

**Persimmon Homes East Wales  
Proposed residential development, North West Barry,  
on land near Waycock Cross  
Vale of Glamorgan**

DRAFT

**North West Barry Development  
Transport Assessment – Modelling Addendum  
May 2025**

**Applicant:** Persimmon Homes East Wakes

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## EXECUTIVE SUMMARY

Asbri Transport Limited were appointed by Persimmon Homes East Wales in 2023 to produce a Transport Assessment (TA) to accompany a further representation in relation to candidate site CS449 further to the original Stage 1 Candidate Site submission made to the Vale of Glamorgan (VoGC) in September 2022.

The initial candidate site submission proposes the allocation of a new residential development of up to 180 dwellings on greenfield land on the north-western side of Barry, located to the west of the Waycock Cross junction and adjacent to the A4226 Port Road.

There are ongoing discussions with the VoGC regarding the potential for a larger development at this site, with 3 potential development scenarios:

- Partial Development: 180 Dwellings
- Full Development Lower: 322 Dwellings
- Full Development Upper: 423 Dwellings

The junction modelling reported upon here provides evidence for the marginal and inconsequential impact of the proposed North West Barry Development on the Waycock Cross junction and the A4226 Port Road, under a range of potential future development scenarios at this and other sites.

As part of the development, it is proposed to construct a new junction from Port Road, to the west of the Waycock Cross roundabout at the location of the existing field gated access in the form of a signal-controlled junction, which would allow for the safe and timely exit of traffic from the development onto the local highway network, particularly for right turning traffic towards Cardiff. The traffic signals would help control traffic entering and existing the Waycock Cross junction having a 'platooning' effect.

Such an access would also provide enhanced Active Travel infrastructure in conjunction with the proposed Active Travel route between the Waycock Cross junction and Cardiff Airport. Traffic signals at the proposed site access would provide for dedicated demand dependent green time for pedestrians and cyclists along this section of the A4226 Port Road

This forecast development trip generation for the proposed North West Barry development shows a range of between 69 and 162 2-way trips during the AM peak hour and between 72 and 170 during the PM peak hour, a proportion of which will travel to and from the Waycock Cross junction. This

equates to a maximum of 1-3 additional trips per minute on the local road network. This results in a 1.3-3.4% increase in total junction flows in 2028 and 1.3-3.1% in 2038.

It is envisaged that the proposed development will have a marginal and inconsequential impact on the performance of the local highway network during the AM and PM peak hour periods, or throughout the course of the day.

Nevertheless, it is acknowledged that the local highway network currently experiences congestion during the network peak hours, which is likely to increase by 2028 and certainly by 2038.

From observations and the modelling, the Port Road Western arm and Waycock Road arms of the junction experience the most congestion and delay. Junction improvements are also feasible on these arms due to available highways and undeveloped third-party land, while the other two arms are constrained by adjacent residential and commercial developments with little scope for improvement.

The potential improvements to the Port Road Western and Waycock Road arms, should they be required could involve increased left turn lane provision. For the Port Road Western arm if the required third-party land is available a free left turn can be provided taking all left turning traffic from the roundabout give way line while providing for dedicated separate straight ahead and right turn lanes.

Such improvements would provide for a degree of spare capacity at the Waycock Cross junction up to 2038. This includes the provision of a signal-controlled junction at the proposed North West Barry site access.

The assessment also included an appraisal of the possible impact other potential committed developments as agreed with VOGC, each of which would individually have a greater impact upon the local highway network:

The cumulative impact of these developments in addition to the North West Barry development has also been assessed within this report.

In conclusion, it is considered that the allocation of this site for the proposed land use is appropriate and acceptable in traffic and transport terms. It is considered that the traffic movements associated with the development proposals could be accommodated on the highway network and will only have a marginal and inconsequential impact on the conditions already experienced on the local highway network due to the existing volumes of traffic using the network and predicted growth in future traffic volumes.



## **CONTENTS**

|   |                                       |    |
|---|---------------------------------------|----|
| 1 | Introduction .....                    | 3  |
| 2 | Waycock Cross .....                   | 9  |
| 3 | Development Proposals .....           | 11 |
| 4 | Trip Generation .....                 | 12 |
| 5 | Trip Distribution & Assignment .....  | 13 |
| 6 | Junction Modelling .....              | 18 |
| 7 | Waycock Cross Enhancements .....      | 30 |
| 8 | Long Term Junction Improvements ..... | 37 |
| 9 | Summary & Conclusions .....           | 39 |

## **FIGURES**

Figure 1.1 Site location

Figure 2.1 Development Site and Local Highway Network

## **APPENDICES**

Appendix A Vale of Glamorgan Council Comments

Appendix B Asbri Transport Ltd Modelling Scoping Note

Appendix C 2025 Base Year Traffic Flows

Appendix D Concept Masterplan

Appendix E 2028 & 2038 Base Flows

Appendix F Concept masterplan

Appendix G Development Trip Distribution and Generation

Appendix H 2028 & 2038 Base + Development

Appendix I 2028 & 2038 Base + Committed Development

Appendix J 2028 & 2038 Base + Development + Committed Development

Appendix K Impact assessment by junction arm

Appendix L Googlemaps Average Delay

Appendix M Journey Time Survey Snapshots

Appendix N Waycock Cross Junction 2025 Base Year Model Output

Appendix O Waycock Cross Junction 2028 & 2038 Future Year Base and Base + Development Year Model Output

Appendix P Waycock Cross Indicative Enhancement

Appendix Q Waycock Cross Enhanced Junction Modelling output

# 1 INTRODUCTION

## 1.1 Background

1.1.1 Asbri Transport Limited were appointed by Persimmon Homes East Wales in 2023 to produce a Transport Assessment (TA) to accompany a further representation in relation to candidate site CS449 further to the original Stage 1 Candidate Site submission made to the Vale of Glamorgan (VoGC) in September 2022.

1.1.2 The initial candidate site submission proposes the allocation of a new residential development of up to 180 dwellings on greenfield land on the north-western side of Barry, located to the west of the Waycock Cross junction.

1.1.3 There are ongoing discussions with the VoGC regarding the potential for a larger development at this site, with 3 potential development scenarios:

- Partial Development: 180 Dwellings
- Full Development Lower: 322 Dwellings
- Full Development Upper: 423 Dwellings

1.1.4 The location of the site is shown in **Figure 1.1**.



Figure 1.1 Site location

## **1.2 Vale of Glamorgan Council Comments**

1.2.1 VoGC and their consultants (Link) provided comments on the TA and in particular on the modelling of the Waycock Cross junction and the proposed site access on 27 November 2024 via an email which is included at **Appendix A**.

1.2.2 In view of these comments Persimmon Homes East Wales have instructed Asbri Transport to scope and prepare a Transport Assessment for submission to the Local Planning Authority.

1.2.3 In summary VoGC required some additional junction modelling with regards to both the Waycock Cross and proposed site access junctions, including the calibration and validation of the base Waycock Cross model, an investigation of the potential improvements to the junction as well as assessing the different options for the proposed site access junction.

1.2.4 In February 2025 Asbri Transport agreed with the VoGC a modelling scope to deal with the issues raised and is included in **Appendix B**. Asbri Transport have been appointed by Persimmon to undertake the Phase 1 modelling.

## **1.3 Methodology**

1.3.1 This TA Addendum provides a response to the VoGC comments and reports on this modelling exercise. In accordance with the modelling scope the basic methodology is as follows:

- 2025 Base Model – Calibration and Validation
- 2028 & 2038 Future Years – Base & Base + Development + Committed Traffic Flows
  - Waycock Cross junction
    - Do Nothing: Existing junction layout
    - Do-Minimum: Enhanced junction layout
  - Waycock Cross junction & Site Access – Linked junctions
    - Do Nothing: Existing Waycock Cross junction layout with signal-controlled site access

- Do-Minimum: Enhanced Waycock Cross junction layout with signal controlled site access
- Waycock Cross Junction Do Something: Junction Enhancement Options – High Level Qualitative Feasibility Assessment

## 2 WAYCOCK CROSS

### 2.1 Site Location

2.1.1 The development site is a parcel of land situated north-west of Barry Town Centre, located on agricultural farmland. The site is accessible via the A4226 Port Road, and is located immediately west of the Waycock Cross roundabout. There is an existing gated access to the site, located approximately 130m from the Waycock Cross junction.

2.1.2 The proposed development site location and local highway network are shown in **Figure 2.1**.



Figure 2.1 Development Site and Local Highway Network

### 2.2 Baseline Traffic Flows

2.2.1 A classified Junction Turning Count was undertaken at the Waycock Cross junction on Tuesday 12 September 2023 between the hours of 07:00-19:00. For the purposes of this analysis, 2025 has been used as the model base year.

2.2.2 Growth factors from 2023 to 2025 have been derived from TEMPro 7.2b, as shown in **Table 2.1**, with the 2025 base year traffic flows shown in **Appendix C**.

| Period      | NTM Growth Factors                                         |        |        |
|-------------|------------------------------------------------------------|--------|--------|
|             | Ward                                                       | AM     | PM     |
| 2023 – 2025 | W02000247: The Vale of Glamorgan 010 - Barry Dyfan & Iltyd | 1.0156 | 1.0156 |

Table 2.1 NTM growth factors

### 3 DEVELOPMENT PROPOSALS

#### 3.1 Land Use

3.1.1 As discussed, the candidate site submission proposes the allocation of a new residential development on greenfield land on the north-western side of Barry, referred to as the North West Barry Development.

3.2 While the original proposals related to a scheme for up to 180 dwellings there are ongoing discussions with the Vale of Glamorgan Council regarding the potential for a larger development at this site.

3.3 For the purposes of this analysis there are 3 development scenarios:

- Partial Development: 180 Dwellings
- Full Development Lower: 322 Dwellings
- Full Development Upper: 423 Dwellings

3.3.1 A concept masterplan is included at **Appendix D**.

#### 3.4 Access

3.4.1 The primary point of vehicular access will be provided from Port Road with an appropriate junction design that encompasses provision for pedestrians and cyclists. There is an existing gated farm access to the site from Port Road West.

## 4 TRIP GENERATION

### 4.1 Introduction

4.1.1 In order to assess the impact of the development proposals on the existing transport infrastructure, it is necessary to establish the vehicle trips likely to be generated by the proposed development.

4.1.2 The forecast multi-modal trip generation rates derived from the TRICS trip generation database as detailed in the TA are shown in **Table 4.1**.

| Multi-Modal<br>Trip Rate | Peak<br>Period | Trip Rate (per dwelling) |        |       |
|--------------------------|----------------|--------------------------|--------|-------|
|                          |                | Arrive                   | Depart | Total |
| Total<br>Vehicles        | 0730-0830      | 0.095                    | 0.289  | 0.384 |
|                          | 1630-1730      | 0.260                    | 0.143  | 0.403 |
| Pedestrians              | 0730-0830      | 0.032                    | 0.106  | 0.138 |
|                          | 1630-1730      | 0.056                    | 0.038  | 0.093 |
| Cyclists                 | 0730-0830      | 0.003                    | 0.006  | 0.009 |
|                          | 1630-1730      | 0.007                    | 0.004  | 0.011 |
| Public<br>Transport      | 0730-0830      | 0.004                    | 0.040  | 0.044 |
|                          | 1630-1730      | 0.028                    | 0.009  | 0.037 |

Table 4.1 Multi-modal trip generation: Residential – mixed private/affordable housing

4.1.3 When applied to the three development scenarios, the vehicular trip generation derived is shown in It can be seen from **Table 4.2**. This shows a range of between 69 and 162 2-way trips during the AM peak and between 72 and 170 during the PM peak.

| Forecast Trip Generation |          |            |       |
|--------------------------|----------|------------|-------|
| Period                   | Arrivals | Departures | Total |
| <b>180 Dwellings</b>     |          |            |       |
| <b>AM</b>                | 17       | 52         | 69    |
| <b>PM</b>                | 47       | 26         | 72    |
| <b>322 Dwellings</b>     |          |            |       |
| <b>AM</b>                | 31       | 93         | 124   |
| <b>PM</b>                | 84       | 46         | 130   |
| <b>423 Dwellings</b>     |          |            |       |
| <b>AM</b>                | 40       | 122        | 162   |
| <b>PM</b>                | 110      | 60         | 170   |

Table 4.2 Forecast Trip Generation



## 5 TRIP DISTRIBUTION & ASSIGNMENT

### 5.1 Future Year Base Traffic Flows

5.1.1 In order to obtain the base traffic flows (i.e. with no development traffic) baseline traffic flows (2023) have been factored using National Trip End Model (NTEM) growth factors. The growth factors were generated using TEMPro 7.2b.

5.1.2 TEMPro growth factors make allowances for growth forecasts included in the NTEM datasets. As such, this allows for all future development sites included in the LDP.

5.1.3 The factors applied to the baseline surveyed flows are identified in **Table 5.1** and the future year base traffic flows are set out in **Appendix E** for the 2028 and 2038 future year base scenarios.

| Period      | NTM Growth Factors                                          |        |        |
|-------------|-------------------------------------------------------------|--------|--------|
|             | Ward                                                        | AM     | PM     |
| 2023 – 2028 | W02000247: The Vale of Glamorgan 010 - Barry Dyfan & Illtyd | 1.0359 | 1.0356 |
| 2023 – 2038 |                                                             | 1.1055 | 1.1014 |

Table 5.1 NTM growth factors

### 5.2 Distribution & Assignment of Development Traffic

5.2.1 The development traffic has been distributed and assigned to the local highway network on a pro-rata basis using the existing traffic flow movements at Waycock Cross, with an assumed east west split of AM Peak:60%/40% and PM Peak: 55%/45% for forecast traffic accessing the proposed development site.

5.2.2 The pro-rata distribution assumptions for the AM and PM peak periods are shown in with the resultant development trip generation flows for each the three development scenarios shown in **Appendix F**.

5.2.3 When the forecast development trips are added to the future year base traffic, the resultant future year Base + Development traffic flows are shown in **Appendix G** for 2028 and 2038 for all three development scenarios.

5.2.4 Adding the forecast development trips to the future year base flows provides the junction flow totals summarised in **Table 5.2**. This data shows a range of between 69 and 162 2-way trips during the AM peak and between 72 and 170 during the PM peak. This results in a 1.3-3.4% increase in total junction flows in 2028 and 1.3-3.1% in 2038.

| Forecast Trip Generation Impact - Waycock Cross Junction |      |                   |       |       |                          |       |       |          |       |       |
|----------------------------------------------------------|------|-------------------|-------|-------|--------------------------|-------|-------|----------|-------|-------|
| Period                                                   | Base | Development Trips |       |       | Base + Development Trips |       |       | Increase |       |       |
|                                                          |      | Partial           | Lower | Upper | Partial                  | Lower | Upper | Partial  | Lower | Upper |
| 2028                                                     |      |                   |       |       |                          |       |       |          |       |       |
| AM                                                       | 2903 | 41                | 74    | 97    | 2945                     | 2977  | 3001  | 1.4%     | 2.6%  | 3.4%  |
| PM                                                       | 2964 | 40                | 71    | 94    | 3003                     | 3035  | 3057  | 1.3%     | 2.4%  | 3.2%  |
| 2038                                                     |      |                   |       |       |                          |       |       |          |       |       |
| AM                                                       | 3098 | 41                | 74    | 97    | 3140                     | 3172  | 3196  | 1.3%     | 2.4%  | 3.1%  |
| PM                                                       | 3152 | 40                | 71    | 94    | 3192                     | 3223  | 3245  | 1.3%     | 2.3%  | 3.0%  |

Table 5.2 2028 & 2038 Future Year Base + Development Flow Junction Totals

### 5.3 Committed Developments

5.3.1 VoGC Highways officers have provided a list of three other developments that need to be considered as committed development that may be at least partly outside of the scope of the background NTM growth forecasts:

- Model Farm (2019/00871/OUT) – currently subject to an appeal hearing
- Cardiff and Vale College (2024/00329/FUL) - Consented
- North of Rhoose Development (2022/00733/FUL) – Determination currently under consideration

5.3.2 While these developments are at different places in the planning process the forecast additional development traffic using Waycock Cross are taken from the individual Transport Assessments for each scheme and summarised in **Table 5.3**.

| Forecast Committed Development Trip Generation - Waycock Cross Junction |          |            |       |
|-------------------------------------------------------------------------|----------|------------|-------|
| Period                                                                  | Arrivals | Departures | Total |
| <b>Manor Farm</b>                                                       |          |            |       |
| <b>AM</b>                                                               | 715      | 158        | 873   |
| <b>PM</b>                                                               | 141      | 599        | 740   |
| <b>Cardiff &amp; Vale College</b>                                       |          |            |       |
| <b>AM</b>                                                               | 220      | 33         | 253   |
| <b>PM</b>                                                               | 25       | 86         | 111   |
| <b>North of Rhoose</b>                                                  |          |            |       |
| <b>AM</b>                                                               | 114      | 32         | 146   |
| <b>PM</b>                                                               | 43       | 105        | 148   |
| <b>Total</b>                                                            |          |            |       |
| <b>AM</b>                                                               | 1049     | 223        | 1272  |
| <b>PM</b>                                                               | 209      | 790        | 999   |

Table 5.3 Committed Development Trip Generation

- 5.3.3 Adding the forecast committed development trip generation to the 2028 and 2038 future year base flows produces the junction impact at Waycock Cross as summarised in **Table 5.4**.

| Forecast Committed Trip Generation Impact - Waycok Cross Junction |      |                     |                |                 |                          |                |                 |            |                |                 |       |
|-------------------------------------------------------------------|------|---------------------|----------------|-----------------|--------------------------|----------------|-----------------|------------|----------------|-----------------|-------|
| Period                                                            | Base | Development Trips - |                |                 | Base + Development Trips |                |                 | Increase   |                |                 | Total |
|                                                                   |      | Model Farm          | Cardiff & Vale | North of Rhoose | Model Farm               | Cardiff & Vale | North of Rhoose | Model Farm | Cardiff & Vale | North of Rhoose |       |
| 2028                                                              |      |                     |                |                 |                          |                |                 |            |                |                 |       |
| AM                                                                | 2903 | 0                   | 253            | 146             | 2903                     | 3156           | 3049            | 0.0%       | 8.7%           | 5.0%            | 13.7% |
| PM                                                                | 2964 | 0                   | 111            | 148             | 2964                     | 3075           | 3112            | 0.0%       | 3.8%           | 5.0%            | 8.7%  |
| 2038                                                              |      |                     |                |                 |                          |                |                 |            |                |                 |       |
| AM                                                                | 3098 | 873                 | 253            | 146             | 3971                     | 3351           | 3244            | 28.2%      | 8.2%           | 4.7%            | 41.0% |
| PM                                                                | 3152 | 740                 | 111            | 148             | 3892                     | 3263           | 3300            | 23.5%      | 3.5%           | 4.7%            | 31.7% |

Table 5.4 Committed Development Trip Generation Impact

- 5.3.4 While the Cardiff & Vale College and the Land North of Rhoose developments if built would most likely not be fully constructed and occupied by the proposed 2028 opening year of the North West of Barry development, for the purposes of this analysis the full trip generation by 2028 has been assumed.
- 5.3.5 The size of the Model Farm development and the fact that it has yet to be given planning permission would mean that little if any of the site would have been developed and occupied by 2028. By 2038 the development is likely to have been largely if not completely developed and occupied. For the purposes of this analysis there are no forecast development trips in 2028 and full development in 2038 for the Model Farm development has been assumed.
- 5.3.6 For 2028, while the Cardiff & Vale College and North of Rhoose developments will at least be partly covered by the NTM background growth, for the purposes of this analysis, these committed development trips have been added to the future year base flows and are shown in **Appendix H**.
- 5.3.7 When the cumulative impacts the Cardiff & Vale College and North Rhoose developments are added to the future year base traffic flows there is a forecast increase in total junction flows of 8.7-13.7% in 2028 and 8.2-12.9% in 2038.
- 5.3.8 When the North West of Barry development flows for each development scenario are added to the future year base and committed development flows, the resultant flows are shown in **Appendix I**.

- 5.3.9 For 2038, for the purposes of this analysis, the Model Farm development trip generation, is added to the Cardiff & Vale and North of Rhoose developments, with these committed development trips added to the future year base flows and are shown in **Appendix J**.
- 5.3.10 When the North West of Barry development flows for each development scenario are added to the future year base and committed development flows, the resultant flows are shown in **Appendix K**.
- 5.3.11 This results in a 8.7-13.7% increase in total junction flows in 2028 and up to 31.7-41.0% in 2038 if all committed development traffic is included. In isolation the Model Farm development would result in a 23.5%-28.2% increase in total junction traffic flows at Waycock Cross.
- 5.3.12 When compared with the 1.3-3.4% increase in total junction flows in 2028 and 1.3-3.1% in 2038, this demonstrates the minimal impact for the North West of Barry development on the Waycock Cross junction in percentage terms as compared to the other committed developments.
- 5.3.13 From a review of the Cardiff & Vale College development Transport Assessment, the 2023 base model was evidently not calibrated and validated to replicate observed congestion and delay, as for example an AM peak RFC of 0.55 for the Port Road eastbound arm significantly underestimates the observed congestion and delay. Therefore, no mitigation measures for the Waycock Cross junction have been suggested.
- 5.3.14 From a review of the North of Rhoose development Transport Assessment, no modelling of the Waycock Cross junction was undertaken as the forecast impact for the junction as a whole is under the industry standard threshold of 5%. But as stated in Tan 18 (Paragraph E4 of Annex E) any junction arm with an impact over 5% should be modelled, while “Where the capacity of a junction is, or near to being exceeded, a smaller increase on a link would normally be material”. Again, no mitigation measures for the Waycock Cross junction have been suggested.
- 5.3.15 From a review of the Model Farm development Transport Assessment, it is evident that the forecast trip generation is large, providing a significant increase in traffic demands on the local highway network including the Waycock Cross Junction, which would require significant mitigation in isolation from any other development proposal.

5.3.16 While the original TA did not propose any mitigation measures at the Waycock Cross junction, the subsequent Revised Implementation Strategy submitted with the planning application does suggest a highway improvement to the Port Road western arm of Waycock Cross in the form of a left turn slip, once the development has been built out to 170,000m<sup>2</sup> and would be delivered as part of the wider Cardiff Airport and Bro Tathan Enterprise Zone. This potential infrastructure improvement has not been subject to any junction capacity assessment.

## 6 JUNCTION MODELLING

### 6.1 Overview

6.1.1 Modelling for all junctions has been undertaken using passenger car units (PCUs).

### 6.2 Model Reporting Outputs Software

#### *Junctions 9*

6.2.1 The capacity assessments of roundabout and priority junctions have been carried out using TRL software package, Junctions 9. The capacity assessments of traffic signals junctions have been undertaken using the industry standard LinSig software.

6.2.2 The modelling has been based on geometric measurements using OS map data supplemented with on-site measurements, where feasible. The outputs of Junctions 9 provide a number of measurements to ascertain information of a junctions' operation. The key measurements which are considered in this assessment are:

- 'Ratio of Flow to Capacity' (RFC),
- Maximum queue length in PCUs,
- Delay in seconds per vehicle
- Level of Service indicated by a letter between A (well within capacity) and F (at or over capacity)

6.2.3 The main indication of the performance of a junction is given by the RFC for each arm. The peak capacity is realised when the demand flow at the entry is great enough to cause a continuous queue of vehicles to wait on approach to the stop line.

6.2.4 This is reached when the RFC attains a value of 1, even though congestion and delay generally occurs when the RFC reaches 0.85. Delay provides an indication of how the levels of congestion on each arm of a junction, with changes in delay providing a useful indicator as to a development's impact on the operation of a junction.

#### **LinSig**

6.2.5 The outputs of LinSig provide a number of measurements to ascertain information of a junction's operation. The key measurements which are considered in this assessment are:

- 'Degree of Saturation' (DoS),
- Mean Maximum queue length in PCUs,
- Average Delay in seconds per PCU
- Practical Reserve Capacity (PRC)

6.2.6 The main indicators of the performance of a junction are given by the DoS for each traffic movement at the junction as well as the PRC for a measure of the overall performance of the junction. The peak capacity is realised when the demand flow at the entry is great enough to cause a continuous queue of vehicles to wait on approach to the stop line. This is reached when the DoS attains a value of 1, even though congestion and delay generally occurs when the DoS reaches 0.9.

6.2.7 The PRC is a measure of the overall junction performance. The junction is modelled to achieve the best overall result balancing the opposing traffic flows to provide the optimal traffic signal timings and operation. A positive PRC shows there is reserve capacity at a junction while a negative PRC indicates a junction is over capacity.

### **6.3 Waycock Cross Junction Base Model – Calibration and Validation**

6.3.1 The 2025 base year capacity assessments of the Waycock Cross roundabout have been undertaken using Junctions 9 software in roundabout mode (ARCADY).

#### **2025 Base**

6.3.2 As detailed above the classified junction turning count undertaken in September 2023 has been used as the basis for the junction modelling with NTM growth rates applied to provide a robust 2025 baseline.

6.3.3 With regards to the calibration and validation of the 2025 base model, observed delay and journey time data from a number of sources has been used to provide a robust indication of the average maximum congestion and delay at the junction for both the AM and PM peak hours. These data sources are:

- Video footage from classified junction turning count (September 2023);
- Googlemaps average journey time data; and
- On-site observations, including peak period journey time surveys (March 2025).

- 6.3.4 An indication of the average peak period delay at this junction is shown in **Appendix L** for the AM (0715-0845) and the PM (1615-1575) peak model periods. Snapshot images of the Journey time video footage is included in **Appendix M**, showing the extent of observed congestion and delay.

#### **Waycock Road**

- 6.3.5 This data shows that for both the AM and PM peak hours that this arm of the junction experiences periods with minimal or no levels of delay as well as periods of congestion and delay across the peak hours.
- 6.3.6 For the AM peak, Plates M1 to M4 show no or minimal delay on the Waycock Road approach to the junction between 0734 and 0800. Between 0810 and 0824 the start of delay is observed to be in the vicinity of the large directional sign, located approximately 120m from the give way line.
- 6.3.7 These three observations (see Plates M6, M7 and M9), show that on approach to the give way line within the section with two approach lanes that there are gaps in the traffic and a relatively low use of the left turn lane. This traffic behaviour is also observed during the PM peak as shown in Plates M16, M17, M19 and M20.
- 6.3.8 The PM peak also experiences periods of different levels of congestion and delay. There is little or no delay shown during the observations at 1631 (Plate M11), 1636 (Plate M12) and at 1737 (Plate M20) with a period of delay starting in the vicinity of the large directional sign between 1643 and 1733 (see Plates M13, M15 and M18). During this period of observed delay there was a single observation at 1717 (see Plate M17) with minimal congestion and delay shown.
- 6.3.9 This data indicates that during congested periods, much of the delay at this approach to the junction is experienced on the single lane approach to the junction with a reduction in the two-lane section and a degree of delay at the Give Way Line.

#### **Port Road West**

- 6.3.10 As with Waycock Road this data shows that for both the AM and PM peak hours that this arm of the junction experiences periods with minimal or no levels of delay as well as periods of congestion and delay during the peak hours.



- 6.3.11 For the AM peak, each of the observations (see Plates M21 to M27) show a small amount of delay at the give way line of the junction, with a moderate level of delay observed at 0747 (see Plate M24).
- 6.3.12 For the PM Peak a moderate level of delay is observed between 1628 and 1651 (see Plates M29 to M32) with the start of a moving queue observed in the vicinity of Numbers 6 and 7 Port Road West, 275m from the Give Way Line.
- 6.3.13 Observations between 1701 and 1730 (see Plates M33-M37) show a lesser degree of congestion and delay in the vicinity of the Shell Petrol Station and Co-op convenience store.
- 6.3.14 This data indicates that during congested periods, much of the delay at this approach to the junction is experienced on the single lane approach to the junction with a reduction in the two-lane section and a degree of delay at the Give Way Line.

#### **Pontypridd Road**

- 6.3.15 Pontypridd Road observations show a generally low level of congestion and delay during both the AM and PM peak periods.
- 6.3.16 For the AM peak the majority of the observations show a minimal delay on approach to the Give Way Line and a degree of delay at the Give Way line, associated with the heavy Port Road flows (see Plates M38 to M45). The exceptions being at 0742 (Plate M40) and 0814 (Plate M43) where a moderate level of delay on approach to the junction is observed.
- 6.3.17 For the PM Peak a moderate level of delay is observed between 1633 and 1639 (see Plates M46 to M48). Observations between 1658 and 1628 (see Plates M49-M50) show no delay on approach to the Give Way line, with a degree of delay at the Give Way Line.

#### **Port Road**

- 6.3.18 This data shows that there are very different levels of congestion and delay for the AM and PM peak hours. During the AM peak significant levels of delay are observed, with much lesser levels observed during the PM peak.
- 6.3.19 For the AM peak, the observation at 0733 (Plates M51) shows the start of slow moving traffic to be on the approach to the start of the left-hand lane.

- 6.3.20 The observations between 0745 and 0826 (Plates M53, M57-M60) show the beginning of congestion and delay along Port Road heading towards the Waycock Cross junction to be between the westbound layby (900m from junction) and the Airport Access Roundabout (1700m from the junction).
- 6.3.21 As with Waycock road, this data indicates that during congested periods, much of the delay on this approach to the Waycock Cross junction is experienced on the single lane approach to the junction with a reduction in the two-lane section and a degree of delay at the Give Way Line.
- 6.3.22 Each of the observations taken at the two-lane section of the junction approach show gaps in the traffic (Plates M52, M54, M55 and M61). In addition, while the start of the delay is shown to be 900m-1700m distant from the Waycock Cross junction, gaps were observed in traffic as shown at 0755 in Plate M57 at the access to the Travelodge, with the associated start of delay shown at the Airport Access roundabout at 0757 in Plate M58.
- 6.3.23 The final AM observation at 0845 (Plate M62, looking east from the Travelodge) shows that congestion and delay has cleared on approach to the Waycock Cross junction.
- 6.3.24 During the PM peak minimal congestion and delay on approach to the junction was observed at 1627 (Plate M63), 1633 (Plate 64) and 1637 (Plate 65) as well as at 1725 (Plate M71) and 1735 (Plate M72).
- 6.3.25 The observations between these periods show the start of delay at 1700 (Plate M66) on the approach to the two-lane section and at 1710 (Plate M68) just to the west of the Travelodge access.

#### **2025 Base Model Results**

- 6.3.26 The results for the 2025 base year scenario are summarised in **Table 6.1**, with the modelling output included in **Appendix N**.
- 6.3.27 The queue validation exercise demonstrates that the observed and modelled delays are broadly similar. As such, it is considered that the baseline junction modelled has been validated as a realistic representation of the operation of the existing roundabout.

| Weycock Cross           |                       |       |      |     |                       |       |      |     |
|-------------------------|-----------------------|-------|------|-----|-----------------------|-------|------|-----|
| Movement                | AM Peak (07:30-08:30) |       |      |     | PM Peak (16:30-17:30) |       |      |     |
|                         | Q                     | Delay | RFC  | LOS | Q                     | Delay | RFC  | LOS |
| 2025                    |                       |       |      |     |                       |       |      |     |
| A - A4226/Waycock Rd    | 1.9                   | 12.91 | 0.66 | B   | 2.8                   | 15.13 | 0.74 | C   |
| B - A4226/Port Road W   | 1.7                   | 7.88  | 0.62 | A   | 2.9                   | 12.43 | 0.75 | B   |
| C - B4226/Pontypridd Rd | 2.0                   | 8.52  | 0.67 | A   | 2.1                   | 9.65  | 0.68 | A   |
| D - A4226/Port Rd       | 12.0                  | 48.16 | 0.94 | E   | 2.6                   | 11.35 | 0.73 | B   |

Table 6.1 Capacity Assessment Results – 2025

6.3.28 As expected, with the observed relatively high level of traffic flows on each arm of the junction there is a degree of peak hour congestion and delay. This is particularly so during the AM peak on the Port Road, with commuters heading in towards Barry, Penarth and Cardiff, with a modelled RFC of 0.94. There is reduced congestion and delay during the PM with an RFC of 0.73.

6.3.29 Waycock Road has periods of moderate congestion and delay during both the AM and PM peak hours, while Port Road West experiences a degree of delay during the PM peak.

6.3.30 For both the AM and PM peak periods Pontypridd Road only experiences moderate levels of congestion and delay.;

#### 2028 & 2038 Future Year Base and Development

6.3.31 The results for the 2028 future year base and the Base + Development scenarios are shown in **Table 6.2** with the results for the 2038 future year Base and the Base + Development scenarios shown in **Table 6.3**. The modelling output is included in **Appendix O**.

6.3.32 The 2028 results show that the levels of congestion and delay marginally increase on each arm, with the Port Road AM peak RFC increasing from 0.97 for the 2028 base to between 1.01 for the Partial to 1.05 for the Full Upper development scenarios.

6.3.33 The 2038 results show that the levels of congestion and delay moderately increase on each arm due to background growth, with the base RFC increasing from 0.97 to 1.07 between 2028 and 2038). The addition of development traffic is forecast to have a marginal impact upon the junction, with the Port Road AM peak RFC increasing to between 1.11 for the Partial to 1.16 for the Full Upper development scenarios.

| Waycock Cross                                       |                       |        |      |     |                       |       |      |     |
|-----------------------------------------------------|-----------------------|--------|------|-----|-----------------------|-------|------|-----|
| Arm                                                 | AM Peak (07:30-08:30) |        |      |     | PM Peak (16:30-17:30) |       |      |     |
|                                                     | Q                     | Delay  | RFC  | LOS | Q                     | Delay | RFC  | LOS |
| 2028 Base                                           |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                    | 2.1                   | 13.81  | 0.67 | B   | 3.1                   | 16.74 | 0.76 | C   |
| B - Port Road West                                  | 1.8                   | 8.28   | 0.64 | A   | 3.3                   | 13.70 | 0.77 | B   |
| C - Pontypridd Road                                 | 2.2                   | 9.06   | 0.68 | A   | 2.3                   | 10.39 | 0.70 | B   |
| D - Port Road                                       | 16.2                  | 62.21  | 0.97 | F   | 2.9                   | 12.24 | 0.75 | B   |
| 2028 Base + Development (Partial, 180 dwellings)    |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                    | 2.2                   | 14.47  | 0.69 | B   | 3.3                   | 17.71 | 0.77 | C   |
| B - Port Road West                                  | 1.8                   | 8.48   | 0.65 | A   | 3.6                   | 14.78 | 0.79 | B   |
| C - Pontypridd Road                                 | 2.2                   | 9.25   | 0.69 | A   | 2.5                   | 11.10 | 0.72 | B   |
| D - Port Road                                       | 23.9                  | 84.80  | 1.01 | F   | 3.1                   | 12.83 | 0.76 | B   |
| 2028 Base + Development (Full Lower, 322 dwellings) |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                    | 2.2                   | 14.83  | 0.69 | B   | 3.5                   | 18.64 | 0.78 | C   |
| B - Port Road West                                  | 1.9                   | 8.64   | 0.65 | A   | 3.8                   | 15.71 | 0.80 | C   |
| C - Pontypridd Road                                 | 2.3                   | 9.44   | 0.69 | A   | 2.6                   | 11.72 | 0.73 | B   |
| D - Port Road                                       | 32.5                  | 107.67 | 1.03 | F   | 3.3                   | 13.46 | 0.77 | B   |
| 2028 Base + Development (Full Upper, 423 dwellings) |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                    | 2.3                   | 15.04  | 0.70 | C   | 3.6                   | 19.30 | 0.79 | C   |
| B - Port Road West                                  | 1.9                   | 8.71   | 0.65 | A   | 4.0                   | 16.41 | 0.81 | C   |
| C - Pontypridd Road                                 | 2.3                   | 9.55   | 0.70 | A   | 2.8                   | 12.22 | 0.74 | B   |
| D - Port Road                                       | 39.8                  | 126.43 | 1.05 | F   | 3.4                   | 13.90 | 0.78 | B   |

Table 6.2 Capacity Assessment Results – 2028 Base

| Waycock Cross                                       |                       |        |      |     |                       |       |      |     |
|-----------------------------------------------------|-----------------------|--------|------|-----|-----------------------|-------|------|-----|
| Arm                                                 | AM Peak (07:30-08:30) |        |      |     | PM Peak (16:30-17:30) |       |      |     |
|                                                     | Q                     | Delay  | RFC  | LOS | Q                     | Delay | RFC  | LOS |
| 2038 Base                                           |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                    | 2.8                   | 17.30  | 0.74 | C   | 5.0                   | 25.40 | 0.84 | D   |
| B - Port Road West                                  | 2.3                   | 9.89   | 0.69 | A   | 5.2                   | 20.57 | 0.85 | C   |
| C - Pontypridd Road                                 | 2.9                   | 11.59  | 0.75 | B   | 3.2                   | 13.87 | 0.77 | B   |
| D - Port Road                                       | 46.4                  | 147.24 | 1.07 | F   | 4.1                   | 16.35 | 0.81 | C   |
| 2038 Base + Development (Partial, 180 dwellings)    |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                    | 2.8                   | 17.70  | 0.74 | C   | 5.4                   | 27.67 | 0.85 | D   |
| B - Port Road West                                  | 2.3                   | 10.08  | 0.70 | B   | 5.8                   | 22.92 | 0.86 | C   |
| C - Pontypridd Road                                 | 3.0                   | 11.90  | 0.75 | B   | 3.5                   | 15.14 | 0.79 | C   |
| D - Port Road                                       | 61.3                  | 186.16 | 1.11 | F   | 4.4                   | 17.51 | 0.82 | C   |
| 2038 Base + Development (Full Lower, 322 dwellings) |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                    | 2.9                   | 17.95  | 0.75 | C   | 5.8                   | 29.78 | 0.86 | D   |
| B - Port Road West                                  | 2.4                   | 10.26  | 0.70 | B   | 6.4                   | 25.15 | 0.88 | D   |
| C - Pontypridd Road                                 | 3.1                   | 12.21  | 0.76 | B   | 3.8                   | 16.28 | 0.80 | C   |
| D - Port Road                                       | 73.7                  | 218.55 | 1.13 | F   | 4.7                   | 18.63 | 0.83 | C   |
| 2038 Base + Development (Full Upper, 423 dwellings) |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                    | 2.9                   | 18.06  | 0.75 | C   | 6.1                   | 31.17 | 0.87 | D   |
| B - Port Road West                                  | 2.4                   | 10.33  | 0.70 | B   | 6.8                   | 26.67 | 0.88 | D   |
| C - Pontypridd Road                                 | 3.2                   | 12.39  | 0.76 | B   | 4.1                   | 17.20 | 0.81 | C   |
| D - Port Road                                       | 83.8                  | 245.28 | 1.16 | F   | 4.9                   | 19.35 | 0.84 | C   |

Table 6.3 Capacity Assessment Results – 2038

- 6.3.34 By 2038 Waycock Road during both the AM and PM peaks and Port Road West for the PM peak are also close to capacity with an RFC between 0.85 and 0.88.
- 6.3.35 The 2028 and 2038 results show that the junction performance is not expected to be significantly altered by the addition of the traffic from the proposed North West of Barry development.
- 6.3.36 This indicates that the impact of the development traffic on the Waycock Cross junction is marginal. This analysis has not taken into consideration any reduction in trip generation and mode share for sustainable transport modes and working from home and can be seen as a worst-case scenario in terms of development traffic generation.

### **Committed Developments**

- 6.3.37 As discussed in Section 5.3, VoGC provided a list of three other developments that need to be considered as committed development that may be at least partly outside of the scope of the background NTM growth forecasts:
- Model Farm (2019/00871/OUT) – currently subject to an appeal hearing
  - Cardiff and Vale College (2024/00329/FUL) - Consented
  - North of Rhoose Development (2022/00733/FUL) – Determination currently under consideration

### **2028**

- 6.3.38 While the Cardiff & Vale College and the Land North of Rhoose developments will be at least partly accommodated by the NTM growth forecasts and would not likely be fully constructed and occupied by 2028, for the purposes of this analysis the full trip generation by 2028 has been assumed.
- 6.3.39 The nature and size of the Model Farm development, if given permission, is such that little if any of the development would be constructed and occupied by 2028 and is excluded from the 2028 future year assessment.
- 6.3.40 The results for the 2028 future year Base + Committed and the Base + Committed + Development scenarios are shown in **Table 6.24**. The modelling report is also included in **Appendix O**.
- 6.3.41 As shown above, with a forecast 8.7-13.7% increase in total junction flows in 2028 due to committed development trip generation as opposed to the 1.3-3.4% increase due to the

North West Barry development the impact of these committed developments will obviously be greater as reflected in the modelling results.

6.3.42 For Port Road the AM peak RFC raises to 1.21 with an associated large increase in delay, with both Waycock Road and Port Road West reaching RFC's above 0.90 for the Full Upper development scenario.

6.3.43 A basic caveat of all traffic model software, including Junctions9 is the fact that when an arm or junction as a whole become congested with RFC's over 0.9 or 1.0 then the actual results calculated need to be treated with caution and taken as an indication of increasing congestion and delay and not as an absolute number.

| Waycock Cross                                                          |                       |        |      |     |                       |       |      |     |
|------------------------------------------------------------------------|-----------------------|--------|------|-----|-----------------------|-------|------|-----|
| Arm                                                                    | AM Peak (07:30-08:30) |        |      |     | PM Peak (16:30-17:30) |       |      |     |
|                                                                        | Q                     | Delay  | RFC  | LOS | Q                     | Delay | RFC  | LOS |
| <b>2028 Base + Committed</b>                                           |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                                       | 3.1                   | 18.32  | 0.76 | C   | 7.9                   | 39.37 | 0.90 | E   |
| B - Port Road West                                                     | 3.3                   | 13.26  | 0.77 | B   | 5.7                   | 23.48 | 0.86 | C   |
| C - Pontypridd Road                                                    | 4.8                   | 18.97  | 0.83 | C   | 3.3                   | 14.65 | 0.77 | B   |
| D - Port Road                                                          | 75.2                  | 215.96 | 1.13 | F   | 6.0                   | 22.65 | 0.87 | C   |
| <b>2028 Base + Committed + Development (Partial, 180 dwellings)</b>    |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                                       | 3.1                   | 18.68  | 0.76 | C   | 8.9                   | 43.92 | 0.92 | E   |
| B - Port Road West                                                     | 3.4                   | 13.61  | 0.77 | B   | 6.5                   | 26.38 | 0.88 | D   |
| C - Pontypridd Road                                                    | 5.1                   | 19.88  | 0.84 | C   | 3.6                   | 16.04 | 0.79 | C   |
| D - Port Road                                                          | 91.8                  | 258.45 | 1.17 | F   | 6.7                   | 24.78 | 0.88 | C   |
| <b>2028 Base + Committed + Development (Full Lower, 322 dwellings)</b> |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                                       | 3.2                   | 18.96  | 0.76 | C   | 9.8                   | 47.95 | 0.93 | E   |
| B - Port Road West                                                     | 3.5                   | 13.92  | 0.78 | B   | 7.2                   | 28.97 | 0.89 | D   |
| C - Pontypridd Road                                                    | 5.3                   | 20.59  | 0.85 | C   | 3.9                   | 17.37 | 0.81 | C   |
| D - Port Road                                                          | 105.2                 | 309.07 | 1.19 | F   | 7.2                   | 26.53 | 0.89 | D   |
| <b>2028 Base + Committed + Development (Full Upper, 423 dwellings)</b> |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                                       | 3.2                   | 19.13  | 0.77 | C   | 10.5                  | 51.07 | 0.94 | F   |
| B - Port Road West                                                     | 3.5                   | 14.09  | 0.78 | B   | 7.8                   | 31.19 | 0.90 | D   |
| C - Pontypridd Road                                                    | 5.4                   | 21.08  | 0.85 | C   | 4.2                   | 18.35 | 0.82 | C   |
| D - Port Road                                                          | 115.4                 | 348.3  | 1.21 | F   | 7.7                   | 28.28 | 0.90 | D   |

Table 6.4 Capacity Assessment Results – 2028 Base + Committed + Development

6.3.44 Taking this into consideration the addition of the development traffic to the committed traffic has a minimal impact upon the operation of an already congested junction.

Nevertheless, the cumulative impact of these development schemes could, if all approved and ultimately developed in full, raise operational capacity issues at the Waycock Cross junction that may require mitigation and junction improvements as part of the wider Cardiff Airport and Bro Tathan Enterprise Zone improvements.

## 2038

- 6.3.45 By 2038, the majority of the Model Farm development, if given permission, may be constructed and occupied and while some of the forecast development traffic will be accommodated by the NTM forecast growth, for the purposes of this analysis will be included in the 2038 future year assessment.
- 6.3.46 The results for the 2038 future year Base + Committed and the Case + Committed + Development scenarios are shown in **Table 6.25**. The modelling report is also included in **Appendix O**.
- 6.3.47 As shown above, with a forecast of up to 31.7-41.0% in 2038 if all committed development traffic is included, this would result in extreme and unacceptable delay at the Waycock Cross junction. This is particularly so if the Model Farm development was implemented.
- 6.3.48 As stated above the calculated model output with so much additional traffic must be treated with caution and is not a true reflection of the true future levels of congestion and delay but be taken as an indication of the significant traffic issues that are likely to occur at the Waycock Cross junction increasing congestion and delay and not as an absolute number.
- 6.3.49 Nevertheless, taking this into consideration the addition of the North West Barry development traffic to the committed traffic has an inconsequential impact upon the operation of an already congested junction.

| Waycock Cross                                          |                       |        |      |     |                       |       |      |     |
|--------------------------------------------------------|-----------------------|--------|------|-----|-----------------------|-------|------|-----|
| Arm                                                    | AM Peak (07:30-08:30) |        |      |     | PM Peak (16:30-17:30) |       |      |     |
|                                                        | Q                     | Delay  | RFC  | LOS | Q                     | Delay | RFC  | LOS |
| 2038 Base + Committed (Cardiff & Vale, North of Rhose) |                       |        |      |     |                       |       |      |     |
| A - Waycock Road                                       | 4                     | 22.73  | 0.8  | C   | 18.2                  | 80.67 | 0.99 | F   |
| B - Port Road West                                     | 4.4                   | 17.24  | 0.82 | C   | 10.8                  | 41.78 | 0.94 | E   |
| C - Pontypridd Road                                    | 8.5                   | 32.1   | 0.91 | D   | 5                     | 21.46 | 0.84 | C   |
| D - Port Road                                          | 123.3                 | 391.18 | 1.24 | F   | 10.5                  | 37.78 | 0.93 | E   |
| 2038 Base + Committed (Model Farm)                     |                       |        |      |     |                       |       |      |     |

|                                                                                                                  |       |        |      |   |       |         |      |   |
|------------------------------------------------------------------------------------------------------------------|-------|--------|------|---|-------|---------|------|---|
| A - Waycock Road                                                                                                 | 14.1  | 68.22  | 0.97 | F | 15.5  | 74.88   | 0.97 | F |
| B - Port Road West                                                                                               | 67.3  | 183.78 | 1.11 | F | 12.3  | 46.47   | 0.95 | E |
| C - Pontypridd Road                                                                                              | 127.3 | 464.6  | 1.25 | F | 5.7   | 23.83   | 0.86 | C |
| D - Port Road                                                                                                    | 87.6  | 280.26 | 1.14 | F | 273.7 | 775.27  | 1.38 | F |
| <b>2038 Base + Committed (Cardiff &amp; Vale, North of Rhose and Model Farm)</b>                                 |       |        |      |   |       |         |      |   |
| A - Waycock Road                                                                                                 | 28.1  | 115.94 | 1.03 | F | 40.2  | 160.05  | 1.07 | F |
| B - Port Road West                                                                                               | 151   | 498.86 | 1.26 | F | 25.6  | 86.18   | 1.01 | F |
| C - Pontypridd Road                                                                                              | 240.6 | 915.63 | 1.4  | F | 10.3  | 42.31   | 0.93 | E |
| D - Port Road                                                                                                    | 159.2 | 516.7  | 1.24 | F | 402.5 | 1135.68 | 1.5  | F |
| <b>2038 Base + Committed (Cardiff &amp; Vale, North of Rhose) + Development (Full Upper: 423)</b>                |       |        |      |   |       |         |      |   |
| A - Waycock Road                                                                                                 | 4.2   | 23.86  | 0.81 | C | 25.1  | 105.01  | 1.03 | F |
| B - Port Road West                                                                                               | 4.9   | 18.74  | 0.83 | C | 15.7  | 57.49   | 0.97 | F |
| C - Pontypridd Road                                                                                              | 10    | 37.65  | 0.93 | E | 6.7   | 28.39   | 0.89 | D |
| D - Port Road                                                                                                    | 168.4 | 565.91 | 1.32 | F | 14.6  | 50.23   | 0.96 | F |
| <b>2038 Base + Committed (Model Farm) + Development (Full Upper: 423)</b>                                        |       |        |      |   |       |         |      |   |
| A - Waycock Road                                                                                                 | 15.7  | 74.54  | 0.98 | F | 18.5  | 86.3    | 0.99 | F |
| B - Port Road West                                                                                               | 74.5  | 202.08 | 1.13 | F | 17.9  | 63.58   | 0.98 | F |
| C - Pontypridd Road                                                                                              | 137.1 | 499.94 | 1.26 | F | 7.9   | 32.49   | 0.91 | D |
| D - Port Road                                                                                                    | 130.3 | 447.38 | 1.21 | F | 305.7 | 857     | 1.41 | F |
| <b>2038 Base + Committed (Cardiff &amp; Vale, North of Rhose and Model Farm) + Development (Full Upper: 423)</b> |       |        |      |   |       |         |      |   |
| A - Waycock Road                                                                                                 | 31.1  | 126.09 | 1.04 | F | 46.3  | 180.39  | 1.09 | F |
| B - Port Road West                                                                                               | 164.3 | 538.53 | 1.28 | F | 36.9  | 115.38  | 1.04 | F |
| C - Pontypridd Road                                                                                              | 252.2 | 968.65 | 1.41 | F | 15.3  | 59.81   | 0.97 | F |
| D - Port Road                                                                                                    | 224.8 | 703.24 | 1.31 | F | 436.4 | 1244.01 | 1.53 | F |

Table 6.5 Capacity Assessment Results – 2038 Base + Committed + Development

## 6.4 Site Access

- 6.4.1 The proposed site access location is at the existing field access on the southern side of Port Road and would be approximately 130m from the Waycock Cross junction. The observed AM peak congestion reaches back passed this location and much further for a period. This would result in any development traffic wishing to turn right out of the development site would have difficulty in doing so both in terms of traffic flows, queueing traffic and road safety.
- 6.4.2 While the proposed site access can be modelled in isolation as a priority junction using Junctions 9 software in priority junction mode (PICADY) and be calibrated to reflect the observed AM peak congestion, such an would only provide evidence for the unsuitability of a priority junction at this location.
- 6.4.3 With regards to providing priority for development accessing the proposed site, a roundabout or a traffic signal option would be the feasible options.



- 6.4.4 While a roundabout would provide a degree of priority to development traffic exiting the site, the issue of slow moving and queueing traffic through the junction would still remain. In addition, the provision of the necessary deflection at the roundabout would require a relatively significant degree of land take, which would likely require third party land in addition to the environmental impact.
- 6.4.5 The traffic signals option would minimise the land take and maximise the required priority for development traffic, while helping control, by platooning, the movement of traffic towards the Waycock Cross junction eastbound along Port Road.
- 6.4.6 In addition, the traffic signal operation would include dedicated active travel phases, providing improved active travel provision, which would be designed in accordance with the proposals for an Active Travel Route between the Amnor Farm and Cardiff and Vale College development sites and the Waycock Cross junction.
- 6.4.7 In the longer term if a traffic signals option was implemented at the Waycock Cross junction, the signal operation could be connected in order to maximise operational capacity.
- 6.4.8 The Waycock Cross and site access junctions have been modelled as linked junctions in both Junctions 9 (Lane Simulation Mode) and Linsig. The results of the lane simulation mode are to be treated with caution and only be used as an indication of the relative performance of different lane configurations and usage.
- 6.4.9 For the Waycock Cross roundabout lane simulation will have little impact upon lane usage as with a single lane approach Road for each arm with all left and right turning traffic are currently making use of the appropriate left or right turning lanes where available.

## **7 WAYCOCK CROSS ENHANCEMENTS**

### **7.1 Short to Medium Term**

- 7.1.1 It is evident from the observation and modelling of the Waycock Cross junction that a degree of mitigation and operational capacity improvements are required whatever the level of future development traffic flows.
- 7.1.2 As discussed, if all the listed developments were implemented in full there would be the requirement for a longer term improvement scheme involving a modification of the junction. In the wider scheme of things, the impact of the North West Barry development would be inconsequential.
- 7.1.3 In the short to medium term and in relation to the North West Barry and the Cardiff & Valle College and North of Rhoose developments less significant enhancements to the existing Waycock Cross junction may be feasible.
- 7.1.4 From observations and the modelling, the Port Road Western arm and Waycock Road arms of the junction experience the most congestion and delay. This is reflected in the fact that these arms have already been provided with relatively lengthy sections of left turn lane. Such a provision has also been feasible due to the available undeveloped highways and third-party land.
- 7.1.5 While the Port Road West and Pontypridd Road arms also experience some degree of congestion and delay these arms at the junction are restricted by adjacent properties, including residential dwellings as well as a Petrol Station and a Convenience Store. Any improvements to these arms, in terms of providing longer right turn lanes would be small and have a negligible impact upon the operation of the junction.
- 7.1.6 The Port Road arm has no adjacent properties on approach to or at the junction, while the Waycock Road arm has no adjacent properties on approach but is restricted by adjacent properties at the junction itself.
- 7.1.7 While both of these arms have the opportunity to be provided with an extension to their exiting left turn lanes, the Port Road western arm also has the opportunity for the provision of a free left turn (bypass) lane, which would effectively remove left turning traffic from the give way line at the roundabout.

7.1.8 A proposed enhancement, devised with no prior knowledge of any such suggestion in the Model Farm transportation assessment, as indicatively shown in **Appendix P**, involves:

- Waycock Road: Lengthen left turn lane to 120m; and
- Port Road: Provide free left turn lane, allowing for a dedicated ahead only lane with a right turn lane extended to 100m.

7.1.9 The results of modelling of these enhancements, are summarised in **Table 7.1** for 2028 and **Table 7.2** for 2038. The modelling output is included in **Appendix Q**.

| <b>Waycock Cross</b>                                                   |                              |              |            |            |                              |              |            |            |
|------------------------------------------------------------------------|------------------------------|--------------|------------|------------|------------------------------|--------------|------------|------------|
| <b>Arm</b>                                                             | <b>AM Peak (07:30-08:30)</b> |              |            |            | <b>PM Peak (16:30-17:30)</b> |              |            |            |
|                                                                        | <b>Q</b>                     | <b>Delay</b> | <b>RFC</b> | <b>LOS</b> | <b>Q</b>                     | <b>Delay</b> | <b>RFC</b> | <b>LOS</b> |
| <b>2028 Base</b>                                                       |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                       | 1.8                          | 11.73        | 0.64       | B          | 2.5                          | 13.32        | 0.71       | B          |
| B - Port Road West                                                     | 1.6                          | 7.45         | 0.61       | A          | 2.8                          | 11.5         | 0.74       | B          |
| C - Pontypridd Road                                                    | 2.2                          | 9.06         | 0.68       | A          | 2.3                          | 10.39        | 0.70       | B          |
| D - Port Road                                                          | 2.1                          | 11.01        | 0.67       | B          | 1.4                          | 7.23         | 0.58       | A          |
| <b>2028 Base + Development (Partial, 180 dwellings)</b>                |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                       | 1.9                          | 12.48        | 0.65       | B          | 2.6                          | 13.95        | 0.72       | B          |
| B - Port Road West                                                     | 1.7                          | 7.66         | 0.62       | A          | 3                            | 12.27        | 0.75       | B          |
| C - Pontypridd Road                                                    | 2.2                          | 9.25         | 0.69       | A          | 2.5                          | 11.11        | 0.72       | B          |
| D - Port Road                                                          | 2.3                          | 11.86        | 0.70       | B          | 1.4                          | 7.4          | 0.59       | A          |
| <b>2028 Base + Development (Full Lower, 322 dwellings)</b>             |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                       | 2                            | 13.11        | 0.67       | B          | 2.8                          | 14.54        | 0.73       | B          |
| B - Port Road West                                                     | 1.7                          | 7.84         | 0.63       | A          | 3.2                          | 12.92        | 0.76       | B          |
| C - Pontypridd Road                                                    | 2.3                          | 9.44         | 0.69       | A          | 2.6                          | 11.73        | 0.73       | B          |
| D - Port Road                                                          | 2.5                          | 12.62        | 0.72       | B          | 1.5                          | 7.55         | 0.60       | A          |
| <b>2028 Base + Development (Full Upper, 423 dwellings)</b>             |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                       | 2.1                          | 13.61        | 0.67       | B          | 2.9                          | 14.96        | 0.74       | B          |
| B - Port Road West                                                     | 1.7                          | 7.95         | 0.63       | A          | 3.3                          | 13.4         | 0.77       | B          |
| C - Pontypridd Road                                                    | 2.3                          | 9.55         | 0.70       | A          | 2.8                          | 12.23        | 0.74       | B          |
| D - Port Road                                                          | 2.7                          | 13.26        | 0.73       | B          | 1.5                          | 7.67         | 0.60       | A          |
| <b>2028 Base + Committed</b>                                           |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                       | 3.1                          | 18.63        | 0.76       | C          | 5.3                          | 26.14        | 0.85       | D          |
| B - Port Road West                                                     | 3                            | 12.08        | 0.75       | B          | 4.5                          | 18.2         | 0.83       | C          |
| C - Pontypridd Road                                                    | 4.8                          | 18.97        | 0.83       | C          | 3.3                          | 14.74        | 0.77       | B          |
| D - Port Road                                                          | 2.9                          | 14.06        | 0.75       | B          | 1.9                          | 8.87         | 0.66       | A          |
| <b>2028 Base + Committed + Development (Partial, 180 dwellings)</b>    |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                       | 3.4                          | 20.45        | 0.78       | C          | 5.8                          | 28.54        | 0.86       | D          |
| B - Port Road West                                                     | 3.1                          | 12.61        | 0.76       | B          | 5                            | 20.08        | 0.84       | C          |
| C - Pontypridd Road                                                    | 5.1                          | 19.88        | 0.84       | C          | 3.6                          | 16.18        | 0.79       | C          |
| D - Port Road                                                          | 3.3                          | 15.45        | 0.77       | C          | 2                            | 9.13         | 0.67       | A          |
| <b>2028 Base + Committed + Development (Full Lower, 322 dwellings)</b> |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                       | 3.7                          | 22.11        | 0.79       | C          | 6.3                          | 30.66        | 0.87       | D          |
| B - Port Road West                                                     | 3.3                          | 13.09        | 0.77       | B          | 5.5                          | 21.75        | 0.86       | C          |
| C - Pontypridd Road                                                    | 5.3                          | 20.57        | 0.85       | C          | 4                            | 17.57        | 0.81       | C          |
| D - Port Road                                                          | 3.6                          | 16.73        | 0.79       | C          | 2                            | 9.34         | 0.67       | A          |
| <b>2028 Base + Committed + Development (Full Upper, 423 dwellings)</b> |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                       | 3.9                          | 23.48        | 0.80       | C          | 6.6                          | 32.34        | 0.88       | D          |
| B - Port Road West                                                     | 3.3                          | 13.4         | 0.77       | B          | 5.9                          | 23.18        | 0.86       | C          |
| C - Pontypridd Road                                                    | 5.4                          | 21.05        | 0.85       | C          | 4.2                          | 18.61        | 0.82       | C          |
| D - Port Road                                                          | 3.9                          | 17.85        | 0.80       | C          | 2.1                          | 9.52         | 0.68       | A          |

Table 7.1 Capacity Assessment Results – 2028 Base + Committed + Development

- 7.1.10 This shows a significant improvement in the operation of the junction in 2028 and 2038 with the North West Barry development only and with the addition of committed development flows.
- 7.1.11 The 2028 base RFC for Port Road has been reduced from 0.97 to 0.67 and increases to between 0.70 and 0.73 for the different development scenarios. This provides for an inconsequential development impact on the operation of the Waycock Cross junction.
- 7.1.12 For Waycock Road the RFC lies between 0.71-0.74, while the maximum RFC for the junction lies between 0.74 and 0.77 for the Port Road West arm for the PM peak, which is indicative of there being little scope for improvement on this arm.
- 7.1.13 With the addition of the committed development traffic the Port Road RFC increases to 0.77-0.80 and to 0.84-0.86 for Port Road West. The maximum RFC for the junction is now for the Waycock Road arm at 0.86-0.88.
- 7.1.14 For 2038 the junction still operates within acceptable but busy levels with only the North West Barry development. The 2038 base RFC for Port Road has been reduced from 1.24 to 0.75 and increases to between 0.80 and 0.83 for the different development scenarios. This provides for an inconsequential development impact on the operation of the Waycock Cross junction.
- 7.1.15 For Waycock Road the RFC lies between 0.80-0.82, while the maximum RFC for the junction lies between 0.86 and 0.89 for the Port Road West arm for the PM peak, which is indicative of there being little scope for improvement on this arm.
- 7.1.16 With the addition of the committed development traffic the Port Road RFC increases to 0.85-0.89 and to 0.96-0.99 for Port Road West. The RFC for the Waycock Road arm is 0.95-0.97.
- 7.1.17 Adding the Cardiff & Vale College and North of Rhoose as committed developments push the junction close to capacity with each arm experiencing relatively high levels of congestion and delay.

| Waycock Cross                                                           |                       |       |      |     |                       |       |      |     |
|-------------------------------------------------------------------------|-----------------------|-------|------|-----|-----------------------|-------|------|-----|
| Arm                                                                     | AM Peak (07:30-08:30) |       |      |     | PM Peak (16:30-17:30) |       |      |     |
|                                                                         | Q                     | Delay | RFC  | LOS | Q                     | Delay | RFC  | LOS |
| <b>2038 Base</b>                                                        |                       |       |      |     |                       |       |      |     |
| A - Waycock Road                                                        | 2.5                   | 15.86 | 0.72 | C   | 3.7                   | 18.56 | 0.79 | C   |
| B - Port Road West                                                      | 2.4                   | 10.28 | 0.70 | B   | 5.2                   | 20.67 | 0.85 | C   |
| C - Pontypridd Road                                                     | 2.9                   | 11.58 | 0.75 | B   | 3.2                   | 13.89 | 0.77 | B   |
| D - Port Road                                                           | 3                     | 15.26 | 0.75 | C   | 1.7                   | 8.62  | 0.63 | A   |
| <b>2038 Base + Development (Partial, 180 dwellings)</b>                 |                       |       |      |     |                       |       |      |     |
| A - Waycock Road                                                        | 2.8                   | 17.24 | 0.74 | C   | 3.9                   | 19.84 | 0.80 | C   |
| B - Port Road West                                                      | 2.5                   | 10.67 | 0.71 | B   | 5.8                   | 23.08 | 0.86 | C   |
| C - Pontypridd Road                                                     | 3                     | 11.9  | 0.75 | B   | 3.5                   | 15.17 | 0.79 | C   |
| D - Port Road                                                           | 3.4                   | 16.92 | 0.78 | C   | 1.8                   | 8.87  | 0.64 | A   |
| <b>2038 Base + Development (Full Lower, 322 dwellings)</b>              |                       |       |      |     |                       |       |      |     |
| A - Waycock Road                                                        | 3                     | 18.44 | 0.75 | C   | 4.2                   | 21.01 | 0.81 | C   |
| B - Port Road West                                                      | 2.5                   | 11.02 | 0.72 | B   | 6.5                   | 25.37 | 0.88 | D   |
| C - Pontypridd Road                                                     | 3.1                   | 12.2  | 0.76 | B   | 3.8                   | 16.31 | 0.80 | C   |
| D - Port Road                                                           | 3.8                   | 18.47 | 0.80 | C   | 1.9                   | 9.09  | 0.65 | A   |
| <b>2038 Base + Development (Full Upper, 423 dwellings)</b>              |                       |       |      |     |                       |       |      |     |
| A - Waycock Road                                                        | 3.1                   | 19.4  | 0.76 | C   | 4.3                   | 21.78 | 0.82 | C   |
| B - Port Road West                                                      | 2.6                   | 11.23 | 0.72 | B   | 6.9                   | 26.96 | 0.89 | D   |
| C - Pontypridd Road                                                     | 3.2                   | 12.38 | 0.76 | B   | 4.1                   | 17.24 | 0.81 | C   |
| D - Port Road                                                           | 4.2                   | 19.84 | 0.81 | C   | 1.9                   | 9.24  | 0.66 | A   |
| <b>2038 Base + Committed*</b>                                           |                       |       |      |     |                       |       |      |     |
| A - Waycock Road                                                        | 5.2                   | 30.22 | 0.85 | D   | 10.4                  | 48.92 | 0.93 | E   |
| B - Port Road West                                                      | 5.3                   | 20.94 | 0.85 | C   | 11.8                  | 45.56 | 0.95 | E   |
| C - Pontypridd Road                                                     | 8.4                   | 31.84 | 0.91 | D   | 5.1                   | 21.83 | 0.85 | C   |
| D - Port Road                                                           | 4.6                   | 21.41 | 0.83 | C   | 2.5                   | 11    | 0.71 | B   |
| <b>2038 Base + Committed* + Development (Partial, 180 dwellings)</b>    |                       |       |      |     |                       |       |      |     |
| A - Waycock Road                                                        | 6                     | 34.77 | 0.87 | D   | 12                    | 55.47 | 0.95 | F   |
| B - Port Road West                                                      | 5.8                   | 22.53 | 0.86 | C   | 14.2                  | 53.3  | 0.96 | F   |
| C - Pontypridd Road                                                     | 9.1                   | 34.16 | 0.92 | D   | 5.7                   | 24.53 | 0.86 | C   |
| D - Port Road                                                           | 5.4                   | 24.55 | 0.85 | C   | 2.6                   | 11.39 | 0.72 | B   |
| <b>2038 Base + Committed* + Development (Full Lower, 322 dwellings)</b> |                       |       |      |     |                       |       |      |     |
| A - Waycock Road                                                        | 6.8                   | 38.99 | 0.89 | E   | 13.6                  | 61.81 | 0.96 | F   |
| B - Port Road West                                                      | 6.1                   | 23.74 | 0.87 | C   | 16.5                  | 60.47 | 0.98 | F   |
| C - Pontypridd Road                                                     | 9.5                   | 35.58 | 0.92 | E   | 6.4                   | 27.11 | 0.88 | D   |
| D - Port Road                                                           | 6.1                   | 27.63 | 0.87 | D   | 2.7                   | 11.77 | 0.73 | B   |
| <b>2038 Base + Committed* + Development (Full Upper, 423 dwellings)</b> |                       |       |      |     |                       |       |      |     |
| A - Waycock Road                                                        | 7.4                   | 42.51 | 0.90 | E   | 14.5                  | 65.38 | 0.97 | F   |
| B - Port Road West                                                      | 6.3                   | 24.74 | 0.87 | C   | 18.4                  | 65.99 | 0.99 | F   |
| C - Pontypridd Road                                                     | 9.8                   | 36.9  | 0.92 | E   | 6.8                   | 29.0  | 0.89 | D   |
| D - Port Road                                                           | 6.9                   | 30.44 | 0.89 | D   | 2.8                   | 11.97 | 0.74 | B   |

\*Cardiff & Vale College and North of Rhoose Committed Developments Only

Table 7.2 Capacity Assessment Results – 2038 Base + Committed\* + Development

7.1.18 Adding the Model Farm development could necessarily provide significant levels of congestion and delay. Adding so much traffic to the junction pushes the enhanced junction over capacity. As mentioned, while the ARCDAY results when a junction is over capacity need to be treated with caution the results for the 2038 Base + Model Farm

Committed development and for the Base + All Committed developments + North West Barry Development is shown in **Table 7.3**.

| <b>Waycock Cross</b>                                                       |                              |              |            |            |                              |              |            |            |
|----------------------------------------------------------------------------|------------------------------|--------------|------------|------------|------------------------------|--------------|------------|------------|
| <b>Arm</b>                                                                 | <b>AM Peak (07:30-08:30)</b> |              |            |            | <b>PM Peak (16:30-17:30)</b> |              |            |            |
|                                                                            | <b>Q</b>                     | <b>Delay</b> | <b>RFC</b> | <b>LOS</b> | <b>Q</b>                     | <b>Delay</b> | <b>RFC</b> | <b>LOS</b> |
| <b>2038 Base</b>                                                           |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                           | 2.5                          | 15.86        | 0.72       | C          | 3.7                          | 18.56        | 0.79       | C          |
| B - Port Road West                                                         | 2.4                          | 10.28        | 0.7        | B          | 5.2                          | 20.67        | 0.85       | C          |
| C - Pontypridd Road                                                        | 2.9                          | 11.58        | 0.75       | B          | 3.2                          | 13.89        | 0.77       | B          |
| D - Port Road                                                              | 3                            | 15.26        | 0.75       | C          | 1.7                          | 8.62         | 0.63       | A          |
| <b>2038 Base + Development (Partial, 180 dwellings)</b>                    |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                           | 2.8                          | 17.24        | 0.74       | C          | 3.9                          | 19.84        | 0.8        | C          |
| B - Port Road West                                                         | 2.5                          | 10.67        | 0.71       | B          | 5.8                          | 23.08        | 0.86       | C          |
| C - Pontypridd Road                                                        | 3                            | 11.9         | 0.75       | B          | 3.5                          | 15.17        | 0.79       | C          |
| D - Port Road                                                              | 3.4                          | 16.92        | 0.78       | C          | 1.8                          | 8.87         | 0.64       | A          |
| <b>2038 Base + Development (Full Lower, 322 dwellings)</b>                 |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                           | 3                            | 18.44        | 0.75       | C          | 4.2                          | 21.01        | 0.81       | C          |
| B - Port Road West                                                         | 2.5                          | 11.02        | 0.72       | B          | 6.5                          | 25.37        | 0.88       | D          |
| C - Pontypridd Road                                                        | 3.1                          | 12.2         | 0.76       | B          | 3.8                          | 16.31        | 0.8        | C          |
| D - Port Road                                                              | 3.8                          | 18.47        | 0.8        | C          | 1.9                          | 9.09         | 0.65       | A          |
| <b>2038 Base + Model Farm</b>                                              |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                           | 17.1                         | 80.55        | 0.99       | F          | 56.7                         | 242.01       | 1.16       | F          |
| B - Port Road West                                                         | 79.1                         | 216.01       | 1.14       | F          | 15.4                         | 57.12        | 0.97       | F          |
| C - Pontypridd Road                                                        | 122                          | 448.06       | 1.23       | F          | 5                            | 20.94        | 0.84       | C          |
| D - Port Road                                                              | 3.9                          | 16.97        | 0.8        | C          | 34.3                         | 99.08        | 1.03       | F          |
| <b>2038 Base + Committed All</b>                                           |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                           | 52.4                         | 202          | 1.12       | F          | 114.5                        | 571.22       | 1.29       | F          |
| B - Port Road West                                                         | 173.6                        | 567.95       | 1.29       | F          | 27.3                         | 91.75        | 1.02       | F          |
| C - Pontypridd Road                                                        | 227.1                        | 886.1        | 1.35       | F          | 7.7                          | 31.86        | 0.9        | D          |
| D - Port Road                                                              | 4.9                          | 19.8         | 0.84       | C          | 72.1                         | 183.69       | 1.11       | F          |
| <b>2038 Base + Committed All + Development (Partial, 180 dwellings)</b>    |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                           | 60.6                         | 232.84       | 1.14       | F          | 119.5                        | 599.05       | 1.3        | F          |
| B - Port Road West                                                         | 178.3                        | 586.2        | 1.29       | F          | 31.8                         | 103.52       | 1.03       | F          |
| C - Pontypridd Road                                                        | 229.4                        | 901.49       | 1.35       | F          | 8.8                          | 35.99        | 0.92       | E          |
| D - Port Road                                                              | 5.6                          | 22.52        | 0.86       | C          | 77.3                         | 195.39       | 1.12       | F          |
| <b>2038 Base + Committed All + Development (Full Lower, 322 dwellings)</b> |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                           | 67                           | 257.8        | 1.17       | F          | 123.6                        | 623.91       | 1.31       | F          |
| B - Port Road West                                                         | 181                          | 598.29       | 1.29       | F          | 35.6                         | 113.31       | 1.04       | F          |
| C - Pontypridd Road                                                        | 229.9                        | 907.62       | 1.35       | F          | 9.9                          | 39.98        | 0.93       | E          |
| D - Port Road                                                              | 6.4                          | 25.2         | 0.87       | D          | 82.1                         | 206.68       | 1.13       | F          |
| <b>2038 Base + Committed All + Development (Full Upper, 423 dwellings)</b> |                              |              |            |            |                              |              |            |            |
| A - Waycock Road                                                           | 71.7                         | 276.37       | 1.18       | F          | 125.7                        | 636.97       | 1.31       | F          |
| B - Port Road West                                                         | 183.3                        | 608.42       | 1.29       | F          | 38.6                         | 121.14       | 1.05       | F          |
| C - Pontypridd Road                                                        | 230.8                        | 914.49       | 1.35       | F          | 10.7                         | 42.86        | 0.94       | E          |
| D - Port Road                                                              | 7.1                          | 27.61        | 0.89       | D          | 84.5                         | 215.64       | 1.13       | F          |

Table 7.3 Capacity Assessment Results – 2038 Base + All Committed + Development

7.1.19 These results show that while a Port Road arm stays close to capacity as a result of the significant improvements to this arm, the other arms become over capacity, with little scope for improvement on these arms.

7.1.20 These results reinforce the fact that the North West Barry development would have an inconsequential impact upon the operation of the Waycock Cross junction.

7.1.21 These patterns of results are reflected by the pattern of the results produced by running the Junctions 9 model in Lane simulation mode. The results of the lane simulation mode are to be treated with caution and only be used as an indication of the relative performance of different lane configurations and usage.

## 7.2 Linked Junctions

7.2.1 To model the operation of a site access traffic signals option the Linsig software was used. For the model, the Waycock Cross arms were modelled as give way links and were calibrated for the 2025 base to match the results of the Arcady model.

7.2.2 A comparison of the results between the existing and enhanced junction layouts for the future year 2028 scenarios are shown in **Table 7.4**, showing the PRC for each model run. These model results show that while Waycock Cross becomes marginally more congested as the development flows increase, the site access junction runs within capacity, with the site access arm is provided with sufficient green time to allow for existing traffic to safely join the main flow of traffic on Port Road.

7.2.3 With the proposed enhancements, for the AM peak it is evident that the junctions as a whole, only exceed capacity slightly for the Development Full Upper scenario, while the PM peak shows a reduction on performance even with the proposed junction enhancements. This is a reflection that the AM peak eastbound Port Road arm has been improved, while the westbound Port Road arm has not been improved, with little if any scope for any improvements.

| 2028 (PRC %)                              |          |       |          |       |
|-------------------------------------------|----------|-------|----------|-------|
| Scenario                                  | Existing |       | Enhanced |       |
|                                           | AM       | PM    | AM       | PM    |
| Base                                      | -6.3     | 4.8   | 47.7     | 4.8   |
| Base + Development Partial                | -10.1    | 0.5   | 45.1     | 0.5   |
| Base + Development Full Lower             | -13.0    | -2.9  | 42.9     | -2.9  |
| Base + Development Full Upper             | -15.2    | -5.1  | 41.5     | -5.1  |
| Base + Committed                          | -17.8    | -23.9 | 3.2      | -19.5 |
| Base + Committed + Development Partial    | -21.5    | -27.9 | 1.6      | -25.2 |
| Base + Committed + Development Full Lower | -24.4    | -30.6 | 0.1      | -30.1 |
| Base + Committed + Development Full Upper | -26.6    | -31.2 | -0.7     | -33.3 |

Table 7.3 – 2028 Site Access and Waycock Cross Linsig Results

7.2.4 As with the Arcady results for the 2038 Base + Development modelling will show an increase in congestion. The overall model junction performance results (PRC) for the existing and enhanced junction layouts are summarised in **Table 7.4**.

7.2.5 Again, the site access arm is provided with sufficient green time to allow for exiting traffic to safely join the main flow of traffic on Port Road, with the consequent increase in delay on Port Road approaching Waycock Cross. Nevertheless, it is evident that further mitigation measures and operational capacity improvements would be required at the Waycock Cross junction if the Model Farm development was fully built out..

7.2.6 When the committed development flows are added to the North West Barry development flows the congestion and delay increases as with the Waycock Cross Arcady results.

| 2038 (PRC %)                                  |          |       |          |       |
|-----------------------------------------------|----------|-------|----------|-------|
| Scenario                                      | Existing |       | Enhanced |       |
|                                               | AM       | PM    | AM       | PM    |
| Base                                          | -6.3     | 4.8   | 47.7     | 4.8   |
| Base + Development Partial                    | -27.7    | -14.4 | 30.8     | -14.2 |
| Base + Development Full Lower                 | -30.9    | -17.6 | 28.8     | -18.3 |
| Base + Development Full Upper                 | -33.3    | -19.5 | 27.5     | -20.9 |
| Base + Committed*                             | -36.1    | -33   | -8.9     | -37.9 |
| Base + Committed + Development Partial        | -40.2    | -44.4 | -10.7    | -40.9 |
| Base + Committed + Development Full Lower     | -42.9    | -34.3 | -12.3    | -43.3 |
| Base + Committed + Development Full Upper     | -44.7    | -49.4 | -13.2    | -44.9 |
| Base + Committed All                          | -241.1   | -62.8 | -178.2   | -56.2 |
| Base + Committed All + Development Partial    | -244.5   | -64.1 | -174.6   | -59.6 |
| Base + Committed All + Development Full Lower | -247.1   | -65.5 | -171.8   | -62.5 |
| Base + Committed All+ Development Full Upper  | -248.5   | -66.5 | -169.6   | -64.3 |

Table 7.4 2038 Site Access and Waycock Cross Linsig Results

7.2.7 As already discussed, the cumulative impact of these development schemes is likely to raise significant operational capacity issues at the Waycock Cross junction that may require mitigation and junction improvements.

7.2.8 Nevertheless, taking this into consideration the addition of the development traffic to the committed traffic has a marginal and inconsequential impact upon the operation of an already congested junction.



## **8 LONG TERM JUNCTION IMPROVEMENTS**

### **8.1 High Level Option Feasibility**

8.1.1 For the purposes of this assessment a long list of basic options have been identified and have been subjected to an indicative high level qualitative feasibility assessment.

### **8.2 Waycock Cross Junction Do Something**

8.2.1 A number of long-term options have been considered and discussed:

- Enhanced priority roundabout
- Partial signalisation of existing roundabout
- Full signalisation of existing roundabout
- Hamburger Signals Option
- Full signalisation as 4-arm crossroads

### **8.3 Enhanced Priority Roundabout**

8.3.1 This option has been discussed and modelled in Section 7, with short to medium term improvements to the junction feasible with regards to additional capacity on Port Road and Waycock Road and the provision of a free left turn lane between Port Road and Waycock Road.

8.3.2 A longer-term solution, future proofing for a high level of development would require further works.

### **8.4 Traffic Signal Options – Existing Layout**

8.4.1 Given the size and shape of the Waycock Cross junction, a traffic signals option, whether partial or full, for the existing junction layout are not feasible given the lack of internal stacking space within the junction. This is particularly so between Port Road and Waycock Road as well as Port Road West and Pontypridd Road.

8.4.2 A hamburger signals option providing for example priority for straight ahead traffic on Port Road would not be feasible given the relatively high and equal levels of traffic demand on each arm as well as a high proportion of right turners from each arm.

## **8.5 Traffic Signal Options – Modified Layout**

- 8.5.1 The most feasible traffic signals option at the Waycock Cross junction would be a four-arm crossroads, providing priority for all required traffic movements. In addition each arm could include signal-controlled pedestrian and cyclist crossing facilities, which would encourage Active Travel movements.
- 8.5.2 While such an option would require the reconfiguration of the junction, with significant impacts in terms of costs and construction period disruption, the benefits would also be significant. The land take for the crossroads would be less than for the existing junction layout. The layout would provide scope for three lanes being available at each arm at the junction. This would provide for individual stop line capacity for each traffic movement at the junction, with free left turns where feasible.
- 8.5.3 Any such major improvements would need to be modelled in conjunction with the site access with Linsig and be part of a wider scheme development.

## **8.6 Conclusion**

- 8.6.1 This high-level qualitative appraisal identifies a Signal Controlled crossroads option to be the most likely junction layout to provide the highest level of capacity at this busy junction.

## 9 SUMMARY & CONCLUSIONS

### 9.1 Summary

9.1.1 Asbri Transport Limited were appointed by Persimmon Homes East Wales in 2023 to produce a Transport Assessment (TA) to accompany a further representation in relation to candidate site CS449 further to the original Stage 1 Candidate Site submission made to the Vale of Glamorgan (VoGC) in September 2022.

9.2 The initial candidate site submission proposes the allocation of a new residential development of up to 180 dwellings on greenfield land on the north-western side of Barry, located to the west of the Waycock Cross junction.

9.3 There are ongoing discussions with the VoGC regarding the potential for a larger development at this site, with 3 potential development scenarios:

- Partial Development: 180 Dwellings
- Full Development Lower: 322 Dwellings
- Full Development Upper: 423 Dwellings

9.4 The junction modelling reported upon here provides evidence for the marginal and inconsequential impact of the proposed North West Barry Development on the Waycock Cross junction and the A4226 Port Road, under a range of potential future development scenarios at this and other sites.

9.5 As part of the development, it is proposed to construct a new junction from Port Road, to the west of the Waycock Cross roundabout at the location of the existing field gated access in the form of a signal-controlled junction, which would allow for the safe and timely exit of traffic from the development onto the local highway network, particularly for right turning traffic towards Cardiff. The traffic signals would help control traffic entering and existing the Waycock Cross junction having a 'platooning' effect.

9.6 Such an access would also provide enhanced Active Travel infrastructure in conjunction with the proposed Active Travel route between the Waycock Cross junction and Cardiff Airport. Traffic signals at the proposed site access would provide for dedicated demand dependent green time for pedestrians and cyclists along this section of the A4226 Port Road

- 9.7 This forecast development trip generation for the proposed North West Barry development shows a range of between 69 and 162 2-way trips during the AM peak hour and between 72 and 170 during the PM peak hour, a proportion of which will travel to and from the Waycock Cross junction. This equates to a maximum of 1-3 additional trips per minute on the local road network. This results in a 1.3-3.4% increase in total junction flows in 2028 and 1.3-3.1% in 2038.
- 9.7.1 Such an access would also provide enhanced Active Travel infrastructure in conjunction with the proposed Active Travel route between the Waycock Cross junction and Cardiff Airport.
- 9.7.2 From observations and the modelling, the Port Road Western arm and Waycock Road arms of the junction experience the most congestion and delay. Junction improvements are also feasible on these arms due to available highways and undeveloped third-party land, while the other two arms are constrained by adjacent residential and commercial developments with little scope for improvement.
- 9.7.3 The potential improvements to the Port Road Western and Waycock Road arms involve increase left turn lane provision. For the Port Road Western arm if the required third-party land is available a free left turn can be provided taking all left turning traffic from the roundabout give way line while providing for dedicated separate straight ahead and right turn lanes.
- 9.7.4 Such improvements would provide for a degree of spare capacity at the Waycock Cross junction up to 2038. This includes the provision of a signal controlled junction at the proposed North West Barry site access.
- 9.7.5 The assessment included an appraisal of the possible impact of other potential committed developments as agreed with VOGC, which would have a greater impact upon the local highway network.
- 9.7.6 The North West Barry development is smaller in comparison to the other developments and would have a marginal and inconsequential impact upon the operation of the Waycock Cross junction.

## **9.8 Conclusion**

- 9.8.1 In conclusion, it is considered that the allocation of this for the proposed land use is appropriate and acceptable in traffic and transport terms. It is considered that the traffic movements associated with the development proposals could be accommodated on the highway network and will only have a marginal and inconsequential impact on the conditions already experienced on the local highway network due to the existing volumes of traffic using the network and predicted growth in future traffic volumes.

# Appendices

# Appendix A

## Wyn Davies - Asbri Transport

---

**From:** [REDACTED]  
**Sent:** 27 November 2024 12:45  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** TA for North West Barry (Weycock Cross)  
**Attachments:** Land at Weycock Cross - TA (February, 2024).pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Hi both,

I am conscious that our discussions on this have been directly with yourselves and not Asbri Planning as your agents, but I assume you have made them aware of the current discussions. Please let us know if you would also like them copied in on any correspondence.

We have met with our transport consultant, Link Transport Planning, and they have undertaken further assessment of the TA that was submitted in February. They have advised the following, in consultation with the Council's Highways team:

1. The TA proposed a ghost island priority junction vehicular access. However, this arrangement has significant operational and highway safety concerns due to its proximity and resultant adverse interaction with Weycock Roundabout. The TA assesses the access and Weycock Roundabout independently, which is considered misrepresentative of what would occur in reality. A revised capacity assessment is required with the junctions linked to fully appreciate the implications of the proposal, and this may require micro-simulation modelling.
2. Notwithstanding the above, it is likely that a signalised site access would be required at this location, to be linked to a signalised upgrade of Weycock Cross.
3. It is recommended that the preferred design solution is subject to a Stage 1 RSA, to help overcome the significant concerns regarding local highway network operation and safety.
4. The junction model (ARCADY) of Weycock Roundabout requires calibration to better reflect congestion at the junction (as confirmed by the submitted queue length surveys). As above, it is possible that micro-simulation is required to more accurately represent local conditions.
5. A Transport Implementation Strategy is required to outline how sustainable modes of travel from the site to key trip attractors will be encouraged. This should include formal Active Travel Audits (and resultant interventions) and discussions with local bus operators.

The capacity of the highway is one of the key constraints identified in respect of the site and is likely to generate significant objection locally so we need to ensure any modelling is as accurate as possible. Please could you and your transport consultants consider the matters raised and look to provide us with an updated TA that addresses the issues raised as soon as is feasible.

Our transport consultant and highways team would be happy to discuss if further clarification is required.

Thanks

Victoria

[REDACTED]





*Consider the environment. Please don't print this e-mail unless you really need to.  
Ystyriwch yr amgylchedd. Peidiwch ag argraffu'r neges hon oni bai fod gwir angen.*

Visit our Website at [www.valeofglamorgan.gov.uk](http://www.valeofglamorgan.gov.uk)  
Ewch i'n gwefan yn [www.bromorgannwg.gov.uk](http://www.bromorgannwg.gov.uk)

[Find us on Facebook / Cewch ddod o hyd i ni ar Facebook](#)  
[Follow us on Twitter / Dilynwch ni ar Twitter](#)

Correspondence is welcomed in Welsh or English / Croesewir Gohebiaeth yn y Gymraeg neu yn Saesneg.

## Appendix B

## Appendix B

## Waycock Cross Development - Modelling Scoping Note

### Development Scenarios

- |                            |               |
|----------------------------|---------------|
| a. Partial Development:    | 180 Dwellings |
| b. Full Development Lower: | 322 Dwellings |
| c. Full Development Upper: | 423 Dwellings |

### Committed Developments

List to be agreed with Vale of Glamorgan, with flows added to future year network if appropriate

### Tasks

#### Phase 1

#### 2025 Base

Waycock Cross Base Model (*Junctions 9*)

- o Calibrate & Validate Base Model – using 2023 survey data and associated video footage in addition to googlemaps average delay data, and
- o In-car peak hour video survey
- o Incorporating January 2025 provision of splitter island

#### 2028 & 2038 Future Year Base

#### Do Nothing

Option 1a - Waycock Cross Priority Roundabout (*Junctions 9*)

#### Do Minimum

Option 1b - Waycock Cross Priority Roundabout – investigation regarding potential minor enhancements, low-cost low impact modifications within the existing adopted highway (*Junctions 9*)  
- if feasible

#### 2028 & 2038 Future Year Base + Development

#### Do Nothing

Option 2a - Waycock Cross Priority Roundabout & Site Access Priority Ghost Island T-Junction (*Junctions 9*), including indicative design

Option 3a - Waycock Cross Priority Roundabout & Site Access Signal Controlled T-Junction (*Linsig*), including indicative design

- Run Model for each Development Scenario as listed above

#### Do Minimum

Option 2b - Waycock Cross Priority Roundabout Enhanced & Site Access Priority Ghost Island T-Junction, (*Junctions 9*), including indicative design

Option 3b - Waycock Cross Priority Roundabout Enhanced & Site Access Signal Controlled T-Junction, (*Linsig*), including indicative design

- Run Model for each Development Scenario as listed above

## **Waycock Cross Junction Do Something**

### **Junction Enhancement Options – High Level Qualitative Feasibility Study**

- Priority Roundabout Enhancement
- Partial signalisation of existing roundabout
- Full signalisation of existing roundabout
- Full signalisation as 4-arm crossroads

- Including High Level Indicative Sketch Plans

### **Phase 2 (If required) – outside of scope of this individual development**

#### **2028 & 2038 Future Year Base + Development**

Waycock Cross Junction Do Something (with development site access included)

Full list of modelling options below would be mutually exclusive dependent upon the results of the Qualitative Feasibility Study which would provide a short list of options or a preferred option to be tested.

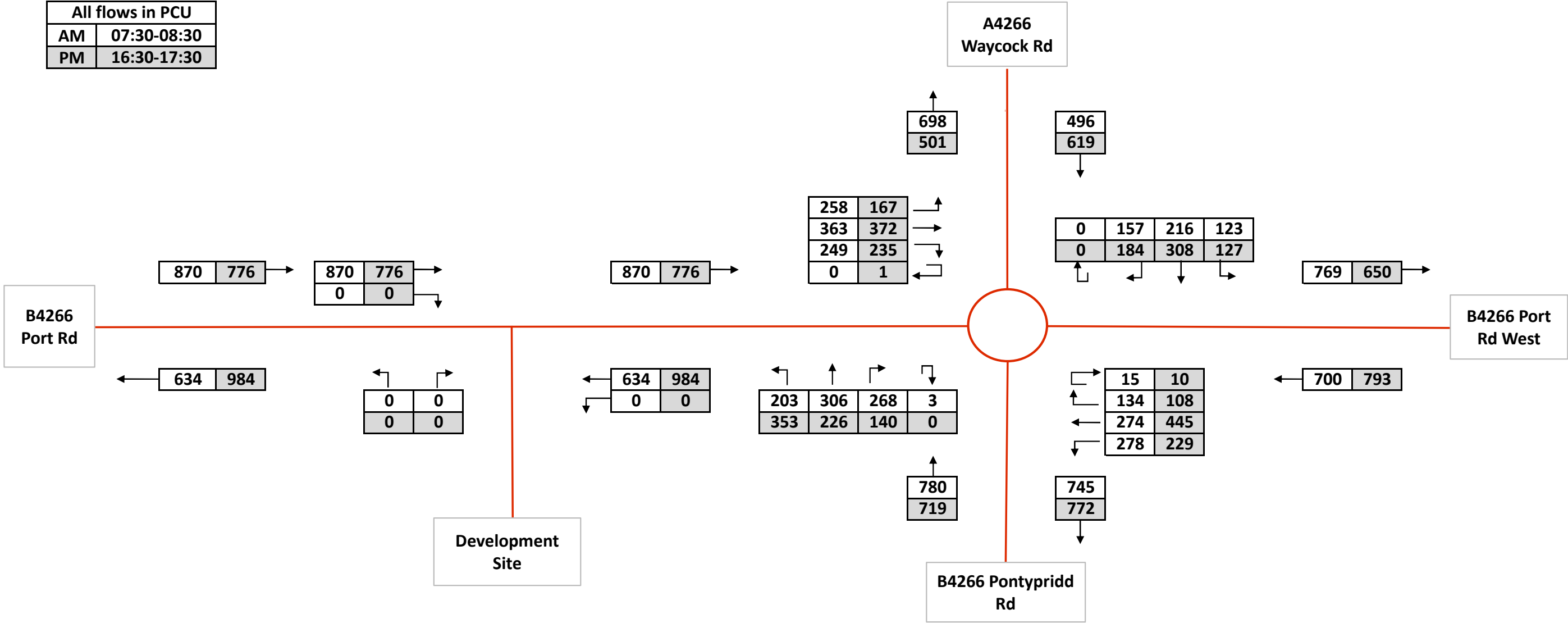
Scope for Phase 2 (**if required**) to be agreed following the conclusion of Phase 1.

- Priority Roundabout Enhancement
  - Partial signalisation of existing roundabout
  - Full signalisation of existing roundabout
  - Full signalisation as 4-arm crossroads
- Run Model for each Development Scenario as listed above

# Appendix C

Appendix C 2025 Base

| All flows in PCU |             |
|------------------|-------------|
| AM               | 07:30-08:30 |
| PM               | 16:30-17:30 |



# Appendix D





DEVELOPMENT

- 1. Dwellings to front Port Road West across a landscape edge
- 2. Key buildings to aid legibility
- 3. Medium to high density residential development to body of the site
- 4. Lower residential density towards the western and southern residential areas

ACCESS

- 5. Active travel accesses from the A4226 Port Road West
- 6. Active travel and vehicular access from A4226 Port Road West
- 7. A distinctive street hierarchy, including internal vehicular loop, designed to adoptable gradients to encourage active and swales alongside the primary streets

LANDSCAPE & ECOLOGY

- 8. Landscape edge to soften the interface with Port Road West, with tree-lined entrance
- 9. Focal open spaces with equipped play areas
- 10. Central multi-functional park with Neighbourhood Euipped Area of Play and Multi-Use Games Area, sitting along foot/cyclepath from Port Road West to Cwm Ciddy Lane
- 11. Wide west-east landscape corridor, with play trail, drainage features and foot/cyclepath
- 12. Green corridors accommodating retained hedgerows and tree planting to soften roofline
- 13. Multi-functional landscape edge along the western boundary
- 14. Landscape edge alongside Knock Man Down Wood SINC

Amendments

By Chk'd Date

DRAFT FOR COMMENT

|                                                                                                                |               |                                          |             |
|----------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------|-------------|
| Job No/Drawing No<br><b>24673/3200</b>                                                                         |               | Job Title<br><b>Weycock Cross, Barry</b> |             |
| Scale<br>1:2500<br>@ A3                                                                                        | Date<br>11/24 | Drawn<br>MD                              | Chk'd<br>PG |
| Drawing Title<br>Concept Masterplan                                                                            |               | OS Licence No:                           |             |
| All Dimensions to be checked on site                                                                           |               |                                          |             |
| pad Design Ltd - The Tobacco Factory - Raleigh Road - Bristol BS3 1TF - Tel. 0117 9530059 - www.pad-design.com |               |                                          |             |

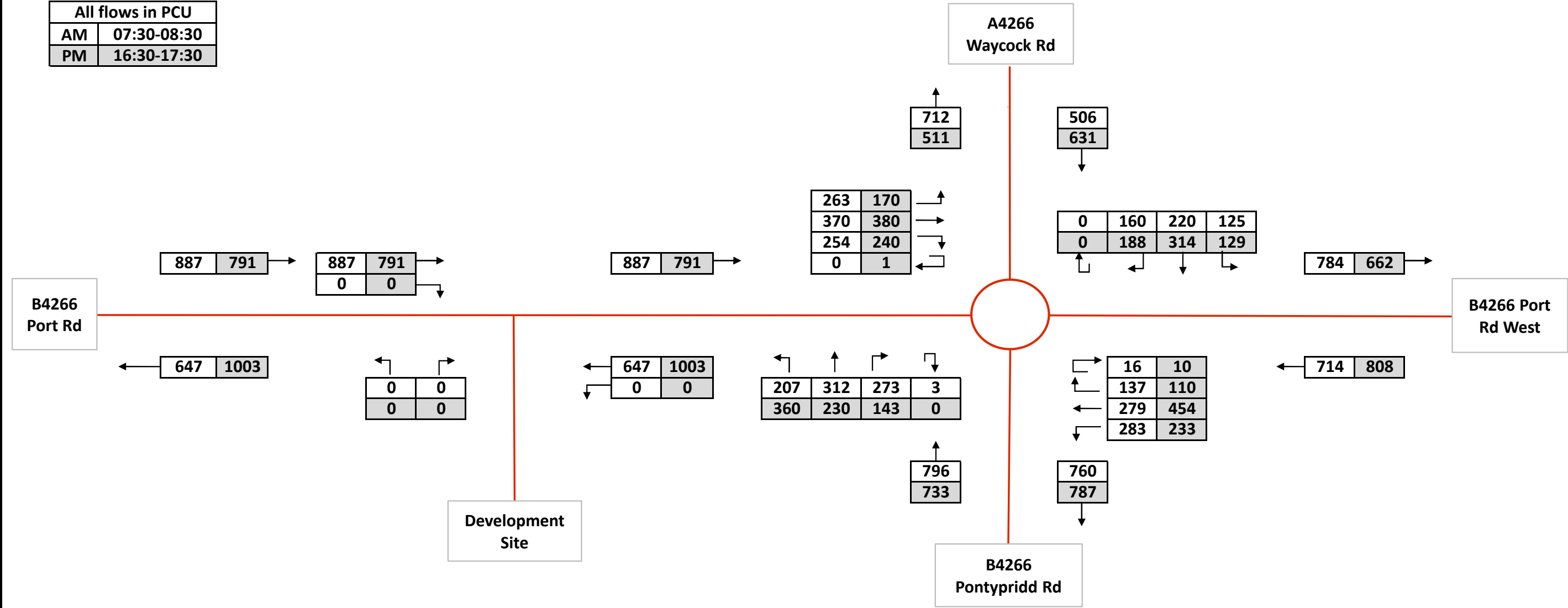
MASTERPLANNING ARCHITECTURE URBAN DESIGN



# Appendix E

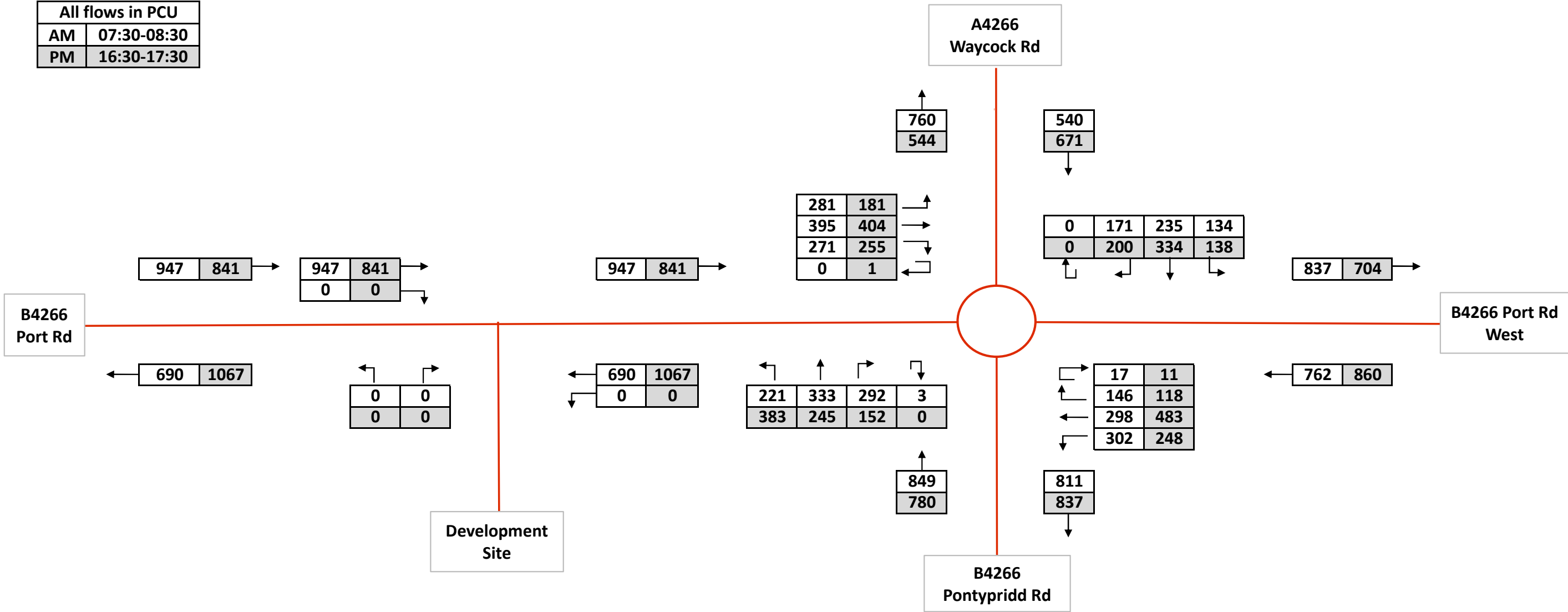
Appendix E1 2028 Base

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|------------------|-------------|
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| PM               | 16:30-17:30 |



Appendix E2 2038 Base

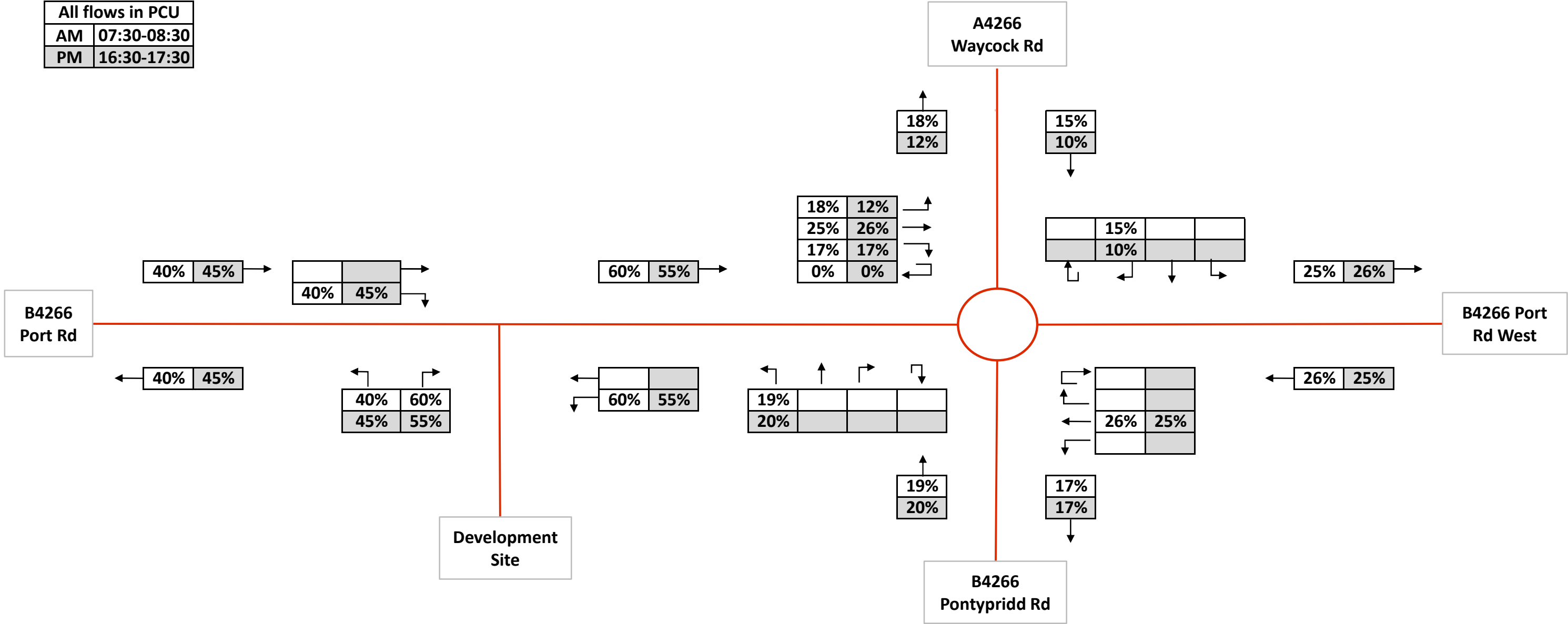
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|------------------|-------------|
| AM               | 07:30-08:30 |
| PM               | 16:30-17:30 |

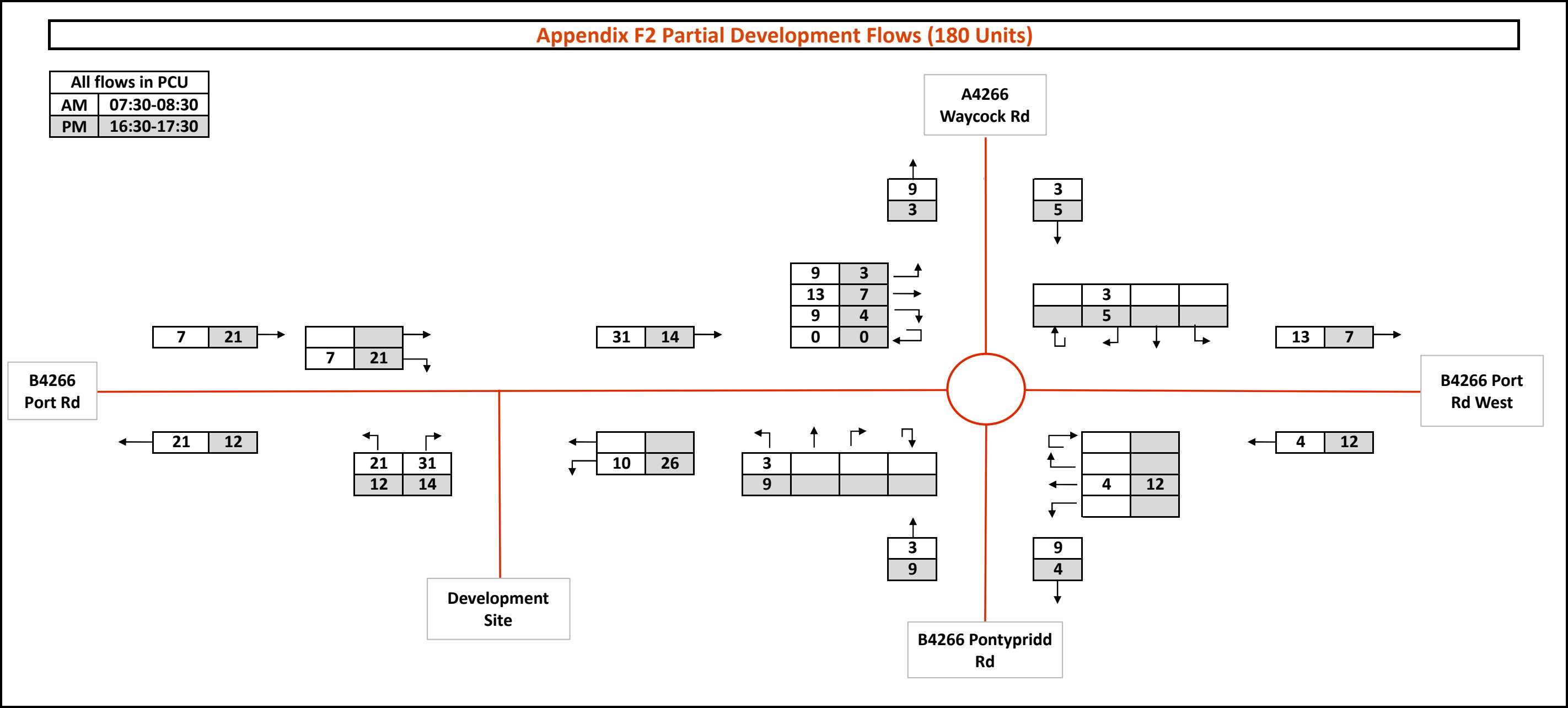


# Appendix F

Appendix F1 Development Trip Distribution

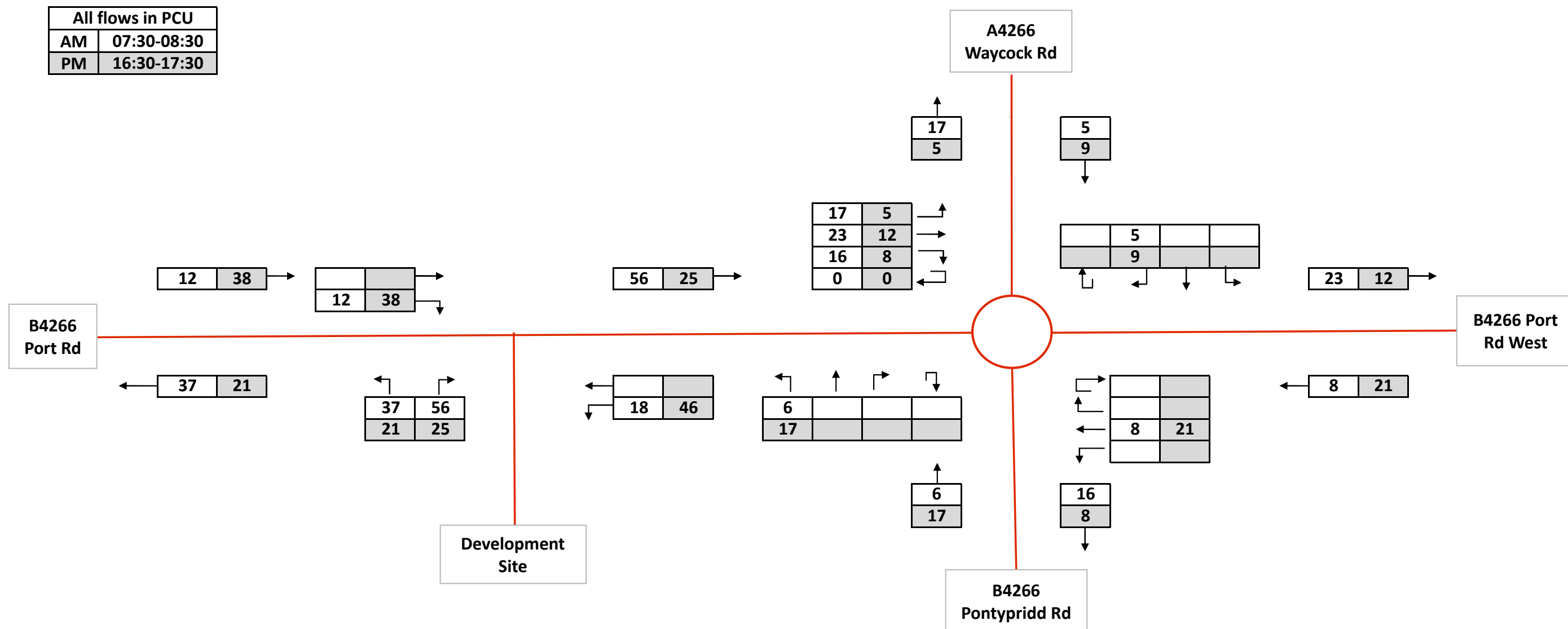
| All flows in PCU |             |
|------------------|-------------|
| AM               | 07:30-08:30 |
| PM               | 16:30-17:30 |





### Appendix F3 Full Development Lower Flows (322 Units)

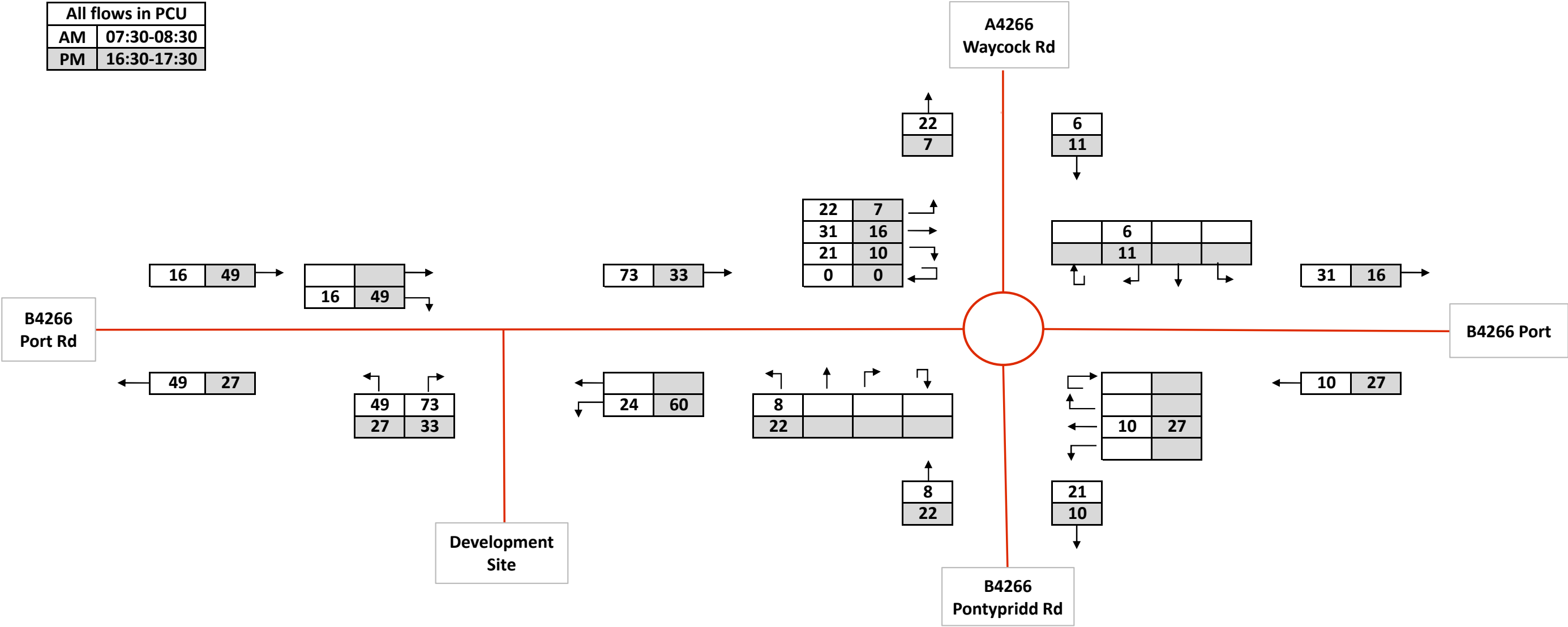
| All flows in PCU |             |
|------------------|-------------|
| AM               | 07:30-08:30 |
| PM               | 16:30-17:30 |





Appendix F4 Full Development Upper Flows (423 Units)

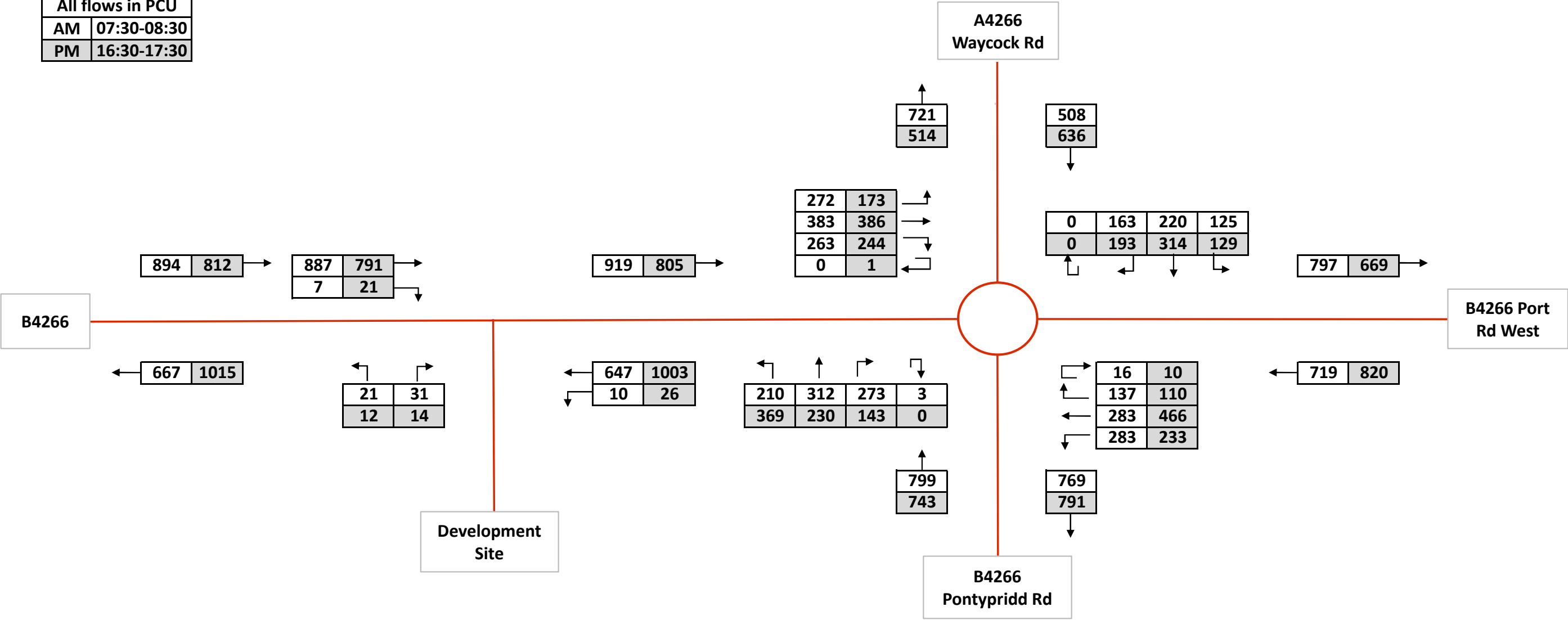
| All flows in PCU |             |
|------------------|-------------|
| AM               | 07:30-08:30 |
| PM               | 16:30-17:30 |



# Appendix G

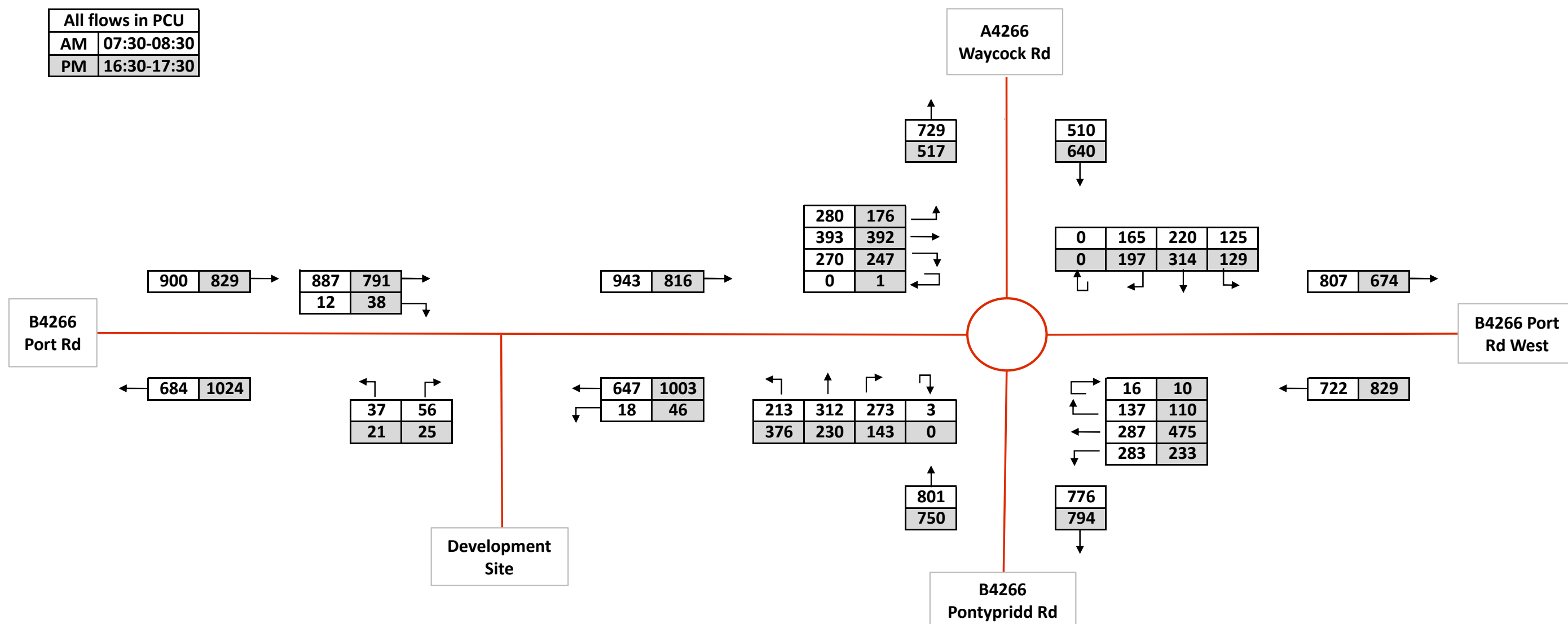
Appendix G1 2028 Base + Development Flows - Partial (180 Units)

| All flows in PCU |             |
|------------------|-------------|
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| PM               | 16:30-17:30 |



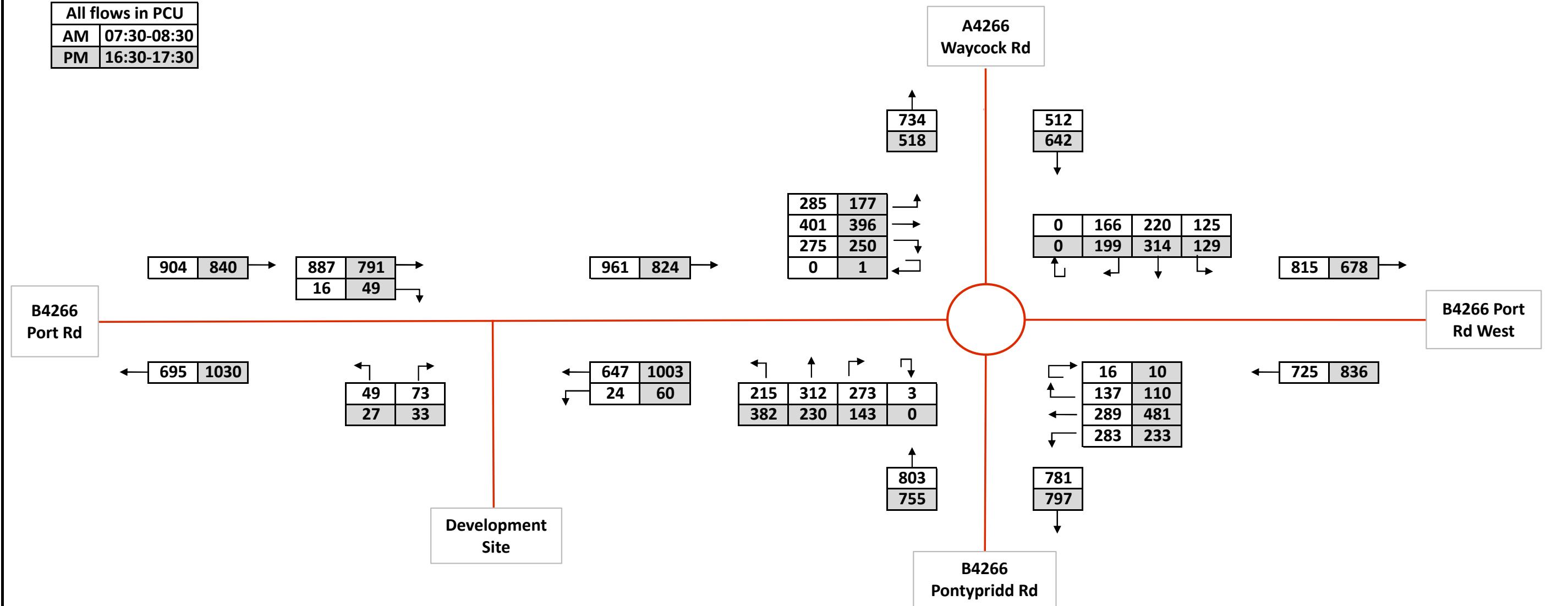
### Appendix G2 2028 Base + Development Flows - Full Lower (322 Units)

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|------------------|-------------|
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| PM               | 16:30-17:30 |



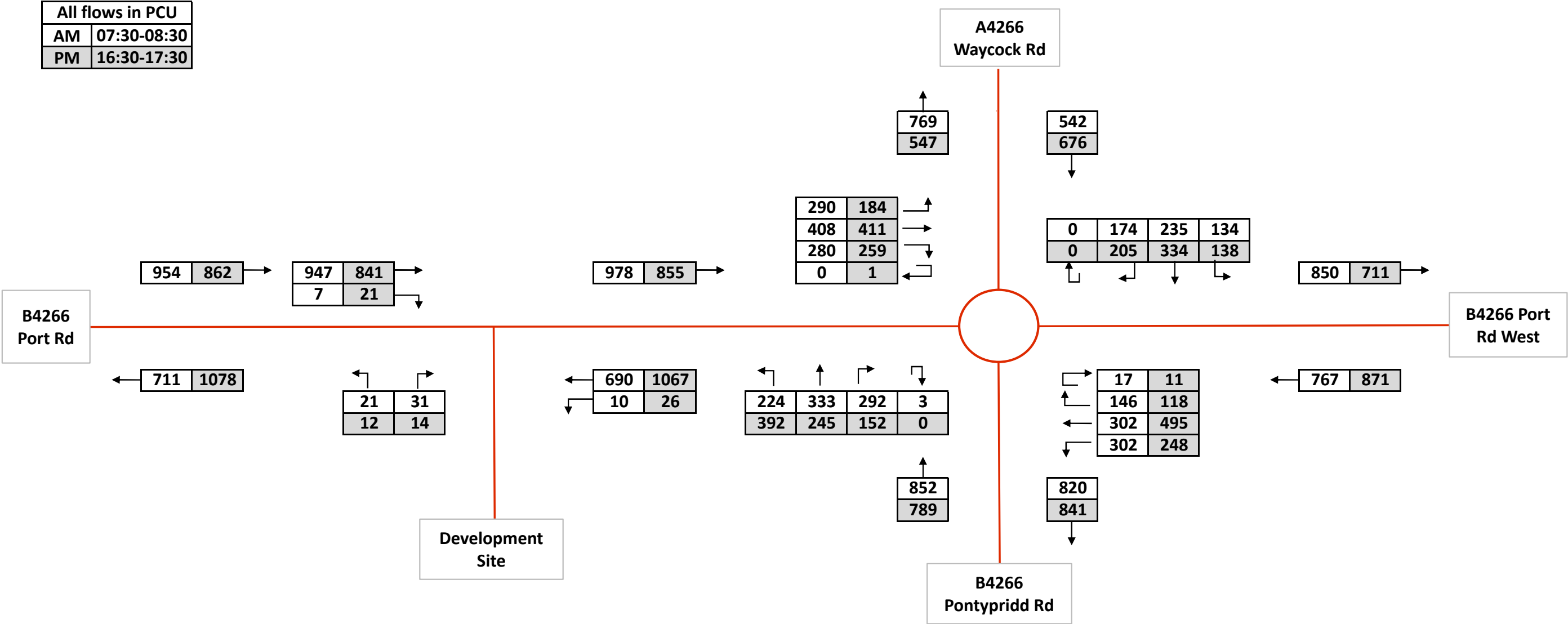
## Appendix G3 2028 Base + Development Flows - Full Upper (423 Units)

| All flows in PCU |             |
|------------------|-------------|
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| PM               | 16:30-17:30 |



Appendix G4 2038 Base + Development Flows - Partial (180 Units)

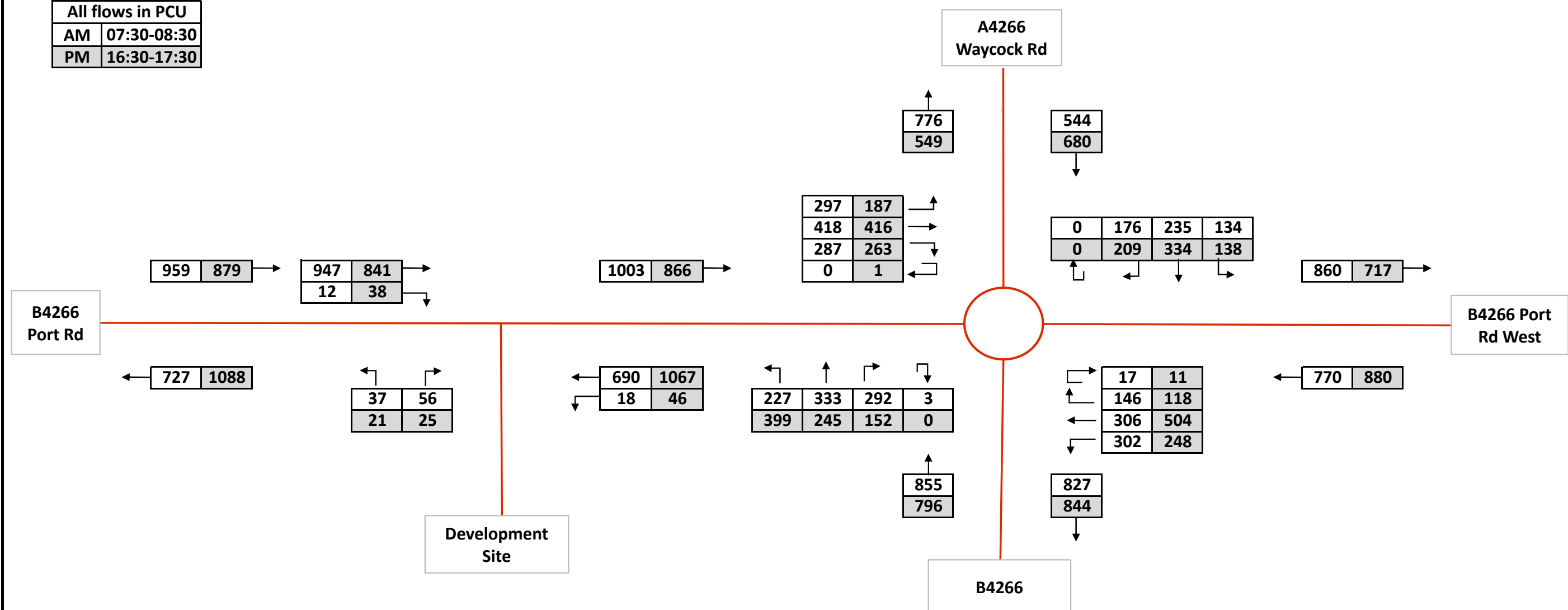
| All flows in PCU |             |
|------------------|-------------|
| AM               | 07:30-08:30 |
| PM               | 16:30-17:30 |





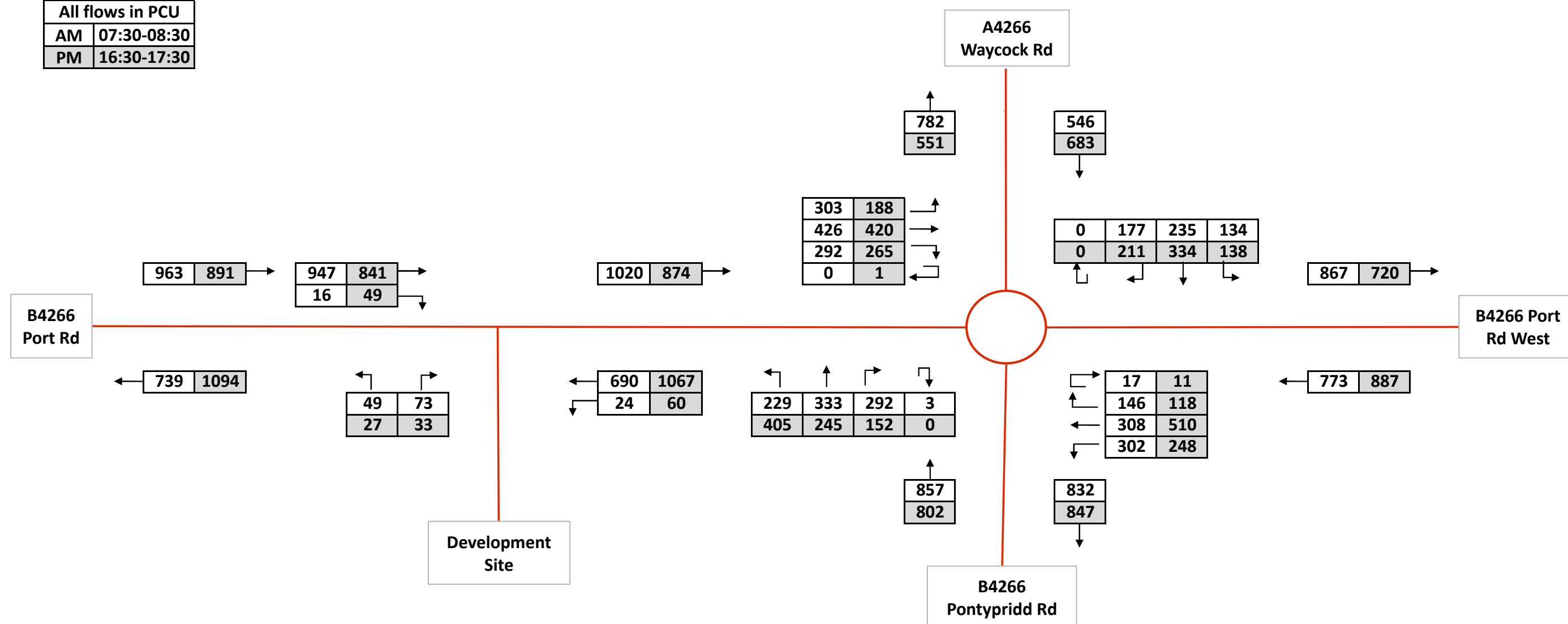
### Appendix G5 2038 Base + Development Flows - Full Lower (322 Units)

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|------------------|-------------|
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| PM               | 16:30-17:30 |



### Appendix G6 2038 Base + Development Flows - Full Upper (423 Units)

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|------------------|-------------|
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| PM               | 16:30-17:30 |

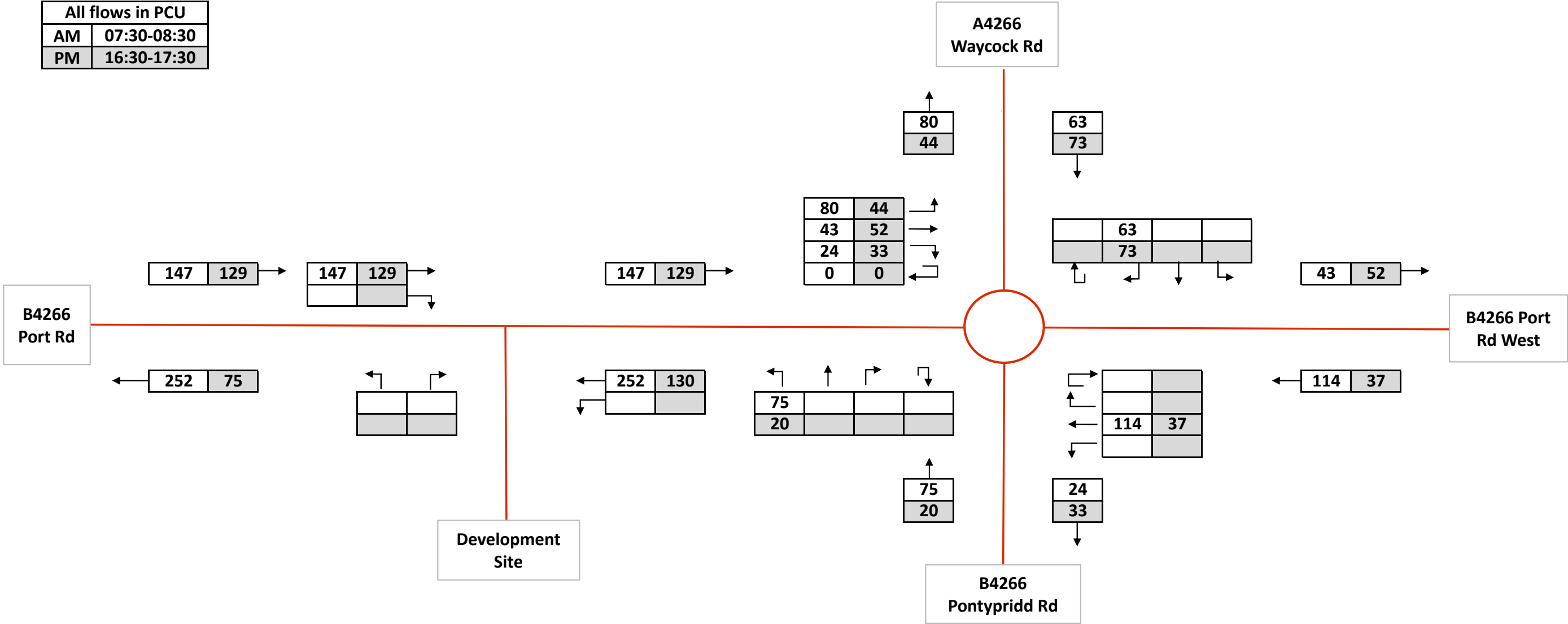




# Appendix H

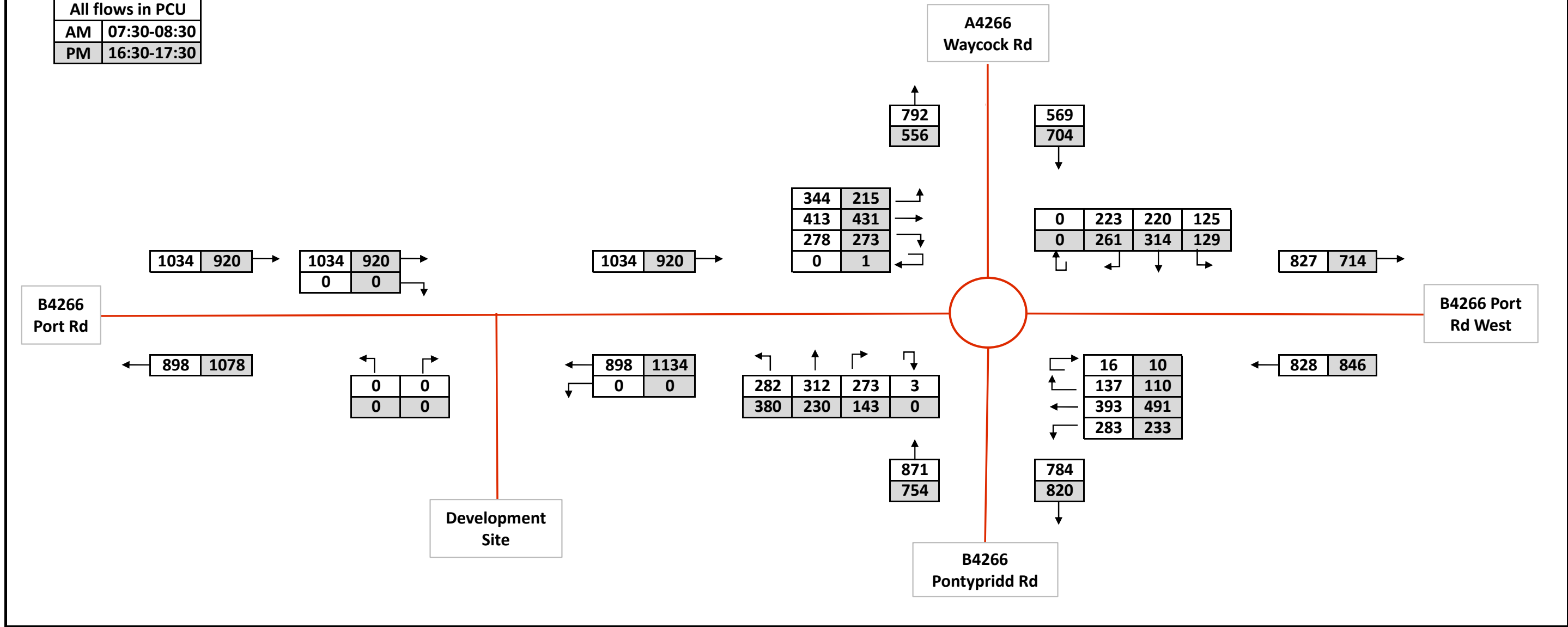
Appendix H1 2028 Committed Development Flows

| All flows in PCU |             |
|------------------|-------------|
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| PM               | 16:30-17:30 |



Appendix H2 2028 Base + Committed Development Flows

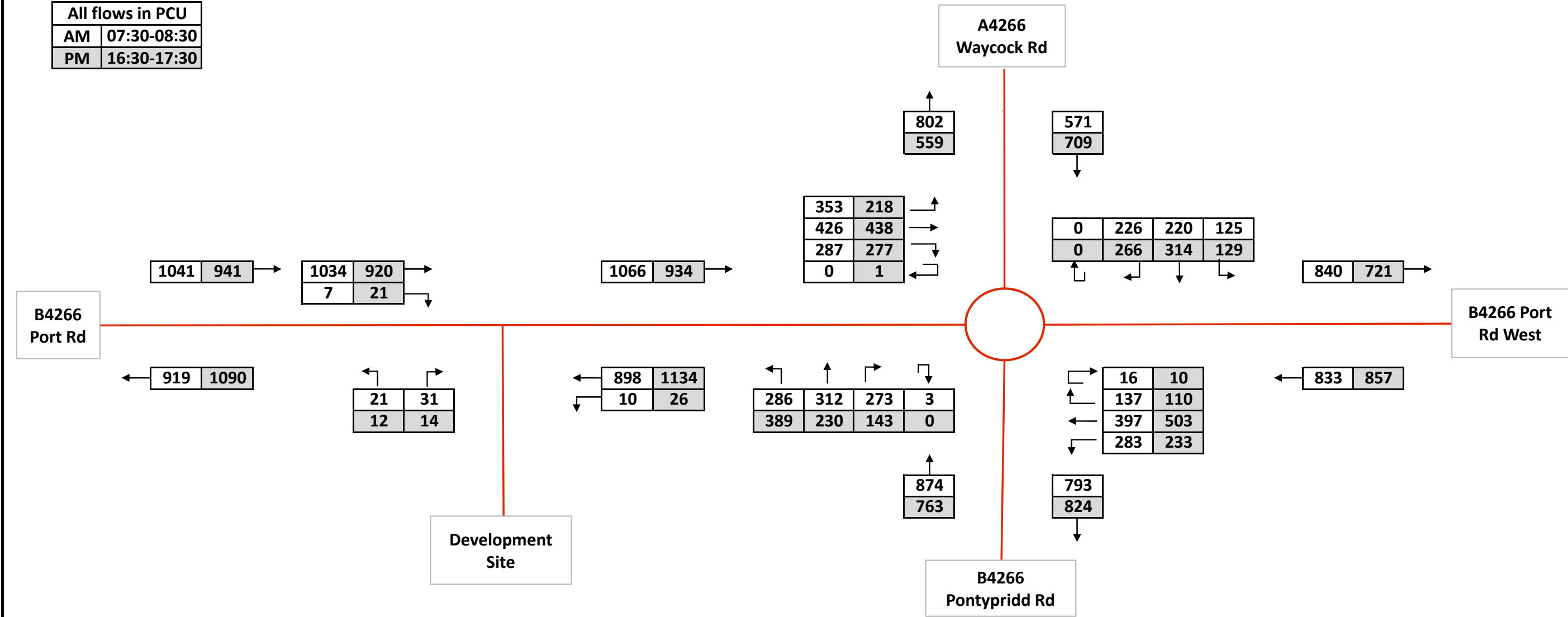
| All flows in PCU |             |
|------------------|-------------|
| AM               | 07:30-08:30 |
| PM               | 16:30-17:30 |



# Appendix I

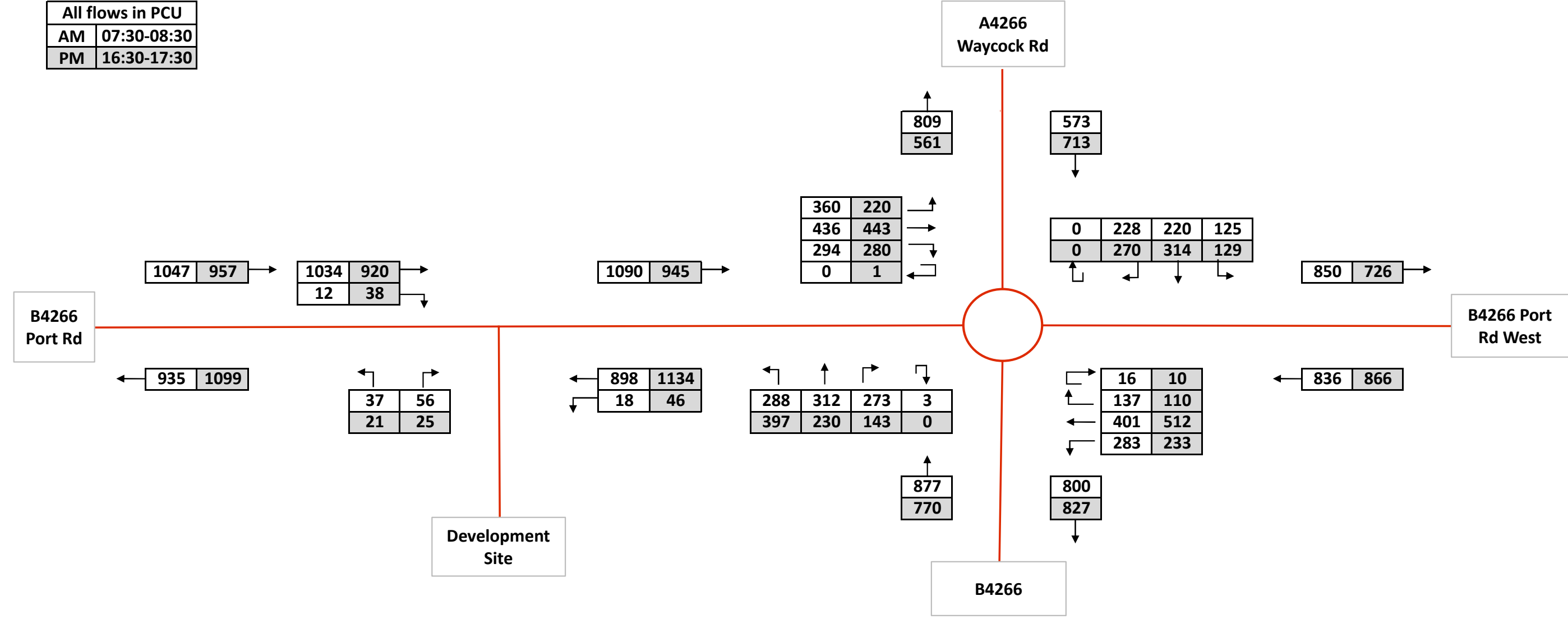
Appendix I1 2028 Base + Committed Development + Partial Development Flows

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|------------------|-------------|--|
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| PM               | 16:30-17:30 |  |



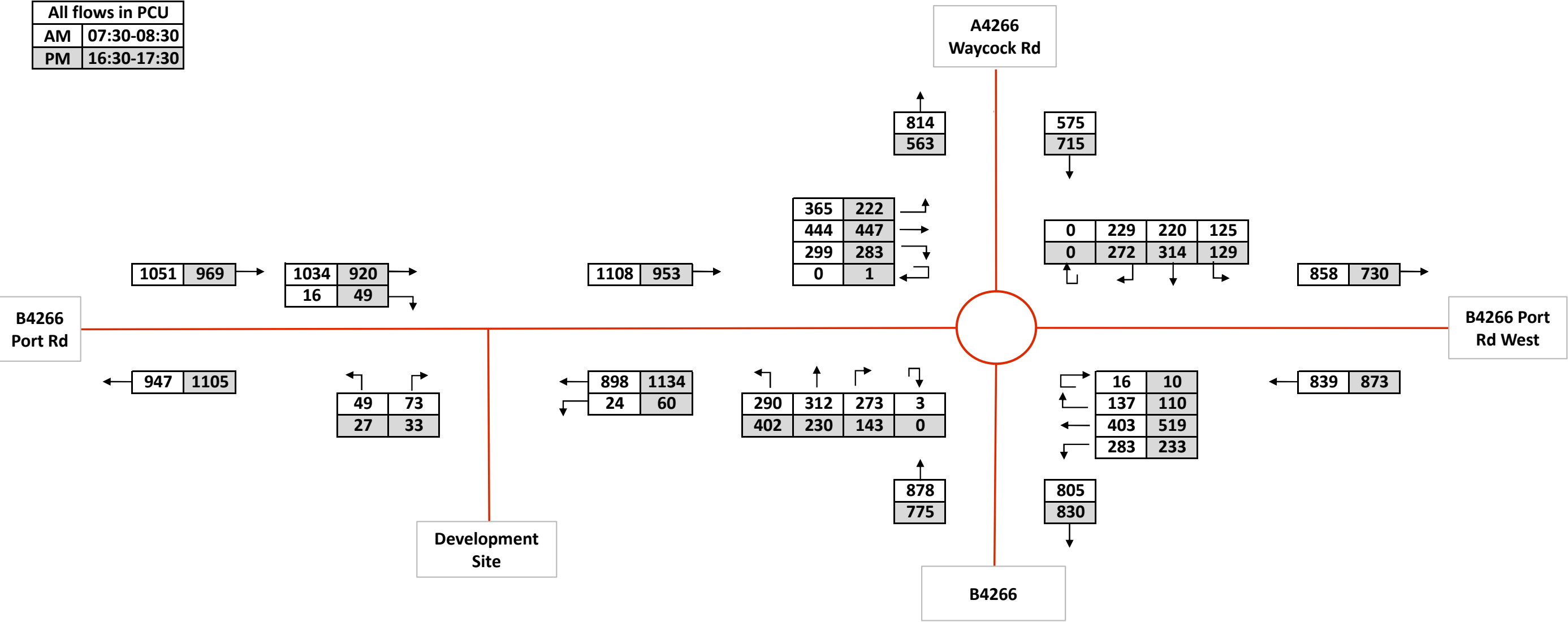
Appendix I2 2028 Base + Committed Development + Full Lower Development Flows

| All flows in PCU |             |
|------------------|-------------|
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| PM               | 16:30-17:30 |



Appendix I3 2028 Base + Committed Development + Full Upper Development Flows

| All flows in PCU |             |
|------------------|-------------|
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| PM               | 16:30-17:30 |



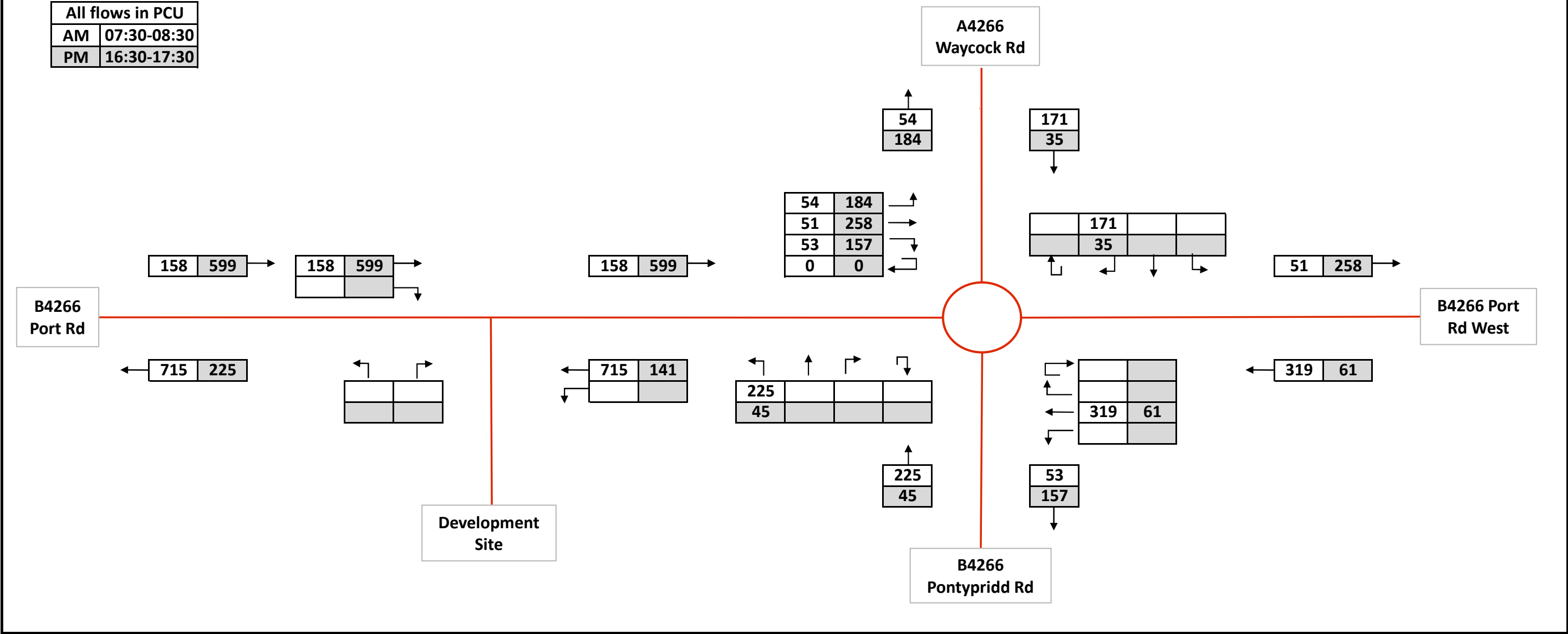


# Appendix J



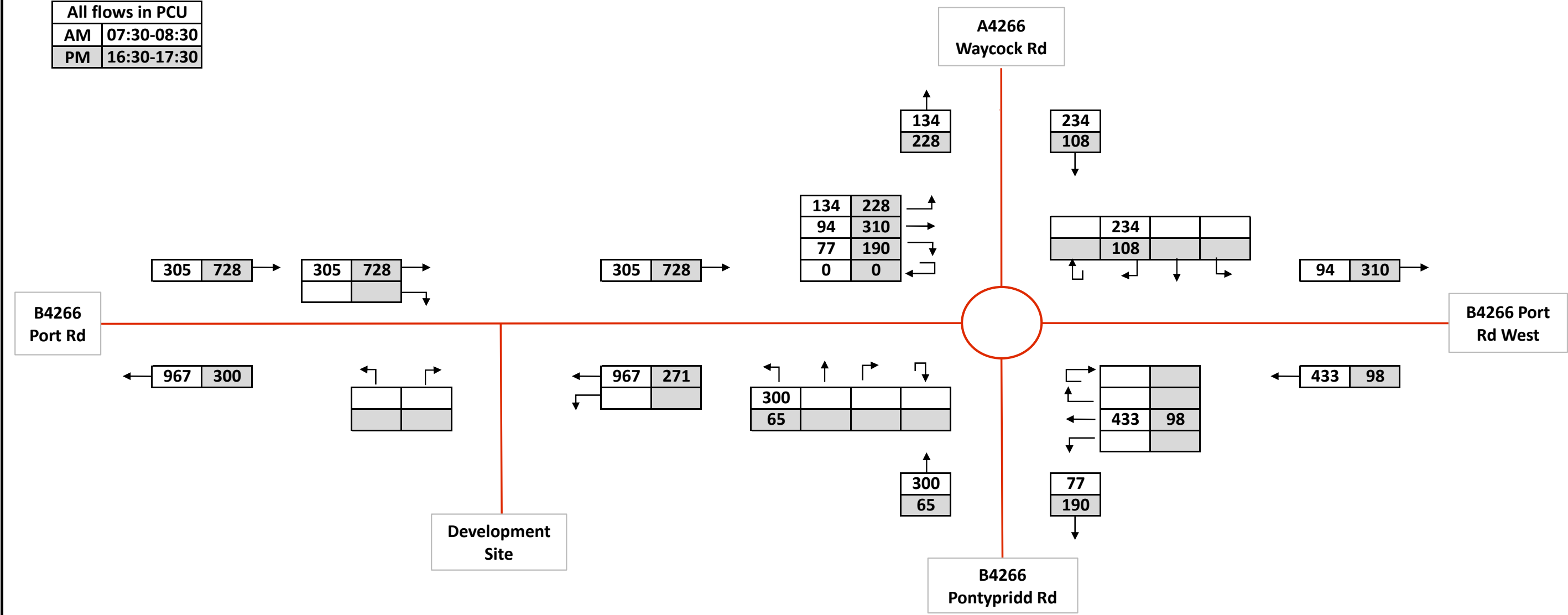
Appendix J1 2038 Model Farm Committed Development Flows

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|------------------|-------------|
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| PM               | 16:30-17:30 |



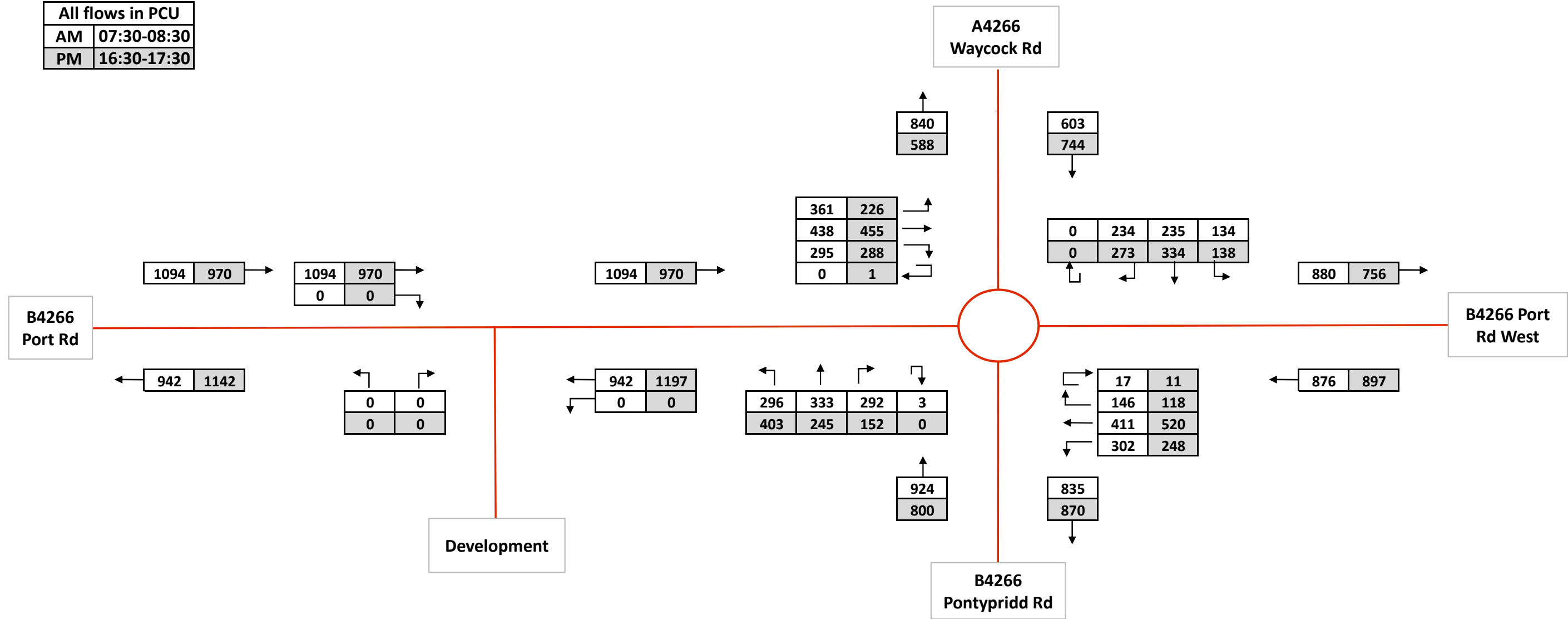
Appendix J2 2038 All Committed Development Flows

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|------------------|-------------|
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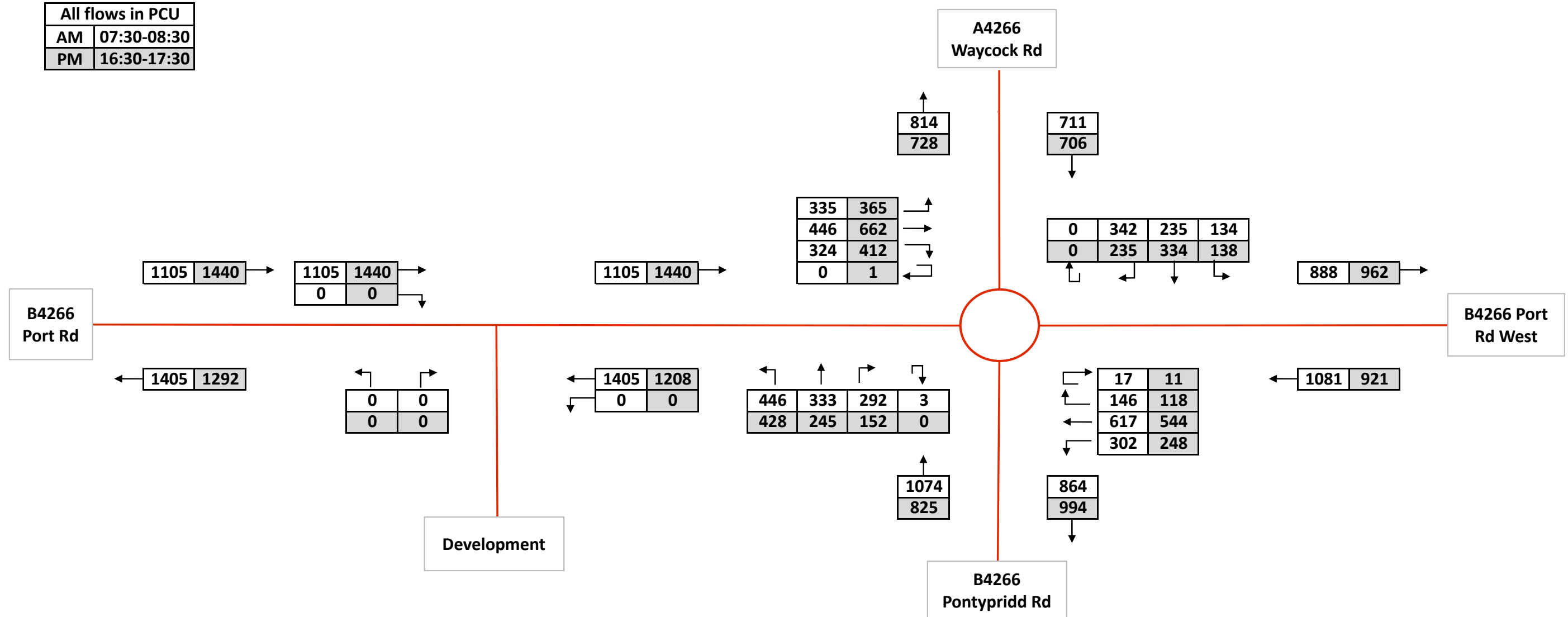
Appendix J3 2038 Base + Committed Development Flows

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|------------------|-------------|
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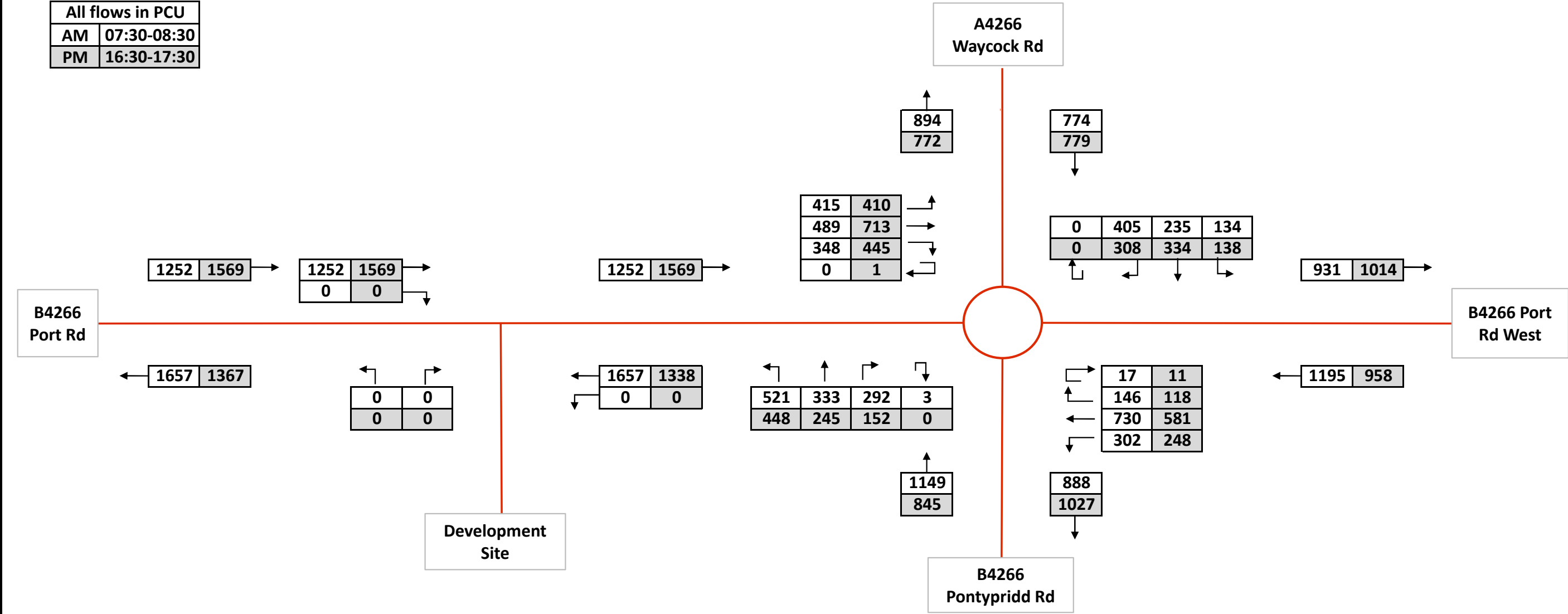
**Appendix J4 2038 Base + Model Farm Committed Development Flows**

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|------------------|-------------|
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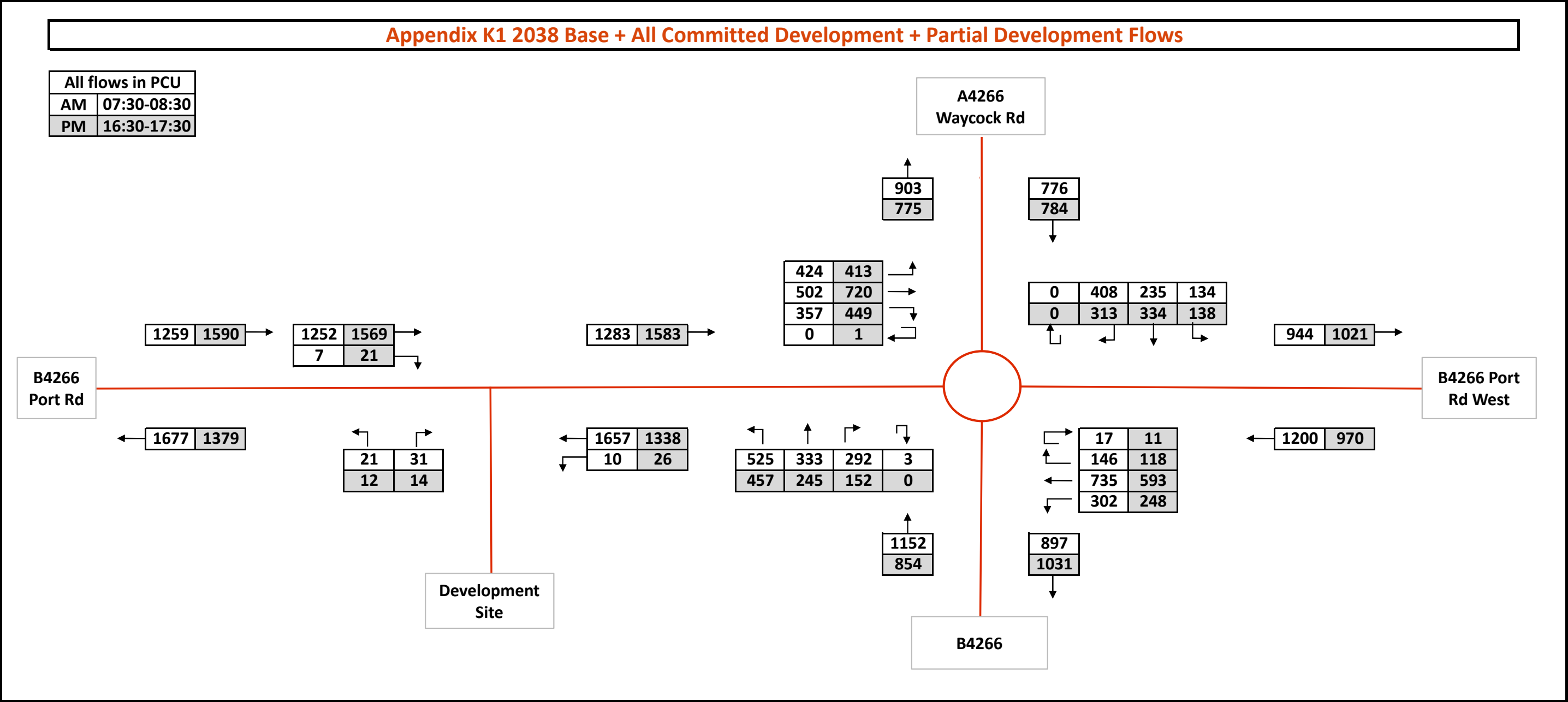
Appendix J5 2038 Base + All Committed Development Flows

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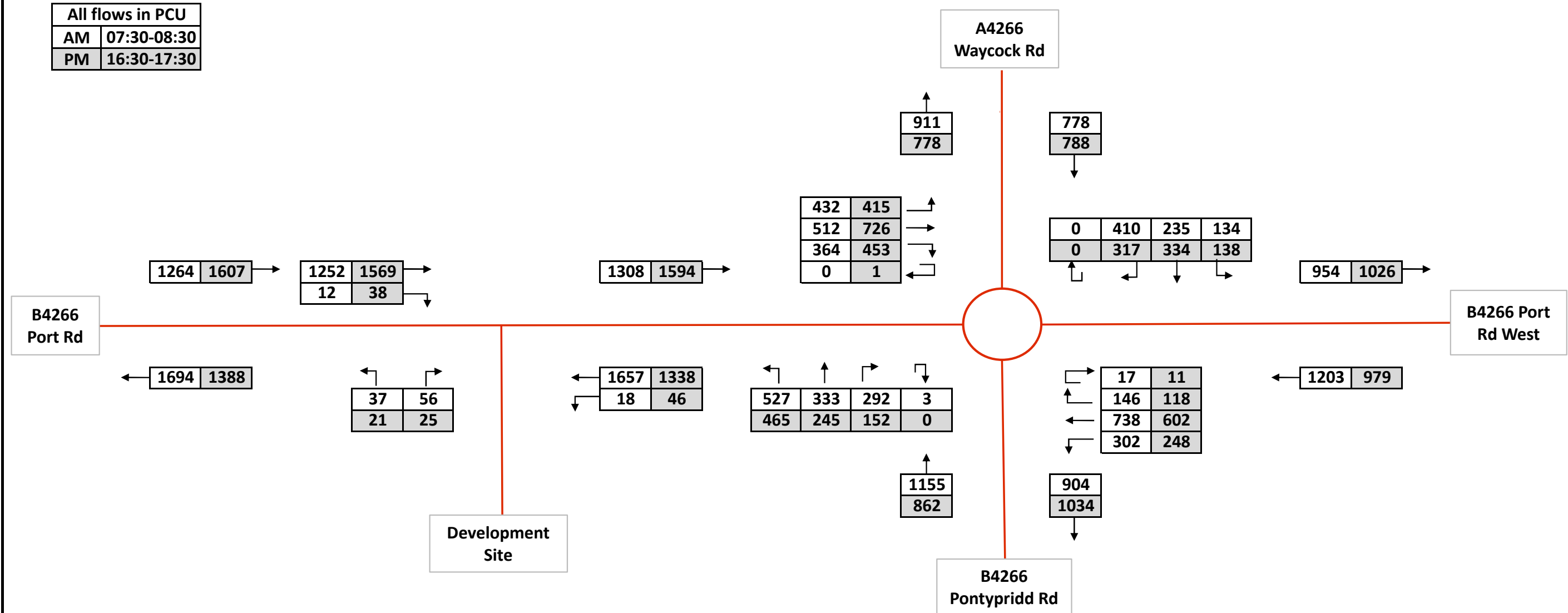
# Appendix K



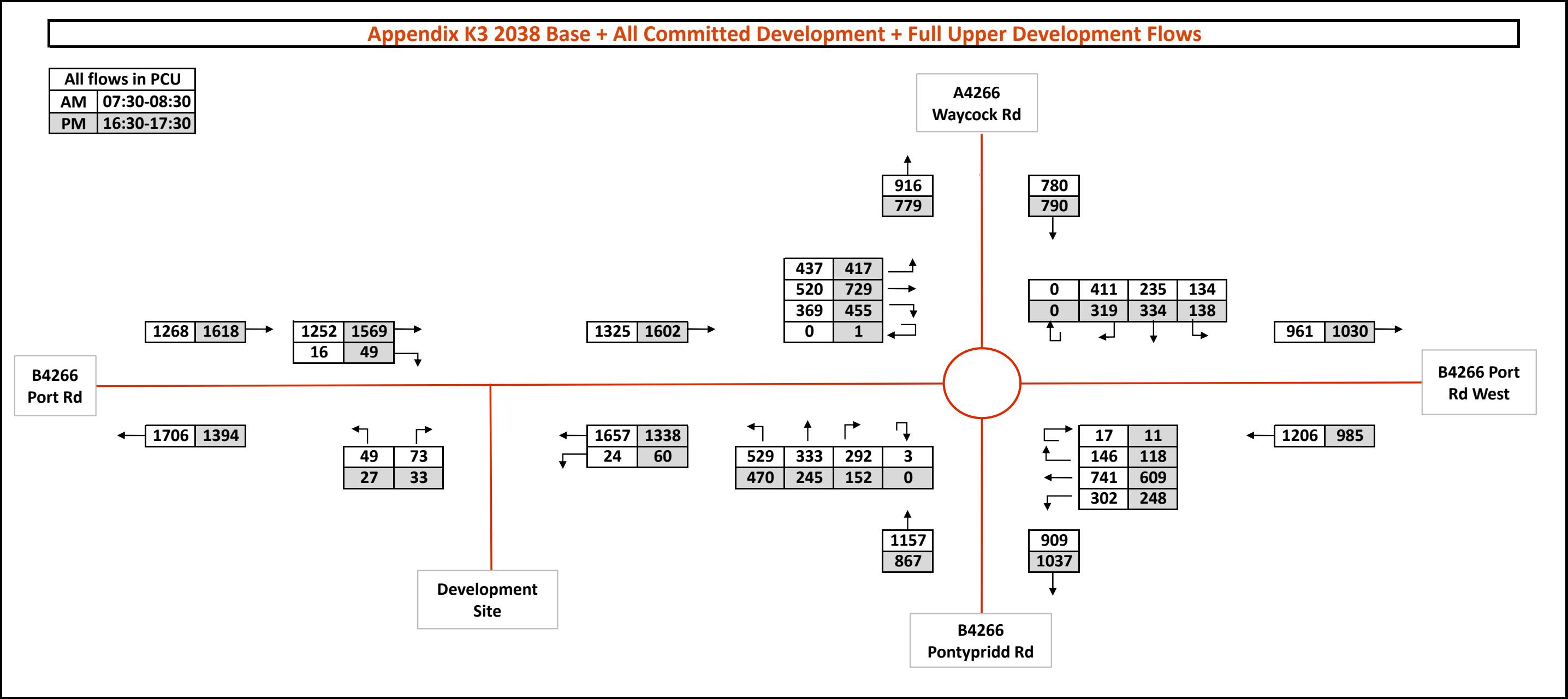


## Appendix K2 2038 Base + All Committed Development + Full Lower Development Flows

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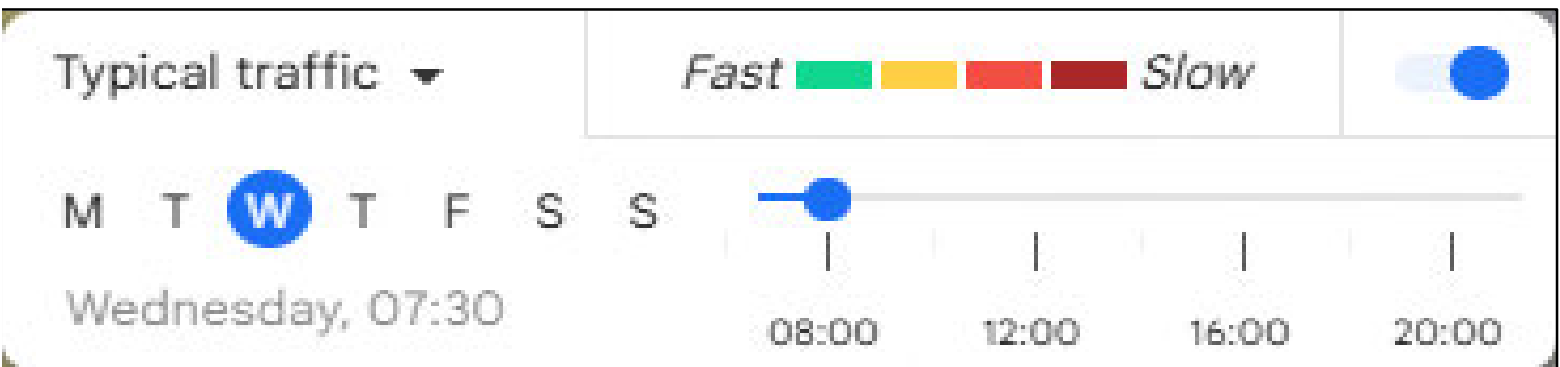
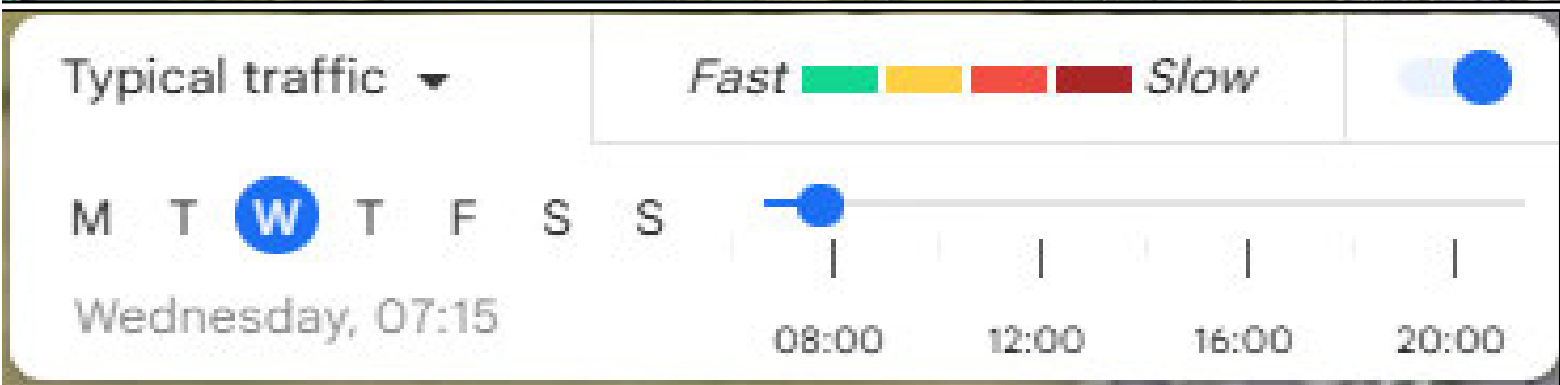




# Appendix L

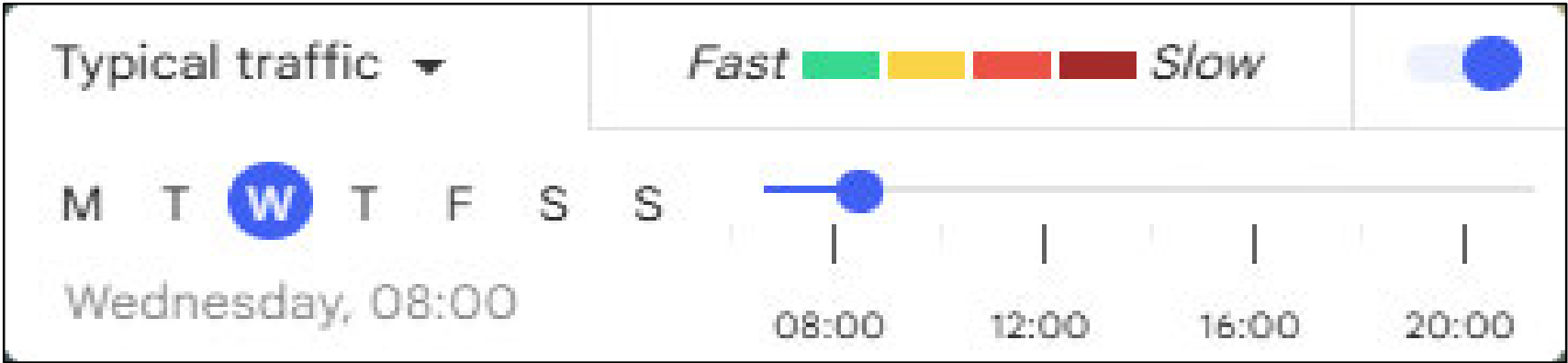
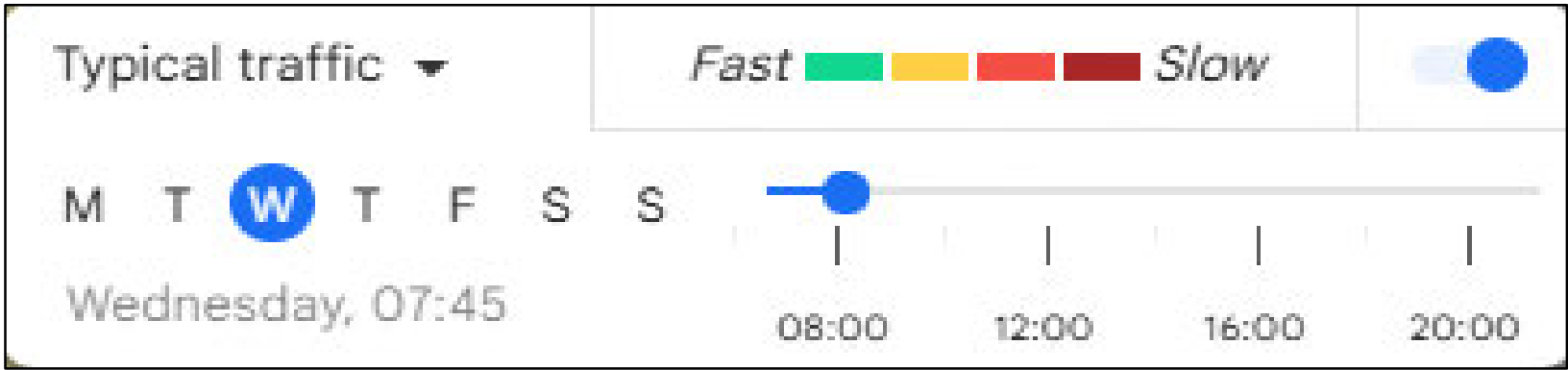


Googlemaps Average Delay Data: AM Peak Period



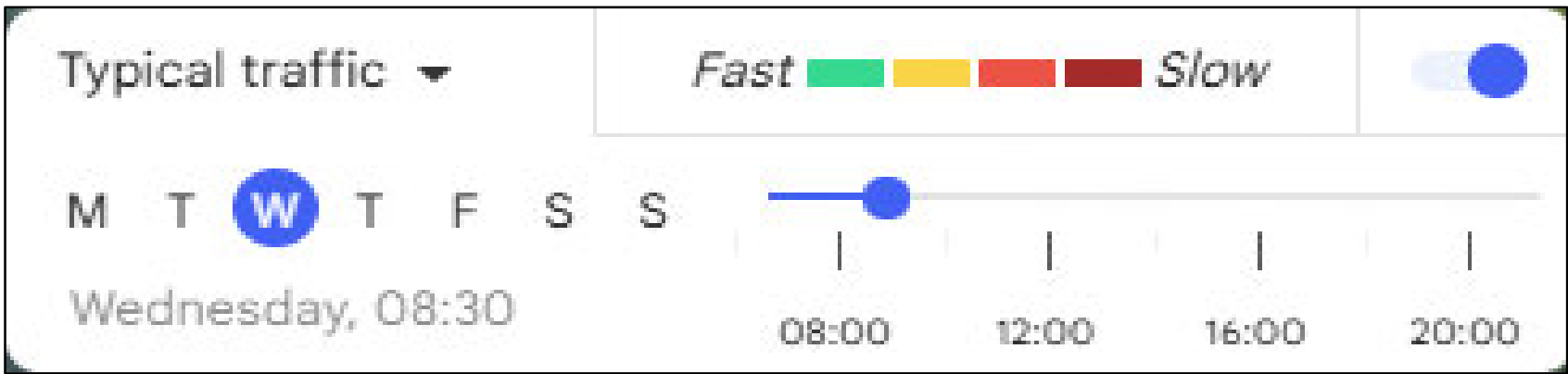
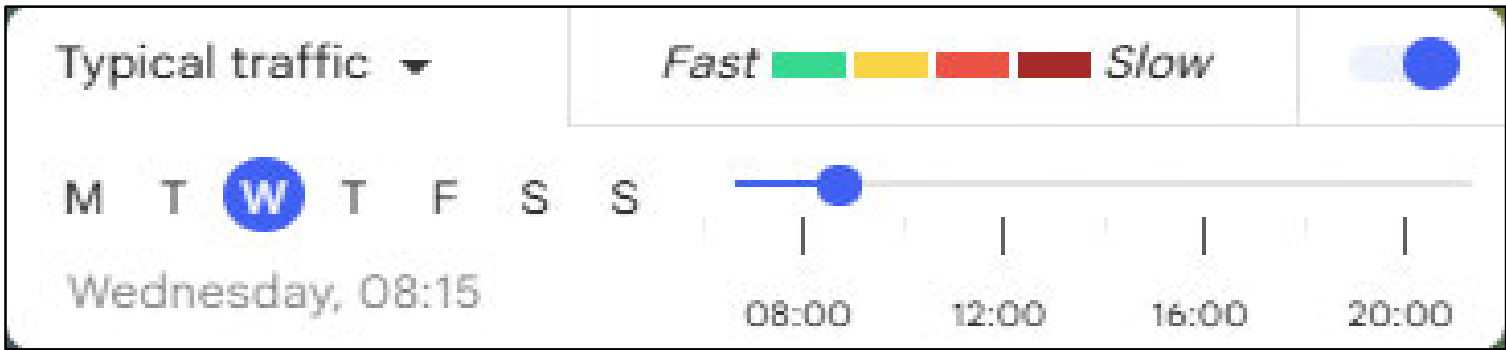


Googlemaps Average Delay Data: AM Peak Period





Googlemaps Average Delay Data: AM Peak Period



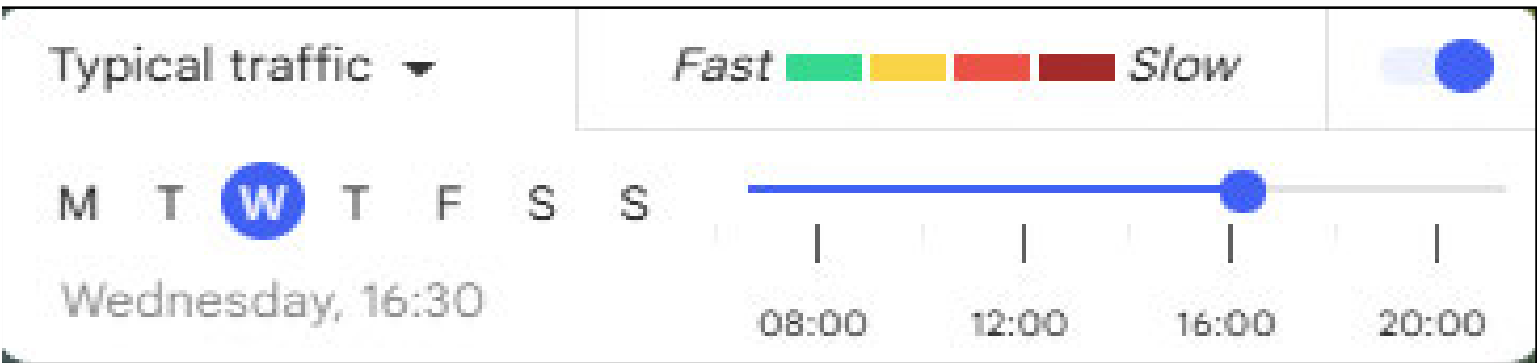
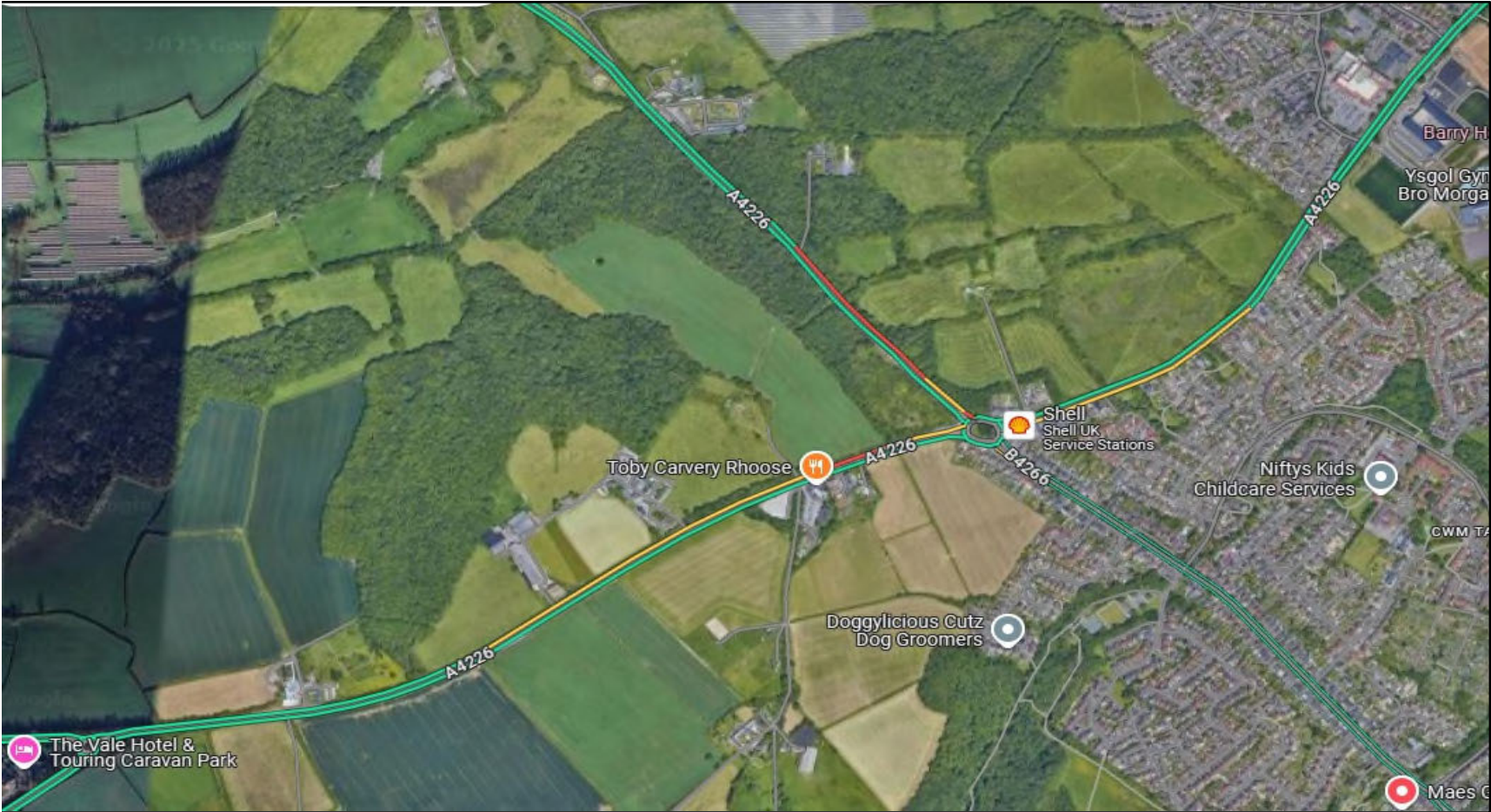
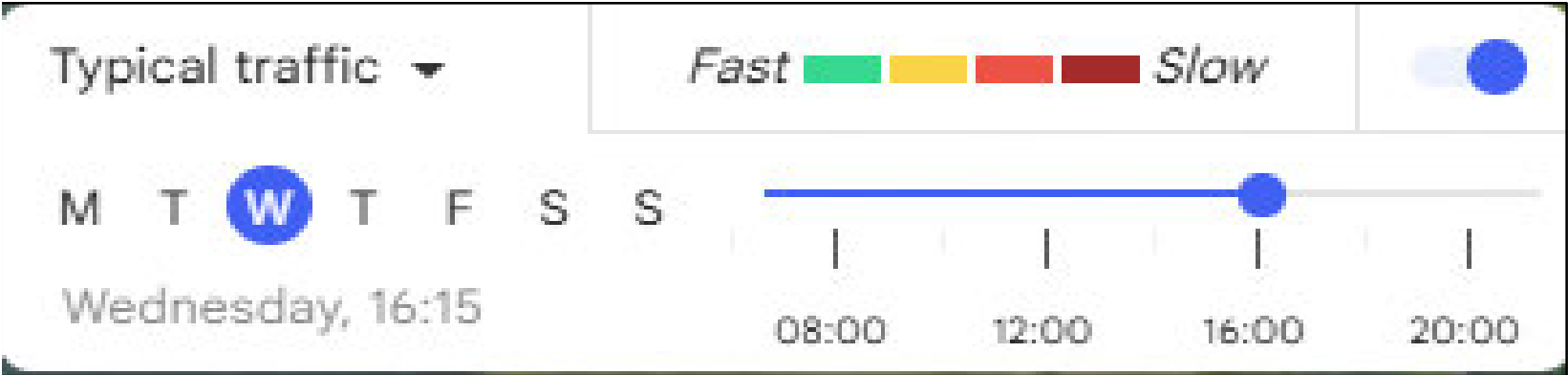
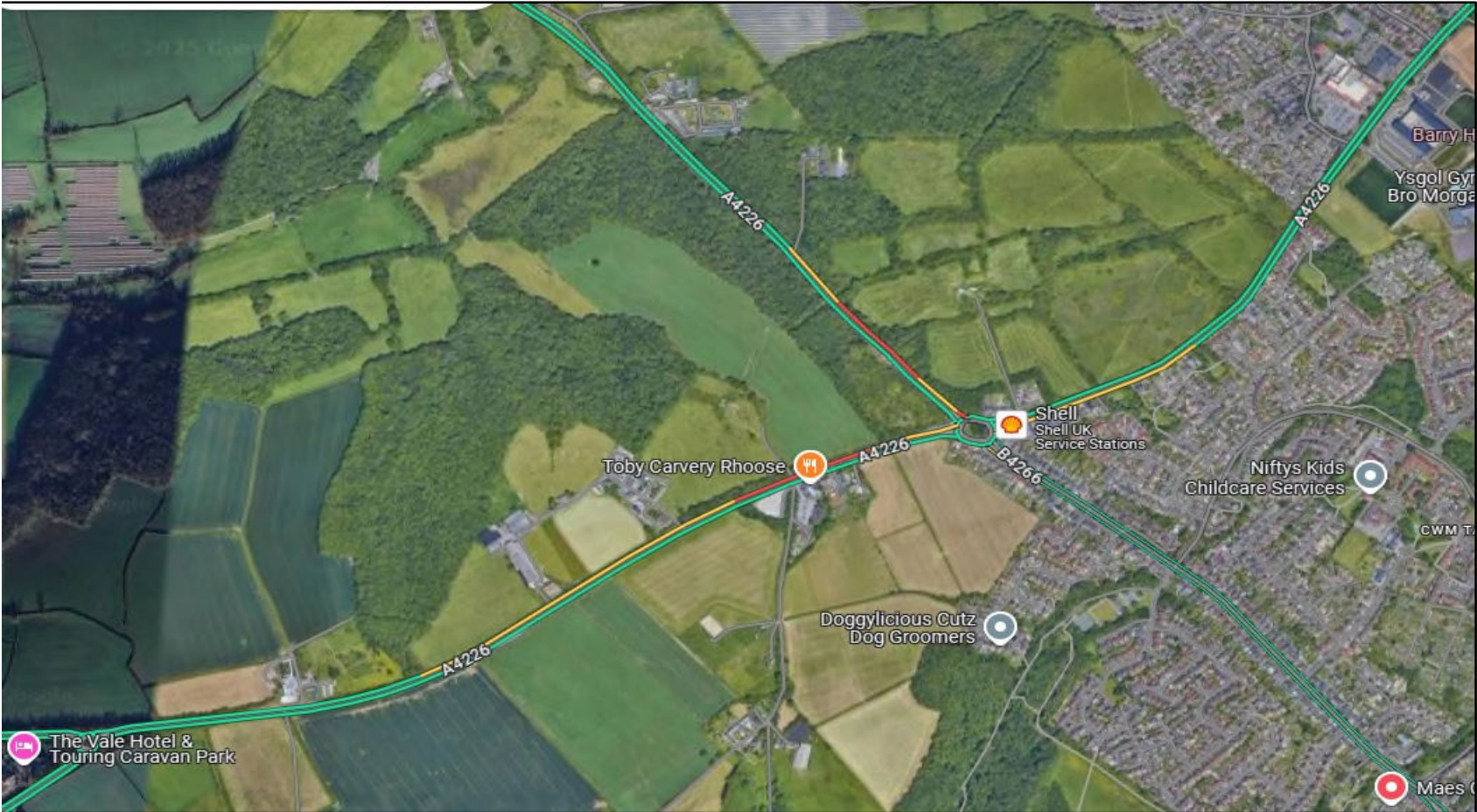


Googlemaps Average Delay Data: AM Peak Period



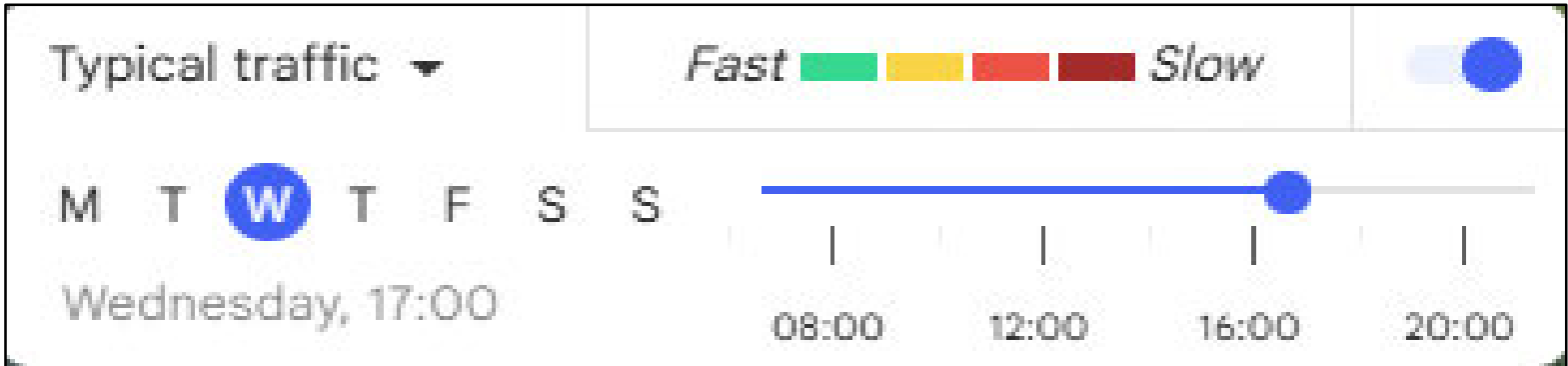
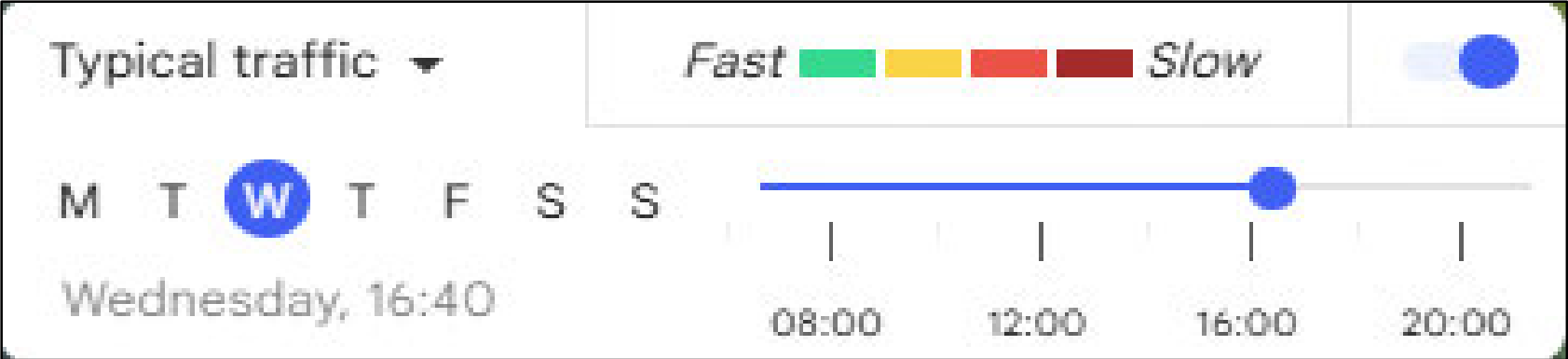
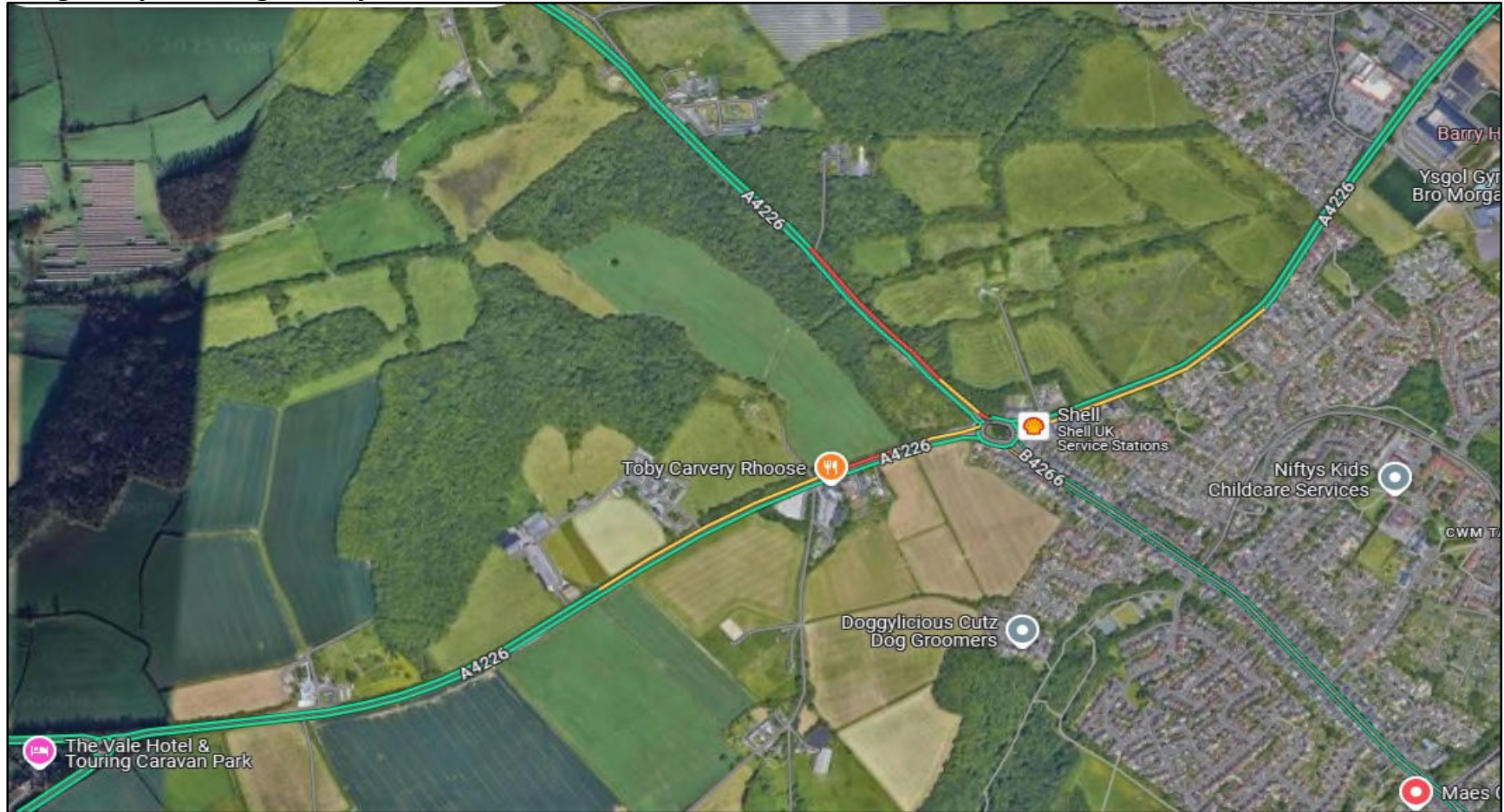


Googlemaps Average Delay Data: PM Peak Period



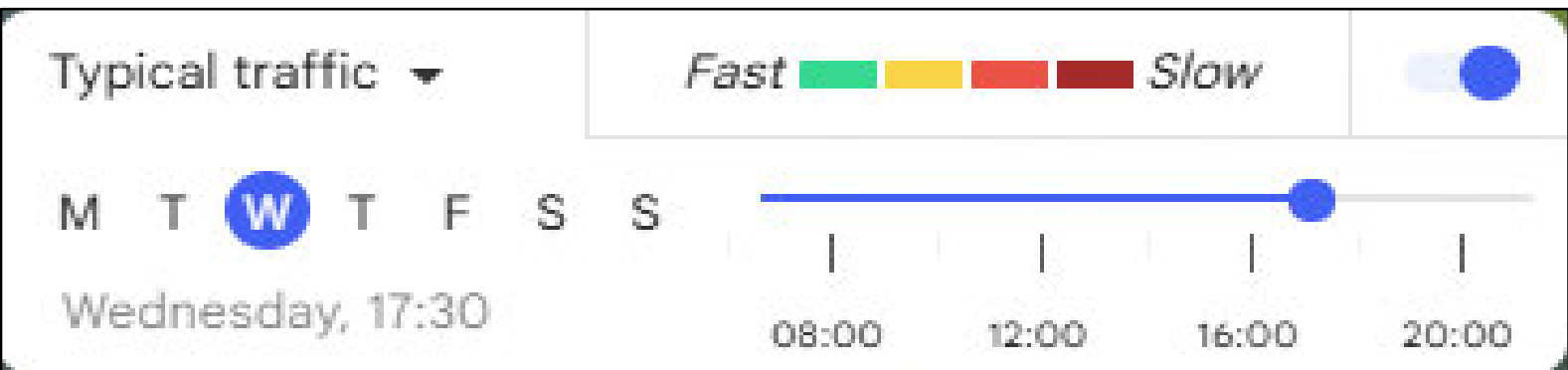
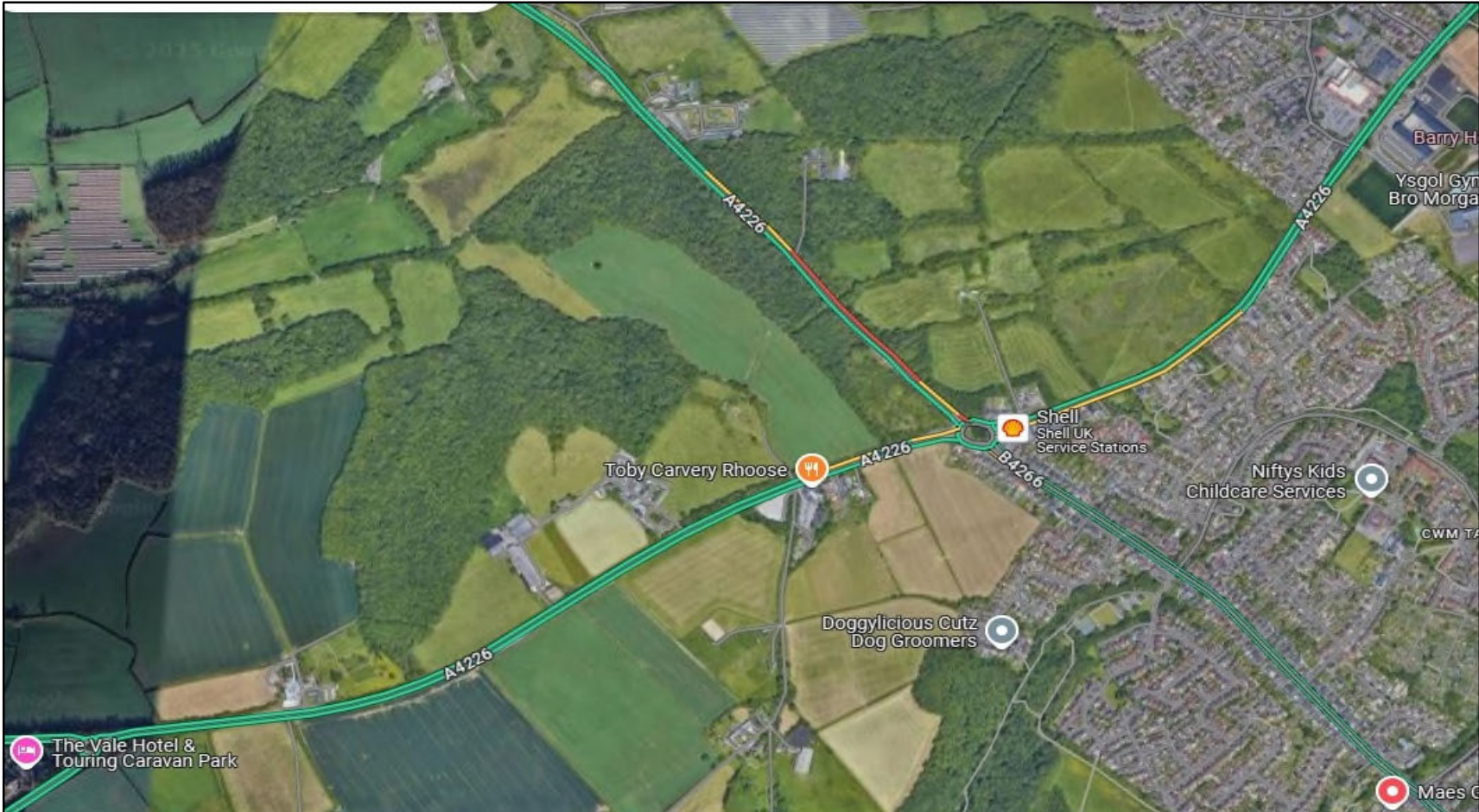
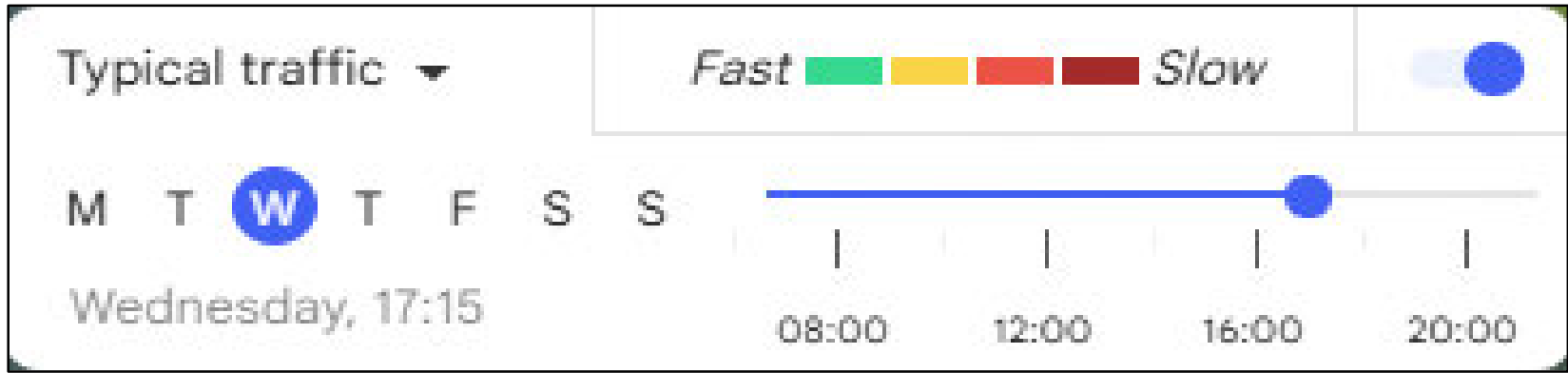
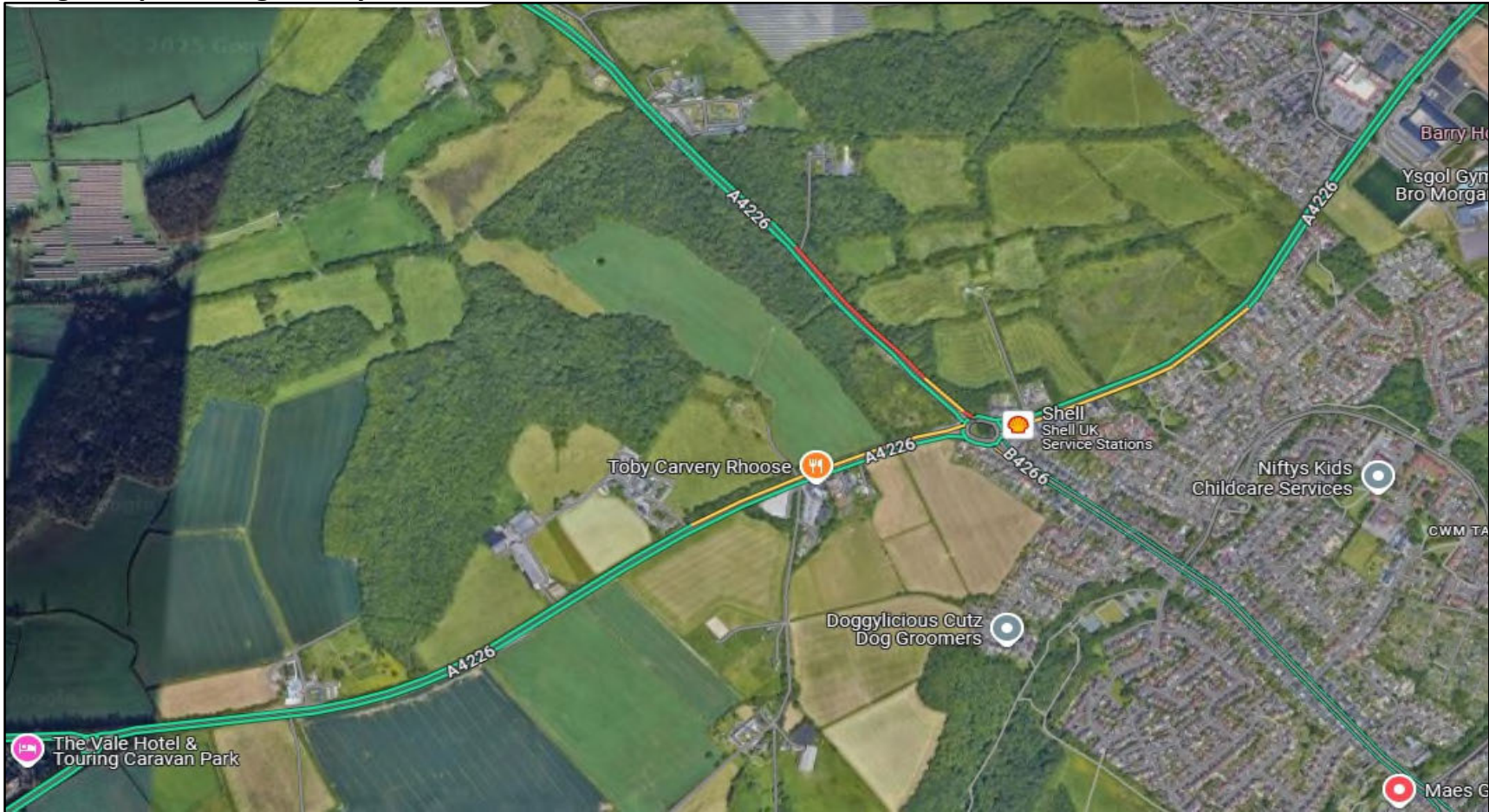


Googlemaps Average Delay Data: PM Peak Period



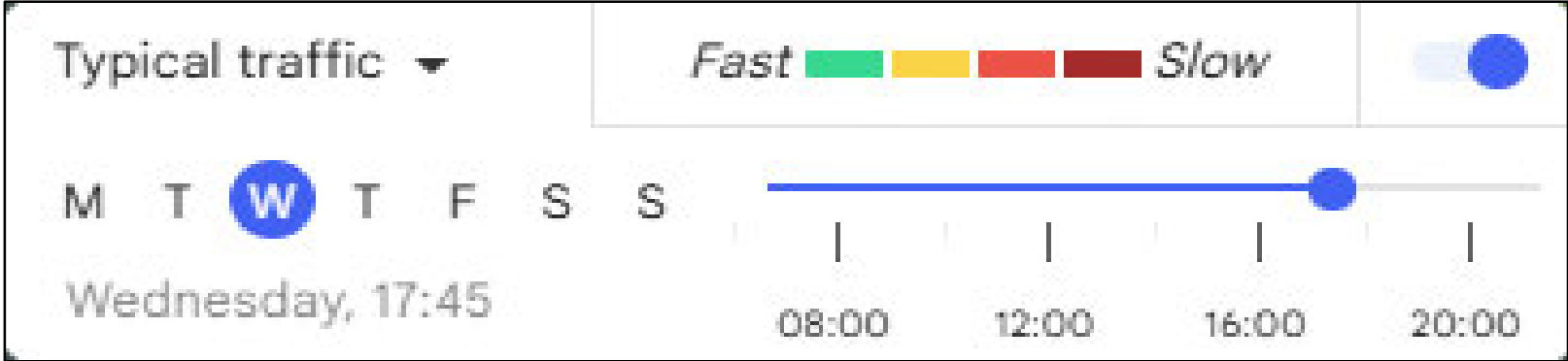
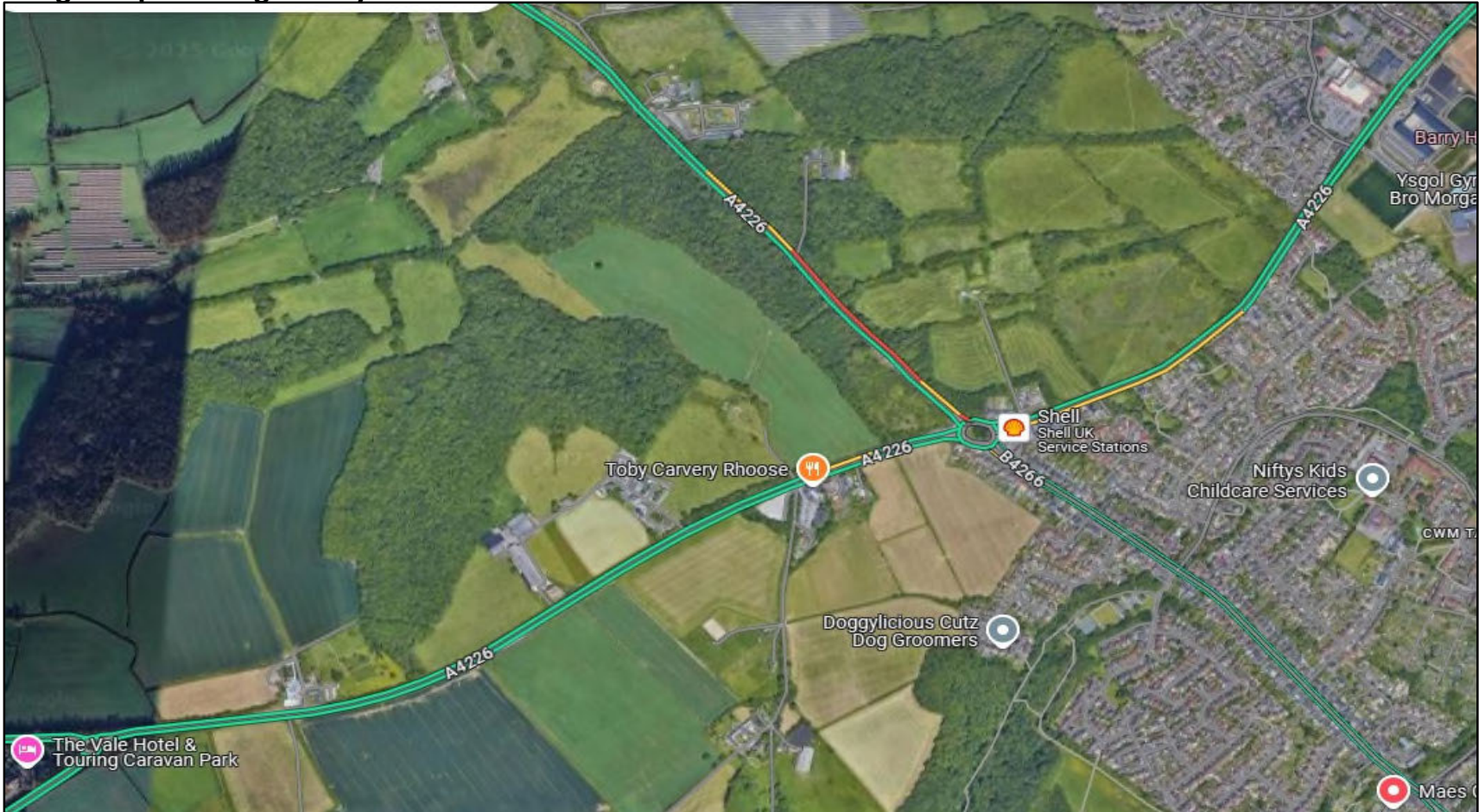


Googlemaps Average Delay Data: PM Peak Period





Googlemaps Average Delay Data: PM Peak Period



# Appendix M



Journey Time Survey Snapshots

Waycock Road - AM Peak  
Plate M1 - Approaching Give Way Line Southbound: 0734



Plate M2 - Waycock Rd Looking North from Junction: 0737



Plate M3 - Approaching Stopline Southbound: 0750





Plate M4 - Approaching Give Way Line Southbound: 0800



Plate M5 - Approaching Junction Southbound: 0809 (large direction sign 120m from Give Way Line)



Plate M6 - Approaching Give Way Line Southbound: 0801





Plate M7 - Waycock Rd Looking North from Junction: 0815



Plate M8 - Approaching Junction Southbound: 0815 (close to entrance of left turn lane)



Plate M9 - Waycock Rd Looking North from Junction: 0821



Plate M10 - Approaching Junction Southbound: 0824 (large direction sign 120m from Give Way Line)





Journey Time Survey Snapshots

Waycock Road - PM Peak  
Plate M21 - Approaching Give Way Line Southbound: 1631



Plate M12 - Approaching Give Way Line Southbound: 1636



Plate M13 - Approaching Give Way Line Southbound: 1643 (large direction sign 120m from Give Way Line)



Plate M14 - Approaching Give Way Line Southbound: 1644



Plate M15 - Approaching Junction Southbound: 1655 (large direction sign 120m from Give Way Line)



Plate M16 - Approaching Give Way Line Southbound: 1655



Plate M17 - Waycock Rd Looking North from Junction: 1717



Plate M18 - Approaching Junction Southbound: 1733 (large direction sign 120m from Give Way Line)



Plate M19 - Approaching Give Way Line Southbound: 1734



Plate M20 - Waycock Rd Looking North from Junction: 1737





Journey Time Survey Snapshots

Port Road West - AM Peak  
Plate M21 - Approaching Give Way Line Westbound: 0730



Plate M22 - Approaching Give Way Line Westbound: 0737



Plate M23 - Approaching Stopline Westbound: 0742



Plate M24 - PortRoad West looking East: 0747



Plate M25 - Approaching Stopline Westbound: 0752



Plate M26 - Approaching Stopline Westbound: 0807





Plate M27 - Approaching Stopline Westbound: 0823



Journey Time Survey Snapshots

Port Road West - PM Peak  
Plate M28 - Port Road West looking East: 1628



Plate M29 - Approaching Junction Eastbound: 1631



Plate M30 - Port Road West looking East: 1637





Plate M31 - Approaching Junction Eastbound: 1642



Plate M32 - Approaching Junction Eastbound: 1651



Plate M33 - Port Road West looking East: 1701



Plate M34 - Approaching Stopline Westbound: 1705



Plate M35 - Approaching Stopline Westbound: 1722



Plate M36 - Port Road West looking East: 1726



Plate M37 - Approaching Stopline Westbound: 1730





Journey Time Survey Snapshots

Pontypridd Road - AM Peak  
Plate M38 - Approaching Give Way Line Northbound: 0730



Plate M39 - Approaching Give Way Line Northbound: 0736



Plate M40 - Pontypridd Rd looking South: 0742





Plate M41 - Approaching Give Way Line Northbound: 0756



Plate M42 - Approaching Give Way Line Northbound: 0805



Plate M43 - Approaching Give Way Line Northbound: 0814





Plate M44 - Waycock Rd Looking North from Junction: 0821



Plate M45 - Approaching Give Way Line Northbound: 0830



Journey Time Survey Snapshots

Pontypridd Road - PM Peak  
Plate M46 - Approaching Give Way Line Northbound: 1633



Plate M47 - Pontypridd Rd looking South: 1637



Plate M48 - Approaching Give Way Line Northbound: 1639



Plate M49 - Approaching Give Way Line Northbound: 1658



Plate M50 - Approaching Give Way Line Northbound: 1728





Journey Time Survey Snapshots

Port Road - AM Peak  
Plate M51 - Approaching Junction Eastbound: 0733



Plate M52 - Approaching Give Way Line Eastbound: 0734



Plate M53 - Approaching Junction Eastbound (east of westbound layby): 0745





Plate M54 - Approaching Give Way Line Eastbound: 0748



Plate M55 - Port Road looking West from junction: 0755



Plate M56 - Port Road looking West at start of left turn lane: 0755



Plate M57 - Port Road looking West at Travelodge Access: 0755



Plate M58 - Port Road looking West towards Airport Roundabout: 0757



Plate M59 - Port Road Eastbound at Airport Roundabout Exit: 0800



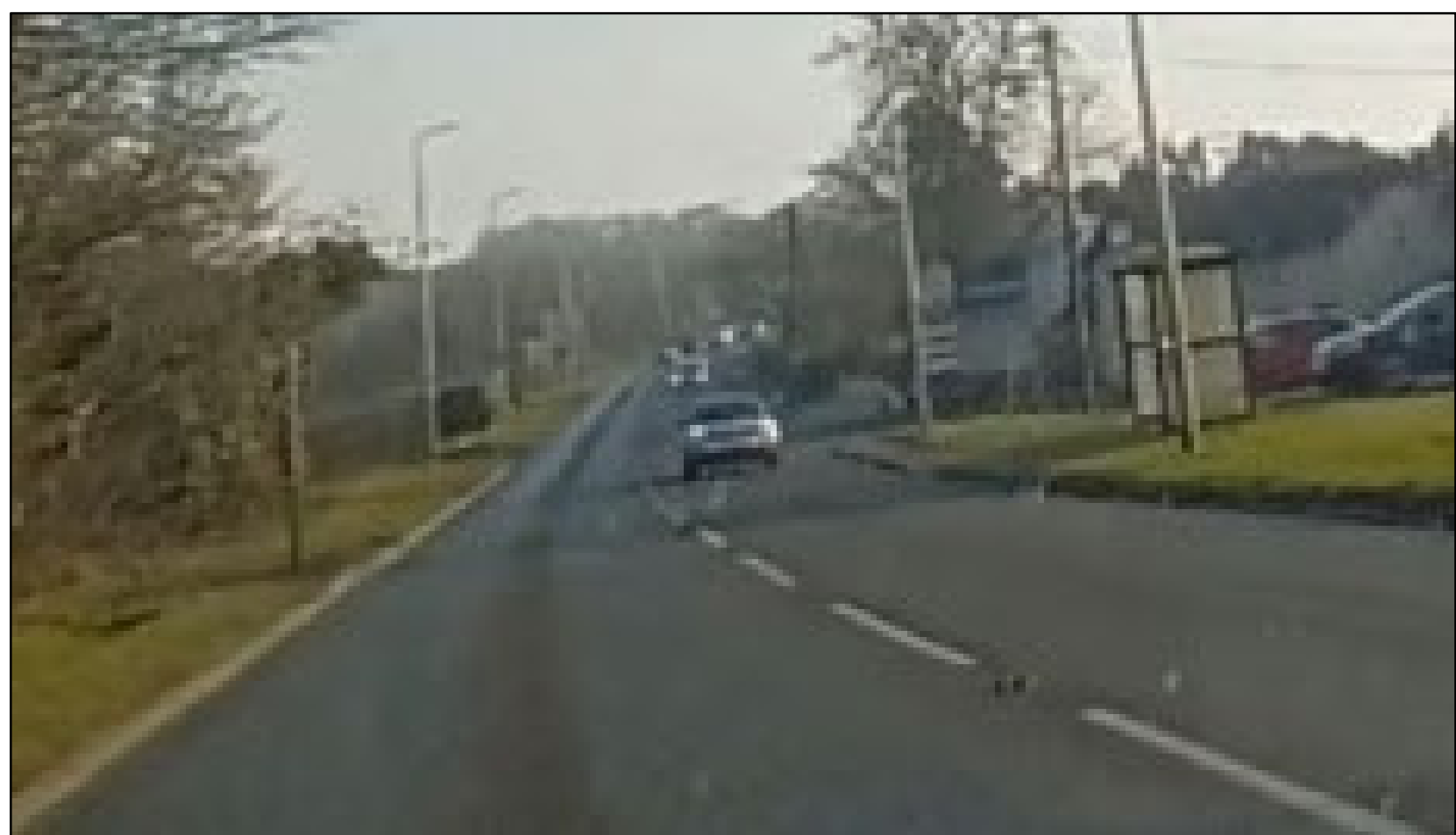
Plate M60 - Approaching Junction Eastbound from westbound layby: 0826



Plate M61 - Approaching Give Way Line: 0829



Plate M62 - Approaching Gjunction looking east from Travelodge: 0845





Journey Time Survey Snapshots

Port Road - PM Peak  
Plate M63 - Approaching Give Way Line Eastbound: 1627



Plate M64 - Port Road looking West from junction: 1633



Plate M65 - Approaching Give Way Line Eastbound: 1637





Plate M66 - Approaching Junction Eastbound: 1700



Plate M67 - Approaching Give Way Line Eastbound: 1700



Plate M68 - Approaching Junction Eastbound at Travelodge: 1710





Plate M69 - Approaching Give Way Line Eastbound: 1711



Plate M70 - Port Road looking West from junction: 1722



Plate M71 - Approaching Give Way Line Eastbound: 1725



Plate M72 - Approaching Give Way Line Eastbound: 1735



# Appendix N

| Junctions 9                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |
| Version: 9.5.1.7462<br>© Copyright TRL Limited, 2019                                                                                                             |  |  |  |  |  |  |  |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk              |  |  |  |  |  |  |  |  |  |  |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution |  |  |  |  |  |  |  |  |  |  |

Filename: Waycock Cross\_Base Standard.j9

Path: K:\T23\Jobs\T23.135 Weycock Cross TA\Analysis\Modelling\2025\Waycock Base Model

Report generation date: 25/03/2025 10:44:00

»Base - 2025 base, AM

»Base - 2025 base, PM

»Base - 2028 base, AM

»Base - 2028 base, PM

»Base - 2038 base, AM

»Base - 2038 base, PM

### Summary of junction performance

|                           | AM               |             |           |      |     | PM     |             |           |      |     |
|---------------------------|------------------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
|                           | Set ID           | Queue (PCU) | Delay (s) | RFC  | LOS | Set ID | Queue (PCU) | Delay (s) | RFC  | LOS |
|                           | Base - 2025 base |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D1               | 1.9         | 12.91     | 0.66 | B   | D2     | 2.8         | 15.13     | 0.74 | C   |
| B - A4226/Port Road W     |                  | 1.7         | 7.88      | 0.62 | A   |        | 2.9         | 12.43     | 0.75 | B   |
| C - B4226/Pontypridd Road |                  | 2.0         | 8.52      | 0.67 | A   |        | 2.1         | 9.65      | 0.68 | A   |
| D - A4226/Port Road       |                  | 12.0        | 48.16     | 0.94 | E   |        | 2.6         | 11.35     | 0.73 | B   |
|                           | Base - 2028 base |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D3               | 2.1         | 13.81     | 0.67 | B   | D4     | 3.1         | 16.74     | 0.76 | C   |
| B - A4226/Port Road W     |                  | 1.8         | 8.28      | 0.64 | A   |        | 3.3         | 13.70     | 0.77 | B   |
| C - B4226/Pontypridd Road |                  | 2.2         | 9.06      | 0.68 | A   |        | 2.3         | 10.39     | 0.70 | B   |
| D - A4226/Port Road       |                  | 16.2        | 62.21     | 0.97 | F   |        | 2.9         | 12.24     | 0.75 | B   |
|                           | Base - 2038 base |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D5               | 2.8         | 17.30     | 0.74 | C   | D6     | 5.0         | 25.40     | 0.84 | D   |
| B - A4226/Port Road W     |                  | 2.3         | 9.89      | 0.69 | A   |        | 5.2         | 20.57     | 0.85 | C   |
| C - B4226/Pontypridd Road |                  | 2.9         | 11.59     | 0.75 | B   |        | 3.2         | 13.87     | 0.77 | B   |
| D - A4226/Port Road       |                  | 46.4        | 147.24    | 1.07 | F   |        | 4.1         | 16.35     | 0.81 | C   |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

### File Description

|                    |                            |
|--------------------|----------------------------|
| <b>Title</b>       | Weycock Cross              |
| <b>Location</b>    | Barry                      |
| <b>Site number</b> |                            |
| <b>Date</b>        | 16/11/2023                 |
| <b>Version</b>     |                            |
| <b>Status</b>      | (new file)                 |
| <b>Identifier</b>  |                            |
| <b>Client</b>      | Persimmon Homes East Wales |
| <b>Jobnumber</b>   | T23.135                    |
| <b>Enumerator</b>  | ATRANS\katiewilliams       |
| <b>Description</b> |                            |

## Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m              | kph         | PCU                 | PCU                   | perHour    | s                   | -Min              | perMin              |

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Demand Set Summary

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2025 base     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D2 | 2025 base     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D3 | 2028 base     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D4 | 2028 base     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D5 | 2038 base     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D6 | 2038 base     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

## Analysis Set Details

| ID | Name | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|------|-------------------|---------------------------------|-------------------------------------|
| A1 | Base | ✓                 | 100.000                         | 100.000                             |



# Base - 2025 base, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 21.24              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name                  | Description |
|-----|-----------------------|-------------|
| A   | A4226/Waycock Road    |             |
| B   | A4226/Port Road W     |             |
| C   | B4226/Pontypridd Road |             |
| D   | A4226/Port Road       |             |

### Roundabout Geometry

| Arm                       | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|---------------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| A - A4226/Waycock Road    | 3.45                             | 7.83                | 61.2                            | 155.0                | 33.4                              | 22.3                               |           |
| B - A4226/Port Road W     | 3.98                             | 6.94                | 20.6                            | 22.9                 | 33.2                              | 22.2                               |           |
| C - B4226/Pontypridd Road | 4.31                             | 6.26                | 28.8                            | 183.9                | 33.3                              | 23.1                               |           |
| D - A4226/Port Road       | 3.88                             | 6.68                | 72.0                            | 9.4                  | 33.2                              | 33.7                               |           |

### Pelican/Puffin Crossings

| Arm                 | Space between crossing and junc. entry (Signalised) (PCU) | Amber time preceding red (s) | Amber time regarded as green (s) | Time from traffic red start to green man start (s) | Time period green man shown (s) | Clearance Period (s) | Traffic minimum green (s) |
|---------------------|-----------------------------------------------------------|------------------------------|----------------------------------|----------------------------------------------------|---------------------------------|----------------------|---------------------------|
| D - A4226/Port Road | 12.00                                                     | 3.00                         | 2.90                             | 1.00                                               | 6.00                            | 6.00                 | 7.00                      |

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

| Arm                       | Type       | Reason | Percentage intercept adjustment (%) |
|---------------------------|------------|--------|-------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                               |
| B - A4226/Port Road W     | Percentage |        | 95.00                               |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                               |
| D - A4226/Port Road       | Percentage |        | 91.00                               |

### Roundabout Slope and Intercept used in model

| Arm                       | Final slope | Final intercept (PCU/hr) |
|---------------------------|-------------|--------------------------|
| A - A4226/Waycock Road    | 0.792       | 1819                     |
| B - A4226/Port Road W     | 0.701       | 1787                     |
| C - B4226/Pontypridd Road | 0.718       | 1818                     |
| D - A4226/Port Road       | 0.654       | 1638                     |

The slope and intercept shown above include any corrections and adjustments.

### Arm Capacity Adjustments

| Arm                       | Type       | Reason | Percentage capacity adjustment (%) |
|---------------------------|------------|--------|------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                              |
| B - A4226/Port Road W     | Percentage |        | 95.00                              |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                              |
| D - A4226/Port Road       | Percentage |        | 91.00                              |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2025 base     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 496                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 701                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 780                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 870                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 2.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 123                   | 216                       | 157                 |
|      | B - A4226/Port Road W     | 134                    | 15                    | 278                       | 274                 |
|      | C - B4226/Pontypridd Road | 306                    | 268                   | 3                         | 203                 |
|      | D - A4226/Port Road       | 258                    | 363                   | 249                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.66    | 12.91         | 1.9             | B       | 455                     | 683                           |
| B - A4226/Port Road W     | 0.62    | 7.88          | 1.7             | A       | 643                     | 965                           |
| C - B4226/Pontypridd Road | 0.67    | 8.52          | 2.0             | A       | 716                     | 1074                          |
| D - A4226/Port Road       | 0.94    | 48.16         | 12.0            | E       | 798                     | 1197                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 373                   | 93                      | 671                       |                            | 1030              | 0.363 | 371                 | 522                             | 0.0               | 0.6             | 5.616     | A                             |
| B - A4226/Port Road W     | 528                   | 132                     | 467                       |                            | 1386              | 0.381 | 525                 | 575                             | 0.0               | 0.6             | 4.284     | A                             |
| C - B4226/Pontypridd Road | 587                   | 147                     | 434                       |                            | 1430              | 0.411 | 584                 | 558                             | 0.0               | 0.7             | 4.347     | A                             |
| D - A4226/Port Road       | 655                   | 164                     | 544                       | 0.00                       | 1167              | 0.561 | 650                 | 475                             | 0.0               | 1.3             | 7.228     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 446                   | 111                     | 804                       |                            | 946               | 0.471 | 445                 | 625                             | 0.6               | 0.9             | 7.382     | A                             |
| B - A4226/Port Road W     | 630                   | 158                     | 560                       |                            | 1324              | 0.476 | 629                 | 689                             | 0.6               | 0.9             | 5.308     | A                             |
| C - B4226/Pontypridd Road | 701                   | 175                     | 520                       |                            | 1372              | 0.511 | 700                 | 668                             | 0.7               | 1.1             | 5.479     | A                             |
| D - A4226/Port Road       | 782                   | 196                     | 651                       | 0.00                       | 1103              | 0.709 | 778                 | 569                             | 1.3               | 2.5             | 11.435    | B                             |

#### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 546                   | 137                     | 966                       |                            | 843               | 0.648 | 542                 | 758                             | 0.9               | 1.8             | 12.202    | B                             |
| B - A4226/Port Road W     | 772                   | 193                     | 677                       |                            | 1246              | 0.619 | 769                 | 832                             | 0.9               | 1.6             | 7.698     | A                             |
| C - B4226/Pontypridd Road | 859                   | 215                     | 636                       |                            | 1293              | 0.664 | 855                 | 810                             | 1.1               | 2.0             | 8.354     | A                             |
| D - A4226/Port Road       | 958                   | 239                     | 796                       | 0.00                       | 1017              | 0.942 | 928                 | 695                             | 2.5               | 9.9             | 34.534    | D                             |

#### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 546                   | 137                     | 983                       |                            | 833               | 0.656 | 546                 | 766                             | 1.8               | 1.9             | 12.906    | B                             |
| B - A4226/Port Road W     | 772                   | 193                     | 685                       |                            | 1241              | 0.622 | 772                 | 843                             | 1.6               | 1.7             | 7.880     | A                             |
| C - B4226/Pontypridd Road | 859                   | 215                     | 638                       |                            | 1291              | 0.665 | 859                 | 819                             | 2.0               | 2.0             | 8.523     | A                             |
| D - A4226/Port Road       | 958                   | 239                     | 799                       | 0.00                       | 1015              | 0.943 | 949                 | 698                             | 9.9               | 12.0            | 48.160    | E                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 446                   | 111                     | 835                       |                            | 926               | 0.481 | 450                 | 641                             | 1.9               | 1.0             | 7.848     | A                             |
| B - A4226/Port Road W     | 630                   | 158                     | 575                       |                            | 1314              | 0.480 | 633                 | 709                             | 1.7               | 1.0             | 5.454     | A                             |
| C - B4226/Pontypridd Road | 701                   | 175                     | 524                       |                            | 1369              | 0.512 | 705                 | 684                             | 2.0               | 1.1             | 5.586     | A                             |
| D - A4226/Port Road       | 782                   | 196                     | 656                       | 0.00                       | 1101              | 0.711 | 819                 | 573                             | 12.0              | 2.7             | 15.066    | C                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 373                   | 93                      | 680                       |                            | 1024              | 0.365 | 375                 | 528                             | 1.0               | 0.6             | 5.732     | A                             |
| B - A4226/Port Road W     | 528                   | 132                     | 473                       |                            | 1382              | 0.382 | 529                 | 582                             | 1.0               | 0.6             | 4.342     | A                             |
| C - B4226/Pontypridd Road | 587                   | 147                     | 438                       |                            | 1428              | 0.411 | 589                 | 564                             | 1.1               | 0.7             | 4.404     | A                             |
| D - A4226/Port Road       | 655                   | 164                     | 548                       | 0.00                       | 1165              | 0.562 | 660                 | 479                             | 2.7               | 1.4             | 7.564     | A                             |

# Base - 2025 base, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 12.03              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2025 base     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 619                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 792                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 719                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 775                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data



### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 127                   | 308                       | 184                 |
|      | B - A4226/Port Road W     | 108                    | 10                    | 229                       | 445                 |
|      | C - B4226/Pontypridd Road | 226                    | 140                   | 0                         | 353                 |
|      | D - A4226/Port Road       | 167                    | 372                   | 235                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.74    | 15.13         | 2.8             | C       | 568                     | 852                           |
| B - A4226/Port Road W     | 0.75    | 12.43         | 2.9             | B       | 727                     | 1090                          |
| C - B4226/Pontypridd Road | 0.68    | 9.65          | 2.1             | A       | 660                     | 990                           |
| D - A4226/Port Road       | 0.73    | 11.35         | 2.6             | B       | 711                     | 1067                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 466                   | 117                     | 567                       |                            | 1096              | 0.425 | 463                 | 375                             | 0.0               | 0.8             | 5.866     | A                             |
| B - A4226/Port Road W     | 596                   | 149                     | 545                       |                            | 1334              | 0.447 | 593                 | 486                             | 0.0               | 0.8             | 4.888     | A                             |
| C - B4226/Pontypridd Road | 541                   | 135                     | 560                       |                            | 1345              | 0.403 | 539                 | 578                             | 0.0               | 0.7             | 4.465     | A                             |
| D - A4226/Port Road       | 583                   | 146                     | 363                       | 0.00                       | 1275              | 0.458 | 580                 | 736                             | 0.0               | 0.8             | 5.223     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 556                   | 139                     | 680                       |                            | 1025              | 0.543 | 555                 | 449                             | 0.8               | 1.2             | 7.904     | A                             |
| B - A4226/Port Road W     | 712                   | 178                     | 652                       |                            | 1263              | 0.564 | 710                 | 582                             | 0.8               | 1.3             | 6.567     | A                             |
| C - B4226/Pontypridd Road | 646                   | 162                     | 671                       |                            | 1269              | 0.509 | 645                 | 692                             | 0.7               | 1.0             | 5.771     | A                             |
| D - A4226/Port Road       | 697                   | 174                     | 434                       | 0.00                       | 1233              | 0.565 | 695                 | 881                             | 0.8               | 1.3             | 6.761     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 682                   | 170                     | 830                       |                            | 930               | 0.733 | 676                 | 548                             | 1.2               | 2.7             | 14.355    | B                             |
| B - A4226/Port Road W     | 872                   | 218                     | 795                       |                            | 1167              | 0.747 | 866                 | 710                             | 1.3               | 2.8             | 11.829    | B                             |
| C - B4226/Pontypridd Road | 792                   | 198                     | 817                       |                            | 1169              | 0.677 | 788                 | 844                             | 1.0               | 2.0             | 9.366     | A                             |
| D - A4226/Port Road       | 853                   | 213                     | 530                       | 0.00                       | 1176              | 0.726 | 848                 | 1075                            | 1.3               | 2.6             | 10.974    | B                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 682                   | 170                     | 834                       |                            | 927               | 0.735 | 681                 | 551                             | 2.7               | 2.8             | 15.126    | C                             |
| B - A4226/Port Road W     | 872                   | 218                     | 801                       |                            | 1164              | 0.749 | 872                 | 714                             | 2.8               | 2.9             | 12.429    | B                             |
| C - B4226/Pontypridd Road | 792                   | 198                     | 823                       |                            | 1165              | 0.679 | 791                 | 850                             | 2.0               | 2.1             | 9.652     | A                             |
| D - A4226/Port Road       | 853                   | 213                     | 533                       | 0.00                       | 1174              | 0.727 | 853                 | 1082                            | 2.6               | 2.6             | 11.347    | B                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 556                   | 139                     | 686                       |                            | 1021              | 0.545 | 563                 | 454                             | 2.8               | 1.3             | 8.248     | A                             |
| B - A4226/Port Road W     | 712                   | 178                     | 661                       |                            | 1257              | 0.566 | 718                 | 588                             | 2.9               | 1.3             | 6.835     | A                             |
| C - B4226/Pontypridd Road | 646                   | 162                     | 679                       |                            | 1264              | 0.511 | 650                 | 700                             | 2.1               | 1.1             | 5.928     | A                             |
| D - A4226/Port Road       | 697                   | 174                     | 438                       | 0.00                       | 1230              | 0.566 | 702                 | 891                             | 2.6               | 1.3             | 6.972     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 466                   | 117                     | 572                       |                            | 1093              | 0.426 | 468                 | 378                             | 1.3               | 0.8             | 5.988     | A                             |
| B - A4226/Port Road W     | 596                   | 149                     | 550                       |                            | 1331              | 0.448 | 598                 | 490                             | 1.3               | 0.8             | 4.985     | A                             |
| C - B4226/Pontypridd Road | 541                   | 135                     | 565                       |                            | 1341              | 0.404 | 543                 | 583                             | 1.1               | 0.7             | 4.531     | A                             |
| D - A4226/Port Road       | 583                   | 146                     | 365                       | 0.00                       | 1273              | 0.458 | 585                 | 743                             | 1.3               | 0.9             | 5.318     | A                             |

# Base - 2028 base, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 25.94              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D3 | 2028 base     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 505                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 715                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 795                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 887                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 160                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 279                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 207                 |
|      | D - A4226/Port Road       | 263                    | 370                   | 254                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.67    | 13.81         | 2.1             | B       | 463                     | 694                           |
| B - A4226/Port Road W     | 0.64    | 8.28          | 1.8             | A       | 656                     | 984                           |
| C - B4226/Pontypridd Road | 0.68    | 9.06          | 2.2             | A       | 730                     | 1094                          |
| D - A4226/Port Road       | 0.97    | 62.21         | 16.2            | F       | 814                     | 1221                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 380                   | 95                      | 685                       |                            | 1022              | 0.372 | 377                 | 533                             | 0.0               | 0.6             | 5.744     | A                             |
| B - A4226/Port Road W     | 538                   | 135                     | 476                       |                            | 1380              | 0.390 | 536                 | 586                             | 0.0               | 0.7             | 4.366     | A                             |
| C - B4226/Pontypridd Road | 599                   | 150                     | 443                       |                            | 1424              | 0.420 | 596                 | 569                             | 0.0               | 0.7             | 4.438     | A                             |
| D - A4226/Port Road       | 668                   | 167                     | 555                       | 0.00                       | 1160              | 0.575 | 662                 | 484                             | 0.0               | 1.4             | 7.499     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 454                   | 113                     | 819                       |                            | 936               | 0.484 | 452                 | 638                             | 0.6               | 1.0             | 7.649     | A                             |
| B - A4226/Port Road W     | 643                   | 161                     | 570                       |                            | 1317              | 0.488 | 642                 | 701                             | 0.7               | 1.0             | 5.460     | A                             |
| C - B4226/Pontypridd Road | 715                   | 179                     | 531                       |                            | 1365              | 0.524 | 713                 | 681                             | 0.7               | 1.1             | 5.653     | A                             |
| D - A4226/Port Road       | 797                   | 199                     | 665                       | 0.00                       | 1095              | 0.728 | 792                 | 579                             | 1.4               | 2.7             | 12.257    | B                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 556                   | 139                     | 980                       |                            | 835               | 0.666 | 551                 | 770                             | 1.0               | 2.0             | 12.930    | B                             |
| B - A4226/Port Road W     | 787                   | 197                     | 687                       |                            | 1239              | 0.635 | 784                 | 844                             | 1.0               | 1.7             | 8.065     | A                             |
| C - B4226/Pontypridd Road | 875                   | 219                     | 649                       |                            | 1284              | 0.682 | 871                 | 823                             | 1.1               | 2.1             | 8.844     | A                             |
| D - A4226/Port Road       | 977                   | 244                     | 812                       | 0.00                       | 1008              | 0.969 | 938                 | 708                             | 2.7               | 12.4            | 40.826    | E                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 556                   | 139                     | 998                       |                            | 823               | 0.675 | 555                 | 779                             | 2.0               | 2.1             | 13.814    | B                             |
| B - A4226/Port Road W     | 787                   | 197                     | 697                       |                            | 1233              | 0.638 | 787                 | 856                             | 1.7               | 1.8             | 8.284     | A                             |
| C - B4226/Pontypridd Road | 875                   | 219                     | 652                       |                            | 1282              | 0.683 | 875                 | 832                             | 2.1               | 2.2             | 9.055     | A                             |
| D - A4226/Port Road       | 977                   | 244                     | 816                       | 0.00                       | 1005              | 0.971 | 961                 | 711                             | 12.4              | 16.2            | 62.211    | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 454                   | 113                     | 862                       |                            | 909               | 0.499 | 458                 | 658                             | 2.1               | 1.0             | 8.300     | A                             |
| B - A4226/Port Road W     | 643                   | 161                     | 591                       |                            | 1304              | 0.493 | 646                 | 729                             | 1.8               | 1.0             | 5.647     | A                             |
| C - B4226/Pontypridd Road | 715                   | 179                     | 535                       |                            | 1362              | 0.525 | 719                 | 701                             | 2.2               | 1.1             | 5.775     | A                             |
| D - A4226/Port Road       | 797                   | 199                     | 670                       | 0.00                       | 1092              | 0.730 | 850                 | 584                             | 16.2              | 3.0             | 18.676    | C                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 380                   | 95                      | 695                       |                            | 1015              | 0.374 | 382                 | 539                             | 1.0               | 0.6             | 5.873     | A                             |
| B - A4226/Port Road W     | 538                   | 135                     | 483                       |                            | 1376              | 0.391 | 540                 | 593                             | 1.0               | 0.7             | 4.431     | A                             |
| C - B4226/Pontypridd Road | 599                   | 150                     | 447                       |                            | 1422              | 0.421 | 600                 | 575                             | 1.1               | 0.8             | 4.498     | A                             |
| D - A4226/Port Road       | 668                   | 167                     | 559                       | 0.00                       | 1158              | 0.577 | 674                 | 488                             | 3.0               | 1.5             | 7.900     | A                             |



# Base - 2028 base, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 13.14              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D4 | 2028 base     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 631                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 807                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 733                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 791                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 188                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 454                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 360                 |
|      | D - A4226/Port Road       | 170                    | 380                   | 240                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.76    | 16.74         | 3.1             | C       | 579                     | 868                           |
| B - A4226/Port Road W     | 0.77    | 13.70         | 3.3             | B       | 741                     | 1111                          |
| C - B4226/Pontypridd Road | 0.70    | 10.39         | 2.3             | B       | 673                     | 1009                          |
| D - A4226/Port Road       | 0.75    | 12.24         | 2.9             | B       | 726                     | 1089                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 475                   | 119                     | 580                       |                            | 1088              | 0.436 | 472                 | 382                             | 0.0               | 0.8             | 6.021     | A                             |
| B - A4226/Port Road W     | 608                   | 152                     | 556                       |                            | 1327              | 0.458 | 604                 | 495                             | 0.0               | 0.8             | 5.014     | A                             |
| C - B4226/Pontypridd Road | 552                   | 138                     | 571                       |                            | 1337              | 0.413 | 549                 | 589                             | 0.0               | 0.7             | 4.567     | A                             |
| D - A4226/Port Road       | 596                   | 149                     | 369                       | 0.00                       | 1271              | 0.469 | 592                 | 751                             | 0.0               | 0.9             | 5.343     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 567                   | 142                     | 694                       |                            | 1016              | 0.558 | 565                 | 457                             | 0.8               | 1.3             | 8.243     | A                             |
| B - A4226/Port Road W     | 726                   | 181                     | 666                       |                            | 1254              | 0.579 | 723                 | 593                             | 0.8               | 1.4             | 6.838     | A                             |
| C - B4226/Pontypridd Road | 659                   | 165                     | 684                       |                            | 1260              | 0.523 | 657                 | 705                             | 0.7               | 1.1             | 5.975     | A                             |
| D - A4226/Port Road       | 711                   | 178                     | 442                       | 0.00                       | 1228              | 0.579 | 709                 | 899                             | 0.9               | 1.4             | 7.007     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 694                   | 174                     | 847                       |                            | 919               | 0.756 | 688                 | 558                             | 1.3               | 3.0             | 15.686    | C                             |
| B - A4226/Port Road W     | 889                   | 222                     | 811                       |                            | 1157              | 0.768 | 881                 | 724                             | 1.4               | 3.2             | 12.884    | B                             |
| C - B4226/Pontypridd Road | 807                   | 202                     | 833                       |                            | 1158              | 0.697 | 802                 | 859                             | 1.1               | 2.2             | 10.018    | B                             |
| D - A4226/Port Road       | 871                   | 218                     | 540                       | 0.00                       | 1170              | 0.745 | 865                 | 1096                            | 1.4               | 2.8             | 11.753    | B                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 694                   | 174                     | 852                       |                            | 915               | 0.759 | 694                 | 561                             | 3.0               | 3.1             | 16.739    | C                             |
| B - A4226/Port Road W     | 889                   | 222                     | 818                       |                            | 1153              | 0.771 | 888                 | 728                             | 3.2               | 3.3             | 13.700    | B                             |
| C - B4226/Pontypridd Road | 807                   | 202                     | 840                       |                            | 1154              | 0.699 | 807                 | 866                             | 2.2               | 2.3             | 10.387    | B                             |
| D - A4226/Port Road       | 871                   | 218                     | 543                       | 0.00                       | 1168              | 0.746 | 871                 | 1104                            | 2.8               | 2.9             | 12.236    | B                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 567                   | 142                     | 702                       |                            | 1011              | 0.561 | 574                 | 462                             | 3.1               | 1.4             | 8.675     | A                             |
| B - A4226/Port Road W     | 726                   | 181                     | 675                       |                            | 1247              | 0.582 | 733                 | 600                             | 3.3               | 1.4             | 7.178     | A                             |
| C - B4226/Pontypridd Road | 659                   | 165                     | 693                       |                            | 1254              | 0.526 | 664                 | 715                             | 2.3               | 1.1             | 6.165     | A                             |
| D - A4226/Port Road       | 711                   | 178                     | 447                       | 0.00                       | 1225              | 0.581 | 717                 | 910                             | 2.9               | 1.4             | 7.259     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 475                   | 119                     | 585                       |                            | 1085              | 0.438 | 477                 | 385                             | 1.4               | 0.8             | 6.159     | A                             |
| B - A4226/Port Road W     | 608                   | 152                     | 562                       |                            | 1323              | 0.459 | 610                 | 500                             | 1.4               | 0.9             | 5.122     | A                             |
| C - B4226/Pontypridd Road | 552                   | 138                     | 577                       |                            | 1333              | 0.414 | 553                 | 595                             | 1.1               | 0.7             | 4.640     | A                             |
| D - A4226/Port Road       | 596                   | 149                     | 372                       | 0.00                       | 1269              | 0.469 | 598                 | 758                             | 1.4               | 0.9             | 5.447     | A                             |

# Base - 2038 base, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 53.61              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D5 | 2038 base     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 540                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 763                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 849                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 947                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 171                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 298                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 221                 |
|      | D - A4226/Port Road       | 281                    | 395                   | 271                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.74    | 17.30         | 2.8             | C       | 496                     | 743                           |
| B - A4226/Port Road W     | 0.69    | 9.89          | 2.3             | A       | 700                     | 1050                          |
| C - B4226/Pontypridd Road | 0.75    | 11.59         | 2.9             | B       | 779                     | 1169                          |
| D - A4226/Port Road       | 1.07    | 147.24        | 46.4            | F       | 869                     | 1303                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 407                   | 102                     | 730                       |                            | 993               | 0.410 | 404                 | 568                             | 0.0               | 0.7             | 6.275     | A                             |
| B - A4226/Port Road W     | 574                   | 144                     | 508                       |                            | 1359              | 0.423 | 571                 | 626                             | 0.0               | 0.7             | 4.678     | A                             |
| C - B4226/Pontypridd Road | 639                   | 160                     | 473                       |                            | 1404              | 0.455 | 636                 | 606                             | 0.0               | 0.8             | 4.783     | A                             |
| D - A4226/Port Road       | 713                   | 178                     | 593                       | 0.00                       | 1138              | 0.626 | 706                 | 517                             | 0.0               | 1.7             | 8.609     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 485                   | 121                     | 873                       |                            | 902               | 0.538 | 484                 | 680                             | 0.7               | 1.2             | 8.826     | A                             |
| B - A4226/Port Road W     | 686                   | 171                     | 608                       |                            | 1292              | 0.531 | 684                 | 749                             | 0.7               | 1.1             | 6.065     | A                             |
| C - B4226/Pontypridd Road | 763                   | 191                     | 567                       |                            | 1340              | 0.570 | 762                 | 726                             | 0.8               | 1.3             | 6.353     | A                             |
| D - A4226/Port Road       | 851                   | 213                     | 710                       | 0.00                       | 1069              | 0.797 | 843                 | 619                             | 1.7               | 3.8             | 16.168    | C                             |



## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 595                   | 149                     | 1009                      |                            | 816               | 0.729 | 589                 | 806                             | 1.2               | 2.6             | 15.951    | C                             |
| B - A4226/Port Road W     | 840                   | 210                     | 718                       |                            | 1219              | 0.689 | 836                 | 880                             | 1.1               | 2.2             | 9.559     | A                             |
| C - B4226/Pontypridd Road | 935                   | 234                     | 691                       |                            | 1255              | 0.745 | 929                 | 862                             | 1.3               | 2.9             | 11.112    | B                             |
| D - A4226/Port Road       | 1043                  | 261                     | 866                       | 0.00                       | 976               | 1.069 | 949                 | 755                             | 3.8               | 27.2            | 72.718    | F                             |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 595                   | 149                     | 1023                      |                            | 807               | 0.737 | 594                 | 814                             | 2.6               | 2.8             | 17.305    | C                             |
| B - A4226/Port Road W     | 840                   | 210                     | 727                       |                            | 1213              | 0.692 | 840                 | 890                             | 2.2               | 2.3             | 9.887     | A                             |
| C - B4226/Pontypridd Road | 935                   | 234                     | 695                       |                            | 1252              | 0.747 | 935                 | 871                             | 2.9               | 2.9             | 11.590    | B                             |
| D - A4226/Port Road       | 1043                  | 261                     | 871                       | 0.00                       | 973               | 1.072 | 966                 | 759                             | 27.2              | 46.4            | 147.238   | F                             |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 485                   | 121                     | 997                       |                            | 824               | 0.589 | 490                 | 735                             | 2.8               | 1.5             | 11.301    | B                             |
| B - A4226/Port Road W     | 686                   | 171                     | 662                       |                            | 1256              | 0.546 | 690                 | 825                             | 2.3               | 1.3             | 6.578     | A                             |
| C - B4226/Pontypridd Road | 763                   | 191                     | 572                       |                            | 1336              | 0.571 | 770                 | 780                             | 2.9               | 1.4             | 6.578     | A                             |
| D - A4226/Port Road       | 851                   | 213                     | 717                       | 0.00                       | 1064              | 0.800 | 1015                | 625                             | 46.4              | 5.4             | 88.379    | F                             |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 407                   | 102                     | 747                       |                            | 982               | 0.414 | 410                 | 578                             | 1.5               | 0.7             | 6.522     | A                             |
| B - A4226/Port Road W     | 574                   | 144                     | 519                       |                            | 1352              | 0.425 | 576                 | 638                             | 1.3               | 0.8             | 4.780     | A                             |
| C - B4226/Pontypridd Road | 639                   | 160                     | 478                       |                            | 1401              | 0.456 | 641                 | 617                             | 1.4               | 0.9             | 4.872     | A                             |
| D - A4226/Port Road       | 713                   | 178                     | 598                       | 0.00                       | 1135              | 0.628 | 727                 | 522                             | 5.4               | 1.8             | 9.558     | A                             |

# Base - 2038 base, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 18.82              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D6 | 2038 base     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 672                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 860                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 780                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 841                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 200                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 483                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 383                 |
|      | D - A4226/Port Road       | 181                    | 404                   | 255                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.84    | 25.40         | 5.0             | D       | 617                     | 925                           |
| B - A4226/Port Road W     | 0.85    | 20.57         | 5.2             | C       | 789                     | 1184                          |
| C - B4226/Pontypridd Road | 0.77    | 13.87         | 3.2             | B       | 716                     | 1074                          |
| D - A4226/Port Road       | 0.81    | 16.35         | 4.1             | C       | 772                     | 1158                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 506                   | 126                     | 616                       |                            | 1065              | 0.475 | 502                 | 407                             | 0.0               | 0.9             | 6.584     | A                             |
| B - A4226/Port Road W     | 647                   | 162                     | 591                       |                            | 1304              | 0.497 | 643                 | 527                             | 0.0               | 1.0             | 5.480     | A                             |
| C - B4226/Pontypridd Road | 587                   | 147                     | 608                       |                            | 1312              | 0.448 | 584                 | 626                             | 0.0               | 0.8             | 4.940     | A                             |
| D - A4226/Port Road       | 633                   | 158                     | 394                       | 0.00                       | 1257              | 0.504 | 629                 | 798                             | 0.0               | 1.0             | 5.777     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 604                   | 151                     | 737                       |                            | 988               | 0.611 | 601                 | 487                             | 0.9               | 1.6             | 9.580     | A                             |
| B - A4226/Port Road W     | 773                   | 193                     | 707                       |                            | 1226              | 0.631 | 770                 | 632                             | 1.0               | 1.7             | 7.938     | A                             |
| C - B4226/Pontypridd Road | 701                   | 175                     | 728                       |                            | 1230              | 0.570 | 699                 | 750                             | 0.8               | 1.3             | 6.777     | A                             |
| D - A4226/Port Road       | 756                   | 189                     | 471                       | 0.00                       | 1210              | 0.625 | 754                 | 956                             | 1.0               | 1.6             | 7.940     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 740                   | 185                     | 898                       |                            | 887               | 0.835 | 728                 | 593                             | 1.6               | 4.6             | 22.050    | C                             |
| B - A4226/Port Road W     | 947                   | 237                     | 858                       |                            | 1126              | 0.841 | 935                 | 768                             | 1.7               | 4.8             | 17.983    | C                             |
| C - B4226/Pontypridd Road | 859                   | 215                     | 883                       |                            | 1124              | 0.764 | 852                 | 909                             | 1.3               | 3.1             | 12.923    | B                             |
| D - A4226/Port Road       | 926                   | 232                     | 574                       | 0.00                       | 1149              | 0.806 | 917                 | 1161                            | 1.6               | 3.9             | 15.147    | C                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 740                   | 185                     | 905                       |                            | 882               | 0.839 | 738                 | 598                             | 4.6               | 5.0             | 25.401    | D                             |
| B - A4226/Port Road W     | 947                   | 237                     | 868                       |                            | 1119              | 0.846 | 945                 | 775                             | 4.8               | 5.2             | 20.570    | C                             |
| C - B4226/Pontypridd Road | 859                   | 215                     | 894                       |                            | 1117              | 0.769 | 858                 | 920                             | 3.1               | 3.2             | 13.874    | B                             |
| D - A4226/Port Road       | 926                   | 232                     | 579                       | 0.00                       | 1147              | 0.808 | 925                 | 1173                            | 3.9               | 4.1             | 16.348    | C                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 604                   | 151                     | 749                       |                            | 981               | 0.616 | 617                 | 495                             | 5.0               | 1.7             | 10.595    | B                             |
| B - A4226/Port Road W     | 773                   | 193                     | 723                       |                            | 1215              | 0.636 | 786                 | 642                             | 5.2               | 1.8             | 8.739     | A                             |
| C - B4226/Pontypridd Road | 701                   | 175                     | 744                       |                            | 1219              | 0.575 | 709                 | 766                             | 3.2               | 1.4             | 7.174     | A                             |
| D - A4226/Port Road       | 756                   | 189                     | 479                       | 0.00                       | 1206              | 0.627 | 765                 | 974                             | 4.1               | 1.7             | 8.444     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 506                   | 126                     | 622                       |                            | 1061              | 0.477 | 509                 | 411                             | 1.7               | 1.0             | 6.790     | A                             |
| B - A4226/Port Road W     | 647                   | 162                     | 598                       |                            | 1299              | 0.498 | 651                 | 533                             | 1.8               | 1.0             | 5.642     | A                             |
| C - B4226/Pontypridd Road | 587                   | 147                     | 615                       |                            | 1307              | 0.449 | 589                 | 633                             | 1.4               | 0.8             | 5.047     | A                             |
| D - A4226/Port Road       | 633                   | 158                     | 398                       | 0.00                       | 1254              | 0.505 | 636                 | 807                             | 1.7               | 1.0             | 5.927     | A                             |



# Appendix O



| <b>Junctions 9</b>                                                                                                                                                      |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>ARCADY 9 - Roundabout Module</b>                                                                                                                                     |  |
| Version: 9.5.1.7462<br>© Copyright TRL Limited, 2019                                                                                                                    |  |
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| <b>The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution</b> |  |

**Filename:** WX 2028\_B+D Standard.j9

**Path:** K:\T23\Jobs\T23.135 Weycock Cross TA\Analysis\Modelling\2025\Waycock + Dev\Arcady

**Report generation date:** 25/03/2025 11:04:36

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»Base - 2028 B, AM  
 »Base - 2028 B, PM  
 »Base - 2028 B+C, AM  
 »Base - 2028 B+C, PM  
 »Base - 2028 B+D L, AM  
 »Base - 2028 B+D L, PM  
 »Base - 2028 B+D M, AM  
 »Base - 2028 B+D M, PM  
 »Base - 2028 B+D H, AM  
 »Base - 2028 B+D H, PM  
 »Base - 2028 B+D+C L, AM  
 »Base - 2028 B+D+C L, PM  
 »Base - 2028 B+D+C M, AM  
 »Base - 2028 B+D+C M, PM  
 »Base - 2028 B+D+C H, AM  
 »Base - 2028 B+D+C H, PM

## Summary of junction performance

|                           | AM                  |             |           |      |     | PM     |             |           |      |     |
|---------------------------|---------------------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
|                           | Set ID              | Queue (PCU) | Delay (s) | RFC  | LOS | Set ID | Queue (PCU) | Delay (s) | RFC  | LOS |
|                           | Base - 2028 B       |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D1                  | 2.1         | 13.81     | 0.67 | B   | D2     | 3.1         | 16.74     | 0.76 | C   |
| B - A4226/Port Road W     |                     | 1.8         | 8.28      | 0.64 | A   |        | 3.3         | 13.70     | 0.77 | B   |
| C - B4226/Pontypridd Road |                     | 2.2         | 9.06      | 0.68 | A   |        | 2.3         | 10.39     | 0.70 | B   |
| D - A4226/Port Road       |                     | 16.2        | 62.21     | 0.97 | F   |        | 2.9         | 12.24     | 0.75 | B   |
|                           | Base - 2028 B+C     |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D3                  | 3.1         | 18.32     | 0.76 | C   | D4     | 7.9         | 39.37     | 0.90 | E   |
| B - A4226/Port Road W     |                     | 3.3         | 13.26     | 0.77 | B   |        | 5.7         | 23.48     | 0.86 | C   |
| C - B4226/Pontypridd Road |                     | 4.8         | 18.97     | 0.83 | C   |        | 3.3         | 14.65     | 0.77 | B   |
| D - A4226/Port Road       |                     | 75.2        | 215.96    | 1.13 | F   |        | 6.0         | 22.65     | 0.87 | C   |
|                           | Base - 2028 B+D L   |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D5                  | 2.2         | 14.47     | 0.69 | B   | D6     | 3.3         | 17.71     | 0.77 | C   |
| B - A4226/Port Road W     |                     | 1.8         | 8.48      | 0.65 | A   |        | 3.6         | 14.78     | 0.79 | B   |
| C - B4226/Pontypridd Road |                     | 2.2         | 9.25      | 0.69 | A   |        | 2.5         | 11.10     | 0.72 | B   |
| D - A4226/Port Road       |                     | 23.9        | 84.80     | 1.01 | F   |        | 3.1         | 12.83     | 0.76 | B   |
|                           | Base - 2028 B+D M   |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D7                  | 2.2         | 14.83     | 0.69 | B   | D8     | 3.5         | 18.64     | 0.78 | C   |
| B - A4226/Port Road W     |                     | 1.9         | 8.64      | 0.65 | A   |        | 3.8         | 15.71     | 0.80 | C   |
| C - B4226/Pontypridd Road |                     | 2.3         | 9.44      | 0.69 | A   |        | 2.6         | 11.72     | 0.73 | B   |
| D - A4226/Port Road       |                     | 32.5        | 107.67    | 1.03 | F   |        | 3.3         | 13.46     | 0.77 | B   |
|                           | Base - 2028 B+D H   |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D9                  | 2.3         | 15.04     | 0.70 | C   | D10    | 3.6         | 19.30     | 0.79 | C   |
| B - A4226/Port Road W     |                     | 1.9         | 8.71      | 0.65 | A   |        | 4.0         | 16.41     | 0.81 | C   |
| C - B4226/Pontypridd Road |                     | 2.3         | 9.55      | 0.70 | A   |        | 2.8         | 12.22     | 0.74 | B   |
| D - A4226/Port Road       |                     | 39.8        | 126.43    | 1.05 | F   |        | 3.4         | 13.90     | 0.78 | B   |
|                           | Base - 2028 B+D+C L |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D11                 | 3.1         | 18.68     | 0.76 | C   | D12    | 8.9         | 43.92     | 0.92 | E   |
| B - A4226/Port Road W     |                     | 3.4         | 13.61     | 0.77 | B   |        | 6.5         | 26.38     | 0.88 | D   |
| C - B4226/Pontypridd Road |                     | 5.1         | 19.88     | 0.84 | C   |        | 3.6         | 16.04     | 0.79 | C   |
| D - A4226/Port Road       |                     | 91.8        | 258.45    | 1.17 | F   |        | 6.7         | 24.78     | 0.88 | C   |
|                           | Base - 2028 B+D+C M |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D13                 | 3.2         | 18.96     | 0.76 | C   | D14    | 9.8         | 47.95     | 0.93 | E   |
| B - A4226/Port Road W     |                     | 3.5         | 13.92     | 0.78 | B   |        | 7.2         | 28.97     | 0.89 | D   |
| C - B4226/Pontypridd Road |                     | 5.3         | 20.59     | 0.85 | C   |        | 3.9         | 17.37     | 0.81 | C   |
| D - A4226/Port Road       |                     | 105.2       | 309.07    | 1.19 | F   |        | 7.2         | 26.53     | 0.89 | D   |
|                           | Base - 2028 B+D+C H |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D15                 | 3.2         | 19.13     | 0.77 | C   | D16    | 10.5        | 51.07     | 0.94 | F   |
| B - A4226/Port Road W     |                     | 3.5         | 14.09     | 0.78 | B   |        | 7.8         | 31.19     | 0.90 | D   |
| C - B4226/Pontypridd Road |                     | 5.4         | 21.08     | 0.85 | C   |        | 4.2         | 18.35     | 0.82 | C   |
| D - A4226/Port Road       |                     | 115.4       | 348.30    | 1.21 | F   |        | 7.7         | 28.28     | 0.90 | D   |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

### File Description

|                    |                            |
|--------------------|----------------------------|
| <b>Title</b>       | Weycock Cross              |
| <b>Location</b>    | Barry                      |
| <b>Site number</b> |                            |
| <b>Date</b>        | 16/11/2023                 |
| <b>Version</b>     |                            |
| <b>Status</b>      | (new file)                 |
| <b>Identifier</b>  |                            |
| <b>Client</b>      | Persimmon Homes East Wales |
| <b>Jobnumber</b>   | T23.135                    |
| <b>Enumerator</b>  | ATRANS\katiewilliams       |
| <b>Description</b> |                            |

## Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m              | kph         | PCU                 | PCU                   | perHour    | s                   | -Min              | perMin              |

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Demand Set Summary

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1  | 2028 B        | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D2  | 2028 B        | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D3  | 2028 B+C      | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D4  | 2028 B+C      | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D5  | 2028 B+D L    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D6  | 2028 B+D L    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D7  | 2028 B+D M    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D8  | 2028 B+D M    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D9  | 2028 B+D H    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D10 | 2028 B+D H    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D11 | 2028 B+D+C L  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D12 | 2028 B+D+C L  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D13 | 2028 B+D+C M  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D14 | 2028 B+D+C M  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D15 | 2028 B+D+C H  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D16 | 2028 B+D+C H  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

### Analysis Set Details

| ID | Name | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|------|-------------------|---------------------------------|-------------------------------------|
| A1 | Base | ✓                 | 100.000                         | 100.000                             |

# Base - 2028 B, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 25.94              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name                  | Description |
|-----|-----------------------|-------------|
| A   | A4226/Waycock Road    |             |
| B   | A4226/Port Road W     |             |
| C   | B4226/Pontypridd Road |             |
| D   | A4226/Port Road       |             |

### Roundabout Geometry

| Arm                       | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|---------------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| A - A4226/Waycock Road    | 3.45                             | 7.83                | 61.2                            | 155.0                | 33.4                              | 22.3                               |           |
| B - A4226/Port Road W     | 3.98                             | 6.94                | 20.6                            | 22.9                 | 33.2                              | 22.2                               |           |
| C - B4226/Pontypridd Road | 4.31                             | 6.26                | 28.8                            | 183.9                | 33.3                              | 23.1                               |           |
| D - A4226/Port Road       | 3.88                             | 6.68                | 72.0                            | 9.4                  | 33.2                              | 33.7                               |           |

### Pelican/Puffin Crossings

| Arm                 | Space between crossing and junc. entry (Signalised) (PCU) | Amber time preceding red (s) | Amber time regarded as green (s) | Time from traffic red start to green man start (s) | Time period green man shown (s) | Clearance Period (s) | Traffic minimum green (s) |
|---------------------|-----------------------------------------------------------|------------------------------|----------------------------------|----------------------------------------------------|---------------------------------|----------------------|---------------------------|
| D - A4226/Port Road | 12.00                                                     | 3.00                         | 2.90                             | 1.00                                               | 6.00                            | 6.00                 | 7.00                      |

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

| Arm                       | Type       | Reason | Percentage intercept adjustment (%) |
|---------------------------|------------|--------|-------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                               |
| B - A4226/Port Road W     | Percentage |        | 95.00                               |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                               |
| D - A4226/Port Road       | Percentage |        | 91.00                               |



### Roundabout Slope and Intercept used in model

| Arm                       | Final slope | Final intercept (PCU/hr) |
|---------------------------|-------------|--------------------------|
| A - A4226/Waycock Road    | 0.792       | 1819                     |
| B - A4226/Port Road W     | 0.701       | 1787                     |
| C - B4226/Pontypridd Road | 0.718       | 1818                     |
| D - A4226/Port Road       | 0.654       | 1638                     |

The slope and intercept shown above include any corrections and adjustments.

### Arm Capacity Adjustments

| Arm                       | Type       | Reason | Percentage capacity adjustment (%) |
|---------------------------|------------|--------|------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                              |
| B - A4226/Port Road W     | Percentage |        | 95.00                              |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                              |
| D - A4226/Port Road       | Percentage |        | 91.00                              |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2028 B        | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 505                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 715                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 795                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 887                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                       |                           |                     |
|------|---------------------------|-----------------------|---------------------------|---------------------|
|      | A - A4226/Waycock Road    | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                     | 125                       | 220                 |
|      | B - A4226/Port Road W     | 137                   | 16                        | 283                 |
|      | C - B4226/Pontypridd Road | 312                   | 273                       | 3                   |
|      | D - A4226/Port Road       | 263                   | 370                       | 254                 |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.67    | 13.81         | 2.1             | B       | 463                     | 694                           |
| B - A4226/Port Road W     | 0.64    | 8.28          | 1.8             | A       | 656                     | 984                           |
| C - B4226/Pontypridd Road | 0.68    | 9.06          | 2.2             | A       | 730                     | 1094                          |
| D - A4226/Port Road       | 0.97    | 62.21         | 16.2            | F       | 814                     | 1221                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 380                   | 95                      | 685                       |                            | 1022              | 0.372 | 377                 | 533                             | 0.0               | 0.6             | 5.744     | A                             |
| B - A4226/Port Road W     | 538                   | 135                     | 476                       |                            | 1380              | 0.390 | 536                 | 586                             | 0.0               | 0.7             | 4.366     | A                             |
| C - B4226/Pontypridd Road | 599                   | 150                     | 443                       |                            | 1424              | 0.420 | 596                 | 569                             | 0.0               | 0.7             | 4.438     | A                             |
| D - A4226/Port Road       | 668                   | 167                     | 555                       | 0.00                       | 1160              | 0.575 | 662                 | 484                             | 0.0               | 1.4             | 7.499     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 454                   | 113                     | 819                       |                            | 936               | 0.484 | 452                 | 638                             | 0.6               | 1.0             | 7.649     | A                             |
| B - A4226/Port Road W     | 643                   | 161                     | 570                       |                            | 1317              | 0.488 | 642                 | 701                             | 0.7               | 1.0             | 5.460     | A                             |
| C - B4226/Pontypridd Road | 715                   | 179                     | 531                       |                            | 1365              | 0.524 | 713                 | 681                             | 0.7               | 1.1             | 5.653     | A                             |
| D - A4226/Port Road       | 797                   | 199                     | 665                       | 0.00                       | 1095              | 0.728 | 792                 | 579                             | 1.4               | 2.7             | 12.257    | B                             |

#### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 556                   | 139                     | 980                       |                            | 835               | 0.666 | 551                 | 770                             | 1.0               | 2.0             | 12.930    | B                             |
| B - A4226/Port Road W     | 787                   | 197                     | 687                       |                            | 1239              | 0.635 | 784                 | 844                             | 1.0               | 1.7             | 8.065     | A                             |
| C - B4226/Pontypridd Road | 875                   | 219                     | 649                       |                            | 1284              | 0.682 | 871                 | 823                             | 1.1               | 2.1             | 8.844     | A                             |
| D - A4226/Port Road       | 977                   | 244                     | 812                       | 0.00                       | 1008              | 0.969 | 938                 | 708                             | 2.7               | 12.4            | 40.826    | E                             |

#### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 556                   | 139                     | 998                       |                            | 823               | 0.675 | 555                 | 779                             | 2.0               | 2.1             | 13.814    | B                             |
| B - A4226/Port Road W     | 787                   | 197                     | 697                       |                            | 1233              | 0.638 | 787                 | 856                             | 1.7               | 1.8             | 8.284     | A                             |
| C - B4226/Pontypridd Road | 875                   | 219                     | 652                       |                            | 1282              | 0.683 | 875                 | 832                             | 2.1               | 2.2             | 9.055     | A                             |
| D - A4226/Port Road       | 977                   | 244                     | 816                       | 0.00                       | 1005              | 0.971 | 961                 | 711                             | 12.4              | 16.2            | 62.211    | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 454                   | 113                     | 862                       |                            | 909               | 0.499 | 458                 | 658                             | 2.1               | 1.0             | 8.300     | A                             |
| B - A4226/Port Road W     | 643                   | 161                     | 591                       |                            | 1304              | 0.493 | 646                 | 729                             | 1.8               | 1.0             | 5.647     | A                             |
| C - B4226/Pontypridd Road | 715                   | 179                     | 535                       |                            | 1362              | 0.525 | 719                 | 701                             | 2.2               | 1.1             | 5.775     | A                             |
| D - A4226/Port Road       | 797                   | 199                     | 670                       | 0.00                       | 1092              | 0.730 | 850                 | 584                             | 16.2              | 3.0             | 18.676    | C                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 380                   | 95                      | 695                       |                            | 1015              | 0.374 | 382                 | 539                             | 1.0               | 0.6             | 5.873     | A                             |
| B - A4226/Port Road W     | 538                   | 135                     | 483                       |                            | 1376              | 0.391 | 540                 | 593                             | 1.0               | 0.7             | 4.431     | A                             |
| C - B4226/Pontypridd Road | 599                   | 150                     | 447                       |                            | 1422              | 0.421 | 600                 | 575                             | 1.1               | 0.8             | 4.498     | A                             |
| D - A4226/Port Road       | 668                   | 167                     | 559                       | 0.00                       | 1158              | 0.577 | 674                 | 488                             | 3.0               | 1.5             | 7.900     | A                             |

# Base - 2028 B, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 13.14              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2028 B        | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 631                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 807                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 733                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 791                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 188                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 454                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 360                 |
|      | D - A4226/Port Road       | 170                    | 380                   | 240                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.76    | 16.74         | 3.1             | C       | 579                     | 868                           |
| B - A4226/Port Road W     | 0.77    | 13.70         | 3.3             | B       | 741                     | 1111                          |
| C - B4226/Pontypridd Road | 0.70    | 10.39         | 2.3             | B       | 673                     | 1009                          |
| D - A4226/Port Road       | 0.75    | 12.24         | 2.9             | B       | 726                     | 1089                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 475                   | 119                     | 580                       |                            | 1088              | 0.436 | 472                 | 382                             | 0.0               | 0.8             | 6.021     | A                             |
| B - A4226/Port Road W     | 608                   | 152                     | 556                       |                            | 1327              | 0.458 | 604                 | 495                             | 0.0               | 0.8             | 5.014     | A                             |
| C - B4226/Pontypridd Road | 552                   | 138                     | 571                       |                            | 1337              | 0.413 | 549                 | 589                             | 0.0               | 0.7             | 4.567     | A                             |
| D - A4226/Port Road       | 596                   | 149                     | 369                       | 0.00                       | 1271              | 0.469 | 592                 | 751                             | 0.0               | 0.9             | 5.343     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 567                   | 142                     | 694                       |                            | 1016              | 0.558 | 565                 | 457                             | 0.8               | 1.3             | 8.243     | A                             |
| B - A4226/Port Road W     | 726                   | 181                     | 666                       |                            | 1254              | 0.579 | 723                 | 593                             | 0.8               | 1.4             | 6.838     | A                             |
| C - B4226/Pontypridd Road | 659                   | 165                     | 684                       |                            | 1260              | 0.523 | 657                 | 705                             | 0.7               | 1.1             | 5.975     | A                             |
| D - A4226/Port Road       | 711                   | 178                     | 442                       | 0.00                       | 1228              | 0.579 | 709                 | 899                             | 0.9               | 1.4             | 7.007     | A                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 694                   | 174                     | 847                       |                            | 919               | 0.756 | 688                 | 558                             | 1.3               | 3.0             | 15.686    | C                             |
| B - A4226/Port Road W     | 889                   | 222                     | 811                       |                            | 1157              | 0.768 | 881                 | 724                             | 1.4               | 3.2             | 12.884    | B                             |
| C - B4226/Pontypridd Road | 807                   | 202                     | 833                       |                            | 1158              | 0.697 | 802                 | 859                             | 1.1               | 2.2             | 10.018    | B                             |
| D - A4226/Port Road       | 871                   | 218                     | 540                       | 0.00                       | 1170              | 0.745 | 865                 | 1096                            | 1.4               | 2.8             | 11.753    | B                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 694                   | 174                     | 852                       |                            | 915               | 0.759 | 694                 | 561                             | 3.0               | 3.1             | 16.739    | C                             |
| B - A4226/Port Road W     | 889                   | 222                     | 818                       |                            | 1153              | 0.771 | 888                 | 728                             | 3.2               | 3.3             | 13.700    | B                             |
| C - B4226/Pontypridd Road | 807                   | 202                     | 840                       |                            | 1154              | 0.699 | 807                 | 866                             | 2.2               | 2.3             | 10.387    | B                             |
| D - A4226/Port Road       | 871                   | 218                     | 543                       | 0.00                       | 1168              | 0.746 | 871                 | 1104                            | 2.8               | 2.9             | 12.236    | B                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 567                   | 142                     | 702                       |                            | 1011              | 0.561 | 574                 | 462                             | 3.1               | 1.4             | 8.675     | A                             |
| B - A4226/Port Road W     | 726                   | 181                     | 675                       |                            | 1247              | 0.582 | 733                 | 600                             | 3.3               | 1.4             | 7.178     | A                             |
| C - B4226/Pontypridd Road | 659                   | 165                     | 693                       |                            | 1254              | 0.526 | 664                 | 715                             | 2.3               | 1.1             | 6.165     | A                             |
| D - A4226/Port Road       | 711                   | 178                     | 447                       | 0.00                       | 1225              | 0.581 | 717                 | 910                             | 2.9               | 1.4             | 7.259     | A                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 475                   | 119                     | 585                       |                            | 1085              | 0.438 | 477                 | 385                             | 1.4               | 0.8             | 6.159     | A                             |
| B - A4226/Port Road W     | 608                   | 152                     | 562                       |                            | 1323              | 0.459 | 610                 | 500                             | 1.4               | 0.9             | 5.122     | A                             |
| C - B4226/Pontypridd Road | 552                   | 138                     | 577                       |                            | 1333              | 0.414 | 553                 | 595                             | 1.1               | 0.7             | 4.640     | A                             |
| D - A4226/Port Road       | 596                   | 149                     | 372                       | 0.00                       | 1269              | 0.469 | 598                 | 758                             | 1.4               | 0.9             | 5.447     | A                             |



# Base - 2028 B+C, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 79.16              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D3 | 2028 B+C      | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 568                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 829                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 870                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1035                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 223                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 393                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 282                 |
|      | D - A4226/Port Road       | 344                    | 413                   | 278                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.76    | 18.32         | 3.1             | C       | 521                     | 782                           |
| B - A4226/Port Road W     | 0.77    | 13.26         | 3.3             | B       | 761                     | 1141                          |
| C - B4226/Pontypridd Road | 0.83    | 18.97         | 4.8             | C       | 799                     | 1198                          |
| D - A4226/Port Road       | 1.13    | 215.96        | 75.2            | F       | 950                     | 1425                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 428                   | 107                     | 733                       |                            | 991               | 0.432 | 425                 | 592                             | 0.0               | 0.8             | 6.562     | A                             |
| B - A4226/Port Road W     | 624                   | 156                     | 541                       |                            | 1337              | 0.467 | 621                 | 617                             | 0.0               | 0.9             | 5.150     | A                             |
| C - B4226/Pontypridd Road | 655                   | 164                     | 575                       |                            | 1334              | 0.491 | 651                 | 586                             | 0.0               | 1.0             | 5.392     | A                             |
| D - A4226/Port Road       | 779                   | 195                     | 555                       | 0.00                       | 1161              | 0.671 | 771                 | 672                             | 0.0               | 2.1             | 9.543     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 511                   | 128                     | 875                       |                            | 901               | 0.567 | 508                 | 707                             | 0.8               | 1.3             | 9.458     | A                             |
| B - A4226/Port Road W     | 745                   | 186                     | 646                       |                            | 1267              | 0.588 | 743                 | 737                             | 0.9               | 1.4             | 7.050     | A                             |
| C - B4226/Pontypridd Road | 782                   | 196                     | 689                       |                            | 1257              | 0.623 | 780                 | 700                             | 1.0               | 1.7             | 7.717     | A                             |
| D - A4226/Port Road       | 930                   | 233                     | 664                       | 0.00                       | 1096              | 0.849 | 918                 | 804                             | 2.1               | 5.2             | 20.052    | C                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 625                   | 156                     | 983                       |                            | 833               | 0.751 | 619                 | 820                             | 1.3               | 2.9             | 16.984    | C                             |
| B - A4226/Port Road W     | 913                   | 228                     | 754                       |                            | 1195              | 0.764 | 906                 | 848                             | 1.4               | 3.1             | 12.534    | B                             |
| C - B4226/Pontypridd Road | 958                   | 240                     | 840                       |                            | 1154              | 0.830 | 947                 | 820                             | 1.7               | 4.5             | 17.004    | C                             |
| D - A4226/Port Road       | 1140                  | 285                     | 807                       | 0.00                       | 1011              | 1.128 | 995                 | 979                             | 5.2               | 41.2            | 97.079    | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 625                   | 156                     | 991                       |                            | 827               | 0.756 | 625                 | 827                             | 2.9               | 3.1             | 18.317    | C                             |
| B - A4226/Port Road W     | 913                   | 228                     | 760                       |                            | 1191              | 0.767 | 912                 | 856                             | 3.1               | 3.3             | 13.263    | B                             |
| C - B4226/Pontypridd Road | 958                   | 240                     | 846                       |                            | 1150              | 0.834 | 957                 | 827                             | 4.5               | 4.8             | 18.968    | C                             |
| D - A4226/Port Road       | 1140                  | 285                     | 815                       | 0.00                       | 1006              | 1.133 | 1003                | 988                             | 41.2              | 75.2            | 215.956   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 511                   | 128                     | 984                       |                            | 832               | 0.614 | 516                 | 766                             | 3.1               | 1.7             | 12.016    | B                             |
| B - A4226/Port Road W     | 745                   | 186                     | 694                       |                            | 1235              | 0.603 | 752                 | 806                             | 3.3               | 1.6             | 7.781     | A                             |
| C - B4226/Pontypridd Road | 782                   | 196                     | 698                       |                            | 1251              | 0.626 | 795                 | 748                             | 4.8               | 1.8             | 8.331     | A                             |
| D - A4226/Port Road       | 930                   | 233                     | 676                       | 0.00                       | 1089              | 0.855 | 1074                | 817                             | 75.2              | 39.4            | 194.221   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 428                   | 107                     | 841                       |                            | 923               | 0.463 | 431                 | 648                             | 1.7               | 0.9             | 7.640     | A                             |
| B - A4226/Port Road W     | 624                   | 156                     | 588                       |                            | 1306              | 0.478 | 627                 | 684                             | 1.6               | 1.0             | 5.483     | A                             |
| C - B4226/Pontypridd Road | 655                   | 164                     | 582                       |                            | 1330              | 0.493 | 658                 | 632                             | 1.8               | 1.0             | 5.539     | A                             |
| D - A4226/Port Road       | 779                   | 195                     | 561                       | 0.00                       | 1157              | 0.673 | 928                 | 679                             | 39.4              | 2.3             | 29.276    | D                             |

# Base - 2028 B+C, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 24.65              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D4 | 2028 B+C      | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 704                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 844                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 753                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 920                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 261                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 491                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 380                 |
|      | D - A4226/Port Road       | 215                    | 431                   | 273                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.90    | 39.37         | 7.9             | E       | 646                     | 969                           |
| B - A4226/Port Road W     | 0.86    | 23.48         | 5.7             | C       | 774                     | 1162                          |
| C - B4226/Pontypridd Road | 0.77    | 14.65         | 3.3             | B       | 691                     | 1036                          |
| D - A4226/Port Road       | 0.87    | 22.65         | 6.0             | C       | 844                     | 1266                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 530                   | 133                     | 642                       |                            | 1049              | 0.505 | 526                 | 415                             | 0.0               | 1.0             | 7.119     | A                             |
| B - A4226/Port Road W     | 635                   | 159                     | 634                       |                            | 1275              | 0.499 | 631                 | 533                             | 0.0               | 1.0             | 5.625     | A                             |
| C - B4226/Pontypridd Road | 567                   | 142                     | 653                       |                            | 1281              | 0.442 | 564                 | 613                             | 0.0               | 0.8             | 5.009     | A                             |
| D - A4226/Port Road       | 693                   | 173                     | 369                       | 0.00                       | 1271              | 0.545 | 688                 | 848                             | 0.0               | 1.2             | 6.206     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 633                   | 158                     | 768                       |                            | 969               | 0.653 | 629                 | 497                             | 1.0               | 1.9             | 10.957    | B                             |
| B - A4226/Port Road W     | 759                   | 190                     | 760                       |                            | 1191              | 0.637 | 756                 | 638                             | 1.0               | 1.7             | 8.302     | A                             |
| C - B4226/Pontypridd Road | 677                   | 169                     | 781                       |                            | 1194              | 0.567 | 675                 | 734                             | 0.8               | 1.3             | 6.940     | A                             |
| D - A4226/Port Road       | 827                   | 207                     | 442                       | 0.00                       | 1228              | 0.674 | 824                 | 1015                            | 1.2               | 2.0             | 8.956     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 775                   | 194                     | 932                       |                            | 865               | 0.896 | 756                 | 604                             | 1.9               | 6.8             | 30.240    | D                             |
| B - A4226/Port Road W     | 929                   | 232                     | 915                       |                            | 1088              | 0.854 | 916                 | 773                             | 1.7               | 5.1             | 19.741    | C                             |
| C - B4226/Pontypridd Road | 829                   | 207                     | 944                       |                            | 1083              | 0.766 | 822                 | 886                             | 1.3               | 3.1             | 13.494    | B                             |
| D - A4226/Port Road       | 1013                  | 253                     | 537                       | 0.00                       | 1171              | 0.865 | 999                 | 1229                            | 2.0               | 5.6             | 19.723    | C                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 775                   | 194                     | 943                       |                            | 858               | 0.904 | 770                 | 610                             | 6.8               | 7.9             | 39.370    | E                             |
| B - A4226/Port Road W     | 929                   | 232                     | 931                       |                            | 1077              | 0.863 | 927                 | 783                             | 5.1               | 5.7             | 23.475    | C                             |
| C - B4226/Pontypridd Road | 829                   | 207                     | 958                       |                            | 1073              | 0.772 | 828                 | 900                             | 3.1               | 3.3             | 14.654    | B                             |
| D - A4226/Port Road       | 1013                  | 253                     | 542                       | 0.00                       | 1168              | 0.867 | 1011                | 1244                            | 5.6               | 6.0             | 22.646    | C                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 633                   | 158                     | 785                       |                            | 958               | 0.661 | 656                 | 507                             | 7.9               | 2.1             | 13.311    | B                             |
| B - A4226/Port Road W     | 759                   | 190                     | 787                       |                            | 1173              | 0.647 | 774                 | 654                             | 5.7               | 1.9             | 9.456     | A                             |
| C - B4226/Pontypridd Road | 677                   | 169                     | 805                       |                            | 1178              | 0.575 | 684                 | 756                             | 3.3               | 1.4             | 7.426     | A                             |
| D - A4226/Port Road       | 827                   | 207                     | 449                       | 0.00                       | 1224              | 0.676 | 843                 | 1040                            | 6.0               | 2.2             | 9.944     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 530                   | 133                     | 649                       |                            | 1044              | 0.508 | 534                 | 420                             | 2.1               | 1.1             | 7.419     | A                             |
| B - A4226/Port Road W     | 635                   | 159                     | 644                       |                            | 1268              | 0.501 | 639                 | 540                             | 1.9               | 1.0             | 5.813     | A                             |
| C - B4226/Pontypridd Road | 567                   | 142                     | 661                       |                            | 1276              | 0.444 | 569                 | 621                             | 1.4               | 0.8             | 5.129     | A                             |
| D - A4226/Port Road       | 693                   | 173                     | 373                       | 0.00                       | 1269              | 0.546 | 696                 | 858                             | 2.2               | 1.2             | 6.415     | A                             |



# Base - 2028 B+D L, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 33.53              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D5 | 2028 B+D L    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 508                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 719                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 798                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 918                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 163                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 283                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 210                 |
|      | D - A4226/Port Road       | 272                    | 383                   | 263                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.69    | 14.47         | 2.2             | B       | 466                     | 699                           |
| B - A4226/Port Road W     | 0.65    | 8.48          | 1.8             | A       | 660                     | 990                           |
| C - B4226/Pontypridd Road | 0.69    | 9.25          | 2.2             | A       | 732                     | 1099                          |
| D - A4226/Port Road       | 1.01    | 84.80         | 23.9            | F       | 842                     | 1264                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 382                   | 96                      | 701                       |                            | 1011              | 0.378 | 380                 | 539                             | 0.0               | 0.6             | 5.858     | A                             |
| B - A4226/Port Road W     | 541                   | 135                     | 485                       |                            | 1374              | 0.394 | 539                 | 595                             | 0.0               | 0.7             | 4.412     | A                             |
| C - B4226/Pontypridd Road | 601                   | 150                     | 449                       |                            | 1421              | 0.423 | 598                 | 575                             | 0.0               | 0.7             | 4.468     | A                             |
| D - A4226/Port Road       | 691                   | 173                     | 555                       | 0.00                       | 1160              | 0.596 | 685                 | 491                             | 0.0               | 1.5             | 7.846     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 456                   | 114                     | 838                       |                            | 924               | 0.494 | 455                 | 646                             | 0.6               | 1.0             | 7.889     | A                             |
| B - A4226/Port Road W     | 646                   | 162                     | 581                       |                            | 1310              | 0.493 | 645                 | 713                             | 0.7               | 1.0             | 5.546     | A                             |
| C - B4226/Pontypridd Road | 717                   | 179                     | 537                       |                            | 1360              | 0.527 | 716                 | 688                             | 0.7               | 1.1             | 5.712     | A                             |
| D - A4226/Port Road       | 825                   | 206                     | 665                       | 0.00                       | 1095              | 0.753 | 819                 | 588                             | 1.5               | 3.0             | 13.388    | B                             |

### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 559                   | 140                     | 993                       |                            | 826               | 0.677 | 555                 | 776                             | 1.0               | 2.1             | 13.471    | B                             |
| B - A4226/Port Road W     | 792                   | 198                     | 696                       |                            | 1234              | 0.642 | 788                 | 852                             | 1.0               | 1.8             | 8.246     | A                             |
| C - B4226/Pontypridd Road | 879                   | 220                     | 656                       |                            | 1279              | 0.687 | 875                 | 828                             | 1.1               | 2.2             | 9.026     | A                             |
| D - A4226/Port Road       | 1011                  | 253                     | 812                       | 0.00                       | 1008              | 1.003 | 957                 | 719                             | 3.0               | 16.5            | 49.832    | E                             |

### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 559                   | 140                     | 1012                      |                            | 814               | 0.686 | 558                 | 785                             | 2.1               | 2.2             | 14.472    | B                             |
| B - A4226/Port Road W     | 792                   | 198                     | 706                       |                            | 1227              | 0.645 | 791                 | 865                             | 1.8               | 1.8             | 8.482     | A                             |
| C - B4226/Pontypridd Road | 879                   | 220                     | 659                       |                            | 1277              | 0.688 | 879                 | 838                             | 2.2               | 2.2             | 9.251     | A                             |
| D - A4226/Port Road       | 1011                  | 253                     | 816                       | 0.00                       | 1005              | 1.005 | 981                 | 722                             | 16.5              | 23.9            | 84.803    | F                             |

### 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 456                   | 114                     | 902                       |                            | 884               | 0.516 | 461                 | 675                             | 2.2               | 1.1             | 8.865     | A                             |
| B - A4226/Port Road W     | 646                   | 162                     | 610                       |                            | 1291              | 0.501 | 650                 | 753                             | 1.8               | 1.0             | 5.796     | A                             |
| C - B4226/Pontypridd Road | 717                   | 179                     | 542                       |                            | 1357              | 0.529 | 722                 | 718                             | 2.2               | 1.2             | 5.846     | A                             |
| D - A4226/Port Road       | 825                   | 206                     | 670                       | 0.00                       | 1092              | 0.756 | 907                 | 593                             | 23.9              | 3.5             | 27.978    | D                             |

### 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 382                   | 96                      | 712                       |                            | 1004              | 0.381 | 384                 | 546                             | 1.1               | 0.6             | 6.007     | A                             |
| B - A4226/Port Road W     | 541                   | 135                     | 492                       |                            | 1369              | 0.395 | 543                 | 604                             | 1.0               | 0.7             | 4.483     | A                             |
| C - B4226/Pontypridd Road | 601                   | 150                     | 452                       |                            | 1418              | 0.424 | 602                 | 583                             | 1.2               | 0.8             | 4.532     | A                             |
| D - A4226/Port Road       | 691                   | 173                     | 559                       | 0.00                       | 1158              | 0.597 | 699                 | 495                             | 3.5               | 1.6             | 8.356     | A                             |

# Base - 2028 B+D L, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 13.97              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D6 | 2028 B+D L    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 636                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 819                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 742                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 804                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 193                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 466                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 369                 |
|      | D - A4226/Port Road       | 173                    | 386                   | 244                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.77    | 17.71         | 3.3             | C       | 583                     | 875                           |
| B - A4226/Port Road W     | 0.79    | 14.78         | 3.6             | B       | 752                     | 1127                          |
| C - B4226/Pontypridd Road | 0.72    | 11.10         | 2.5             | B       | 681                     | 1021                          |
| D - A4226/Port Road       | 0.76    | 12.83         | 3.1             | B       | 738                     | 1107                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 479                   | 120                     | 587                       |                            | 1083              | 0.442 | 475                 | 384                             | 0.0               | 0.8             | 6.106     | A                             |
| B - A4226/Port Road W     | 617                   | 154                     | 562                       |                            | 1323              | 0.466 | 613                 | 500                             | 0.0               | 0.9             | 5.108     | A                             |
| C - B4226/Pontypridd Road | 559                   | 140                     | 584                       |                            | 1329              | 0.420 | 556                 | 592                             | 0.0               | 0.7             | 4.656     | A                             |
| D - A4226/Port Road       | 605                   | 151                     | 369                       | 0.00                       | 1271              | 0.476 | 602                 | 770                             | 0.0               | 0.9             | 5.420     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 571                   | 143                     | 703                       |                            | 1010              | 0.566 | 569                 | 460                             | 0.8               | 1.3             | 8.445     | A                             |
| B - A4226/Port Road W     | 736                   | 184                     | 674                       |                            | 1248              | 0.590 | 734                 | 599                             | 0.9               | 1.4             | 7.047     | A                             |
| C - B4226/Pontypridd Road | 667                   | 167                     | 699                       |                            | 1250              | 0.534 | 665                 | 709                             | 0.7               | 1.1             | 6.161     | A                             |
| D - A4226/Port Road       | 723                   | 181                     | 442                       | 0.00                       | 1228              | 0.589 | 721                 | 922                             | 0.9               | 1.4             | 7.166     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 700                   | 175                     | 858                       |                            | 912               | 0.767 | 692                 | 561                             | 1.3               | 3.2             | 16.465    | C                             |
| B - A4226/Port Road W     | 902                   | 225                     | 820                       |                            | 1151              | 0.784 | 894                 | 730                             | 1.4               | 3.4             | 13.754    | B                             |
| C - B4226/Pontypridd Road | 817                   | 204                     | 851                       |                            | 1146              | 0.713 | 812                 | 863                             | 1.1               | 2.4             | 10.644    | B                             |
| D - A4226/Port Road       | 885                   | 221                     | 539                       | 0.00                       | 1170              | 0.757 | 879                 | 1124                            | 1.4               | 3.0             | 12.277    | B                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 700                   | 175                     | 863                       |                            | 908               | 0.770 | 699                 | 564                             | 3.2               | 3.3             | 17.715    | C                             |
| B - A4226/Port Road W     | 902                   | 225                     | 827                       |                            | 1146              | 0.787 | 901                 | 735                             | 3.4               | 3.6             | 14.776    | B                             |
| C - B4226/Pontypridd Road | 817                   | 204                     | 858                       |                            | 1141              | 0.716 | 817                 | 870                             | 2.4               | 2.5             | 11.104    | B                             |
| D - A4226/Port Road       | 885                   | 221                     | 543                       | 0.00                       | 1168              | 0.758 | 885                 | 1132                            | 3.0               | 3.1             | 12.833    | B                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 571                   | 143                     | 711                       |                            | 1005              | 0.569 | 579                 | 465                             | 3.3               | 1.4             | 8.921     | A                             |
| B - A4226/Port Road W     | 736                   | 184                     | 684                       |                            | 1241              | 0.593 | 745                 | 606                             | 3.6               | 1.5             | 7.447     | A                             |
| C - B4226/Pontypridd Road | 667                   | 167                     | 710                       |                            | 1243              | 0.537 | 672                 | 719                             | 2.5               | 1.2             | 6.387     | A                             |
| D - A4226/Port Road       | 723                   | 181                     | 447                       | 0.00                       | 1225              | 0.590 | 729                 | 935                             | 3.1               | 1.5             | 7.453     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 479                   | 120                     | 593                       |                            | 1080              | 0.443 | 481                 | 387                             | 1.4               | 0.8             | 6.253     | A                             |
| B - A4226/Port Road W     | 617                   | 154                     | 569                       |                            | 1318              | 0.468 | 619                 | 505                             | 1.5               | 0.9             | 5.222     | A                             |
| C - B4226/Pontypridd Road | 559                   | 140                     | 590                       |                            | 1324              | 0.422 | 560                 | 598                             | 1.2               | 0.7             | 4.736     | A                             |
| D - A4226/Port Road       | 605                   | 151                     | 372                       | 0.00                       | 1269              | 0.477 | 608                 | 778                             | 1.5               | 0.9             | 5.532     | A                             |



# Base - 2028 B+D M, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 41.29              | E            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D7 | 2028 B+D M    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 510                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 723                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 801                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 943                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 165                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 287                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 213                 |
|      | D - A4226/Port Road       | 280                    | 393                   | 270                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.69    | 14.83         | 2.2             | B       | 468                     | 701                           |
| B - A4226/Port Road W     | 0.65    | 8.64          | 1.9             | A       | 663                     | 995                           |
| C - B4226/Pontypridd Road | 0.69    | 9.44          | 2.3             | A       | 735                     | 1103                          |
| D - A4226/Port Road       | 1.03    | 107.67        | 32.5            | F       | 865                     | 1298                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 384                   | 96                      | 713                       |                            | 1003              | 0.382 | 381                 | 545                             | 0.0               | 0.6             | 5.946     | A                             |
| B - A4226/Port Road W     | 544                   | 136                     | 492                       |                            | 1370              | 0.397 | 542                 | 603                             | 0.0               | 0.7             | 4.452     | A                             |
| C - B4226/Pontypridd Road | 603                   | 151                     | 453                       |                            | 1418              | 0.425 | 600                 | 580                             | 0.0               | 0.8             | 4.498     | A                             |
| D - A4226/Port Road       | 710                   | 177                     | 555                       | 0.00                       | 1161              | 0.612 | 703                 | 498                             | 0.0               | 1.6             | 8.154     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 458                   | 115                     | 853                       |                            | 915               | 0.501 | 457                 | 652                             | 0.6               | 1.0             | 8.079     | A                             |
| B - A4226/Port Road W     | 650                   | 162                     | 588                       |                            | 1305              | 0.498 | 649                 | 721                             | 0.7               | 1.0             | 5.621     | A                             |
| C - B4226/Pontypridd Road | 720                   | 180                     | 543                       |                            | 1357              | 0.531 | 719                 | 694                             | 0.8               | 1.1             | 5.770     | A                             |
| D - A4226/Port Road       | 848                   | 212                     | 665                       | 0.00                       | 1095              | 0.774 | 841                 | 596                             | 1.6               | 3.4             | 14.448    | B                             |

### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 561                   | 140                     | 1001                      |                            | 821               | 0.683 | 557                 | 780                             | 1.0               | 2.1             | 13.818    | B                             |
| B - A4226/Port Road W     | 796                   | 199                     | 701                       |                            | 1230              | 0.647 | 793                 | 856                             | 1.0               | 1.8             | 8.392     | A                             |
| C - B4226/Pontypridd Road | 882                   | 221                     | 663                       |                            | 1275              | 0.692 | 878                 | 831                             | 1.1               | 2.2             | 9.196     | A                             |
| D - A4226/Port Road       | 1038                  | 260                     | 812                       | 0.00                       | 1008              | 1.030 | 969                 | 728                             | 3.4               | 20.8            | 58.347    | F                             |

### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 561                   | 140                     | 1018                      |                            | 810               | 0.693 | 561                 | 789                             | 2.1               | 2.2             | 14.832    | B                             |
| B - A4226/Port Road W     | 796                   | 199                     | 711                       |                            | 1224              | 0.650 | 796                 | 868                             | 1.8               | 1.9             | 8.635     | A                             |
| C - B4226/Pontypridd Road | 882                   | 221                     | 666                       |                            | 1273              | 0.693 | 882                 | 841                             | 2.2               | 2.3             | 9.436     | A                             |
| D - A4226/Port Road       | 1038                  | 260                     | 816                       | 0.00                       | 1005              | 1.033 | 991                 | 732                             | 20.8              | 32.5            | 107.674   | F                             |

### 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 458                   | 115                     | 940                       |                            | 860               | 0.533 | 462                 | 691                             | 2.2               | 1.2             | 9.442     | A                             |
| B - A4226/Port Road W     | 650                   | 162                     | 627                       |                            | 1279              | 0.508 | 653                 | 775                             | 1.9               | 1.1             | 5.938     | A                             |
| C - B4226/Pontypridd Road | 720                   | 180                     | 547                       |                            | 1354              | 0.532 | 725                 | 733                             | 2.3               | 1.2             | 5.909     | A                             |
| D - A4226/Port Road       | 848                   | 212                     | 670                       | 0.00                       | 1092              | 0.776 | 961                 | 602                             | 32.5              | 4.1             | 44.703    | E                             |

### 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 384                   | 96                      | 726                       |                            | 995               | 0.385 | 386                 | 553                             | 1.2               | 0.7             | 6.119     | A                             |
| B - A4226/Port Road W     | 544                   | 136                     | 500                       |                            | 1364              | 0.399 | 546                 | 612                             | 1.1               | 0.7             | 4.528     | A                             |
| C - B4226/Pontypridd Road | 603                   | 151                     | 457                       |                            | 1415              | 0.426 | 605                 | 589                             | 1.2               | 0.8             | 4.564     | A                             |
| D - A4226/Port Road       | 710                   | 177                     | 559                       | 0.00                       | 1158              | 0.613 | 719                 | 502                             | 4.1               | 1.7             | 8.791     | A                             |

# Base - 2028 B+D M, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 14.74              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D8 | 2028 B+D M    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 640                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 828                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 749                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 816                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 197                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 475                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 376                 |
|      | D - A4226/Port Road       | 176                    | 392                   | 247                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.78    | 18.64         | 3.5             | C       | 587                     | 880                           |
| B - A4226/Port Road W     | 0.80    | 15.71         | 3.8             | C       | 760                     | 1140                          |
| C - B4226/Pontypridd Road | 0.73    | 11.72         | 2.6             | B       | 687                     | 1031                          |
| D - A4226/Port Road       | 0.77    | 13.46         | 3.3             | B       | 749                     | 1123                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 482                   | 120                     | 594                       |                            | 1079              | 0.446 | 478                 | 386                             | 0.0               | 0.8             | 6.179     | A                             |
| B - A4226/Port Road W     | 623                   | 156                     | 568                       |                            | 1319              | 0.473 | 620                 | 504                             | 0.0               | 0.9             | 5.181     | A                             |
| C - B4226/Pontypridd Road | 564                   | 141                     | 594                       |                            | 1322              | 0.427 | 561                 | 594                             | 0.0               | 0.7             | 4.727     | A                             |
| D - A4226/Port Road       | 614                   | 154                     | 369                       | 0.00                       | 1271              | 0.483 | 611                 | 785                             | 0.0               | 0.9             | 5.492     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 575                   | 144                     | 711                       |                            | 1005              | 0.572 | 573                 | 462                             | 0.8               | 1.4             | 8.601     | A                             |
| B - A4226/Port Road W     | 744                   | 186                     | 680                       |                            | 1244              | 0.598 | 742                 | 604                             | 0.9               | 1.5             | 7.216     | A                             |
| C - B4226/Pontypridd Road | 673                   | 168                     | 711                       |                            | 1242              | 0.542 | 672                 | 711                             | 0.7               | 1.2             | 6.312     | A                             |
| D - A4226/Port Road       | 734                   | 183                     | 442                       | 0.00                       | 1228              | 0.598 | 731                 | 940                             | 0.9               | 1.5             | 7.316     | A                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 704                   | 176                     | 867                       |                            | 906               | 0.777 | 696                 | 564                             | 1.4               | 3.3             | 17.179    | C                             |
| B - A4226/Port Road W     | 912                   | 228                     | 827                       |                            | 1146              | 0.796 | 903                 | 736                             | 1.5               | 3.7             | 14.484    | B                             |
| C - B4226/Pontypridd Road | 825                   | 206                     | 865                       |                            | 1137              | 0.725 | 819                 | 866                             | 1.2               | 2.5             | 11.177    | B                             |
| D - A4226/Port Road       | 898                   | 225                     | 539                       | 0.00                       | 1170              | 0.768 | 892                 | 1145                            | 1.5               | 3.2             | 12.795    | B                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 704                   | 176                     | 873                       |                            | 902               | 0.781 | 704                 | 568                             | 3.3               | 3.5             | 18.637    | C                             |
| B - A4226/Port Road W     | 912                   | 228                     | 835                       |                            | 1141              | 0.799 | 911                 | 742                             | 3.7               | 3.8             | 15.707    | C                             |
| C - B4226/Pontypridd Road | 825                   | 206                     | 872                       |                            | 1132              | 0.729 | 824                 | 874                             | 2.5               | 2.6             | 11.724    | B                             |
| D - A4226/Port Road       | 898                   | 225                     | 543                       | 0.00                       | 1168              | 0.769 | 898                 | 1154                            | 3.2               | 3.3             | 13.460    | B                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 575                   | 144                     | 720                       |                            | 999               | 0.575 | 583                 | 468                             | 3.5               | 1.4             | 9.146     | A                             |
| B - A4226/Port Road W     | 744                   | 186                     | 691                       |                            | 1237              | 0.602 | 754                 | 612                             | 3.8               | 1.6             | 7.670     | A                             |
| C - B4226/Pontypridd Road | 673                   | 168                     | 722                       |                            | 1234              | 0.546 | 679                 | 723                             | 2.6               | 1.2             | 6.569     | A                             |
| D - A4226/Port Road       | 734                   | 183                     | 447                       | 0.00                       | 1225              | 0.599 | 740                 | 954                             | 3.3               | 1.5             | 7.637     | A                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 482                   | 120                     | 599                       |                            | 1076              | 0.448 | 484                 | 390                             | 1.4               | 0.9             | 6.336     | A                             |
| B - A4226/Port Road W     | 623                   | 156                     | 574                       |                            | 1315              | 0.474 | 626                 | 509                             | 1.6               | 0.9             | 5.305     | A                             |
| C - B4226/Pontypridd Road | 564                   | 141                     | 600                       |                            | 1318              | 0.428 | 566                 | 600                             | 1.2               | 0.8             | 4.813     | A                             |
| D - A4226/Port Road       | 614                   | 154                     | 373                       | 0.00                       | 1269              | 0.484 | 617                 | 793                             | 1.5               | 1.0             | 5.611     | A                             |



# Base - 2028 B+D H, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 47.73              | E            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D9 | 2028 B+D H    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 511                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 725                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 803                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 961                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 166                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 289                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 215                 |
|      | D - A4226/Port Road       | 285                    | 401                   | 275                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.70    | 15.04         | 2.3             | C       | 468                     | 703                           |
| B - A4226/Port Road W     | 0.65    | 8.71          | 1.9             | A       | 665                     | 998                           |
| C - B4226/Pontypridd Road | 0.70    | 9.55          | 2.3             | A       | 737                     | 1105                          |
| D - A4226/Port Road       | 1.05    | 126.43        | 39.8            | F       | 882                     | 1323                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 384                   | 96                      | 723                       |                            | 997               | 0.385 | 382                 | 549                             | 0.0               | 0.6             | 6.013     | A                             |
| B - A4226/Port Road W     | 546                   | 136                     | 496                       |                            | 1367              | 0.399 | 543                 | 609                             | 0.0               | 0.7             | 4.476     | A                             |
| C - B4226/Pontypridd Road | 605                   | 151                     | 455                       |                            | 1416              | 0.427 | 602                 | 584                             | 0.0               | 0.8             | 4.515     | A                             |
| D - A4226/Port Road       | 723                   | 181                     | 555                       | 0.00                       | 1161              | 0.623 | 717                 | 502                             | 0.0               | 1.7             | 8.388     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 459                   | 115                     | 864                       |                            | 908               | 0.506 | 457                 | 657                             | 0.6               | 1.0             | 8.220     | A                             |
| B - A4226/Port Road W     | 652                   | 163                     | 594                       |                            | 1302              | 0.501 | 650                 | 728                             | 0.7               | 1.0             | 5.666     | A                             |
| C - B4226/Pontypridd Road | 722                   | 180                     | 545                       |                            | 1355              | 0.533 | 720                 | 699                             | 0.8               | 1.2             | 5.804     | A                             |
| D - A4226/Port Road       | 864                   | 216                     | 665                       | 0.00                       | 1095              | 0.789 | 856                 | 601                             | 1.7               | 3.6             | 15.310    | C                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 562                   | 141                     | 1006                      |                            | 818               | 0.687 | 558                 | 781                             | 1.0               | 2.2             | 14.040    | B                             |
| B - A4226/Port Road W     | 798                   | 200                     | 704                       |                            | 1228              | 0.650 | 795                 | 860                             | 1.0               | 1.9             | 8.469     | A                             |
| C - B4226/Pontypridd Road | 884                   | 221                     | 666                       |                            | 1272              | 0.695 | 880                 | 833                             | 1.2               | 2.3             | 9.294     | A                             |
| D - A4226/Port Road       | 1058                  | 265                     | 812                       | 0.00                       | 1008              | 1.050 | 976                 | 734                             | 3.6               | 24.3            | 65.140    | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 562                   | 141                     | 1022                      |                            | 808               | 0.696 | 562                 | 790                             | 2.2               | 2.3             | 15.038    | C                             |
| B - A4226/Port Road W     | 798                   | 200                     | 713                       |                            | 1222              | 0.653 | 798                 | 871                             | 1.9               | 1.9             | 8.711     | A                             |
| C - B4226/Pontypridd Road | 884                   | 221                     | 669                       |                            | 1270              | 0.696 | 884                 | 842                             | 2.3               | 2.3             | 9.546     | A                             |
| D - A4226/Port Road       | 1058                  | 265                     | 816                       | 0.00                       | 1005              | 1.052 | 996                 | 737                             | 24.3              | 39.8            | 126.435   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 459                   | 115                     | 971                       |                            | 840               | 0.546 | 463                 | 704                             | 2.3               | 1.3             | 9.952     | A                             |
| B - A4226/Port Road W     | 652                   | 163                     | 640                       |                            | 1271              | 0.513 | 655                 | 793                             | 1.9               | 1.1             | 6.037     | A                             |
| C - B4226/Pontypridd Road | 722                   | 180                     | 550                       |                            | 1352              | 0.534 | 726                 | 745                             | 2.3               | 1.2             | 5.946     | A                             |
| D - A4226/Port Road       | 864                   | 216                     | 670                       | 0.00                       | 1092              | 0.791 | 1004                | 606                             | 39.8              | 4.7             | 64.688    | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 384                   | 96                      | 738                       |                            | 988               | 0.389 | 387                 | 557                             | 1.3               | 0.7             | 6.205     | A                             |
| B - A4226/Port Road W     | 546                   | 136                     | 505                       |                            | 1361              | 0.401 | 547                 | 619                             | 1.1               | 0.7             | 4.557     | A                             |
| C - B4226/Pontypridd Road | 605                   | 151                     | 460                       |                            | 1413              | 0.428 | 606                 | 593                             | 1.2               | 0.8             | 4.582     | A                             |
| D - A4226/Port Road       | 723                   | 181                     | 559                       | 0.00                       | 1158              | 0.625 | 735                 | 506                             | 4.7               | 1.8             | 9.158     | A                             |

# Base - 2028 B+D H, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 15.30              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D10 | 2028 B+D H    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 642                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 834                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 755                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 824                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 199                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 481                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 382                 |
|      | D - A4226/Port Road       | 177                    | 396                   | 250                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.79    | 19.30         | 3.6             | C       | 589                     | 883                           |
| B - A4226/Port Road W     | 0.81    | 16.41         | 4.0             | C       | 765                     | 1148                          |
| C - B4226/Pontypridd Road | 0.74    | 12.22         | 2.8             | B       | 693                     | 1039                          |
| D - A4226/Port Road       | 0.78    | 13.90         | 3.4             | B       | 756                     | 1134                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 483                   | 121                     | 599                       |                            | 1076              | 0.449 | 480                 | 387                             | 0.0               | 0.8             | 6.228     | A                             |
| B - A4226/Port Road W     | 628                   | 157                     | 571                       |                            | 1317              | 0.477 | 624                 | 507                             | 0.0               | 0.9             | 5.231     | A                             |
| C - B4226/Pontypridd Road | 568                   | 142                     | 599                       |                            | 1318              | 0.431 | 565                 | 596                             | 0.0               | 0.8             | 4.780     | A                             |
| D - A4226/Port Road       | 620                   | 155                     | 369                       | 0.00                       | 1271              | 0.488 | 617                 | 796                             | 0.0               | 1.0             | 5.540     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 577                   | 144                     | 717                       |                            | 1001              | 0.576 | 575                 | 463                             | 0.8               | 1.4             | 8.715     | A                             |
| B - A4226/Port Road W     | 750                   | 187                     | 684                       |                            | 1241              | 0.604 | 747                 | 608                             | 0.9               | 1.5             | 7.333     | A                             |
| C - B4226/Pontypridd Road | 679                   | 170                     | 718                       |                            | 1237              | 0.549 | 677                 | 714                             | 0.8               | 1.2             | 6.425     | A                             |
| D - A4226/Port Road       | 741                   | 185                     | 442                       | 0.00                       | 1228              | 0.603 | 739                 | 953                             | 1.0               | 1.5             | 7.421     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 706                   | 177                     | 874                       |                            | 901               | 0.784 | 698                 | 565                             | 1.4               | 3.5             | 17.695    | C                             |
| B - A4226/Port Road W     | 918                   | 230                     | 832                       |                            | 1143              | 0.804 | 909                 | 740                             | 1.5               | 3.8             | 15.023    | C                             |
| C - B4226/Pontypridd Road | 831                   | 208                     | 873                       |                            | 1131              | 0.735 | 825                 | 869                             | 1.2               | 2.7             | 11.591    | B                             |
| D - A4226/Port Road       | 907                   | 227                     | 539                       | 0.00                       | 1170              | 0.775 | 900                 | 1160                            | 1.5               | 3.3             | 13.166    | B                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 706                   | 177                     | 881                       |                            | 897               | 0.787 | 706                 | 569                             | 3.5               | 3.6             | 19.299    | C                             |
| B - A4226/Port Road W     | 918                   | 230                     | 840                       |                            | 1137              | 0.807 | 918                 | 746                             | 3.8               | 4.0             | 16.409    | C                             |
| C - B4226/Pontypridd Road | 831                   | 208                     | 881                       |                            | 1126              | 0.739 | 831                 | 877                             | 2.7               | 2.8             | 12.216    | B                             |
| D - A4226/Port Road       | 907                   | 227                     | 543                       | 0.00                       | 1168              | 0.777 | 907                 | 1169                            | 3.3               | 3.4             | 13.902    | B                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 577                   | 144                     | 726                       |                            | 995               | 0.580 | 586                 | 469                             | 3.6               | 1.5             | 9.303     | A                             |
| B - A4226/Port Road W     | 750                   | 187                     | 696                       |                            | 1234              | 0.608 | 760                 | 616                             | 4.0               | 1.6             | 7.830     | A                             |
| C - B4226/Pontypridd Road | 679                   | 170                     | 730                       |                            | 1229              | 0.552 | 685                 | 726                             | 2.8               | 1.3             | 6.709     | A                             |
| D - A4226/Port Road       | 741                   | 185                     | 448                       | 0.00                       | 1224              | 0.605 | 748                 | 967                             | 3.4               | 1.6             | 7.770     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 483                   | 121                     | 605                       |                            | 1072              | 0.451 | 485                 | 391                             | 1.5               | 0.9             | 6.391     | A                             |
| B - A4226/Port Road W     | 628                   | 157                     | 578                       |                            | 1312              | 0.479 | 631                 | 512                             | 1.6               | 0.9             | 5.362     | A                             |
| C - B4226/Pontypridd Road | 568                   | 142                     | 606                       |                            | 1314              | 0.433 | 570                 | 603                             | 1.3               | 0.8             | 4.870     | A                             |
| D - A4226/Port Road       | 620                   | 155                     | 373                       | 0.00                       | 1269              | 0.489 | 623                 | 804                             | 1.6               | 1.0             | 5.665     | A                             |



# Base - 2028 B+D+C L, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 94.17              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D11 | 2028 B+D+C L  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 571                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 833                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 874                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1066                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 226                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 397                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 286                 |
|      | D - A4226/Port Road       | 353                    | 426                   | 287                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.76    | 18.68         | 3.1             | C       | 524                     | 785                           |
| B - A4226/Port Road W     | 0.77    | 13.61         | 3.4             | B       | 764                     | 1147                          |
| C - B4226/Pontypridd Road | 0.84    | 19.88         | 5.1             | C       | 802                     | 1203                          |
| D - A4226/Port Road       | 1.17    | 258.45        | 91.8            | F       | 978                     | 1467                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 430                   | 107                     | 749                       |                            | 981               | 0.438 | 426                 | 599                             | 0.0               | 0.8             | 6.704     | A                             |
| B - A4226/Port Road W     | 627                   | 157                     | 549                       |                            | 1331              | 0.471 | 623                 | 626                             | 0.0               | 0.9             | 5.214     | A                             |
| C - B4226/Pontypridd Road | 658                   | 165                     | 581                       |                            | 1331              | 0.495 | 654                 | 592                             | 0.0               | 1.0             | 5.443     | A                             |
| D - A4226/Port Road       | 803                   | 201                     | 555                       | 0.00                       | 1161              | 0.691 | 793                 | 680                             | 0.0               | 2.3             | 10.079    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 513                   | 128                     | 892                       |                            | 890               | 0.576 | 511                 | 715                             | 0.8               | 1.4             | 9.788     | A                             |
| B - A4226/Port Road W     | 749                   | 187                     | 656                       |                            | 1260              | 0.594 | 747                 | 747                             | 0.9               | 1.5             | 7.187     | A                             |
| C - B4226/Pontypridd Road | 786                   | 196                     | 695                       |                            | 1253              | 0.627 | 783                 | 707                             | 1.0               | 1.7             | 7.840     | A                             |
| D - A4226/Port Road       | 958                   | 240                     | 664                       | 0.00                       | 1096              | 0.875 | 943                 | 814                             | 2.3               | 6.1             | 22.777    | C                             |

### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 628                   | 157                     | 986                       |                            | 830               | 0.757 | 622                 | 820                             | 1.4               | 3.0             | 17.385    | C                             |
| B - A4226/Port Road W     | 917                   | 229                     | 759                       |                            | 1192              | 0.769 | 910                 | 850                             | 1.5               | 3.2             | 12.846    | B                             |
| C - B4226/Pontypridd Road | 962                   | 241                     | 847                       |                            | 1149              | 0.838 | 950                 | 822                             | 1.7               | 4.7             | 17.662    | C                             |
| D - A4226/Port Road       | 1174                  | 293                     | 806                       | 0.00                       | 1011              | 1.161 | 1000                | 991                             | 6.1               | 49.5            | 112.965   | F                             |

### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 628                   | 157                     | 993                       |                            | 826               | 0.760 | 628                 | 826                             | 3.0               | 3.1             | 18.679    | C                             |
| B - A4226/Port Road W     | 917                   | 229                     | 764                       |                            | 1188              | 0.772 | 917                 | 856                             | 3.2               | 3.4             | 13.605    | B                             |
| C - B4226/Pontypridd Road | 962                   | 241                     | 854                       |                            | 1144              | 0.841 | 961                 | 827                             | 4.7               | 5.1             | 19.884    | C                             |
| D - A4226/Port Road       | 1174                  | 293                     | 815                       | 0.00                       | 1006              | 1.167 | 1005                | 1000                            | 49.5              | 91.8            | 258.454   | F                             |

### 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 513                   | 128                     | 987                       |                            | 830               | 0.618 | 519                 | 766                             | 3.1               | 1.7             | 12.194    | B                             |
| B - A4226/Port Road W     | 749                   | 187                     | 698                       |                            | 1232              | 0.608 | 756                 | 807                             | 3.4               | 1.6             | 7.892     | A                             |
| C - B4226/Pontypridd Road | 786                   | 196                     | 704                       |                            | 1246              | 0.631 | 799                 | 749                             | 5.1               | 1.8             | 8.513     | A                             |
| D - A4226/Port Road       | 958                   | 240                     | 676                       | 0.00                       | 1088              | 0.880 | 1076                | 827                             | 91.8              | 62.4            | 257.849   | F                             |

### 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 430                   | 107                     | 918                       |                            | 874               | 0.491 | 432                 | 684                             | 1.7               | 1.0             | 8.515     | A                             |
| B - A4226/Port Road W     | 627                   | 157                     | 621                       |                            | 1284              | 0.489 | 630                 | 729                             | 1.6               | 1.0             | 5.693     | A                             |
| C - B4226/Pontypridd Road | 658                   | 165                     | 587                       |                            | 1326              | 0.496 | 661                 | 663                             | 1.8               | 1.0             | 5.595     | A                             |
| D - A4226/Port Road       | 803                   | 201                     | 560                       | 0.00                       | 1157              | 0.693 | 1042                | 688                             | 62.4              | 2.6             | 78.224    | F                             |

# Base - 2028 B+D+C L, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 27.32              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D12 | 2028 B+D+C L  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 709                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 856                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 762                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 934                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 266                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 503                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 389                 |
|      | D - A4226/Port Road       | 218                    | 438                   | 277                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.92    | 43.92         | 8.9             | E       | 650                     | 975                           |
| B - A4226/Port Road W     | 0.88    | 26.38         | 6.5             | D       | 786                     | 1178                          |
| C - B4226/Pontypridd Road | 0.79    | 16.04         | 3.6             | C       | 699                     | 1049                          |
| D - A4226/Port Road       | 0.88    | 24.78         | 6.7             | C       | 857                     | 1286                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 534                   | 133                     | 650                       |                            | 1044              | 0.511 | 529                 | 417                             | 0.0               | 1.1             | 7.241     | A                             |
| B - A4226/Port Road W     | 645                   | 161                     | 641                       |                            | 1270              | 0.507 | 640                 | 538                             | 0.0               | 1.0             | 5.744     | A                             |
| C - B4226/Pontypridd Road | 574                   | 143                     | 666                       |                            | 1273              | 0.451 | 570                 | 616                             | 0.0               | 0.8             | 5.118     | A                             |
| D - A4226/Port Road       | 703                   | 176                     | 369                       | 0.00                       | 1271              | 0.553 | 698                 | 867                             | 0.0               | 1.2             | 6.316     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 637                   | 159                     | 778                       |                            | 962               | 0.662 | 633                 | 500                             | 1.1               | 2.0             | 11.294    | B                             |
| B - A4226/Port Road W     | 770                   | 192                     | 767                       |                            | 1186              | 0.649 | 766                 | 644                             | 1.0               | 1.8             | 8.608     | A                             |
| C - B4226/Pontypridd Road | 685                   | 171                     | 797                       |                            | 1183              | 0.579 | 683                 | 737                             | 0.8               | 1.4             | 7.182     | A                             |
| D - A4226/Port Road       | 840                   | 210                     | 442                       | 0.00                       | 1228              | 0.684 | 836                 | 1038                            | 1.2               | 2.1             | 9.228     | A                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 780                   | 195                     | 943                       |                            | 858               | 0.910 | 759                 | 606                             | 2.0               | 7.4             | 32.528    | D                             |
| B - A4226/Port Road W     | 943                   | 236                     | 922                       |                            | 1083              | 0.870 | 927                 | 780                             | 1.8               | 5.7             | 21.490    | C                             |
| C - B4226/Pontypridd Road | 839                   | 210                     | 961                       |                            | 1071              | 0.783 | 831                 | 889                             | 1.4               | 3.4             | 14.546    | B                             |
| D - A4226/Port Road       | 1028                  | 257                     | 537                       | 0.00                       | 1171              | 0.878 | 1012                | 1255                            | 2.1               | 6.1             | 21.109    | C                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 780                   | 195                     | 955                       |                            | 850               | 0.918 | 774                 | 613                             | 7.4               | 8.9             | 43.924    | E                             |
| B - A4226/Port Road W     | 943                   | 236                     | 939                       |                            | 1072              | 0.880 | 939                 | 790                             | 5.7               | 6.5             | 26.377    | D                             |
| C - B4226/Pontypridd Road | 839                   | 210                     | 976                       |                            | 1061              | 0.791 | 838                 | 903                             | 3.4               | 3.6             | 16.045    | C                             |
| D - A4226/Port Road       | 1028                  | 257                     | 542                       | 0.00                       | 1168              | 0.880 | 1026                | 1272                            | 6.1               | 6.7             | 24.785    | C                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 637                   | 159                     | 797                       |                            | 951               | 0.670 | 664                 | 510                             | 8.9               | 2.2             | 14.219    | B                             |
| B - A4226/Port Road W     | 770                   | 192                     | 798                       |                            | 1165              | 0.660 | 788                 | 662                             | 6.5               | 2.0             | 10.066    | B                             |
| C - B4226/Pontypridd Road | 685                   | 171                     | 823                       |                            | 1165              | 0.588 | 694                 | 763                             | 3.6               | 1.5             | 7.792     | A                             |
| D - A4226/Port Road       | 840                   | 210                     | 450                       | 0.00                       | 1223              | 0.687 | 857                 | 1067                            | 6.7               | 2.3             | 10.423    | B                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 534                   | 133                     | 658                       |                            | 1038              | 0.514 | 538                 | 422                             | 2.2               | 1.1             | 7.565     | A                             |
| B - A4226/Port Road W     | 645                   | 161                     | 651                       |                            | 1264              | 0.510 | 648                 | 545                             | 2.0               | 1.1             | 5.953     | A                             |
| C - B4226/Pontypridd Road | 574                   | 143                     | 675                       |                            | 1267              | 0.453 | 576                 | 625                             | 1.5               | 0.8             | 5.249     | A                             |
| D - A4226/Port Road       | 703                   | 176                     | 373                       | 0.00                       | 1269              | 0.554 | 707                 | 878                             | 2.3               | 1.3             | 6.543     | A                             |



# Base - 2028 B+D+C M, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 111.81             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D13 | 2028 B+D+C M  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

|   |   |                |      |
|---|---|----------------|------|
| ✓ | ✓ | HV Percentages | 2.00 |
|---|---|----------------|------|

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 573                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 837                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 876                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1090                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 228                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 401                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 288                 |
|      | D - A4226/Port Road       | 360                    | 436                   | 294                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.76    | 18.96         | 3.2             | C       | 525                     | 788                           |
| B - A4226/Port Road W     | 0.78    | 13.92         | 3.5             | B       | 768                     | 1152                          |
| C - B4226/Pontypridd Road | 0.85    | 20.59         | 5.3             | C       | 804                     | 1206                          |
| D - A4226/Port Road       | 1.19    | 309.07        | 105.2           | F       | 1000                    | 1500                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 431                   | 108                     | 762                       |                            | 973               | 0.443 | 428                 | 604                             | 0.0               | 0.8             | 6.815     | A                             |
| B - A4226/Port Road W     | 630                   | 158                     | 556                       |                            | 1327              | 0.475 | 626                 | 634                             | 0.0               | 0.9             | 5.267     | A                             |
| C - B4226/Pontypridd Road | 660                   | 165                     | 585                       |                            | 1328              | 0.497 | 656                 | 597                             | 0.0               | 1.0             | 5.478     | A                             |
| D - A4226/Port Road       | 821                   | 205                     | 555                       | 0.00                       | 1161              | 0.707 | 811                 | 686                             | 0.0               | 2.4             | 10.550    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 515                   | 129                     | 906                       |                            | 882               | 0.584 | 512                 | 720                             | 0.8               | 1.4             | 10.052    | B                             |
| B - A4226/Port Road W     | 752                   | 188                     | 663                       |                            | 1256              | 0.599 | 750                 | 755                             | 0.9               | 1.5             | 7.291     | A                             |
| C - B4226/Pontypridd Road | 788                   | 197                     | 700                       |                            | 1249              | 0.631 | 785                 | 713                             | 1.0               | 1.7             | 7.930     | A                             |
| D - A4226/Port Road       | 980                   | 245                     | 664                       | 0.00                       | 1096              | 0.894 | 962                 | 821                             | 2.4               | 7.0             | 25.315    | D                             |

### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 630                   | 158                     | 989                       |                            | 829               | 0.761 | 624                 | 820                             | 1.4               | 3.1             | 17.685    | C                             |
| B - A4226/Port Road W     | 922                   | 230                     | 762                       |                            | 1190              | 0.775 | 914                 | 851                             | 1.5               | 3.3             | 13.129    | B                             |
| C - B4226/Pontypridd Road | 965                   | 241                     | 854                       |                            | 1144              | 0.843 | 952                 | 823                             | 1.7               | 4.9             | 18.156    | C                             |
| D - A4226/Port Road       | 1200                  | 300                     | 806                       | 0.00                       | 1011              | 1.187 | 1003                | 999                             | 7.0               | 56.4            | 126.287   | F                             |

### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 630                   | 158                     | 994                       |                            | 825               | 0.764 | 630                 | 826                             | 3.1               | 3.2             | 18.960    | C                             |
| B - A4226/Port Road W     | 922                   | 230                     | 767                       |                            | 1186              | 0.777 | 921                 | 857                             | 3.3               | 3.5             | 13.924    | B                             |
| C - B4226/Pontypridd Road | 965                   | 241                     | 860                       |                            | 1140              | 0.846 | 963                 | 828                             | 4.9               | 5.3             | 20.587    | C                             |
| D - A4226/Port Road       | 1200                  | 300                     | 815                       | 0.00                       | 1006              | 1.193 | 1005                | 1009                            | 56.4              | 105.2           | 292.918   | F                             |

### 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 515                   | 129                     | 989                       |                            | 829               | 0.621 | 521                 | 766                             | 3.2               | 1.8             | 12.332    | B                             |
| B - A4226/Port Road W     | 752                   | 188                     | 701                       |                            | 1230              | 0.612 | 760                 | 808                             | 3.5               | 1.7             | 7.994     | A                             |
| C - B4226/Pontypridd Road | 788                   | 197                     | 710                       |                            | 1242              | 0.634 | 801                 | 750                             | 5.3               | 1.8             | 8.649     | A                             |
| D - A4226/Port Road       | 980                   | 245                     | 677                       | 0.00                       | 1088              | 0.901 | 1077                | 835                             | 105.2             | 80.8            | 309.065   | F                             |

### 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 431                   | 108                     | 978                       |                            | 836               | 0.516 | 434                 | 713                             | 1.8               | 1.1             | 9.347     | A                             |
| B - A4226/Port Road W     | 630                   | 158                     | 646                       |                            | 1267              | 0.497 | 633                 | 765                             | 1.7               | 1.0             | 5.874     | A                             |
| C - B4226/Pontypridd Road | 660                   | 165                     | 591                       |                            | 1323              | 0.498 | 663                 | 688                             | 1.8               | 1.0             | 5.635     | A                             |
| D - A4226/Port Road       | 821                   | 205                     | 561                       | 0.00                       | 1157              | 0.709 | 1130                | 694                             | 80.8              | 3.5             | 134.664   | F                             |

# Base - 2028 B+D+C M, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 29.66              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D14 | 2028 B+D+C M  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 713                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 865                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 770                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 944                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 270                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 512                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 397                 |
|      | D - A4226/Port Road       | 220                    | 443                   | 280                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.93    | 47.95         | 9.8             | E       | 654                     | 981                           |
| B - A4226/Port Road W     | 0.89    | 28.97         | 7.2             | D       | 794                     | 1191                          |
| C - B4226/Pontypridd Road | 0.81    | 17.37         | 3.9             | C       | 707                     | 1060                          |
| D - A4226/Port Road       | 0.89    | 26.53         | 7.2             | D       | 866                     | 1299                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 537                   | 134                     | 656                       |                            | 1040              | 0.516 | 532                 | 419                             | 0.0               | 1.1             | 7.335     | A                             |
| B - A4226/Port Road W     | 651                   | 163                     | 646                       |                            | 1267              | 0.514 | 647                 | 542                             | 0.0               | 1.1             | 5.834     | A                             |
| C - B4226/Pontypridd Road | 580                   | 145                     | 675                       |                            | 1266              | 0.458 | 576                 | 618                             | 0.0               | 0.8             | 5.209     | A                             |
| D - A4226/Port Road       | 711                   | 178                     | 369                       | 0.00                       | 1271              | 0.559 | 706                 | 882                             | 0.0               | 1.3             | 6.398     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 641                   | 160                     | 785                       |                            | 958               | 0.669 | 637                 | 501                             | 1.1               | 2.0             | 11.568    | B                             |
| B - A4226/Port Road W     | 778                   | 194                     | 773                       |                            | 1182              | 0.658 | 774                 | 649                             | 1.1               | 1.9             | 8.857     | A                             |
| C - B4226/Pontypridd Road | 692                   | 173                     | 808                       |                            | 1175              | 0.589 | 690                 | 740                             | 0.8               | 1.4             | 7.400     | A                             |
| D - A4226/Port Road       | 849                   | 212                     | 442                       | 0.00                       | 1228              | 0.691 | 845                 | 1056                            | 1.3               | 2.2             | 9.434     | A                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 785                   | 196                     | 951                       |                            | 853               | 0.920 | 761                 | 607                             | 2.0               | 7.9             | 34.448    | D                             |
| B - A4226/Port Road W     | 953                   | 238                     | 928                       |                            | 1079              | 0.883 | 935                 | 784                             | 1.9               | 6.2             | 22.965    | C                             |
| C - B4226/Pontypridd Road | 848                   | 212                     | 973                       |                            | 1063              | 0.797 | 839                 | 890                             | 1.4               | 3.6             | 15.518    | C                             |
| D - A4226/Port Road       | 1039                  | 260                     | 536                       | 0.00                       | 1172              | 0.887 | 1022                | 1275                            | 2.2               | 6.5             | 22.187    | C                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 785                   | 196                     | 964                       |                            | 845               | 0.929 | 777                 | 615                             | 7.9               | 9.8             | 47.948    | E                             |
| B - A4226/Port Road W     | 953                   | 238                     | 946                       |                            | 1067              | 0.892 | 949                 | 795                             | 6.2               | 7.2             | 28.966    | D                             |
| C - B4226/Pontypridd Road | 848                   | 212                     | 989                       |                            | 1052              | 0.806 | 847                 | 905                             | 3.6               | 3.9             | 17.373    | C                             |
| D - A4226/Port Road       | 1039                  | 260                     | 542                       | 0.00                       | 1168              | 0.890 | 1037                | 1294                            | 6.5               | 7.2             | 26.526    | D                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 641                   | 160                     | 806                       |                            | 945               | 0.678 | 671                 | 513                             | 9.8               | 2.3             | 15.058    | C                             |
| B - A4226/Port Road W     | 778                   | 194                     | 808                       |                            | 1159              | 0.671 | 798                 | 668                             | 7.2               | 2.1             | 10.613    | B                             |
| C - B4226/Pontypridd Road | 692                   | 173                     | 838                       |                            | 1155              | 0.599 | 702                 | 768                             | 3.9               | 1.5             | 8.128     | A                             |
| D - A4226/Port Road       | 849                   | 212                     | 451                       | 0.00                       | 1223              | 0.694 | 868                 | 1089                            | 7.2               | 2.4             | 10.812    | B                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 537                   | 134                     | 664                       |                            | 1034              | 0.519 | 541                 | 424                             | 2.3               | 1.1             | 7.681     | A                             |
| B - A4226/Port Road W     | 651                   | 163                     | 656                       |                            | 1260              | 0.517 | 655                 | 549                             | 2.1               | 1.1             | 6.062     | A                             |
| C - B4226/Pontypridd Road | 580                   | 145                     | 685                       |                            | 1260              | 0.460 | 582                 | 627                             | 1.5               | 0.9             | 5.353     | A                             |
| D - A4226/Port Road       | 711                   | 178                     | 373                       | 0.00                       | 1269              | 0.560 | 715                 | 894                             | 2.4               | 1.3             | 6.641     | A                             |



# Base - 2028 B+D+C H, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 125.70             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D15 | 2028 B+D+C H  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 574                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 839                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 878                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1108                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 229                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 403                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 290                 |
|      | D - A4226/Port Road       | 365                    | 444                   | 299                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.77    | 19.13         | 3.2             | C       | 526                     | 789                           |
| B - A4226/Port Road W     | 0.78    | 14.09         | 3.5             | B       | 770                     | 1155                          |
| C - B4226/Pontypridd Road | 0.85    | 21.08         | 5.4             | C       | 806                     | 1209                          |
| D - A4226/Port Road       | 1.21    | 348.30        | 115.4           | F       | 1017                    | 1525                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 432                   | 108                     | 771                       |                            | 967               | 0.447 | 428                 | 607                             | 0.0               | 0.8             | 6.902     | A                             |
| B - A4226/Port Road W     | 632                   | 158                     | 560                       |                            | 1324              | 0.477 | 628                 | 639                             | 0.0               | 0.9             | 5.301     | A                             |
| C - B4226/Pontypridd Road | 661                   | 165                     | 587                       |                            | 1326              | 0.498 | 657                 | 601                             | 0.0               | 1.0             | 5.503     | A                             |
| D - A4226/Port Road       | 834                   | 209                     | 555                       | 0.00                       | 1161              | 0.719 | 824                 | 690                             | 0.0               | 2.6             | 10.932    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 516                   | 129                     | 915                       |                            | 875               | 0.589 | 513                 | 723                             | 0.8               | 1.4             | 10.246    | B                             |
| B - A4226/Port Road W     | 754                   | 189                     | 668                       |                            | 1253              | 0.602 | 752                 | 761                             | 0.9               | 1.5             | 7.373     | A                             |
| C - B4226/Pontypridd Road | 789                   | 197                     | 703                       |                            | 1247              | 0.633 | 786                 | 716                             | 1.0               | 1.7             | 7.991     | A                             |
| D - A4226/Port Road       | 996                   | 249                     | 664                       | 0.00                       | 1096              | 0.909 | 975                 | 826                             | 2.6               | 7.8             | 27.501    | D                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 631                   | 158                     | 991                       |                            | 828               | 0.763 | 625                 | 819                             | 1.4               | 3.1             | 17.872    | C                             |
| B - A4226/Port Road W     | 924                   | 231                     | 764                       |                            | 1189              | 0.777 | 916                 | 852                             | 1.5               | 3.4             | 13.274    | B                             |
| C - B4226/Pontypridd Road | 967                   | 242                     | 857                       |                            | 1142              | 0.846 | 954                 | 823                             | 1.7               | 5.0             | 18.496    | C                             |
| D - A4226/Port Road       | 1220                  | 305                     | 806                       | 0.00                       | 1011              | 1.206 | 1004                | 1005                            | 7.8               | 61.8            | 136.907   | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 631                   | 158                     | 995                       |                            | 825               | 0.766 | 631                 | 825                             | 3.1               | 3.2             | 19.130    | C                             |
| B - A4226/Port Road W     | 924                   | 231                     | 769                       |                            | 1185              | 0.779 | 923                 | 858                             | 3.4               | 3.5             | 14.086    | B                             |
| C - B4226/Pontypridd Road | 967                   | 242                     | 864                       |                            | 1137              | 0.850 | 965                 | 828                             | 5.0               | 5.4             | 21.079    | C                             |
| D - A4226/Port Road       | 1220                  | 305                     | 815                       | 0.00                       | 1006              | 1.213 | 1005                | 1014                            | 61.8              | 115.4           | 319.562   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 516                   | 129                     | 990                       |                            | 828               | 0.623 | 521                 | 765                             | 3.2               | 1.8             | 12.414    | B                             |
| B - A4226/Port Road W     | 754                   | 189                     | 702                       |                            | 1230              | 0.613 | 762                 | 810                             | 3.5               | 1.7             | 8.045     | A                             |
| C - B4226/Pontypridd Road | 789                   | 197                     | 713                       |                            | 1240              | 0.636 | 804                 | 751                             | 5.4               | 1.8             | 8.741     | A                             |
| D - A4226/Port Road       | 996                   | 249                     | 677                       | 0.00                       | 1088              | 0.916 | 1078                | 839                             | 115.4             | 94.9            | 348.302   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 432                   | 108                     | 989                       |                            | 829               | 0.521 | 434                 | 717                             | 1.8               | 1.2             | 9.527     | A                             |
| B - A4226/Port Road W     | 632                   | 158                     | 651                       |                            | 1263              | 0.500 | 634                 | 772                             | 1.7               | 1.0             | 5.919     | A                             |
| C - B4226/Pontypridd Road | 661                   | 165                     | 594                       |                            | 1322              | 0.500 | 664                 | 692                             | 1.8               | 1.0             | 5.660     | A                             |
| D - A4226/Port Road       | 834                   | 209                     | 561                       | 0.00                       | 1157              | 0.721 | 1145                | 697                             | 94.9              | 17.3            | 181.032   | F                             |

# Base - 2028 B+D+C H, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 31.64              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D16 | 2028 B+D+C H  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 715                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 872                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 775                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 953                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 272                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 519                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 402                 |
|      | D - A4226/Port Road       | 222                    | 447                   | 283                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.94    | 51.07         | 10.5            | F       | 656                     | 984                           |
| B - A4226/Port Road W     | 0.90    | 31.19         | 7.8             | D       | 800                     | 1200                          |
| C - B4226/Pontypridd Road | 0.82    | 18.35         | 4.2             | C       | 711                     | 1067                          |
| D - A4226/Port Road       | 0.90    | 28.28         | 7.7             | D       | 875                     | 1312                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 538                   | 135                     | 661                       |                            | 1037              | 0.519 | 534                 | 420                             | 0.0               | 1.1             | 7.406     | A                             |
| B - A4226/Port Road W     | 657                   | 164                     | 650                       |                            | 1264              | 0.519 | 652                 | 545                             | 0.0               | 1.1             | 5.906     | A                             |
| C - B4226/Pontypridd Road | 583                   | 146                     | 682                       |                            | 1262              | 0.462 | 580                 | 620                             | 0.0               | 0.9             | 5.271     | A                             |
| D - A4226/Port Road       | 717                   | 179                     | 369                       | 0.00                       | 1271              | 0.564 | 712                 | 893                             | 0.0               | 1.3             | 6.471     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 642                   | 161                     | 792                       |                            | 954               | 0.674 | 639                 | 503                             | 1.1               | 2.1             | 11.767    | B                             |
| B - A4226/Port Road W     | 784                   | 196                     | 778                       |                            | 1179              | 0.665 | 781                 | 652                             | 1.1               | 1.9             | 9.052     | A                             |
| C - B4226/Pontypridd Road | 697                   | 174                     | 816                       |                            | 1170              | 0.595 | 694                 | 742                             | 0.9               | 1.4             | 7.551     | A                             |
| D - A4226/Port Road       | 857                   | 214                     | 442                       | 0.00                       | 1228              | 0.698 | 853                 | 1069                            | 1.3               | 2.3             | 9.628     | A                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 787                   | 197                     | 957                       |                            | 849               | 0.927 | 762                 | 609                             | 2.1               | 8.4             | 35.869    | E                             |
| B - A4226/Port Road W     | 960                   | 240                     | 932                       |                            | 1077              | 0.892 | 941                 | 787                             | 1.9               | 6.6             | 24.180    | C                             |
| C - B4226/Pontypridd Road | 853                   | 213                     | 981                       |                            | 1058              | 0.807 | 844                 | 892                             | 1.4               | 3.8             | 16.212    | C                             |
| D - A4226/Port Road       | 1049                  | 262                     | 536                       | 0.00                       | 1172              | 0.895 | 1031                | 1289                            | 2.3               | 6.9             | 23.235    | C                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 787                   | 197                     | 971                       |                            | 840               | 0.936 | 778                 | 617                             | 8.4               | 10.5            | 51.070    | F                             |
| B - A4226/Port Road W     | 960                   | 240                     | 950                       |                            | 1064              | 0.902 | 956                 | 799                             | 6.6               | 7.8             | 31.191    | D                             |
| C - B4226/Pontypridd Road | 853                   | 213                     | 998                       |                            | 1046              | 0.816 | 852                 | 908                             | 3.8               | 4.2             | 18.355    | C                             |
| D - A4226/Port Road       | 1049                  | 262                     | 542                       | 0.00                       | 1169              | 0.898 | 1046                | 1308                            | 6.9               | 7.7             | 28.276    | D                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 642                   | 161                     | 813                       |                            | 940               | 0.683 | 675                 | 516                             | 10.5              | 2.4             | 15.754    | C                             |
| B - A4226/Port Road W     | 784                   | 196                     | 815                       |                            | 1154              | 0.679 | 806                 | 673                             | 7.8               | 2.2             | 11.089    | B                             |
| C - B4226/Pontypridd Road | 697                   | 174                     | 849                       |                            | 1148              | 0.607 | 707                 | 773                             | 4.2               | 1.6             | 8.376     | A                             |
| D - A4226/Port Road       | 857                   | 214                     | 451                       | 0.00                       | 1222              | 0.701 | 878                 | 1104                            | 7.7               | 2.5             | 11.201    | B                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 538                   | 135                     | 670                       |                            | 1031              | 0.522 | 543                 | 425                             | 2.4               | 1.2             | 7.767     | A                             |
| B - A4226/Port Road W     | 657                   | 164                     | 660                       |                            | 1257              | 0.522 | 661                 | 552                             | 2.2               | 1.1             | 6.148     | A                             |
| C - B4226/Pontypridd Road | 583                   | 146                     | 692                       |                            | 1255              | 0.465 | 586                 | 629                             | 1.6               | 0.9             | 5.424     | A                             |
| D - A4226/Port Road       | 717                   | 179                     | 373                       | 0.00                       | 1269              | 0.566 | 722                 | 905                             | 2.5               | 1.3             | 6.727     | A                             |





| Junctions 9                                                                                                                                                      |  |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                     |  |  |  |  |
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Filename: WX 2038\_B+D Standard.j9

Path: K:\T23\Jobs\T23.135 Weycock Cross TA\Analysis\Modelling\2025\Waycock + Dev\Arcady

Report generation date: 25/03/2025 11:08:03

»Base - 2038 B, AM  
 »Base - 2038 B, PM  
 »Base - 2038 B+C, AM  
 »Base - 2038 B+C, PM  
 »Base - 2038 B+D L, AM  
 »Base - 2038 B+D L, PM  
 »Base - 2038 B+D M, AM  
 »Base - 2038 B+D M, PM  
 »Base - 2038 B+D H, AM  
 »Base - 2038 B+D H, PM  
 »Base - 2038 B+D+C L, AM  
 »Base - 2038 B+D+C L, PM  
 »Base - 2038 B+D+C M, AM  
 »Base - 2038 B+D+C M, PM  
 »Base - 2038 B+D+C H, AM  
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 »Base - 2038 B+CMF, AM  
 »Base - 2038 B+CMF, PM  
 »Base - 2038 B+D+CMF L, AM  
 »Base - 2038 B+D+CMF L, PM  
 »Base - 2038 B+D+CMF M, AM  
 »Base - 2038 B+D+CMF M, PM  
 »Base - 2038 B+D+CMF H, AM  
 »Base - 2038 B+D+CMF H, PM  
 »Base - 2038 B+CA, AM  
 »Base - 2038 B+CA, PM  
 »Base - 2038 B+D+CA L, AM  
 »Base - 2038 B+D+CA L, PM  
 »Base - 2038 B+D+CA M, AM  
 »Base - 2038 B+D+CA M, PM  
 »Base - 2038 B+D+CA H, AM  
 »Base - 2038 B+D+CA H, PM

#### Summary of junction performance

|                        | AM     |             |           |      |     | PM     |             |           |      |     |
|------------------------|--------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
|                        | Set ID | Queue (PCU) | Delay (s) | RFC  | LOS | Set ID | Queue (PCU) | Delay (s) | RFC  | LOS |
| Base - 2038 B          |        |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road |        | 2.8         | 17.30     | 0.74 | C   |        | 5.0         | 25.40     | 0.84 | D   |

|                           |                       |       |        |      |   |     |       |        |      |   |
|---------------------------|-----------------------|-------|--------|------|---|-----|-------|--------|------|---|
| B - A4226/Port Road W     | D1                    | 2.3   | 9.88   | 0.69 | A | D2  | 5.2   | 20.57  | 0.85 | C |
| C - B4226/Pontypridd Road |                       | 2.9   | 11.58  | 0.75 | B |     | 3.2   | 13.87  | 0.77 | B |
| D - A4226/Port Road       |                       | 46.3  | 147.08 | 1.07 | F |     | 4.1   | 16.35  | 0.81 | C |
|                           | Base - 2038 B+C       |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D3                    | 4.0   | 22.73  | 0.80 | C | D4  | 18.2  | 80.67  | 0.99 | F |
| B - A4226/Port Road W     |                       | 4.4   | 17.24  | 0.82 | C |     | 10.8  | 41.78  | 0.94 | E |
| C - B4226/Pontypridd Road |                       | 8.5   | 32.10  | 0.91 | D |     | 5.0   | 21.46  | 0.84 | C |
| D - A4226/Port Road       |                       | 123.3 | 391.18 | 1.24 | F |     | 10.5  | 37.78  | 0.93 | E |
|                           | Base - 2038 B+D L     |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D5                    | 2.8   | 17.70  | 0.74 | C | D6  | 5.4   | 27.67  | 0.85 | D |
| B - A4226/Port Road W     |                       | 2.3   | 10.08  | 0.70 | B |     | 5.8   | 22.92  | 0.86 | C |
| C - B4226/Pontypridd Road |                       | 3.0   | 11.90  | 0.75 | B |     | 3.5   | 15.14  | 0.79 | C |
| D - A4226/Port Road       |                       | 61.3  | 186.16 | 1.11 | F |     | 4.4   | 17.51  | 0.82 | C |
|                           | Base - 2038 B+D M     |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D7                    | 2.9   | 17.95  | 0.75 | C | D8  | 5.8   | 29.78  | 0.86 | D |
| B - A4226/Port Road W     |                       | 2.4   | 10.26  | 0.70 | B |     | 6.4   | 25.15  | 0.88 | D |
| C - B4226/Pontypridd Road |                       | 3.1   | 12.21  | 0.76 | B |     | 3.8   | 16.28  | 0.80 | C |
| D - A4226/Port Road       |                       | 73.7  | 218.55 | 1.13 | F |     | 4.7   | 18.63  | 0.83 | C |
|                           | Base - 2038 B+D H     |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D9                    | 2.9   | 18.06  | 0.75 | C | D10 | 6.1   | 31.17  | 0.87 | D |
| B - A4226/Port Road W     |                       | 2.4   | 10.33  | 0.70 | B |     | 6.8   | 26.67  | 0.88 | D |
| C - B4226/Pontypridd Road |                       | 3.2   | 12.39  | 0.76 | B |     | 4.1   | 17.20  | 0.81 | C |
| D - A4226/Port Road       |                       | 83.8  | 245.28 | 1.16 | F |     | 4.9   | 19.35  | 0.84 | C |
|                           | Base - 2038 B+D+C L   |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D11                   | 4.1   | 23.28  | 0.81 | C | D12 | 21.0  | 90.80  | 1.01 | F |
| B - A4226/Port Road W     |                       | 4.6   | 17.89  | 0.83 | C |     | 12.6  | 47.87  | 0.95 | E |
| C - B4226/Pontypridd Road |                       | 9.2   | 34.58  | 0.92 | D |     | 5.6   | 24.04  | 0.86 | C |
| D - A4226/Port Road       |                       | 141.5 | 462.62 | 1.27 | F |     | 12.0  | 42.54  | 0.94 | E |
|                           | Base - 2038 B+D+C M   |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D13                   | 4.2   | 23.62  | 0.81 | C | D14 | 23.7  | 100.25 | 1.02 | F |
| B - A4226/Port Road W     |                       | 4.7   | 18.31  | 0.83 | C |     | 14.3  | 53.20  | 0.96 | F |
| C - B4226/Pontypridd Road |                       | 9.6   | 36.18  | 0.92 | E |     | 6.2   | 26.52  | 0.88 | D |
| D - A4226/Port Road       |                       | 156.8 | 522.11 | 1.30 | F |     | 13.6  | 47.27  | 0.95 | E |
|                           | Base - 2038 B+D+C H   |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D15                   | 4.2   | 23.86  | 0.81 | C | D16 | 25.1  | 105.01 | 1.03 | F |
| B - A4226/Port Road W     |                       | 4.9   | 18.74  | 0.83 | C |     | 15.7  | 57.49  | 0.97 | F |
| C - B4226/Pontypridd Road |                       | 10.0  | 37.65  | 0.93 | E |     | 6.7   | 28.39  | 0.89 | D |
| D - A4226/Port Road       |                       | 168.4 | 565.91 | 1.32 | F |     | 14.6  | 50.23  | 0.96 | F |
|                           | Base - 2038 B+CMF     |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D17                   | 14.1  | 68.22  | 0.97 | F | D18 | 15.5  | 74.88  | 0.97 | F |
| B - A4226/Port Road W     |                       | 67.3  | 183.78 | 1.11 | F |     | 12.3  | 46.47  | 0.95 | E |
| C - B4226/Pontypridd Road |                       | 127.3 | 464.60 | 1.25 | F |     | 5.7   | 23.83  | 0.86 | C |
| D - A4226/Port Road       |                       | 87.6  | 280.26 | 1.14 | F |     | 273.7 | 775.27 | 1.38 | F |
|                           | Base - 2038 B+D+CMF L |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D19                   | 14.9  | 71.37  | 0.97 | F | D20 | 16.8  | 79.81  | 0.98 | F |
| B - A4226/Port Road W     |                       | 70.4  | 191.58 | 1.12 | F |     | 14.5  | 53.27  | 0.96 | F |
| C - B4226/Pontypridd Road |                       | 131.1 | 478.47 | 1.25 | F |     | 6.5   | 27.06  | 0.88 | D |
| D - A4226/Port Road       |                       | 104.7 | 348.11 | 1.17 | F |     | 287.2 | 809.66 | 1.39 | F |
|                           | Base - 2038 B+D+CMF M |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D21                   | 15.4  | 73.55  | 0.97 | F | D22 | 17.8  | 83.83  | 0.99 | F |
| B - A4226/Port Road W     |                       | 73.2  | 198.72 | 1.12 | F |     | 16.5  | 59.42  | 0.98 | F |
| C - B4226/Pontypridd Road |                       | 134.8 | 491.83 | 1.26 | F |     | 7.2   | 30.01  | 0.90 | D |
| D - A4226/Port Road       |                       | 118.4 | 402.21 | 1.20 | F |     | 298.9 | 839.50 | 1.40 | F |
|                           | Base - 2038 B+D+CMF H |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    |                       | 15.7  | 74.54  | 0.98 | F |     | 18.5  | 86.30  | 0.99 | F |

|                           |                      |       |        |      |   |     |       |         |      |   |
|---------------------------|----------------------|-------|--------|------|---|-----|-------|---------|------|---|
| B - A4226/Port Road W     | D23                  | 74.5  | 202.08 | 1.13 | F | D24 | 17.9  | 63.58   | 0.98 | F |
| C - B4226/Pontypridd Road |                      | 137.1 | 499.94 | 1.26 | F |     | 7.9   | 32.49   | 0.91 | D |
| D - A4226/Port Road       |                      | 130.3 | 447.38 | 1.21 | F |     | 305.7 | 857.00  | 1.41 | F |
|                           | Base - 2038 B+CA     |       |        |      |   |     |       |         |      |   |
| A - A4226/Waycock Road    | D25                  | 28.1  | 115.94 | 1.03 | F | D26 | 40.2  | 160.05  | 1.07 | F |
| B - A4226/Port Road W     |                      | 151.0 | 498.86 | 1.26 | F |     | 25.6  | 86.18   | 1.01 | F |
| C - B4226/Pontypridd Road |                      | 240.6 | 915.63 | 1.40 | F |     | 10.3  | 42.31   | 0.93 | E |
| D - A4226/Port Road       |                      | 159.2 | 516.70 | 1.24 | F |     | 402.5 | 1135.68 | 1.50 | F |
|                           | Base - 2038 B+D+CA L |       |        |      |   |     |       |         |      |   |
| A - A4226/Waycock Road    | D27                  | 29.6  | 120.92 | 1.03 | F | D28 | 42.9  | 169.00  | 1.08 | F |
| B - A4226/Port Road W     |                      | 157.2 | 517.53 | 1.27 | F |     | 30.1  | 97.90   | 1.03 | F |
| C - B4226/Pontypridd Road |                      | 246.2 | 941.05 | 1.40 | F |     | 12.1  | 48.92   | 0.95 | E |
| D - A4226/Port Road       |                      | 185.8 | 592.30 | 1.27 | F |     | 416.8 | 1181.20 | 1.51 | F |
|                           | Base - 2038 B+D+CA M |       |        |      |   |     |       |         |      |   |
| A - A4226/Waycock Road    | D29                  | 30.5  | 123.96 | 1.04 | F | D30 | 45.2  | 176.86  | 1.08 | F |
| B - A4226/Port Road W     |                      | 161.1 | 529.04 | 1.27 | F |     | 33.8  | 107.65  | 1.04 | F |
| C - B4226/Pontypridd Road |                      | 249.4 | 955.67 | 1.41 | F |     | 13.9  | 55.23   | 0.96 | F |
| D - A4226/Port Road       |                      | 208.4 | 656.61 | 1.29 | F |     | 429.2 | 1220.72 | 1.52 | F |
|                           | Base - 2038 B+D+CA H |       |        |      |   |     |       |         |      |   |
| A - A4226/Waycock Road    | D31                  | 31.1  | 126.09 | 1.04 | F | D32 | 46.3  | 180.39  | 1.09 | F |
| B - A4226/Port Road W     |                      | 164.3 | 538.53 | 1.28 | F |     | 36.9  | 115.38  | 1.04 | F |
| C - B4226/Pontypridd Road |                      | 252.2 | 968.65 | 1.41 | F |     | 15.3  | 59.81   | 0.97 | F |
| D - A4226/Port Road       |                      | 224.8 | 703.24 | 1.31 | F |     | 436.4 | 1244.01 | 1.53 | F |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

### File Description

|             |                            |
|-------------|----------------------------|
| Title       | Weycock Cross              |
| Location    | Barry                      |
| Site number |                            |
| Date        | 16/11/2023                 |
| Version     |                            |
| Status      | (new file)                 |
| Identifier  |                            |
| Client      | Persimmon Homes East Wales |
| Jobnumber   | T23.135                    |
| Enumerator  | ATRANS\skatiewilliams      |
| Description |                            |

## Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m              | kph         | PCU                 | PCU                   | perHour    | s                   | -Min              | perMin              |

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Demand Set Summary

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1  | 2038 B         | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D2  | 2038 B         | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D3  | 2038 B+C       | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D4  | 2038 B+C       | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D5  | 2038 B+D L     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D6  | 2038 B+D L     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D7  | 2038 B+D M     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D8  | 2038 B+D M     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D9  | 2038 B+D H     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D10 | 2038 B+D H     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D11 | 2038 B+D+C L   | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D12 | 2038 B+D+C L   | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D13 | 2038 B+D+C M   | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D14 | 2038 B+D+C M   | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D15 | 2038 B+D+C H   | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D16 | 2038 B+D+C H   | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D17 | 2038 B+CMF     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D18 | 2038 B+CMF     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D19 | 2038 B+D+CMF L | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D20 | 2038 B+D+CMF L | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D21 | 2038 B+D+CMF M | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D22 | 2038 B+D+CMF M | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D23 | 2038 B+D+CMF H | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D24 | 2038 B+D+CMF H | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D25 | 2038 B+CA      | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D26 | 2038 B+CA      | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D27 | 2038 B+D+CA L  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D28 | 2038 B+D+CA L  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D29 | 2038 B+D+CA M  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D30 | 2038 B+D+CA M  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D31 | 2038 B+D+CA H  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D32 | 2038 B+D+CA H  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

### Analysis Set Details

| ID | Name | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|------|-------------------|---------------------------------|-------------------------------------|
| A1 | Base | ✓                 | 100.000                         | 100.000                             |

# Base - 2038 B, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 53.56              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name                  | Description |
|-----|-----------------------|-------------|
| A   | A4226/Waycock Road    |             |
| B   | A4226/Port Road W     |             |
| C   | B4226/Pontypridd Road |             |
| D   | A4226/Port Road       |             |

### Roundabout Geometry

| Arm                       | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|---------------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| A - A4226/Waycock Road    | 3.45                             | 7.83                | 61.2                            | 155.0                | 33.4                              | 22.3                               |           |
| B - A4226/Port Road W     | 3.98                             | 6.94                | 20.6                            | 22.9                 | 33.2                              | 22.2                               |           |
| C - B4226/Pontypridd Road | 4.31                             | 6.26                | 28.8                            | 183.9                | 33.3                              | 23.1                               |           |
| D - A4226/Port Road       | 3.88                             | 6.68                | 72.0                            | 9.4                  | 33.2                              | 33.7                               |           |

### Pelican/Puffin Crossings

| Arm                 | Space between crossing and junc. entry (Signalised) (PCU) | Amber time preceding red (s) | Amber time regarded as green (s) | Time from traffic red start to green man start (s) | Time period green man shown (s) | Clearance Period (s) | Traffic minimum green (s) |
|---------------------|-----------------------------------------------------------|------------------------------|----------------------------------|----------------------------------------------------|---------------------------------|----------------------|---------------------------|
| D - A4226/Port Road | 12.00                                                     | 3.00                         | 2.90                             | 1.00                                               | 6.00                            | 6.00                 | 7.00                      |

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

| Arm                       | Type       | Reason | Percentage intercept adjustment (%) |
|---------------------------|------------|--------|-------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                               |
| B - A4226/Port Road W     | Percentage |        | 95.00                               |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                               |
| D - A4226/Port Road       | Percentage |        | 91.00                               |



### Roundabout Slope and Intercept used in model

| Arm                       | Final slope | Final intercept (PCU/hr) |
|---------------------------|-------------|--------------------------|
| A - A4226/Waycock Road    | 0.792       | 1819                     |
| B - A4226/Port Road W     | 0.701       | 1787                     |
| C - B4226/Pontypridd Road | 0.718       | 1818                     |
| D - A4226/Port Road       | 0.654       | 1638                     |

The slope and intercept shown above include any corrections and adjustments.

### Arm Capacity Adjustments

| Arm                       | Type       | Reason | Percentage capacity adjustment (%) |
|---------------------------|------------|--------|------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                              |
| B - A4226/Port Road W     | Percentage |        | 95.00                              |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                              |
| D - A4226/Port Road       | Percentage |        | 91.00                              |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2038 B        | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 540                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 763                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 849                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 947                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                       |                           |                     |
|------|---------------------------|-----------------------|---------------------------|---------------------|
|      | A - A4226/Waycock Road    | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                     | 134                       | 235                 |
|      | B - A4226/Port Road W     | 146                   | 17                        | 302                 |
|      | C - B4226/Pontypridd Road | 333                   | 292                       | 3                   |
|      | D - A4226/Port Road       | 281                   | 395                       | 271                 |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.74    | 17.30         | 2.8             | C       | 496                     | 743                           |
| B - A4226/Port Road W     | 0.69    | 9.88          | 2.3             | A       | 700                     | 1050                          |
| C - B4226/Pontypridd Road | 0.75    | 11.58         | 2.9             | B       | 779                     | 1169                          |
| D - A4226/Port Road       | 1.07    | 147.08        | 46.3            | F       | 869                     | 1303                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 407                   | 102                     | 730                       |                            | 993               | 0.410 | 404                 | 568                             | 0.0               | 0.7             | 6.274     | A                             |
| B - A4226/Port Road W     | 574                   | 144                     | 508                       |                            | 1359              | 0.423 | 571                 | 626                             | 0.0               | 0.7             | 4.677     | A                             |
| C - B4226/Pontypridd Road | 639                   | 160                     | 473                       |                            | 1404              | 0.455 | 636                 | 606                             | 0.0               | 0.8             | 4.782     | A                             |
| D - A4226/Port Road       | 713                   | 178                     | 592                       | 0.00                       | 1138              | 0.626 | 706                 | 517                             | 0.0               | 1.7             | 8.607     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 485                   | 121                     | 873                       |                            | 902               | 0.538 | 484                 | 680                             | 0.7               | 1.2             | 8.824     | A                             |
| B - A4226/Port Road W     | 686                   | 171                     | 608                       |                            | 1292              | 0.531 | 684                 | 749                             | 0.7               | 1.1             | 6.064     | A                             |
| C - B4226/Pontypridd Road | 763                   | 191                     | 567                       |                            | 1340              | 0.570 | 761                 | 725                             | 0.8               | 1.3             | 6.351     | A                             |
| D - A4226/Port Road       | 851                   | 213                     | 709                       | 0.00                       | 1069              | 0.797 | 843                 | 619                             | 1.7               | 3.8             | 16.161    | C                             |

#### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 595                   | 149                     | 1009                      |                            | 816               | 0.728 | 589                 | 806                             | 1.2               | 2.6             | 15.945    | C                             |
| B - A4226/Port Road W     | 840                   | 210                     | 718                       |                            | 1219              | 0.689 | 836                 | 880                             | 1.1               | 2.2             | 9.542     | A                             |
| C - B4226/Pontypridd Road | 935                   | 234                     | 691                       |                            | 1255              | 0.745 | 929                 | 862                             | 1.3               | 2.9             | 11.104    | B                             |
| D - A4226/Port Road       | 1043                  | 261                     | 866                       | 0.00                       | 976               | 1.069 | 949                 | 755                             | 3.8               | 27.2            | 72.661    | F                             |

#### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 595                   | 149                     | 1023                      |                            | 807               | 0.737 | 594                 | 814                             | 2.6               | 2.8             | 17.300    | C                             |
| B - A4226/Port Road W     | 840                   | 210                     | 726                       |                            | 1213              | 0.692 | 840                 | 890                             | 2.2               | 2.3             | 9.883     | A                             |
| C - B4226/Pontypridd Road | 935                   | 234                     | 695                       |                            | 1252              | 0.747 | 935                 | 871                             | 2.9               | 2.9             | 11.581    | B                             |
| D - A4226/Port Road       | 1043                  | 261                     | 871                       | 0.00                       | 973               | 1.072 | 966                 | 759                             | 27.2              | 46.3            | 147.080   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 485                   | 121                     | 997                       |                            | 824               | 0.589 | 490                 | 735                             | 2.8               | 1.5             | 11.294    | B                             |
| B - A4226/Port Road W     | 686                   | 171                     | 662                       |                            | 1256              | 0.546 | 690                 | 825                             | 2.3               | 1.3             | 6.576     | A                             |
| C - B4226/Pontypridd Road | 763                   | 191                     | 572                       |                            | 1336              | 0.571 | 770                 | 780                             | 2.9               | 1.4             | 6.576     | A                             |
| D - A4226/Port Road       | 851                   | 213                     | 717                       | 0.00                       | 1064              | 0.800 | 1015                | 625                             | 46.3              | 5.4             | 88.180    | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 407                   | 102                     | 747                       |                            | 982               | 0.414 | 410                 | 578                             | 1.5               | 0.7             | 6.521     | A                             |
| B - A4226/Port Road W     | 574                   | 144                     | 518                       |                            | 1352              | 0.425 | 576                 | 638                             | 1.3               | 0.8             | 4.781     | A                             |
| C - B4226/Pontypridd Road | 639                   | 160                     | 478                       |                            | 1401              | 0.456 | 641                 | 617                             | 1.4               | 0.9             | 4.871     | A                             |
| D - A4226/Port Road       | 713                   | 178                     | 598                       | 0.00                       | 1135              | 0.628 | 727                 | 522                             | 5.4               | 1.8             | 9.555     | A                             |

# Base - 2038 B, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 18.82              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2038 B        | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 672                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 860                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 780                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 841                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 200                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 483                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 383                 |
|      | D - A4226/Port Road       | 181                    | 404                   | 255                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.84    | 25.40         | 5.0             | D       | 617                     | 925                           |
| B - A4226/Port Road W     | 0.85    | 20.57         | 5.2             | C       | 789                     | 1184                          |
| C - B4226/Pontypridd Road | 0.77    | 13.87         | 3.2             | B       | 716                     | 1074                          |
| D - A4226/Port Road       | 0.81    | 16.35         | 4.1             | C       | 772                     | 1158                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 506                   | 126                     | 616                       |                            | 1065              | 0.475 | 502                 | 407                             | 0.0               | 0.9             | 6.584     | A                             |
| B - A4226/Port Road W     | 647                   | 162                     | 591                       |                            | 1304              | 0.497 | 644                 | 527                             | 0.0               | 1.0             | 5.480     | A                             |
| C - B4226/Pontypridd Road | 587                   | 147                     | 608                       |                            | 1312              | 0.448 | 584                 | 626                             | 0.0               | 0.8             | 4.939     | A                             |
| D - A4226/Port Road       | 633                   | 158                     | 394                       | 0.00                       | 1257              | 0.504 | 629                 | 798                             | 0.0               | 1.0             | 5.777     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 604                   | 151                     | 737                       |                            | 988               | 0.611 | 601                 | 487                             | 0.9               | 1.6             | 9.580     | A                             |
| B - A4226/Port Road W     | 773                   | 193                     | 707                       |                            | 1226              | 0.631 | 770                 | 632                             | 1.0               | 1.7             | 7.938     | A                             |
| C - B4226/Pontypridd Road | 701                   | 175                     | 728                       |                            | 1230              | 0.570 | 699                 | 750                             | 0.8               | 1.3             | 6.777     | A                             |
| D - A4226/Port Road       | 756                   | 189                     | 471                       | 0.00                       | 1210              | 0.625 | 754                 | 956                             | 1.0               | 1.6             | 7.939     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 740                   | 185                     | 898                       |                            | 887               | 0.835 | 728                 | 593                             | 1.6               | 4.6             | 22.049    | C                             |
| B - A4226/Port Road W     | 947                   | 237                     | 858                       |                            | 1126              | 0.841 | 935                 | 768                             | 1.7               | 4.8             | 17.984    | C                             |
| C - B4226/Pontypridd Road | 859                   | 215                     | 883                       |                            | 1124              | 0.764 | 852                 | 909                             | 1.3               | 3.1             | 12.925    | B                             |
| D - A4226/Port Road       | 926                   | 231                     | 574                       | 0.00                       | 1149              | 0.806 | 917                 | 1161                            | 1.6               | 3.9             | 15.144    | C                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 740                   | 185                     | 905                       |                            | 882               | 0.839 | 738                 | 598                             | 4.6               | 5.0             | 25.399    | D                             |
| B - A4226/Port Road W     | 947                   | 237                     | 868                       |                            | 1119              | 0.846 | 945                 | 775                             | 4.8               | 5.2             | 20.571    | C                             |
| C - B4226/Pontypridd Road | 859                   | 215                     | 894                       |                            | 1117              | 0.769 | 858                 | 920                             | 3.1               | 3.2             | 13.873    | B                             |
| D - A4226/Port Road       | 926                   | 231                     | 579                       | 0.00                       | 1147              | 0.808 | 925                 | 1173                            | 3.9               | 4.1             | 16.345    | C                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 604                   | 151                     | 749                       |                            | 981               | 0.616 | 617                 | 495                             | 5.0               | 1.7             | 10.594    | B                             |
| B - A4226/Port Road W     | 773                   | 193                     | 723                       |                            | 1215              | 0.636 | 786                 | 642                             | 5.2               | 1.8             | 8.739     | A                             |
| C - B4226/Pontypridd Road | 701                   | 175                     | 744                       |                            | 1219              | 0.575 | 709                 | 766                             | 3.2               | 1.4             | 7.171     | A                             |
| D - A4226/Port Road       | 756                   | 189                     | 479                       | 0.00                       | 1206              | 0.627 | 765                 | 974                             | 4.1               | 1.7             | 8.441     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 506                   | 126                     | 622                       |                            | 1061              | 0.477 | 509                 | 411                             | 1.7               | 1.0             | 6.790     | A                             |
| B - A4226/Port Road W     | 647                   | 162                     | 598                       |                            | 1299              | 0.498 | 651                 | 533                             | 1.8               | 1.0             | 5.642     | A                             |
| C - B4226/Pontypridd Road | 587                   | 147                     | 615                       |                            | 1307              | 0.449 | 589                 | 633                             | 1.4               | 0.8             | 5.049     | A                             |
| D - A4226/Port Road       | 633                   | 158                     | 398                       | 0.00                       | 1254              | 0.505 | 636                 | 807                             | 1.7               | 1.0             | 5.927     | A                             |



# Base - 2038 B+C, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 139.09             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D3 | 2038 B+C      | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 603                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 876                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 924                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1094                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 234                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 411                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 296                 |
|      | D - A4226/Port Road       | 361                    | 438                   | 295                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.80    | 22.73         | 4.0             | C       | 553                     | 830                           |
| B - A4226/Port Road W     | 0.82    | 17.24         | 4.4             | C       | 804                     | 1206                          |
| C - B4226/Pontypridd Road | 0.91    | 32.10         | 8.5             | D       | 848                     | 1272                          |
| D - A4226/Port Road       | 1.24    | 391.18        | 123.3           | F       | 1004                    | 1506                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 454                   | 113                     | 778                       |                            | 962               | 0.472 | 450                 | 627                             | 0.0               | 0.9             | 7.245     | A                             |
| B - A4226/Port Road W     | 659                   | 165                     | 572                       |                            | 1316              | 0.501 | 655                 | 657                             | 0.0               | 1.0             | 5.577     | A                             |
| C - B4226/Pontypridd Road | 696                   | 174                     | 604                       |                            | 1315              | 0.529 | 691                 | 623                             | 0.0               | 1.1             | 5.898     | A                             |
| D - A4226/Port Road       | 824                   | 206                     | 592                       | 0.00                       | 1139              | 0.723 | 813                 | 704                             | 0.0               | 2.6             | 11.300    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 542                   | 136                     | 923                       |                            | 871               | 0.623 | 539                 | 746                             | 0.9               | 1.7             | 11.160    | B                             |
| B - A4226/Port Road W     | 788                   | 197                     | 681                       |                            | 1243              | 0.633 | 785                 | 781                             | 1.0               | 1.7             | 8.029     | A                             |
| C - B4226/Pontypridd Road | 831                   | 208                     | 723                       |                            | 1233              | 0.674 | 827                 | 742                             | 1.1               | 2.1             | 9.035     | A                             |
| D - A4226/Port Road       | 983                   | 246                     | 708                       | 0.00                       | 1069              | 0.920 | 960                 | 842                             | 2.6               | 8.5             | 29.779    | D                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 664                   | 166                     | 991                       |                            | 828               | 0.802 | 655                 | 840                             | 1.7               | 3.8             | 20.723    | C                             |
| B - A4226/Port Road W     | 964                   | 241                     | 777                       |                            | 1180              | 0.817 | 955                 | 870                             | 1.7               | 4.2             | 15.796    | C                             |
| C - B4226/Pontypridd Road | 1018                  | 254                     | 880                       |                            | 1126              | 0.903 | 996                 | 851                             | 2.1               | 7.4             | 25.168    | D                             |
| D - A4226/Port Road       | 1205                  | 301                     | 855                       | 0.00                       | 982               | 1.226 | 976                 | 1021                            | 8.5               | 65.6            | 148.683   | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 664                   | 166                     | 995                       |                            | 825               | 0.805 | 663                 | 847                             | 3.8               | 4.0             | 22.731    | C                             |
| B - A4226/Port Road W     | 964                   | 241                     | 782                       |                            | 1176              | 0.820 | 964                 | 876                             | 4.2               | 4.4             | 17.242    | C                             |
| C - B4226/Pontypridd Road | 1018                  | 254                     | 889                       |                            | 1120              | 0.908 | 1013                | 857                             | 7.4               | 8.5             | 32.101    | D                             |
| D - A4226/Port Road       | 1205                  | 301                     | 868                       | 0.00                       | 974               | 1.236 | 974                 | 1034                            | 65.6              | 123.3           | 349.814   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 542                   | 136                     | 991                       |                            | 828               | 0.655 | 550                 | 787                             | 4.0               | 2.0             | 13.801    | B                             |
| B - A4226/Port Road W     | 788                   | 197                     | 713                       |                            | 1222              | 0.644 | 798                 | 827                             | 4.4               | 1.9             | 8.932     | A                             |
| C - B4226/Pontypridd Road | 831                   | 208                     | 736                       |                            | 1225              | 0.679 | 856                 | 775                             | 8.5               | 2.2             | 10.682    | B                             |
| D - A4226/Port Road       | 983                   | 246                     | 730                       | 0.00                       | 1056              | 0.931 | 1047                | 862                             | 123.3             | 107.3           | 391.179   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 454                   | 113                     | 989                       |                            | 829               | 0.548 | 457                 | 733                             | 2.0               | 1.3             | 10.127    | B                             |
| B - A4226/Port Road W     | 659                   | 165                     | 661                       |                            | 1257              | 0.525 | 663                 | 785                             | 1.9               | 1.2             | 6.268     | A                             |
| C - B4226/Pontypridd Road | 696                   | 174                     | 611                       |                            | 1310              | 0.531 | 700                 | 712                             | 2.2               | 1.2             | 6.114     | A                             |
| D - A4226/Port Road       | 824                   | 206                     | 599                       | 0.00                       | 1134              | 0.726 | 1123                | 712                             | 107.3             | 32.4            | 227.174   | F                             |

# Base - 2038 B+C, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 44.37              | E            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D4 | 2038 B+C      | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 745                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 897                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 800                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 970                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 273                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 520                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 403                 |
|      | D - A4226/Port Road       | 226                    | 455                   | 288                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.99    | 80.67         | 18.2            | F       | 684                     | 1025                          |
| B - A4226/Port Road W     | 0.94    | 41.78         | 10.8            | E       | 823                     | 1235                          |
| C - B4226/Pontypridd Road | 0.84    | 21.46         | 5.0             | C       | 734                     | 1101                          |
| D - A4226/Port Road       | 0.93    | 37.78         | 10.5            | E       | 890                     | 1335                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 561                   | 140                     | 678                       |                            | 1026              | 0.547 | 556                 | 440                             | 0.0               | 1.2             | 7.903     | A                             |
| B - A4226/Port Road W     | 675                   | 169                     | 669                       |                            | 1252              | 0.540 | 671                 | 565                             | 0.0               | 1.2             | 6.217     | A                             |
| C - B4226/Pontypridd Road | 602                   | 151                     | 690                       |                            | 1256              | 0.479 | 599                 | 650                             | 0.0               | 0.9             | 5.463     | A                             |
| D - A4226/Port Road       | 730                   | 183                     | 394                       | 0.00                       | 1257              | 0.581 | 725                 | 895                             | 0.0               | 1.4             | 6.795     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 670                   | 167                     | 811                       |                            | 941               | 0.712 | 665                 | 527                             | 1.2               | 2.4             | 13.340    | B                             |
| B - A4226/Port Road W     | 806                   | 202                     | 800                       |                            | 1164              | 0.693 | 802                 | 676                             | 1.2               | 2.2             | 9.943     | A                             |
| C - B4226/Pontypridd Road | 719                   | 180                     | 825                       |                            | 1164              | 0.618 | 716                 | 777                             | 0.9               | 1.6             | 8.023     | A                             |
| D - A4226/Port Road       | 872                   | 218                     | 471                       | 0.00                       | 1211              | 0.720 | 868                 | 1071                            | 1.4               | 2.5             | 10.500    | B                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 820                   | 205                     | 977                       |                            | 837               | 0.980 | 780                 | 636                             | 2.4               | 12.5            | 48.150    | E                             |
| B - A4226/Port Road W     | 988                   | 247                     | 946                       |                            | 1067              | 0.926 | 962                 | 810                             | 2.2               | 8.6             | 29.476    | D                             |
| C - B4226/Pontypridd Road | 881                   | 220                     | 983                       |                            | 1056              | 0.834 | 869                 | 925                             | 1.6               | 4.5             | 18.292    | C                             |
| D - A4226/Port Road       | 1068                  | 267                     | 570                       | 0.00                       | 1152              | 0.927 | 1043                | 1283                            | 2.5               | 8.9             | 28.435    | D                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 820                   | 205                     | 993                       |                            | 826               | 0.993 | 798                 | 645                             | 12.5              | 18.2            | 80.670    | F                             |
| B - A4226/Port Road W     | 988                   | 247                     | 966                       |                            | 1054              | 0.937 | 979                 | 825                             | 8.6               | 10.8            | 41.780    | E                             |
| C - B4226/Pontypridd Road | 881                   | 220                     | 1002                      |                            | 1043              | 0.844 | 879                 | 943                             | 4.5               | 5.0             | 21.456    | C                             |
| D - A4226/Port Road       | 1068                  | 267                     | 577                       | 0.00                       | 1148              | 0.931 | 1062                | 1304                            | 8.9               | 10.5            | 37.780    | E                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 670                   | 167                     | 842                       |                            | 922               | 0.726 | 731                 | 545                             | 18.2              | 3.0             | 25.063    | D                             |
| B - A4226/Port Road W     | 806                   | 202                     | 864                       |                            | 1121              | 0.719 | 839                 | 708                             | 10.8              | 2.7             | 14.207    | B                             |
| C - B4226/Pontypridd Road | 719                   | 180                     | 876                       |                            | 1129              | 0.637 | 732                 | 827                             | 5.0               | 1.8             | 9.360     | A                             |
| D - A4226/Port Road       | 872                   | 218                     | 484                       | 0.00                       | 1203              | 0.725 | 903                 | 1124                            | 10.5              | 2.8             | 13.302    | B                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 561                   | 140                     | 688                       |                            | 1020              | 0.550 | 568                 | 447                             | 3.0               | 1.3             | 8.417     | A                             |
| B - A4226/Port Road W     | 675                   | 169                     | 682                       |                            | 1243              | 0.543 | 681                 | 574                             | 2.7               | 1.2             | 6.547     | A                             |
| C - B4226/Pontypridd Road | 602                   | 151                     | 702                       |                            | 1248              | 0.483 | 606                 | 661                             | 1.8               | 0.9             | 5.652     | A                             |
| D - A4226/Port Road       | 730                   | 183                     | 399                       | 0.00                       | 1254              | 0.583 | 736                 | 909                             | 2.8               | 1.4             | 7.117     | A                             |



# Base - 2038 B+D L, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 66.73              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D5 | 2038 B+D L    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 543                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 767                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 852                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 978                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 174                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 302                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 224                 |
|      | D - A4226/Port Road       | 290                    | 408                   | 280                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.74    | 17.70         | 2.8             | C       | 498                     | 747                           |
| B - A4226/Port Road W     | 0.70    | 10.08         | 2.3             | B       | 704                     | 1056                          |
| C - B4226/Pontypridd Road | 0.75    | 11.90         | 3.0             | B       | 782                     | 1173                          |
| D - A4226/Port Road       | 1.11    | 186.16        | 61.3            | F       | 897                     | 1346                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 409                   | 102                     | 746                       |                            | 982               | 0.416 | 406                 | 575                             | 0.0               | 0.7             | 6.410     | A                             |
| B - A4226/Port Road W     | 577                   | 144                     | 517                       |                            | 1353              | 0.427 | 574                 | 636                             | 0.0               | 0.8             | 4.732     | A                             |
| C - B4226/Pontypridd Road | 641                   | 160                     | 478                       |                            | 1401              | 0.458 | 638                 | 613                             | 0.0               | 0.9             | 4.819     | A                             |
| D - A4226/Port Road       | 736                   | 184                     | 592                       | 0.00                       | 1138              | 0.647 | 729                 | 524                             | 0.0               | 1.9             | 9.066     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 488                   | 122                     | 891                       |                            | 891               | 0.548 | 486                 | 687                             | 0.7               | 1.2             | 9.136     | A                             |
| B - A4226/Port Road W     | 690                   | 172                     | 618                       |                            | 1286              | 0.536 | 688                 | 760                             | 0.8               | 1.2             | 6.167     | A                             |
| C - B4226/Pontypridd Road | 766                   | 192                     | 573                       |                            | 1336              | 0.573 | 764                 | 733                             | 0.9               | 1.4             | 6.430     | A                             |
| D - A4226/Port Road       | 879                   | 220                     | 709                       | 0.00                       | 1069              | 0.823 | 869                 | 627                             | 1.9               | 4.4             | 18.060    | C                             |

### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 598                   | 149                     | 1014                      |                            | 813               | 0.736 | 592                 | 808                             | 1.2               | 2.7             | 16.404    | C                             |
| B - A4226/Port Road W     | 844                   | 211                     | 723                       |                            | 1215              | 0.695 | 840                 | 883                             | 1.2               | 2.3             | 9.738     | A                             |
| C - B4226/Pontypridd Road | 938                   | 235                     | 699                       |                            | 1250              | 0.751 | 932                 | 864                             | 1.4               | 2.9             | 11.379    | B                             |
| D - A4226/Port Road       | 1077                  | 269                     | 865                       | 0.00                       | 976               | 1.103 | 957                 | 765                             | 4.4               | 34.4            | 86.684    | F                             |

### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 598                   | 149                     | 1025                      |                            | 806               | 0.742 | 597                 | 815                             | 2.7               | 2.8             | 17.704    | C                             |
| B - A4226/Port Road W     | 844                   | 211                     | 731                       |                            | 1210              | 0.698 | 844                 | 892                             | 2.3               | 2.3             | 10.082    | B                             |
| C - B4226/Pontypridd Road | 938                   | 235                     | 703                       |                            | 1247              | 0.752 | 938                 | 872                             | 2.9               | 3.0             | 11.900    | B                             |
| D - A4226/Port Road       | 1077                  | 269                     | 871                       | 0.00                       | 973               | 1.107 | 969                 | 770                             | 34.4              | 61.3            | 186.155   | F                             |

### 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 488                   | 122                     | 1019                      |                            | 810               | 0.603 | 493                 | 744                             | 2.8               | 1.6             | 11.903    | B                             |
| B - A4226/Port Road W     | 690                   | 172                     | 674                       |                            | 1248              | 0.552 | 694                 | 838                             | 2.3               | 1.3             | 6.713     | A                             |
| C - B4226/Pontypridd Road | 766                   | 192                     | 579                       |                            | 1332              | 0.575 | 772                 | 789                             | 3.0               | 1.4             | 6.667     | A                             |
| D - A4226/Port Road       | 879                   | 220                     | 717                       | 0.00                       | 1064              | 0.826 | 1046                | 634                             | 61.3              | 19.5            | 143.485   | F                             |

### 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 409                   | 102                     | 803                       |                            | 947               | 0.432 | 412                 | 601                             | 1.6               | 0.8             | 6.991     | A                             |
| B - A4226/Port Road W     | 577                   | 144                     | 544                       |                            | 1335              | 0.432 | 579                 | 671                             | 1.3               | 0.8             | 4.907     | A                             |
| C - B4226/Pontypridd Road | 641                   | 160                     | 483                       |                            | 1397              | 0.459 | 644                 | 640                             | 1.4               | 0.9             | 4.910     | A                             |
| D - A4226/Port Road       | 736                   | 184                     | 598                       | 0.00                       | 1135              | 0.649 | 806                 | 529                             | 19.5              | 2.0             | 13.991    | B                             |

# Base - 2038 B+D L, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 20.56              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D6 | 2038 B+D L    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 677                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 872                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 789                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 855                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 205                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 495                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 392                 |
|      | D - A4226/Port Road       | 184                    | 411                   | 259                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.85    | 27.67         | 5.4             | D       | 621                     | 932                           |
| B - A4226/Port Road W     | 0.86    | 22.92         | 5.8             | C       | 800                     | 1200                          |
| C - B4226/Pontypridd Road | 0.79    | 15.14         | 3.5             | C       | 724                     | 1086                          |
| D - A4226/Port Road       | 0.82    | 17.51         | 4.4             | C       | 785                     | 1177                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 510                   | 127                     | 624                       |                            | 1060              | 0.481 | 506                 | 409                             | 0.0               | 0.9             | 6.689     | A                             |
| B - A4226/Port Road W     | 656                   | 164                     | 597                       |                            | 1299              | 0.505 | 652                 | 533                             | 0.0               | 1.0             | 5.593     | A                             |
| C - B4226/Pontypridd Road | 594                   | 149                     | 621                       |                            | 1303              | 0.456 | 591                 | 629                             | 0.0               | 0.8             | 5.045     | A                             |
| D - A4226/Port Road       | 644                   | 161                     | 394                       | 0.00                       | 1257              | 0.512 | 640                 | 818                             | 0.0               | 1.1             | 5.872     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 609                   | 152                     | 747                       |                            | 982               | 0.620 | 606                 | 490                             | 0.9               | 1.6             | 9.851     | A                             |
| B - A4226/Port Road W     | 784                   | 196                     | 715                       |                            | 1221              | 0.642 | 781                 | 638                             | 1.0               | 1.8             | 8.220     | A                             |
| C - B4226/Pontypridd Road | 709                   | 177                     | 743                       |                            | 1220              | 0.582 | 707                 | 753                             | 0.8               | 1.4             | 7.015     | A                             |
| D - A4226/Port Road       | 769                   | 192                     | 471                       | 0.00                       | 1210              | 0.635 | 766                 | 979                             | 1.1               | 1.7             | 8.157     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 745                   | 186                     | 909                       |                            | 880               | 0.848 | 732                 | 596                             | 1.6               | 4.9             | 23.522    | C                             |
| B - A4226/Port Road W     | 960                   | 240                     | 866                       |                            | 1120              | 0.857 | 946                 | 775                             | 1.8               | 5.3             | 19.530    | C                             |
| C - B4226/Pontypridd Road | 869                   | 217                     | 900                       |                            | 1113              | 0.781 | 861                 | 913                             | 1.4               | 3.3             | 13.914    | B                             |
| D - A4226/Port Road       | 941                   | 235                     | 573                       | 0.00                       | 1150              | 0.819 | 932                 | 1188                            | 1.7               | 4.2             | 16.032    | C                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 745                   | 186                     | 917                       |                            | 874               | 0.853 | 743                 | 602                             | 4.9               | 5.4             | 27.671    | D                             |
| B - A4226/Port Road W     | 960                   | 240                     | 878                       |                            | 1112              | 0.863 | 958                 | 783                             | 5.3               | 5.8             | 22.921    | C                             |
| C - B4226/Pontypridd Road | 869                   | 217                     | 912                       |                            | 1105              | 0.786 | 868                 | 924                             | 3.3               | 3.5             | 15.145    | C                             |
| D - A4226/Port Road       | 941                   | 235                     | 578                       | 0.00                       | 1147              | 0.821 | 940                 | 1201                            | 4.2               | 4.4             | 17.507    | C                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 609                   | 152                     | 760                       |                            | 974               | 0.625 | 623                 | 499                             | 5.4               | 1.8             | 11.047    | B                             |
| B - A4226/Port Road W     | 784                   | 196                     | 733                       |                            | 1209              | 0.648 | 799                 | 650                             | 5.8               | 1.9             | 9.209     | A                             |
| C - B4226/Pontypridd Road | 709                   | 177                     | 762                       |                            | 1207              | 0.588 | 718                 | 771                             | 3.5               | 1.5             | 7.496     | A                             |
| D - A4226/Port Road       | 769                   | 192                     | 479                       | 0.00                       | 1206              | 0.638 | 779                 | 1000                            | 4.4               | 1.8             | 8.746     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 510                   | 127                     | 631                       |                            | 1056              | 0.483 | 513                 | 414                             | 1.8               | 1.0             | 6.912     | A                             |
| B - A4226/Port Road W     | 656                   | 164                     | 605                       |                            | 1294              | 0.507 | 660                 | 539                             | 1.9               | 1.1             | 5.771     | A                             |
| C - B4226/Pontypridd Road | 594                   | 149                     | 628                       |                            | 1298              | 0.458 | 596                 | 637                             | 1.5               | 0.9             | 5.164     | A                             |
| D - A4226/Port Road       | 644                   | 161                     | 398                       | 0.00                       | 1254              | 0.513 | 647                 | 827                             | 1.8               | 1.1             | 6.035     | A                             |

# Base - 2038 B+D M, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 77.88              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D7 | 2038 B+D M    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 545                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 771                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 855                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1002                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data



### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 176                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 306                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 227                 |
|      | D - A4226/Port Road       | 297                    | 418                   | 287                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.75    | 17.95         | 2.9             | C       | 500                     | 750                           |
| B - A4226/Port Road W     | 0.70    | 10.26         | 2.4             | B       | 707                     | 1061                          |
| C - B4226/Pontypridd Road | 0.76    | 12.21         | 3.1             | B       | 785                     | 1177                          |
| D - A4226/Port Road       | 1.13    | 218.55        | 73.7            | F       | 919                     | 1379                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 410                   | 103                     | 759                       |                            | 975               | 0.421 | 407                 | 580                             | 0.0               | 0.7             | 6.515     | A                             |
| B - A4226/Port Road W     | 580                   | 145                     | 523                       |                            | 1349              | 0.430 | 577                 | 643                             | 0.0               | 0.8             | 4.776     | A                             |
| C - B4226/Pontypridd Road | 644                   | 161                     | 483                       |                            | 1397              | 0.461 | 640                 | 618                             | 0.0               | 0.9             | 4.852     | A                             |
| D - A4226/Port Road       | 754                   | 189                     | 592                       | 0.00                       | 1138              | 0.663 | 746                 | 531                             | 0.0               | 2.0             | 9.453     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 490                   | 122                     | 905                       |                            | 882               | 0.556 | 488                 | 693                             | 0.7               | 1.3             | 9.380     | A                             |
| B - A4226/Port Road W     | 693                   | 173                     | 625                       |                            | 1281              | 0.541 | 691                 | 768                             | 0.8               | 1.2             | 6.259     | A                             |
| C - B4226/Pontypridd Road | 769                   | 192                     | 578                       |                            | 1332              | 0.577 | 767                 | 739                             | 0.9               | 1.4             | 6.500     | A                             |
| D - A4226/Port Road       | 901                   | 225                     | 709                       | 0.00                       | 1069              | 0.843 | 889                 | 635                             | 2.0               | 4.9             | 19.807    | C                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 600                   | 150                     | 1017                      |                            | 811               | 0.740 | 594                 | 809                             | 1.3               | 2.7             | 16.703    | C                             |
| B - A4226/Port Road W     | 849                   | 212                     | 727                       |                            | 1213              | 0.700 | 844                 | 885                             | 1.2               | 2.3             | 9.910     | A                             |
| C - B4226/Pontypridd Road | 941                   | 235                     | 706                       |                            | 1245              | 0.756 | 935                 | 866                             | 1.4               | 3.0             | 11.642    | B                             |
| D - A4226/Port Road       | 1103                  | 276                     | 865                       | 0.00                       | 976               | 1.130 | 961                 | 775                             | 4.9               | 40.5            | 98.492    | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 600                   | 150                     | 1026                      |                            | 805               | 0.745 | 599                 | 815                             | 2.7               | 2.9             | 17.954    | C                             |
| B - A4226/Port Road W     | 849                   | 212                     | 733                       |                            | 1209              | 0.702 | 849                 | 892                             | 2.3               | 2.4             | 10.257    | B                             |
| C - B4226/Pontypridd Road | 941                   | 235                     | 710                       |                            | 1243              | 0.758 | 941                 | 872                             | 3.0               | 3.1             | 12.206    | B                             |
| D - A4226/Port Road       | 1103                  | 276                     | 871                       | 0.00                       | 973               | 1.134 | 971                 | 780                             | 40.5              | 73.7            | 218.553   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 490                   | 122                     | 1021                      |                            | 808               | 0.606 | 495                 | 745                             | 2.9               | 1.6             | 12.036    | B                             |
| B - A4226/Port Road W     | 693                   | 173                     | 677                       |                            | 1247              | 0.556 | 697                 | 840                             | 2.4               | 1.3             | 6.785     | A                             |
| C - B4226/Pontypridd Road | 769                   | 192                     | 584                       |                            | 1328              | 0.579 | 775                 | 790                             | 3.1               | 1.4             | 6.755     | A                             |
| D - A4226/Port Road       | 901                   | 225                     | 717                       | 0.00                       | 1064              | 0.846 | 1049                | 642                             | 73.7              | 36.5            | 191.288   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 410                   | 103                     | 863                       |                            | 908               | 0.452 | 413                 | 626                             | 1.6               | 0.9             | 7.552     | A                             |
| B - A4226/Port Road W     | 580                   | 145                     | 570                       |                            | 1318              | 0.440 | 582                 | 707                             | 1.3               | 0.8             | 5.043     | A                             |
| C - B4226/Pontypridd Road | 644                   | 161                     | 488                       |                            | 1394              | 0.462 | 646                 | 664                             | 1.4               | 0.9             | 4.949     | A                             |
| D - A4226/Port Road       | 754                   | 189                     | 598                       | 0.00                       | 1135              | 0.664 | 892                 | 536                             | 36.5              | 2.2             | 25.939    | D                             |

# Base - 2038 B+D M, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 22.18              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D8 | 2038 B+D M    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 681                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 881                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 796                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 867                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 209                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 504                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 399                 |
|      | D - A4226/Port Road       | 187                    | 416                   | 263                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.86    | 29.78         | 5.8             | D       | 625                     | 937                           |
| B - A4226/Port Road W     | 0.88    | 25.15         | 6.4             | D       | 808                     | 1213                          |
| C - B4226/Pontypridd Road | 0.80    | 16.28         | 3.8             | C       | 730                     | 1096                          |
| D - A4226/Port Road       | 0.83    | 18.63         | 4.7             | C       | 796                     | 1193                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 513                   | 128                     | 631                       |                            | 1056              | 0.486 | 509                 | 412                             | 0.0               | 1.0             | 6.778     | A                             |
| B - A4226/Port Road W     | 663                   | 166                     | 603                       |                            | 1295              | 0.512 | 659                 | 536                             | 0.0               | 1.0             | 5.683     | A                             |
| C - B4226/Pontypridd Road | 599                   | 150                     | 630                       |                            | 1297              | 0.462 | 596                 | 632                             | 0.0               | 0.9             | 5.128     | A                             |
| D - A4226/Port Road       | 653                   | 163                     | 394                       | 0.00                       | 1257              | 0.519 | 648                 | 833                             | 0.0               | 1.1             | 5.957     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 612                   | 153                     | 755                       |                            | 977               | 0.627 | 609                 | 493                             | 1.0               | 1.7             | 10.075    | B                             |
| B - A4226/Port Road W     | 792                   | 198                     | 722                       |                            | 1216              | 0.651 | 789                 | 642                             | 1.0               | 1.8             | 8.458     | A                             |
| C - B4226/Pontypridd Road | 716                   | 179                     | 755                       |                            | 1212              | 0.590 | 713                 | 756                             | 0.9               | 1.4             | 7.209     | A                             |
| D - A4226/Port Road       | 779                   | 195                     | 471                       | 0.00                       | 1210              | 0.644 | 777                 | 997                             | 1.1               | 1.8             | 8.352     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 750                   | 187                     | 918                       |                            | 874               | 0.858 | 736                 | 599                             | 1.7               | 5.2             | 24.829    | C                             |
| B - A4226/Port Road W     | 970                   | 242                     | 874                       |                            | 1115              | 0.870 | 954                 | 780                             | 1.8               | 5.7             | 20.913    | C                             |
| C - B4226/Pontypridd Road | 876                   | 219                     | 913                       |                            | 1104              | 0.794 | 868                 | 916                             | 1.4               | 3.6             | 14.767    | B                             |
| D - A4226/Port Road       | 955                   | 239                     | 573                       | 0.00                       | 1150              | 0.830 | 944                 | 1208                            | 1.8               | 4.5             | 16.868    | C                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 750                   | 187                     | 927                       |                            | 868               | 0.864 | 747                 | 605                             | 5.2               | 5.8             | 29.779    | D                             |
| B - A4226/Port Road W     | 970                   | 242                     | 886                       |                            | 1107              | 0.876 | 967                 | 788                             | 5.7               | 6.4             | 25.145    | D                             |
| C - B4226/Pontypridd Road | 876                   | 219                     | 926                       |                            | 1095              | 0.800 | 875                 | 928                             | 3.6               | 3.8             | 16.278    | C                             |
| D - A4226/Port Road       | 955                   | 239                     | 578                       | 0.00                       | 1147              | 0.832 | 954                 | 1223                            | 4.5               | 4.7             | 18.630    | C                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 612                   | 153                     | 769                       |                            | 968               | 0.632 | 628                 | 502                             | 5.8               | 1.8             | 11.460    | B                             |
| B - A4226/Port Road W     | 792                   | 198                     | 742                       |                            | 1203              | 0.658 | 810                 | 655                             | 6.4               | 2.0             | 9.637     | A                             |
| C - B4226/Pontypridd Road | 716                   | 179                     | 775                       |                            | 1198              | 0.597 | 725                 | 776                             | 3.8               | 1.5             | 7.776     | A                             |
| D - A4226/Port Road       | 779                   | 195                     | 480                       | 0.00                       | 1205              | 0.647 | 791                 | 1020                            | 4.7               | 1.9             | 9.030     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 513                   | 128                     | 638                       |                            | 1051              | 0.488 | 516                 | 416                             | 1.8               | 1.0             | 7.018     | A                             |
| B - A4226/Port Road W     | 663                   | 166                     | 611                       |                            | 1290              | 0.514 | 667                 | 543                             | 2.0               | 1.1             | 5.877     | A                             |
| C - B4226/Pontypridd Road | 599                   | 150                     | 638                       |                            | 1291              | 0.464 | 602                 | 640                             | 1.5               | 0.9             | 5.258     | A                             |
| D - A4226/Port Road       | 653                   | 163                     | 398                       | 0.00                       | 1254              | 0.520 | 656                 | 842                             | 1.9               | 1.1             | 6.128     | A                             |

# Base - 2038 B+D H, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 87.23              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D9 | 2038 B+D H    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 546                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 773                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 857                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1021                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 177                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 308                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 229                 |
|      | D - A4226/Port Road       | 303                    | 426                   | 292                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.75    | 18.06         | 2.9             | C       | 501                     | 752                           |
| B - A4226/Port Road W     | 0.70    | 10.33         | 2.4             | B       | 709                     | 1064                          |
| C - B4226/Pontypridd Road | 0.76    | 12.39         | 3.2             | B       | 786                     | 1180                          |
| D - A4226/Port Road       | 1.16    | 245.28        | 83.8            | F       | 937                     | 1405                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 411                   | 103                     | 768                       |                            | 969               | 0.424 | 408                 | 584                             | 0.0               | 0.8             | 6.595     | A                             |
| B - A4226/Port Road W     | 582                   | 145                     | 528                       |                            | 1346              | 0.432 | 579                 | 649                             | 0.0               | 0.8             | 4.804     | A                             |
| C - B4226/Pontypridd Road | 645                   | 161                     | 485                       |                            | 1396              | 0.462 | 642                 | 622                             | 0.0               | 0.9             | 4.872     | A                             |
| D - A4226/Port Road       | 769                   | 192                     | 592                       | 0.00                       | 1138              | 0.675 | 760                 | 534                             | 0.0               | 2.1             | 9.783     | A                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 491                   | 123                     | 916                       |                            | 875               | 0.561 | 489                 | 698                             | 0.8               | 1.3             | 9.561     | A                             |
| B - A4226/Port Road W     | 695                   | 174                     | 630                       |                            | 1277              | 0.544 | 693                 | 774                             | 0.8               | 1.2             | 6.311     | A                             |
| C - B4226/Pontypridd Road | 771                   | 193                     | 581                       |                            | 1331              | 0.579 | 768                 | 743                             | 0.9               | 1.4             | 6.543     | A                             |
| D - A4226/Port Road       | 918                   | 229                     | 709                       | 0.00                       | 1069              | 0.859 | 904                 | 640                             | 2.1               | 5.5             | 21.400    | C                             |



**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 601                   | 150                     | 1019                      |                            | 810               | 0.742 | 595                 | 810                             | 1.3               | 2.8             | 16.858    | C                             |
| B - A4226/Port Road W     | 851                   | 213                     | 728                       |                            | 1212              | 0.702 | 847                 | 886                             | 1.2               | 2.3             | 9.991     | A                             |
| C - B4226/Pontypridd Road | 944                   | 236                     | 709                       |                            | 1243              | 0.759 | 937                 | 866                             | 1.4               | 3.1             | 11.798    | B                             |
| D - A4226/Port Road       | 1124                  | 281                     | 865                       | 0.00                       | 976               | 1.152 | 964                 | 781                             | 5.5               | 45.6            | 108.431   | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 601                   | 150                     | 1026                      |                            | 805               | 0.747 | 601                 | 815                             | 2.8               | 2.9             | 18.059    | C                             |
| B - A4226/Port Road W     | 851                   | 213                     | 734                       |                            | 1208              | 0.705 | 851                 | 893                             | 2.3               | 2.4             | 10.332    | B                             |
| C - B4226/Pontypridd Road | 944                   | 236                     | 713                       |                            | 1240              | 0.761 | 943                 | 872                             | 3.1               | 3.2             | 12.386    | B                             |
| D - A4226/Port Road       | 1124                  | 281                     | 871                       | 0.00                       | 973               | 1.156 | 971                 | 786                             | 45.6              | 83.8            | 245.276   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 491                   | 123                     | 1022                      |                            | 808               | 0.608 | 496                 | 746                             | 2.9               | 1.6             | 12.100    | B                             |
| B - A4226/Port Road W     | 695                   | 174                     | 678                       |                            | 1246              | 0.558 | 699                 | 840                             | 2.4               | 1.3             | 6.820     | A                             |
| C - B4226/Pontypridd Road | 771                   | 193                     | 587                       |                            | 1326              | 0.581 | 777                 | 790                             | 3.2               | 1.4             | 6.805     | A                             |
| D - A4226/Port Road       | 918                   | 229                     | 717                       | 0.00                       | 1064              | 0.863 | 1051                | 647                             | 83.8              | 50.5            | 230.897   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 411                   | 103                     | 912                       |                            | 878               | 0.468 | 414                 | 647                             | 1.6               | 0.9             | 8.062     | A                             |
| B - A4226/Port Road W     | 582                   | 145                     | 590                       |                            | 1304              | 0.446 | 584                 | 736                             | 1.3               | 0.8             | 5.147     | A                             |
| C - B4226/Pontypridd Road | 645                   | 161                     | 490                       |                            | 1393              | 0.463 | 647                 | 684                             | 1.4               | 0.9             | 4.969     | A                             |
| D - A4226/Port Road       | 769                   | 192                     | 598                       | 0.00                       | 1135              | 0.677 | 961                 | 540                             | 50.5              | 2.3             | 48.878    | E                             |

# Base - 2038 B+D H, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 23.31              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D10 | 2038 B+D H    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 683                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 887                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 802                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 874                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 211                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 510                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 405                 |
|      | D - A4226/Port Road       | 188                    | 420                   | 265                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.87    | 31.17         | 6.1             | D       | 627                     | 940                           |
| B - A4226/Port Road W     | 0.88    | 26.67         | 6.8             | D       | 814                     | 1221                          |
| C - B4226/Pontypridd Road | 0.81    | 17.20         | 4.1             | C       | 736                     | 1104                          |
| D - A4226/Port Road       | 0.84    | 19.35         | 4.9             | C       | 802                     | 1203                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 514                   | 129                     | 635                       |                            | 1053              | 0.488 | 510                 | 412                             | 0.0               | 1.0             | 6.826     | A                             |
| B - A4226/Port Road W     | 668                   | 167                     | 606                       |                            | 1293              | 0.516 | 664                 | 539                             | 0.0               | 1.1             | 5.742     | A                             |
| C - B4226/Pontypridd Road | 604                   | 151                     | 636                       |                            | 1293              | 0.467 | 600                 | 633                             | 0.0               | 0.9             | 5.190     | A                             |
| D - A4226/Port Road       | 658                   | 165                     | 394                       | 0.00                       | 1257              | 0.524 | 654                 | 843                             | 0.0               | 1.1             | 6.007     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 614                   | 154                     | 760                       |                            | 974               | 0.631 | 611                 | 494                             | 1.0               | 1.7             | 10.210    | B                             |
| B - A4226/Port Road W     | 797                   | 199                     | 726                       |                            | 1214              | 0.657 | 794                 | 646                             | 1.1               | 1.9             | 8.608     | A                             |
| C - B4226/Pontypridd Road | 721                   | 180                     | 762                       |                            | 1207              | 0.597 | 719                 | 758                             | 0.9               | 1.5             | 7.357     | A                             |
| D - A4226/Port Road       | 786                   | 196                     | 471                       | 0.00                       | 1210              | 0.649 | 783                 | 1009                            | 1.1               | 1.8             | 8.470     | A                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 752                   | 188                     | 924                       |                            | 870               | 0.864 | 737                 | 599                             | 1.7               | 5.5             | 25.661    | D                             |
| B - A4226/Port Road W     | 977                   | 244                     | 878                       |                            | 1113              | 0.878 | 960                 | 783                             | 1.9               | 6.0             | 21.824    | C                             |
| C - B4226/Pontypridd Road | 883                   | 221                     | 920                       |                            | 1099              | 0.804 | 874                 | 917                             | 1.5               | 3.8             | 15.443    | C                             |
| D - A4226/Port Road       | 962                   | 241                     | 572                       | 0.00                       | 1150              | 0.837 | 951                 | 1222                            | 1.8               | 4.6             | 17.385    | C                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 752                   | 188                     | 934                       |                            | 864               | 0.871 | 749                 | 606                             | 5.5               | 6.1             | 31.170    | D                             |
| B - A4226/Port Road W     | 977                   | 244                     | 890                       |                            | 1104              | 0.885 | 974                 | 792                             | 6.0               | 6.8             | 26.674    | D                             |
| C - B4226/Pontypridd Road | 883                   | 221                     | 934                       |                            | 1090              | 0.810 | 882                 | 930                             | 3.8               | 4.1             | 17.201    | C                             |
| D - A4226/Port Road       | 962                   | 241                     | 578                       | 0.00                       | 1147              | 0.839 | 961                 | 1238                            | 4.6               | 4.9             | 19.346    | C                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 614                   | 154                     | 775                       |                            | 964               | 0.637 | 631                 | 503                             | 6.1               | 1.9             | 11.728    | B                             |
| B - A4226/Port Road W     | 797                   | 199                     | 746                       |                            | 1200              | 0.664 | 816                 | 659                             | 6.8               | 2.1             | 9.930     | A                             |
| C - B4226/Pontypridd Road | 721                   | 180                     | 784                       |                            | 1192              | 0.605 | 731                 | 779                             | 4.1               | 1.6             | 7.996     | A                             |
| D - A4226/Port Road       | 786                   | 196                     | 481                       | 0.00                       | 1205              | 0.652 | 798                 | 1034                            | 4.9               | 2.0             | 9.209     | A                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 514                   | 129                     | 642                       |                            | 1048              | 0.490 | 518                 | 417                             | 1.9               | 1.0             | 7.081     | A                             |
| B - A4226/Port Road W     | 668                   | 167                     | 614                       |                            | 1288              | 0.518 | 672                 | 546                             | 2.1               | 1.1             | 5.943     | A                             |
| C - B4226/Pontypridd Road | 604                   | 151                     | 645                       |                            | 1287              | 0.469 | 606                 | 641                             | 1.6               | 0.9             | 5.327     | A                             |
| D - A4226/Port Road       | 658                   | 165                     | 398                       | 0.00                       | 1254              | 0.525 | 661                 | 853                             | 2.0               | 1.1             | 6.188     | A                             |

# Base - 2038 B+D+C L, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 164.52             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D11 | 2038 B+D+C L  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 606                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 881                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 928                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1125                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 237                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 416                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 300                 |
|      | D - A4226/Port Road       | 370                    | 451                   | 304                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.81    | 23.28         | 4.1             | C       | 556                     | 834                           |
| B - A4226/Port Road W     | 0.83    | 17.89         | 4.6             | C       | 808                     | 1213                          |
| C - B4226/Pontypridd Road | 0.92    | 34.58         | 9.2             | D       | 852                     | 1277                          |
| D - A4226/Port Road       | 1.27    | 462.62        | 141.5           | F       | 1032                    | 1548                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 456                   | 114                     | 794                       |                            | 952               | 0.479 | 452                 | 633                             | 0.0               | 0.9             | 7.419     | A                             |
| B - A4226/Port Road W     | 663                   | 166                     | 580                       |                            | 1311              | 0.506 | 659                 | 666                             | 0.0               | 1.0             | 5.656     | A                             |
| C - B4226/Pontypridd Road | 699                   | 175                     | 610                       |                            | 1311              | 0.533 | 694                 | 629                             | 0.0               | 1.2             | 5.963     | A                             |
| D - A4226/Port Road       | 847                   | 212                     | 592                       | 0.00                       | 1139              | 0.744 | 835                 | 713                             | 0.0               | 2.9             | 12.066    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 545                   | 136                     | 938                       |                            | 861               | 0.633 | 542                 | 751                             | 0.9               | 1.7             | 11.571    | B                             |
| B - A4226/Port Road W     | 792                   | 198                     | 690                       |                            | 1238              | 0.640 | 789                 | 790                             | 1.0               | 1.8             | 8.205     | A                             |
| C - B4226/Pontypridd Road | 834                   | 209                     | 730                       |                            | 1228              | 0.679 | 831                 | 748                             | 1.2               | 2.1             | 9.216     | A                             |
| D - A4226/Port Road       | 1011                  | 253                     | 708                       | 0.00                       | 1070              | 0.946 | 981                 | 853                             | 2.9               | 10.4            | 34.717    | D                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 667                   | 167                     | 993                       |                            | 826               | 0.808 | 659                 | 839                             | 1.7               | 3.9             | 21.231    | C                             |
| B - A4226/Port Road W     | 970                   | 242                     | 781                       |                            | 1177              | 0.824 | 960                 | 871                             | 1.8               | 4.4             | 16.314    | C                             |
| C - B4226/Pontypridd Road | 1022                  | 255                     | 888                       |                            | 1121              | 0.912 | 999                 | 852                             | 2.1               | 7.9             | 26.492    | D                             |
| D - A4226/Port Road       | 1239                  | 310                     | 853                       | 0.00                       | 983               | 1.260 | 979                 | 1034                            | 10.4              | 75.4            | 169.659   | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 667                   | 167                     | 996                       |                            | 824               | 0.809 | 666                 | 846                             | 3.9               | 4.1             | 23.282    | C                             |
| B - A4226/Port Road W     | 970                   | 242                     | 786                       |                            | 1174              | 0.826 | 969                 | 876                             | 4.4               | 4.6             | 17.889    | C                             |
| C - B4226/Pontypridd Road | 1022                  | 255                     | 897                       |                            | 1114              | 0.917 | 1017                | 857                             | 7.9               | 9.2             | 34.585    | D                             |
| D - A4226/Port Road       | 1239                  | 310                     | 867                       | 0.00                       | 975               | 1.271 | 974                 | 1047                            | 75.4              | 141.5           | 399.135   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 545                   | 136                     | 993                       |                            | 826               | 0.659 | 553                 | 787                             | 4.1               | 2.1             | 14.034    | B                             |
| B - A4226/Port Road W     | 792                   | 198                     | 717                       |                            | 1220              | 0.649 | 803                 | 829                             | 4.6               | 2.0             | 9.104     | A                             |
| C - B4226/Pontypridd Road | 834                   | 209                     | 744                       |                            | 1219              | 0.684 | 862                 | 776                             | 9.2               | 2.3             | 11.107    | B                             |
| D - A4226/Port Road       | 1011                  | 253                     | 732                       | 0.00                       | 1055              | 0.958 | 1048                | 874                             | 141.5             | 132.4           | 462.616   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 456                   | 114                     | 992                       |                            | 827               | 0.552 | 459                 | 733                             | 2.1               | 1.3             | 10.244    | B                             |
| B - A4226/Port Road W     | 663                   | 166                     | 664                       |                            | 1255              | 0.529 | 666                 | 787                             | 2.0               | 1.2             | 6.335     | A                             |
| C - B4226/Pontypridd Road | 699                   | 175                     | 618                       |                            | 1305              | 0.535 | 703                 | 713                             | 2.3               | 1.2             | 6.191     | A                             |
| D - A4226/Port Road       | 847                   | 212                     | 599                       | 0.00                       | 1134              | 0.747 | 1125                | 722                             | 132.4             | 62.8            | 314.387   | F                             |



# Base - 2038 B+D+C L, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 50.09              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D12 | 2038 B+D+C L  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 750                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 909                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 809                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 984                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 278                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 532                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 412                 |
|      | D - A4226/Port Road       | 229                    | 462                   | 292                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.01    | 90.80         | 21.0            | F       | 688                     | 1032                          |
| B - A4226/Port Road W     | 0.95    | 47.87         | 12.6            | E       | 834                     | 1251                          |
| C - B4226/Pontypridd Road | 0.86    | 24.04         | 5.6             | C       | 742                     | 1114                          |
| D - A4226/Port Road       | 0.94    | 42.54         | 12.0            | E       | 903                     | 1354                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 565                   | 141                     | 686                       |                            | 1021              | 0.553 | 560                 | 443                             | 0.0               | 1.3             | 8.052     | A                             |
| B - A4226/Port Road W     | 684                   | 171                     | 676                       |                            | 1247              | 0.549 | 680                 | 570                             | 0.0               | 1.2             | 6.360     | A                             |
| C - B4226/Pontypridd Road | 609                   | 152                     | 702                       |                            | 1248              | 0.488 | 605                 | 653                             | 0.0               | 0.9             | 5.589     | A                             |
| D - A4226/Port Road       | 741                   | 185                     | 393                       | 0.00                       | 1257              | 0.590 | 735                 | 914                             | 0.0               | 1.4             | 6.924     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 674                   | 169                     | 821                       |                            | 935               | 0.721 | 669                 | 530                             | 1.3               | 2.6             | 13.834    | B                             |
| B - A4226/Port Road W     | 817                   | 204                     | 808                       |                            | 1159              | 0.705 | 813                 | 682                             | 1.2               | 2.3             | 10.377    | B                             |
| C - B4226/Pontypridd Road | 727                   | 182                     | 840                       |                            | 1154              | 0.630 | 724                 | 781                             | 0.9               | 1.7             | 8.352     | A                             |
| D - A4226/Port Road       | 885                   | 221                     | 471                       | 0.00                       | 1211              | 0.731 | 880                 | 1093                            | 1.4               | 2.6             | 10.870    | B                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 826                   | 206                     | 986                       |                            | 831               | 0.994 | 781                 | 637                             | 2.6               | 13.8            | 51.982    | F                             |
| B - A4226/Port Road W     | 1001                  | 250                     | 951                       |                            | 1064              | 0.941 | 971                 | 815                             | 2.3               | 9.7             | 32.319    | D                             |
| C - B4226/Pontypridd Road | 891                   | 223                     | 997                       |                            | 1047              | 0.851 | 877                 | 926                             | 1.7               | 5.0             | 19.952    | C                             |
| D - A4226/Port Road       | 1083                  | 271                     | 568                       | 0.00                       | 1153              | 0.940 | 1054                | 1306                            | 2.6               | 9.9             | 30.744    | D                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 826                   | 206                     | 1004                      |                            | 819               | 1.008 | 797                 | 648                             | 13.8              | 21.0            | 90.800    | F                             |
| B - A4226/Port Road W     | 1001                  | 250                     | 970                       |                            | 1051              | 0.952 | 989                 | 830                             | 9.7               | 12.6            | 47.873    | E                             |
| C - B4226/Pontypridd Road | 891                   | 223                     | 1016                      |                            | 1034              | 0.862 | 888                 | 944                             | 5.0               | 5.6             | 24.040    | C                             |
| D - A4226/Port Road       | 1083                  | 271                     | 576                       | 0.00                       | 1148              | 0.944 | 1075                | 1328                            | 9.9               | 12.0            | 42.541    | E                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 674                   | 169                     | 856                       |                            | 913               | 0.739 | 746                 | 550                             | 21.0              | 3.2             | 30.357    | D                             |
| B - A4226/Port Road W     | 817                   | 204                     | 883                       |                            | 1109              | 0.737 | 856                 | 719                             | 12.6              | 3.0             | 16.288    | C                             |
| C - B4226/Pontypridd Road | 727                   | 182                     | 899                       |                            | 1113              | 0.653 | 742                 | 839                             | 5.6               | 1.9             | 10.092    | B                             |
| D - A4226/Port Road       | 885                   | 221                     | 486                       | 0.00                       | 1202              | 0.736 | 921                 | 1156                            | 12.0              | 3.0             | 14.496    | B                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 565                   | 141                     | 696                       |                            | 1014              | 0.557 | 572                 | 449                             | 3.2               | 1.3             | 8.627     | A                             |
| B - A4226/Port Road W     | 684                   | 171                     | 689                       |                            | 1238              | 0.553 | 691                 | 579                             | 3.0               | 1.3             | 6.735     | A                             |
| C - B4226/Pontypridd Road | 609                   | 152                     | 715                       |                            | 1239              | 0.492 | 613                 | 665                             | 1.9               | 1.0             | 5.804     | A                             |
| D - A4226/Port Road       | 741                   | 185                     | 399                       | 0.00                       | 1253              | 0.591 | 747                 | 929                             | 3.0               | 1.5             | 7.282     | A                             |

# Base - 2038 B+D+C M, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 186.06             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D13 | 2038 B+D+C M  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 608                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 884                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 930                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1150                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 239                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 419                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 302                 |
|      | D - A4226/Port Road       | 378                    | 461                   | 311                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.81    | 23.62         | 4.2             | C       | 558                     | 837                           |
| B - A4226/Port Road W     | 0.83    | 18.31         | 4.7             | C       | 811                     | 1217                          |
| C - B4226/Pontypridd Road | 0.92    | 36.18         | 9.6             | E       | 853                     | 1280                          |
| D - A4226/Port Road       | 1.30    | 522.11        | 156.8           | F       | 1055                    | 1583                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 458                   | 114                     | 806                       |                            | 945               | 0.485 | 454                 | 639                             | 0.0               | 1.0             | 7.554     | A                             |
| B - A4226/Port Road W     | 666                   | 166                     | 587                       |                            | 1306              | 0.509 | 661                 | 673                             | 0.0               | 1.1             | 5.714     | A                             |
| C - B4226/Pontypridd Road | 700                   | 175                     | 614                       |                            | 1308              | 0.535 | 696                 | 634                             | 0.0               | 1.2             | 6.001     | A                             |
| D - A4226/Port Road       | 866                   | 216                     | 592                       | 0.00                       | 1139              | 0.760 | 853                 | 718                             | 0.0               | 3.1             | 12.759    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 547                   | 137                     | 948                       |                            | 855               | 0.640 | 543                 | 756                             | 1.0               | 1.8             | 11.875    | B                             |
| B - A4226/Port Road W     | 795                   | 199                     | 696                       |                            | 1234              | 0.644 | 792                 | 796                             | 1.1               | 1.8             | 8.331     | A                             |
| C - B4226/Pontypridd Road | 836                   | 209                     | 735                       |                            | 1225              | 0.682 | 832                 | 753                             | 1.2               | 2.1             | 9.324     | A                             |
| D - A4226/Port Road       | 1034                  | 258                     | 708                       | 0.00                       | 1070              | 0.967 | 996                 | 859                             | 3.1               | 12.5            | 39.464    | E                             |

### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 669                   | 167                     | 994                       |                            | 826               | 0.811 | 661                 | 839                             | 1.8               | 4.0             | 21.552    | C                             |
| B - A4226/Port Road W     | 973                   | 243                     | 783                       |                            | 1175              | 0.828 | 963                 | 871                             | 1.8               | 4.5             | 16.651    | C                             |
| C - B4226/Pontypridd Road | 1024                  | 256                     | 893                       |                            | 1117              | 0.917 | 1000                | 853                             | 2.1               | 8.2             | 27.314    | D                             |
| D - A4226/Port Road       | 1266                  | 317                     | 853                       | 0.00                       | 983               | 1.287 | 980                 | 1041                            | 12.5              | 84.0            | 188.508   | F                             |

### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 669                   | 167                     | 996                       |                            | 824               | 0.812 | 668                 | 846                             | 4.0               | 4.2             | 23.623    | C                             |
| B - A4226/Port Road W     | 973                   | 243                     | 788                       |                            | 1172              | 0.830 | 972                 | 876                             | 4.5               | 4.7             | 18.313    | C                             |
| C - B4226/Pontypridd Road | 1024                  | 256                     | 903                       |                            | 1111              | 0.922 | 1018                | 857                             | 8.2               | 9.6             | 36.175    | E                             |
| D - A4226/Port Road       | 1266                  | 317                     | 867                       | 0.00                       | 975               | 1.299 | 975                 | 1054                            | 84.0              | 156.8           | 441.072   | F                             |

### 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 547                   | 137                     | 993                       |                            | 826               | 0.662 | 555                 | 787                             | 4.2               | 2.1             | 14.176    | B                             |
| B - A4226/Port Road W     | 795                   | 199                     | 719                       |                            | 1218              | 0.652 | 806                 | 829                             | 4.7               | 2.0             | 9.215     | A                             |
| C - B4226/Pontypridd Road | 836                   | 209                     | 749                       |                            | 1216              | 0.688 | 865                 | 776                             | 9.6               | 2.3             | 11.378    | B                             |
| D - A4226/Port Road       | 1034                  | 258                     | 733                       | 0.00                       | 1055              | 0.980 | 1048                | 881                             | 156.8             | 153.4           | 522.113   | F                             |

### 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 458                   | 114                     | 993                       |                            | 826               | 0.554 | 461                 | 733                             | 2.1               | 1.3             | 10.307    | B                             |
| B - A4226/Port Road W     | 666                   | 166                     | 666                       |                            | 1253              | 0.531 | 669                 | 787                             | 2.0               | 1.2             | 6.379     | A                             |
| C - B4226/Pontypridd Road | 700                   | 175                     | 621                       |                            | 1303              | 0.537 | 705                 | 714                             | 2.3               | 1.2             | 6.237     | A                             |
| D - A4226/Port Road       | 866                   | 216                     | 599                       | 0.00                       | 1134              | 0.763 | 1127                | 727                             | 153.4             | 88.2            | 387.456   | F                             |

# Base - 2038 B+D+C M, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 55.43              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D14 | 2038 B+D+C M  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 754                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 918                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 817                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 996                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data



### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 282                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 541                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 420                 |
|      | D - A4226/Port Road       | 231                    | 468                   | 296                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.02    | 100.25        | 23.7            | F       | 692                     | 1038                          |
| B - A4226/Port Road W     | 0.96    | 53.20         | 14.3            | F       | 842                     | 1264                          |
| C - B4226/Pontypridd Road | 0.88    | 26.52         | 6.2             | D       | 750                     | 1125                          |
| D - A4226/Port Road       | 0.95    | 47.27         | 13.6            | E       | 914                     | 1371                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 568                   | 142                     | 693                       |                            | 1016              | 0.559 | 562                 | 444                             | 0.0               | 1.3             | 8.186     | A                             |
| B - A4226/Port Road W     | 691                   | 173                     | 681                       |                            | 1243              | 0.556 | 686                 | 574                             | 0.0               | 1.2             | 6.477     | A                             |
| C - B4226/Pontypridd Road | 615                   | 154                     | 712                       |                            | 1241              | 0.496 | 611                 | 656                             | 0.0               | 1.0             | 5.697     | A                             |
| D - A4226/Port Road       | 750                   | 187                     | 393                       | 0.00                       | 1257              | 0.597 | 744                 | 930                             | 0.0               | 1.5             | 7.038     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 678                   | 169                     | 830                       |                            | 930               | 0.729 | 672                 | 531                             | 1.3               | 2.7             | 14.290    | B                             |
| B - A4226/Port Road W     | 825                   | 206                     | 815                       |                            | 1154              | 0.715 | 821                 | 687                             | 1.2               | 2.4             | 10.748    | B                             |
| C - B4226/Pontypridd Road | 734                   | 184                     | 851                       |                            | 1146              | 0.641 | 731                 | 784                             | 1.0               | 1.7             | 8.640     | A                             |
| D - A4226/Port Road       | 895                   | 224                     | 471                       | 0.00                       | 1211              | 0.740 | 890                 | 1112                            | 1.5               | 2.8             | 11.208    | B                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 830                   | 208                     | 994                       |                            | 826               | 1.005 | 780                 | 638                             | 2.7               | 15.1            | 55.459    | F                             |
| B - A4226/Port Road W     | 1011                  | 253                     | 955                       |                            | 1061              | 0.953 | 978                 | 819                             | 2.4               | 10.7            | 34.749    | D                             |
| C - B4226/Pontypridd Road | 900                   | 225                     | 1007                      |                            | 1040              | 0.865 | 885                 | 926                             | 1.7               | 5.4             | 21.475    | C                             |
| D - A4226/Port Road       | 1097                  | 274                     | 567                       | 0.00                       | 1153              | 0.951 | 1064                | 1324                            | 2.8               | 10.9            | 32.916    | D                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 830                   | 208                     | 1013                      |                            | 814               | 1.020 | 796                 | 649                             | 15.1              | 23.7            | 100.249   | F                             |
| B - A4226/Port Road W     | 1011                  | 253                     | 974                       |                            | 1049              | 0.964 | 996                 | 834                             | 10.7              | 14.3            | 53.204    | F                             |
| C - B4226/Pontypridd Road | 900                   | 225                     | 1026                      |                            | 1027              | 0.876 | 896                 | 944                             | 5.4               | 6.2             | 26.519    | D                             |
| D - A4226/Port Road       | 1097                  | 274                     | 576                       | 0.00                       | 1148              | 0.955 | 1086                | 1347                            | 10.9              | 13.6            | 47.271    | E                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 678                   | 169                     | 870                       |                            | 904               | 0.750 | 759                 | 554                             | 23.7              | 3.4             | 36.802    | E                             |
| B - A4226/Port Road W     | 825                   | 206                     | 900                       |                            | 1098              | 0.752 | 869                 | 729                             | 14.3              | 3.3             | 18.591    | C                             |
| C - B4226/Pontypridd Road | 734                   | 184                     | 919                       |                            | 1100              | 0.668 | 751                 | 850                             | 6.2               | 2.1             | 10.824    | B                             |
| D - A4226/Port Road       | 895                   | 224                     | 487                       | 0.00                       | 1201              | 0.746 | 937                 | 1183                            | 13.6              | 3.1             | 15.807    | C                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 568                   | 142                     | 704                       |                            | 1009              | 0.563 | 576                 | 451                             | 3.4               | 1.4             | 8.825     | A                             |
| B - A4226/Port Road W     | 691                   | 173                     | 696                       |                            | 1234              | 0.560 | 699                 | 584                             | 3.3               | 1.3             | 6.902     | A                             |
| C - B4226/Pontypridd Road | 615                   | 154                     | 726                       |                            | 1231              | 0.500 | 619                 | 669                             | 2.1               | 1.0             | 5.942     | A                             |
| D - A4226/Port Road       | 750                   | 187                     | 399                       | 0.00                       | 1253              | 0.598 | 756                 | 946                             | 3.1               | 1.5             | 7.432     | A                             |

# Base - 2038 B+D+C H, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 202.23             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D15 | 2038 B+D+C H  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 609                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 887                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 932                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1168                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 240                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 422                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 304                 |
|      | D - A4226/Port Road       | 383                    | 469                   | 316                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.81    | 23.86         | 4.2             | C       | 559                     | 838                           |
| B - A4226/Port Road W     | 0.83    | 18.74         | 4.9             | C       | 814                     | 1221                          |
| C - B4226/Pontypridd Road | 0.93    | 37.65         | 10.0            | E       | 855                     | 1283                          |
| D - A4226/Port Road       | 1.32    | 565.91        | 168.4           | F       | 1072                    | 1608                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 458                   | 115                     | 815                       |                            | 939               | 0.488 | 455                 | 642                             | 0.0               | 1.0             | 7.656     | A                             |
| B - A4226/Port Road W     | 668                   | 167                     | 591                       |                            | 1303              | 0.512 | 664                 | 679                             | 0.0               | 1.1             | 5.758     | A                             |
| C - B4226/Pontypridd Road | 702                   | 175                     | 617                       |                            | 1306              | 0.537 | 697                 | 638                             | 0.0               | 1.2             | 6.036     | A                             |
| D - A4226/Port Road       | 879                   | 220                     | 592                       | 0.00                       | 1139              | 0.772 | 866                 | 722                             | 0.0               | 3.3             | 13.305    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 547                   | 137                     | 956                       |                            | 850               | 0.644 | 544                 | 759                             | 1.0               | 1.8             | 12.084    | B                             |
| B - A4226/Port Road W     | 797                   | 199                     | 699                       |                            | 1231              | 0.648 | 794                 | 800                             | 1.1               | 1.8             | 8.426     | A                             |
| C - B4226/Pontypridd Road | 838                   | 209                     | 738                       |                            | 1223              | 0.685 | 834                 | 755                             | 1.2               | 2.2             | 9.421     | A                             |
| D - A4226/Port Road       | 1050                  | 263                     | 708                       | 0.00                       | 1070              | 0.982 | 1006                | 864                             | 3.3               | 14.2            | 43.321    | E                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 671                   | 168                     | 995                       |                            | 825               | 0.813 | 662                 | 838                             | 1.8               | 4.0             | 21.770    | C                             |
| B - A4226/Port Road W     | 977                   | 244                     | 785                       |                            | 1174              | 0.832 | 966                 | 872                             | 1.8               | 4.6             | 16.938    | C                             |
| C - B4226/Pontypridd Road | 1026                  | 257                     | 898                       |                            | 1114              | 0.921 | 1001                | 853                             | 2.2               | 8.5             | 28.059    | D                             |
| D - A4226/Port Road       | 1286                  | 321                     | 852                       | 0.00                       | 984               | 1.307 | 981                 | 1047                            | 14.2              | 90.4            | 203.155   | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 671                   | 168                     | 997                       |                            | 824               | 0.814 | 670                 | 845                             | 4.0               | 4.2             | 23.858    | C                             |
| B - A4226/Port Road W     | 977                   | 244                     | 789                       |                            | 1171              | 0.834 | 976                 | 877                             | 4.6               | 4.9             | 18.742    | C                             |
| C - B4226/Pontypridd Road | 1026                  | 257                     | 907                       |                            | 1108              | 0.926 | 1020                | 858                             | 8.5               | 10.0            | 37.655    | E                             |
| D - A4226/Port Road       | 1286                  | 321                     | 867                       | 0.00                       | 975               | 1.319 | 975                 | 1061                            | 90.4              | 168.2           | 472.307   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 547                   | 137                     | 996                       |                            | 824               | 0.664 | 556                 | 788                             | 4.2               | 2.1             | 14.314    | B                             |
| B - A4226/Port Road W     | 797                   | 199                     | 720                       |                            | 1217              | 0.655 | 809                 | 831                             | 4.9               | 2.0             | 9.316     | A                             |
| C - B4226/Pontypridd Road | 838                   | 209                     | 752                       |                            | 1213              | 0.691 | 869                 | 777                             | 10.0              | 2.4             | 11.635    | B                             |
| D - A4226/Port Road       | 1050                  | 263                     | 734                       | 0.00                       | 1054              | 0.996 | 1049                | 887                             | 168.2             | 168.4           | 565.915   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 458                   | 115                     | 994                       |                            | 826               | 0.555 | 462                 | 732                             | 2.1               | 1.3             | 10.359    | B                             |
| B - A4226/Port Road W     | 668                   | 167                     | 667                       |                            | 1253              | 0.533 | 671                 | 788                             | 2.0               | 1.2             | 6.414     | A                             |
| C - B4226/Pontypridd Road | 702                   | 175                     | 625                       |                            | 1301              | 0.539 | 706                 | 714                             | 2.4               | 1.2             | 6.280     | A                             |
| D - A4226/Port Road       | 879                   | 220                     | 599                       | 0.00                       | 1134              | 0.775 | 1127                | 732                             | 168.4             | 106.4           | 439.978   | F                             |

# Base - 2038 B+D+C H, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 58.84              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D16 | 2038 B+D+C H  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 756                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 925                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 822                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1003                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 284                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 548                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 425                 |
|      | D - A4226/Port Road       | 233                    | 471                   | 298                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.03    | 105.01        | 25.1            | F       | 694                     | 1041                          |
| B - A4226/Port Road W     | 0.97    | 57.49         | 15.7            | F       | 849                     | 1273                          |
| C - B4226/Pontypridd Road | 0.89    | 28.39         | 6.7             | D       | 754                     | 1131                          |
| D - A4226/Port Road       | 0.96    | 50.23         | 14.6            | F       | 920                     | 1381                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 569                   | 142                     | 697                       |                            | 1014              | 0.561 | 564                 | 445                             | 0.0               | 1.3             | 8.254     | A                             |
| B - A4226/Port Road W     | 696                   | 174                     | 684                       |                            | 1241              | 0.561 | 691                 | 577                             | 0.0               | 1.3             | 6.558     | A                             |
| C - B4226/Pontypridd Road | 619                   | 155                     | 719                       |                            | 1237              | 0.500 | 615                 | 657                             | 0.0               | 1.0             | 5.771     | A                             |
| D - A4226/Port Road       | 755                   | 189                     | 393                       | 0.00                       | 1257              | 0.601 | 749                 | 940                             | 0.0               | 1.5             | 7.109     | A                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 680                   | 170                     | 834                       |                            | 927               | 0.733 | 674                 | 533                             | 1.3               | 2.7             | 14.528    | B                             |
| B - A4226/Port Road W     | 832                   | 208                     | 818                       |                            | 1152              | 0.722 | 827                 | 690                             | 1.3               | 2.5             | 11.013    | B                             |
| C - B4226/Pontypridd Road | 739                   | 185                     | 859                       |                            | 1141              | 0.648 | 736                 | 786                             | 1.0               | 1.8             | 8.846     | A                             |
| D - A4226/Port Road       | 902                   | 225                     | 471                       | 0.00                       | 1211              | 0.745 | 896                 | 1124                            | 1.5               | 2.8             | 11.414    | B                             |



**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 832                   | 208                     | 997                       |                            | 824               | 1.011 | 780                 | 639                             | 2.7               | 15.7            | 57.183    | F                             |
| B - A4226/Port Road W     | 1018                  | 255                     | 957                       |                            | 1060              | 0.961 | 983                 | 821                             | 2.5               | 11.5            | 36.602    | E                             |
| C - B4226/Pontypridd Road | 905                   | 226                     | 1013                      |                            | 1035              | 0.874 | 889                 | 926                             | 1.8               | 5.8             | 22.581    | C                             |
| D - A4226/Port Road       | 1104                  | 276                     | 566                       | 0.00                       | 1154              | 0.957 | 1070                | 1336                            | 2.8               | 11.5            | 34.246    | D                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 832                   | 208                     | 1017                      |                            | 811               | 1.026 | 795                 | 650                             | 15.7              | 25.1            | 105.010   | F                             |
| B - A4226/Port Road W     | 1018                  | 255                     | 975                       |                            | 1048              | 0.972 | 1002                | 836                             | 11.5              | 15.7            | 57.494    | F                             |
| C - B4226/Pontypridd Road | 905                   | 226                     | 1033                      |                            | 1022              | 0.885 | 901                 | 944                             | 5.8               | 6.7             | 28.392    | D                             |
| D - A4226/Port Road       | 1104                  | 276                     | 575                       | 0.00                       | 1149              | 0.961 | 1092                | 1359                            | 11.5              | 14.6            | 50.227    | F                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 680                   | 170                     | 878                       |                            | 899               | 0.756 | 766                 | 558                             | 25.1              | 3.6             | 40.833    | E                             |
| B - A4226/Port Road W     | 832                   | 208                     | 908                       |                            | 1092              | 0.761 | 880                 | 735                             | 15.7              | 3.5             | 20.566    | C                             |
| C - B4226/Pontypridd Road | 739                   | 185                     | 933                       |                            | 1090              | 0.678 | 757                 | 856                             | 6.7               | 2.2             | 11.384    | B                             |
| D - A4226/Port Road       | 902                   | 225                     | 488                       | 0.00                       | 1200              | 0.751 | 947                 | 1202                            | 14.6              | 3.2             | 16.740    | C                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 569                   | 142                     | 709                       |                            | 1006              | 0.565 | 578                 | 453                             | 3.6               | 1.4             | 8.931     | A                             |
| B - A4226/Port Road W     | 696                   | 174                     | 700                       |                            | 1231              | 0.566 | 705                 | 587                             | 3.5               | 1.3             | 7.024     | A                             |
| C - B4226/Pontypridd Road | 619                   | 155                     | 734                       |                            | 1226              | 0.505 | 623                 | 671                             | 2.2               | 1.0             | 6.036     | A                             |
| D - A4226/Port Road       | 755                   | 189                     | 399                       | 0.00                       | 1253              | 0.603 | 762                 | 958                             | 3.2               | 1.6             | 7.524     | A                             |

# Base - 2038 B+CMF, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 265.88             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D17 | 2038 B+CMF    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 711                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1082                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1074                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1105                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 342                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 617                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 446                 |
|      | D - A4226/Port Road       | 335                    | 446                   | 324                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.97    | 68.22         | 14.1            | F       | 652                     | 979                           |
| B - A4226/Port Road W     | 1.11    | 183.78        | 67.3            | F       | 993                     | 1489                          |
| C - B4226/Pontypridd Road | 1.25    | 464.60        | 127.3           | F       | 986                     | 1479                          |
| D - A4226/Port Road       | 1.14    | 280.26        | 87.6            | F       | 1014                    | 1521                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 535                   | 134                     | 805                       |                            | 946               | 0.566 | 530                 | 606                             | 0.0               | 1.3             | 8.941     | A                             |
| B - A4226/Port Road W     | 815                   | 204                     | 673                       |                            | 1249              | 0.652 | 807                 | 661                             | 0.0               | 1.9             | 8.290     | A                             |
| C - B4226/Pontypridd Road | 809                   | 202                     | 837                       |                            | 1156              | 0.700 | 800                 | 644                             | 0.0               | 2.3             | 10.196    | B                             |
| D - A4226/Port Road       | 832                   | 208                     | 589                       | 0.00                       | 1140              | 0.730 | 821                 | 1047                            | 0.0               | 2.7             | 11.480    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 639                   | 160                     | 949                       |                            | 854               | 0.749 | 633                 | 715                             | 1.3               | 2.9             | 16.567    | C                             |
| B - A4226/Port Road W     | 973                   | 243                     | 801                       |                            | 1164              | 0.836 | 961                 | 782                             | 1.9               | 4.7             | 17.478    | C                             |
| C - B4226/Pontypridd Road | 966                   | 241                     | 997                       |                            | 1046              | 0.923 | 941                 | 765                             | 2.3               | 8.5             | 30.114    | D                             |
| D - A4226/Port Road       | 993                   | 248                     | 695                       | 0.00                       | 1077              | 0.922 | 970                 | 1243                            | 2.7               | 8.6             | 30.042    | D                             |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 783                   | 196                     | 1013                      |                            | 814               | 0.962 | 751                 | 758                             | 2.9               | 10.8            | 45.827    | E                             |
| B - A4226/Port Road W     | 1191                  | 298                     | 922                       |                            | 1083              | 1.100 | 1064                | 842                             | 4.7               | 36.6            | 82.736    | F                             |
| C - B4226/Pontypridd Road | 1183                  | 296                     | 1128                      |                            | 957               | 1.236 | 951                 | 857                             | 8.5               | 66.4            | 153.797   | F                             |
| D - A4226/Port Road       | 1217                  | 304                     | 717                       | 0.00                       | 1064              | 1.143 | 1054                | 1363                            | 8.6               | 49.2            | 111.451   | F                             |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 783                   | 196                     | 1018                      |                            | 810               | 0.966 | 770                 | 760                             | 10.8              | 14.1            | 68.223    | F                             |
| B - A4226/Port Road W     | 1191                  | 298                     | 939                       |                            | 1072              | 1.112 | 1068                | 849                             | 36.6              | 67.3            | 183.780   | F                             |
| C - B4226/Pontypridd Road | 1183                  | 296                     | 1140                      |                            | 949               | 1.247 | 948                 | 867                             | 66.4              | 125.0           | 370.346   | F                             |
| D - A4226/Port Road       | 1217                  | 304                     | 715                       | 0.00                       | 1065              | 1.142 | 1063                | 1373                            | 49.2              | 87.6            | 240.914   | F                             |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 639                   | 160                     | 1009                      |                            | 816               | 0.783 | 679                 | 763                             | 14.1              | 4.2             | 32.795    | D                             |
| B - A4226/Port Road W     | 973                   | 243                     | 861                       |                            | 1124              | 0.865 | 1107                | 828                             | 67.3              | 33.8            | 166.748   | F                             |
| C - B4226/Pontypridd Road | 966                   | 241                     | 1125                      |                            | 959               | 1.007 | 957                 | 843                             | 125.0             | 127.3           | 464.596   | F                             |
| D - A4226/Port Road       | 993                   | 248                     | 726                       | 0.00                       | 1059              | 0.938 | 1046                | 1355                            | 87.6              | 74.4            | 280.262   | F                             |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 535                   | 134                     | 1020                      |                            | 809               | 0.661 | 544                 | 769                             | 4.2               | 2.1             | 14.569    | B                             |
| B - A4226/Port Road W     | 815                   | 204                     | 743                       |                            | 1202              | 0.677 | 941                 | 821                             | 33.8              | 2.3             | 22.073    | C                             |
| C - B4226/Pontypridd Road | 809                   | 202                     | 939                       |                            | 1086              | 0.745 | 1077                | 744                             | 127.3             | 60.2            | 315.559   | F                             |
| D - A4226/Port Road       | 832                   | 208                     | 772                       | 0.00                       | 1032              | 0.806 | 1017                | 1245                            | 74.4              | 28.0            | 184.873   | F                             |

# Base - 2038 B+CMF, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 316.42             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D18 | 2038 B+CMF    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 707                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 921                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 825                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1440                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 235                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 544                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 428                 |
|      | D - A4226/Port Road       | 365                    | 662                   | 412                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.97    | 74.88         | 15.5            | F       | 649                     | 973                           |
| B - A4226/Port Road W     | 0.95    | 46.47         | 12.3            | E       | 845                     | 1268                          |
| C - B4226/Pontypridd Road | 0.86    | 23.83         | 5.7             | C       | 757                     | 1136                          |
| D - A4226/Port Road       | 1.38    | 775.27        | 273.7           | F       | 1321                    | 1982                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 532                   | 133                     | 915                       |                            | 876               | 0.608 | 526                 | 541                             | 0.0               | 1.6             | 10.518    | B                             |
| B - A4226/Port Road W     | 693                   | 173                     | 728                       |                            | 1212              | 0.572 | 688                 | 713                             | 0.0               | 1.3             | 6.877     | A                             |
| C - B4226/Pontypridd Road | 621                   | 155                     | 678                       |                            | 1264              | 0.491 | 617                 | 738                             | 0.0               | 1.0             | 5.552     | A                             |
| D - A4226/Port Road       | 1084                  | 271                     | 393                       | 0.00                       | 1257              | 0.863 | 1062                | 902                             | 0.0               | 5.5             | 17.192    | C                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 636                   | 159                     | 1032                      |                            | 802               | 0.793 | 627                 | 626                             | 1.6               | 3.6             | 20.562    | C                             |
| B - A4226/Port Road W     | 828                   | 207                     | 845                       |                            | 1134              | 0.730 | 823                 | 814                             | 1.3               | 2.6             | 11.502    | B                             |
| C - B4226/Pontypridd Road | 742                   | 185                     | 811                       |                            | 1174              | 0.632 | 739                 | 857                             | 1.0               | 1.7             | 8.246     | A                             |
| D - A4226/Port Road       | 1295                  | 324                     | 471                       | 0.00                       | 1211              | 1.069 | 1186                | 1079                            | 5.5               | 32.6            | 70.321    | F                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 778                   | 195                     | 1036                      |                            | 799               | 0.975 | 745                 | 684                             | 3.6               | 11.9            | 50.869    | F                             |
| B - A4226/Port Road W     | 1014                  | 254                     | 930                       |                            | 1078              | 0.941 | 985                 | 851                             | 2.6               | 9.8             | 32.410    | D                             |
| C - B4226/Pontypridd Road | 908                   | 227                     | 969                       |                            | 1066              | 0.852 | 895                 | 947                             | 1.7               | 5.0             | 19.746    | C                             |
| D - A4226/Port Road       | 1586                  | 396                     | 569                       | 0.00                       | 1152              | 1.376 | 1152                | 1295                            | 32.6              | 141.1           | 279.467   | F                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 778                   | 195                     | 1036                      |                            | 799               | 0.974 | 764                 | 688                             | 11.9              | 15.5            | 74.879    | F                             |
| B - A4226/Port Road W     | 1014                  | 254                     | 944                       |                            | 1068              | 0.949 | 1004                | 856                             | 9.8               | 12.3            | 46.472    | E                             |
| C - B4226/Pontypridd Road | 908                   | 227                     | 988                       |                            | 1052              | 0.863 | 906                 | 960                             | 5.0               | 5.7             | 23.827    | C                             |
| D - A4226/Port Road       | 1586                  | 396                     | 576                       | 0.00                       | 1148              | 1.381 | 1148                | 1318                            | 141.1             | 250.5           | 608.160   | F                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 636                   | 159                     | 1047                      |                            | 792               | 0.803 | 678                 | 640                             | 15.5              | 4.8             | 39.745    | E                             |
| B - A4226/Port Road W     | 828                   | 207                     | 891                       |                            | 1104              | 0.750 | 864                 | 835                             | 12.3              | 3.2             | 17.218    | C                             |
| C - B4226/Pontypridd Road | 742                   | 185                     | 858                       |                            | 1141              | 0.650 | 757                 | 897                             | 5.7               | 1.9             | 9.734     | A                             |
| D - A4226/Port Road       | 1295                  | 324                     | 485                       | 0.00                       | 1202              | 1.077 | 1202                | 1130                            | 250.5             | 273.7           | 775.275   | F                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 532                   | 133                     | 1056                      |                            | 786               | 0.677 | 542                 | 592                             | 4.8               | 2.3             | 15.913    | C                             |
| B - A4226/Port Road W     | 693                   | 173                     | 795                       |                            | 1168              | 0.594 | 700                 | 803                             | 3.2               | 1.5             | 7.894     | A                             |
| C - B4226/Pontypridd Road | 621                   | 155                     | 693                       |                            | 1254              | 0.495 | 625                 | 802                             | 1.9               | 1.0             | 5.771     | A                             |
| D - A4226/Port Road       | 1084                  | 271                     | 399                       | 0.00                       | 1254              | 0.865 | 1249                | 919                             | 273.7             | 232.5           | 729.918   | F                             |



# Base - 2038 B+D+CMF L, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 291.50             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D19 | 2038 B+D+CMF L | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 714                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1086                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1077                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1136                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 345                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 621                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 449                 |
|      | D - A4226/Port Road       | 344                    | 459                   | 333                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.97    | 71.37         | 14.9            | F       | 655                     | 983                           |
| B - A4226/Port Road W     | 1.12    | 191.58        | 70.4            | F       | 997                     | 1495                          |
| C - B4226/Pontypridd Road | 1.25    | 478.47        | 131.1           | F       | 988                     | 1483                          |
| D - A4226/Port Road       | 1.17    | 348.11        | 104.7           | F       | 1042                    | 1564                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 538                   | 134                     | 820                       |                            | 936               | 0.574 | 532                 | 612                             | 0.0               | 1.4             | 9.201     | A                             |
| B - A4226/Port Road W     | 818                   | 204                     | 682                       |                            | 1243              | 0.658 | 810                 | 671                             | 0.0               | 1.9             | 8.446     | A                             |
| C - B4226/Pontypridd Road | 811                   | 203                     | 842                       |                            | 1153              | 0.704 | 801                 | 650                             | 0.0               | 2.4             | 10.346    | B                             |
| D - A4226/Port Road       | 855                   | 214                     | 589                       | 0.00                       | 1140              | 0.750 | 843                 | 1054                            | 0.0               | 3.0             | 12.271    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 642                   | 160                     | 964                       |                            | 845               | 0.760 | 635                 | 721                             | 1.4               | 3.1             | 17.410    | C                             |
| B - A4226/Port Road W     | 976                   | 244                     | 809                       |                            | 1158              | 0.843 | 964                 | 790                             | 1.9               | 4.9             | 18.152    | C                             |
| C - B4226/Pontypridd Road | 968                   | 242                     | 1003                      |                            | 1042              | 0.929 | 942                 | 770                             | 2.4               | 8.9             | 31.214    | D                             |
| D - A4226/Port Road       | 1021                  | 255                     | 694                       | 0.00                       | 1078              | 0.948 | 991                 | 1251                            | 3.0               | 10.6            | 34.954    | D                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 786                   | 197                     | 1015                      |                            | 812               | 0.968 | 753                 | 757                             | 3.1               | 11.4            | 47.631    | E                             |
| B - A4226/Port Road W     | 1196                  | 299                     | 925                       |                            | 1081              | 1.106 | 1063                | 843                             | 4.9               | 38.1            | 85.711    | F                             |
| C - B4226/Pontypridd Road | 1186                  | 296                     | 1131                      |                            | 955               | 1.242 | 950                 | 857                             | 8.9               | 67.9            | 157.725   | F                             |
| D - A4226/Port Road       | 1251                  | 313                     | 713                       | 0.00                       | 1066              | 1.173 | 1059                | 1368                            | 10.6              | 58.5            | 129.510   | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 786                   | 197                     | 1019                      |                            | 810               | 0.971 | 772                 | 759                             | 11.4              | 14.9            | 71.367    | F                             |
| B - A4226/Port Road W     | 1196                  | 299                     | 942                       |                            | 1070              | 1.118 | 1067                | 849                             | 38.1              | 70.4            | 191.578   | F                             |
| C - B4226/Pontypridd Road | 1186                  | 296                     | 1143                      |                            | 947               | 1.252 | 946                 | 866                             | 67.9              | 127.8           | 379.273   | F                             |
| D - A4226/Port Road       | 1251                  | 313                     | 712                       | 0.00                       | 1067              | 1.172 | 1066                | 1377                            | 58.5              | 104.7           | 284.251   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 642                   | 160                     | 1011                      |                            | 815               | 0.788 | 684                 | 762                             | 14.9              | 4.3             | 34.775    | D                             |
| B - A4226/Port Road W     | 976                   | 244                     | 866                       |                            | 1120              | 0.872 | 1104                | 829                             | 70.4              | 38.5            | 179.317   | F                             |
| C - B4226/Pontypridd Road | 968                   | 242                     | 1128                      |                            | 957               | 1.011 | 955                 | 843                             | 127.8             | 131.1           | 478.466   | F                             |
| D - A4226/Port Road       | 1021                  | 255                     | 723                       | 0.00                       | 1061              | 0.963 | 1050                | 1360                            | 104.7             | 97.4            | 348.112   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 538                   | 134                     | 1021                      |                            | 808               | 0.665 | 546                 | 769                             | 4.3               | 2.2             | 14.788    | B                             |
| B - A4226/Port Road W     | 818                   | 204                     | 747                       |                            | 1200              | 0.682 | 962                 | 820                             | 38.5              | 2.3             | 26.980    | D                             |
| C - B4226/Pontypridd Road | 811                   | 203                     | 959                       |                            | 1073              | 0.756 | 1064                | 751                             | 131.1             | 67.7            | 338.123   | F                             |
| D - A4226/Port Road       | 855                   | 214                     | 765                       | 0.00                       | 1036              | 0.826 | 1025                | 1258                            | 97.4              | 55.1            | 269.950   | F                             |

# Base - 2038 B+D+CMF L, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 332.15             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D20 | 2038 B+D+CMF L | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 712                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 933                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 834                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1454                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 240                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 556                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 437                 |
|      | D - A4226/Port Road       | 368                    | 669                   | 416                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.98    | 79.81         | 16.8            | F       | 653                     | 980                           |
| B - A4226/Port Road W     | 0.96    | 53.27         | 14.5            | F       | 856                     | 1284                          |
| C - B4226/Pontypridd Road | 0.88    | 27.06         | 6.5             | D       | 765                     | 1148                          |
| D - A4226/Port Road       | 1.39    | 809.66        | 287.2           | F       | 1334                    | 2001                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 536                   | 134                     | 922                       |                            | 871               | 0.615 | 530                 | 543                             | 0.0               | 1.6             | 10.764    | B                             |
| B - A4226/Port Road W     | 702                   | 176                     | 734                       |                            | 1208              | 0.581 | 697                 | 717                             | 0.0               | 1.4             | 7.047     | A                             |
| C - B4226/Pontypridd Road | 628                   | 157                     | 691                       |                            | 1255              | 0.500 | 624                 | 740                             | 0.0               | 1.0             | 5.683     | A                             |
| D - A4226/Port Road       | 1095                  | 274                     | 393                       | 0.00                       | 1257              | 0.871 | 1071                | 921                             | 0.0               | 5.9             | 17.904    | C                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 640                   | 160                     | 1034                      |                            | 800               | 0.800 | 632                 | 626                             | 1.6               | 3.7             | 21.203    | C                             |
| B - A4226/Port Road W     | 839                   | 210                     | 850                       |                            | 1131              | 0.742 | 833                 | 816                             | 1.4               | 2.8             | 12.008    | B                             |
| C - B4226/Pontypridd Road | 750                   | 187                     | 825                       |                            | 1164              | 0.644 | 747                 | 858                             | 1.0               | 1.8             | 8.594     | A                             |
| D - A4226/Port Road       | 1307                  | 327                     | 471                       | 0.00                       | 1211              | 1.080 | 1189                | 1101                            | 5.9               | 35.3            | 74.792    | F                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 784                   | 196                     | 1037                      |                            | 798               | 0.982 | 748                 | 683                             | 3.7               | 12.7            | 53.145    | F                             |
| B - A4226/Port Road W     | 1027                  | 257                     | 934                       |                            | 1075              | 0.955 | 994                 | 852                             | 2.8               | 11.0            | 35.492    | E                             |
| C - B4226/Pontypridd Road | 918                   | 230                     | 983                       |                            | 1056              | 0.869 | 903                 | 945                             | 1.8               | 5.6             | 21.674    | C                             |
| D - A4226/Port Road       | 1601                  | 400                     | 567                       | 0.00                       | 1153              | 1.388 | 1153                | 1319                            | 35.3              | 147.4           | 293.264   | F                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 784                   | 196                     | 1036                      |                            | 799               | 0.981 | 768                 | 688                             | 12.7              | 16.8            | 79.813    | F                             |
| B - A4226/Port Road W     | 1027                  | 257                     | 948                       |                            | 1066              | 0.964 | 1013                | 856                             | 11.0              | 14.5            | 53.273    | F                             |
| C - B4226/Pontypridd Road | 918                   | 230                     | 1004                      |                            | 1042              | 0.881 | 915                 | 958                             | 5.6               | 6.5             | 27.062    | D                             |
| D - A4226/Port Road       | 1601                  | 400                     | 576                       | 0.00                       | 1148              | 1.394 | 1148                | 1343                            | 147.4             | 260.6           | 633.041   | F                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 640                   | 160                     | 1047                      |                            | 792               | 0.808 | 687                 | 641                             | 16.8              | 5.0             | 43.476    | E                             |
| B - A4226/Port Road W     | 839                   | 210                     | 898                       |                            | 1099              | 0.763 | 883                 | 836                             | 14.5              | 3.5             | 19.740    | C                             |
| C - B4226/Pontypridd Road | 750                   | 187                     | 881                       |                            | 1126              | 0.666 | 767                 | 900                             | 6.5               | 2.1             | 10.538    | B                             |
| D - A4226/Port Road       | 1307                  | 327                     | 487                       | 0.00                       | 1201              | 1.089 | 1201                | 1161                            | 260.6             | 287.2           | 809.656   | F                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 536                   | 134                     | 1056                      |                            | 786               | 0.682 | 547                 | 592                             | 5.0               | 2.3             | 16.291    | C                             |
| B - A4226/Port Road W     | 702                   | 176                     | 799                       |                            | 1165              | 0.603 | 710                 | 804                             | 3.5               | 1.6             | 8.132     | A                             |
| C - B4226/Pontypridd Road | 628                   | 157                     | 707                       |                            | 1245              | 0.504 | 632                 | 803                             | 2.1               | 1.0             | 5.932     | A                             |
| D - A4226/Port Road       | 1095                  | 274                     | 399                       | 0.00                       | 1253              | 0.873 | 1249                | 940                             | 287.2             | 248.6           | 772.459   | F                             |

# Base - 2038 B+D+CMF M, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 313.15             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D21 | 2038 B+D+CMF M | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 716                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1090                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1080                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1160                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data



### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 347                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 625                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 452                 |
|      | D - A4226/Port Road       | 351                    | 469                   | 340                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.97    | 73.55         | 15.4            | F       | 657                     | 986                           |
| B - A4226/Port Road W     | 1.12    | 198.72        | 73.2            | F       | 1000                    | 1500                          |
| C - B4226/Pontypridd Road | 1.26    | 491.83        | 134.8           | F       | 991                     | 1487                          |
| D - A4226/Port Road       | 1.20    | 402.21        | 118.4           | F       | 1064                    | 1597                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 539                   | 135                     | 832                       |                            | 928               | 0.581 | 533                 | 617                             | 0.0               | 1.4             | 9.405     | A                             |
| B - A4226/Port Road W     | 821                   | 205                     | 688                       |                            | 1239              | 0.662 | 813                 | 678                             | 0.0               | 2.0             | 8.582     | A                             |
| C - B4226/Pontypridd Road | 813                   | 203                     | 846                       |                            | 1150              | 0.707 | 804                 | 655                             | 0.0               | 2.4             | 10.490    | B                             |
| D - A4226/Port Road       | 873                   | 218                     | 589                       | 0.00                       | 1140              | 0.766 | 860                 | 1061                            | 0.0               | 3.2             | 12.954    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 644                   | 161                     | 974                       |                            | 838               | 0.768 | 637                 | 725                             | 1.4               | 3.2             | 18.045    | C                             |
| B - A4226/Port Road W     | 980                   | 245                     | 815                       |                            | 1154              | 0.849 | 967                 | 796                             | 2.0               | 5.1             | 18.740    | C                             |
| C - B4226/Pontypridd Road | 971                   | 243                     | 1008                      |                            | 1039              | 0.934 | 943                 | 774                             | 2.4               | 9.3             | 32.302    | D                             |
| D - A4226/Port Road       | 1043                  | 261                     | 693                       | 0.00                       | 1078              | 0.967 | 1005                | 1258                            | 3.2               | 12.6            | 39.427    | E                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 788                   | 197                     | 1017                      |                            | 811               | 0.972 | 754                 | 756                             | 3.2               | 11.7            | 48.881    | E                             |
| B - A4226/Port Road W     | 1200                  | 300                     | 927                       |                            | 1080              | 1.112 | 1062                | 844                             | 5.1               | 39.5            | 88.417    | F                             |
| C - B4226/Pontypridd Road | 1189                  | 297                     | 1134                      |                            | 953               | 1.247 | 948                 | 856                             | 9.3               | 69.5            | 161.563   | F                             |
| D - A4226/Port Road       | 1277                  | 319                     | 710                       | 0.00                       | 1068              | 1.196 | 1063                | 1372                            | 12.6              | 66.2            | 144.926   | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 788                   | 197                     | 1020                      |                            | 809               | 0.974 | 773                 | 757                             | 11.7              | 15.4            | 73.552    | F                             |
| B - A4226/Port Road W     | 1200                  | 300                     | 944                       |                            | 1068              | 1.124 | 1065                | 849                             | 39.5              | 73.2            | 198.720   | F                             |
| C - B4226/Pontypridd Road | 1189                  | 297                     | 1145                      |                            | 945               | 1.258 | 945                 | 865                             | 69.5              | 130.5           | 387.864   | F                             |
| D - A4226/Port Road       | 1277                  | 319                     | 709                       | 0.00                       | 1069              | 1.195 | 1068                | 1381                            | 66.2              | 118.4           | 319.408   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 644                   | 161                     | 1012                      |                            | 814               | 0.791 | 688                 | 760                             | 15.4              | 4.4             | 36.230    | E                             |
| B - A4226/Port Road W     | 980                   | 245                     | 870                       |                            | 1117              | 0.877 | 1102                | 830                             | 73.2              | 42.7            | 190.723   | F                             |
| C - B4226/Pontypridd Road | 971                   | 243                     | 1130                      |                            | 956               | 1.016 | 954                 | 842                             | 130.5             | 134.8           | 491.831   | F                             |
| D - A4226/Port Road       | 1043                  | 261                     | 720                       | 0.00                       | 1063              | 0.981 | 1053                | 1364                            | 118.4             | 115.8           | 402.210   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 539                   | 135                     | 1021                      |                            | 808               | 0.667 | 548                 | 768                             | 4.4               | 2.2             | 14.918    | B                             |
| B - A4226/Port Road W     | 821                   | 205                     | 750                       |                            | 1197              | 0.685 | 982                 | 819                             | 42.7              | 2.4             | 32.673    | D                             |
| C - B4226/Pontypridd Road | 813                   | 203                     | 975                       |                            | 1061              | 0.766 | 1053                | 757                             | 134.8             | 74.8            | 359.926   | F                             |
| D - A4226/Port Road       | 873                   | 218                     | 759                       | 0.00                       | 1039              | 0.840 | 1030                | 1269                            | 115.8             | 76.7            | 337.779   | F                             |

# Base - 2038 B+D+CMF M, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 346.02             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D22 | 2038 B+D+CMF M | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 716                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 942                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 841                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1466                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 244                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 565                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 444                 |
|      | D - A4226/Port Road       | 371                    | 674                   | 420                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.99    | 83.83         | 17.8            | F       | 657                     | 986                           |
| B - A4226/Port Road W     | 0.98    | 59.42         | 16.5            | F       | 864                     | 1297                          |
| C - B4226/Pontypridd Road | 0.90    | 30.01         | 7.2             | D       | 772                     | 1158                          |
| D - A4226/Port Road       | 1.40    | 839.50        | 298.9           | F       | 1345                    | 2018                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 539                   | 135                     | 928                       |                            | 867               | 0.621 | 532                 | 544                             | 0.0               | 1.7             | 10.970    | B                             |
| B - A4226/Port Road W     | 709                   | 177                     | 740                       |                            | 1204              | 0.589 | 704                 | 721                             | 0.0               | 1.4             | 7.187     | A                             |
| C - B4226/Pontypridd Road | 633                   | 158                     | 700                       |                            | 1249              | 0.507 | 629                 | 743                             | 0.0               | 1.0             | 5.789     | A                             |
| D - A4226/Port Road       | 1104                  | 276                     | 393                       | 0.00                       | 1257              | 0.878 | 1079                | 936                             | 0.0               | 6.2             | 18.556    | C                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 644                   | 161                     | 1036                      |                            | 799               | 0.806 | 635                 | 626                             | 1.7               | 3.8             | 21.716    | C                             |
| B - A4226/Port Road W     | 847                   | 212                     | 855                       |                            | 1128              | 0.751 | 841                 | 816                             | 1.4               | 2.9             | 12.435    | B                             |
| C - B4226/Pontypridd Road | 756                   | 189                     | 837                       |                            | 1156              | 0.654 | 753                 | 859                             | 1.0               | 1.8             | 8.882     | A                             |
| D - A4226/Port Road       | 1318                  | 329                     | 470                       | 0.00                       | 1211              | 1.088 | 1192                | 1119                            | 6.2               | 37.8            | 78.785    | F                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 788                   | 197                     | 1037                      |                            | 798               | 0.988 | 751                 | 682                             | 3.8               | 13.3            | 54.965    | F                             |
| B - A4226/Port Road W     | 1037                  | 259                     | 937                       |                            | 1073              | 0.967 | 1000                | 851                             | 2.9               | 12.2            | 38.138    | E                             |
| C - B4226/Pontypridd Road | 926                   | 231                     | 993                       |                            | 1049              | 0.883 | 909                 | 944                             | 1.8               | 6.2             | 23.342    | C                             |
| D - A4226/Port Road       | 1614                  | 404                     | 566                       | 0.00                       | 1154              | 1.399 | 1153                | 1336                            | 37.8              | 152.9           | 305.397   | F                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 788                   | 197                     | 1037                      |                            | 799               | 0.987 | 770                 | 687                             | 13.3              | 17.8            | 83.828    | F                             |
| B - A4226/Port Road W     | 1037                  | 259                     | 952                       |                            | 1063              | 0.975 | 1020                | 855                             | 12.2              | 16.5            | 59.419    | F                             |
| C - B4226/Pontypridd Road | 926                   | 231                     | 1015                      |                            | 1035              | 0.895 | 922                 | 957                             | 6.2               | 7.2             | 30.010    | D                             |
| D - A4226/Port Road       | 1614                  | 404                     | 575                       | 0.00                       | 1149              | 1.405 | 1149                | 1361                            | 152.9             | 269.3           | 654.706   | F                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 644                   | 161                     | 1047                      |                            | 792               | 0.813 | 694                 | 642                             | 17.8              | 5.2             | 46.754    | E                             |
| B - A4226/Port Road W     | 847                   | 212                     | 905                       |                            | 1095              | 0.774 | 898                 | 836                             | 16.5              | 3.7             | 22.451    | C                             |
| C - B4226/Pontypridd Road | 756                   | 189                     | 899                       |                            | 1113              | 0.679 | 776                 | 904                             | 7.2               | 2.2             | 11.301    | B                             |
| D - A4226/Port Road       | 1318                  | 329                     | 489                       | 0.00                       | 1200              | 1.099 | 1199                | 1186                            | 269.3             | 298.9           | 839.504   | F                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 539                   | 135                     | 1057                      |                            | 786               | 0.686 | 550                 | 592                             | 5.2               | 2.4             | 16.593    | C                             |
| B - A4226/Port Road W     | 709                   | 177                     | 803                       |                            | 1162              | 0.610 | 718                 | 804                             | 3.7               | 1.6             | 8.336     | A                             |
| C - B4226/Pontypridd Road | 633                   | 158                     | 717                       |                            | 1238              | 0.512 | 638                 | 804                             | 2.2               | 1.1             | 6.064     | A                             |
| D - A4226/Port Road       | 1104                  | 276                     | 399                       | 0.00                       | 1253              | 0.881 | 1249                | 956                             | 298.9             | 262.6           | 809.378   | F                             |

# Base - 2038 B+D+CMF H, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 329.86             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D23 | 2038 B+D+CMF H | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 717                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1092                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1082                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1179                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 348                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 627                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 454                 |
|      | D - A4226/Port Road       | 357                    | 477                   | 345                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.98    | 74.54         | 15.7            | F       | 658                     | 987                           |
| B - A4226/Port Road W     | 1.13    | 202.08        | 74.5            | F       | 1002                    | 1503                          |
| C - B4226/Pontypridd Road | 1.26    | 499.94        | 137.1           | F       | 993                     | 1489                          |
| D - A4226/Port Road       | 1.21    | 447.38        | 130.3           | F       | 1082                    | 1623                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 540                   | 135                     | 841                       |                            | 922               | 0.585 | 534                 | 621                             | 0.0               | 1.4             | 9.556     | A                             |
| B - A4226/Port Road W     | 822                   | 206                     | 692                       |                            | 1236              | 0.665 | 814                 | 683                             | 0.0               | 2.0             | 8.665     | A                             |
| C - B4226/Pontypridd Road | 815                   | 204                     | 848                       |                            | 1148              | 0.710 | 805                 | 658                             | 0.0               | 2.4             | 10.575    | B                             |
| D - A4226/Port Road       | 888                   | 222                     | 589                       | 0.00                       | 1141              | 0.778 | 874                 | 1064                            | 0.0               | 3.4             | 13.548    | B                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 645                   | 161                     | 981                       |                            | 834               | 0.773 | 637                 | 728                             | 1.4               | 3.3             | 18.477    | C                             |
| B - A4226/Port Road W     | 982                   | 245                     | 818                       |                            | 1152              | 0.852 | 969                 | 800                             | 2.0               | 5.2             | 19.071    | C                             |
| C - B4226/Pontypridd Road | 973                   | 243                     | 1010                      |                            | 1038              | 0.938 | 944                 | 777                             | 2.4               | 9.5             | 32.942    | D                             |
| D - A4226/Port Road       | 1060                  | 265                     | 693                       | 0.00                       | 1079              | 0.983 | 1016                | 1262                            | 3.4               | 14.4            | 43.440    | E                             |



**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 789                   | 197                     | 1017                      |                            | 811               | 0.974 | 755                 | 756                             | 3.3               | 11.9            | 49.523    | E                             |
| B - A4226/Port Road W     | 1202                  | 301                     | 928                       |                            | 1079              | 1.114 | 1062                | 844                             | 5.2               | 40.2            | 89.730    | F                             |
| C - B4226/Pontypridd Road | 1191                  | 298                     | 1135                      |                            | 952               | 1.251 | 948                 | 856                             | 9.5               | 70.5            | 163.949   | F                             |
| D - A4226/Port Road       | 1298                  | 325                     | 709                       | 0.00                       | 1069              | 1.214 | 1065                | 1374                            | 14.4              | 72.7            | 158.431   | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 789                   | 197                     | 1020                      |                            | 809               | 0.975 | 774                 | 757                             | 11.9              | 15.7            | 74.539    | F                             |
| B - A4226/Port Road W     | 1202                  | 301                     | 945                       |                            | 1068              | 1.126 | 1065                | 849                             | 40.2              | 74.5            | 202.079   | F                             |
| C - B4226/Pontypridd Road | 1191                  | 298                     | 1146                      |                            | 945               | 1.261 | 944                 | 864                             | 70.5              | 132.3           | 393.261   | F                             |
| D - A4226/Port Road       | 1298                  | 325                     | 707                       | 0.00                       | 1070              | 1.213 | 1070                | 1383                            | 72.7              | 129.9           | 349.079   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 645                   | 161                     | 1015                      |                            | 812               | 0.794 | 689                 | 761                             | 15.7              | 4.5             | 37.230    | E                             |
| B - A4226/Port Road W     | 982                   | 245                     | 873                       |                            | 1116              | 0.880 | 1101                | 831                             | 74.5              | 44.8            | 196.287   | F                             |
| C - B4226/Pontypridd Road | 973                   | 243                     | 1131                      |                            | 955               | 1.018 | 954                 | 843                             | 132.3             | 137.1           | 499.936   | F                             |
| D - A4226/Port Road       | 1060                  | 265                     | 718                       | 0.00                       | 1064              | 0.996 | 1058                | 1367                            | 129.9             | 130.3           | 447.377   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 540                   | 135                     | 1021                      |                            | 808               | 0.668 | 549                 | 768                             | 4.5               | 2.2             | 14.993    | B                             |
| B - A4226/Port Road W     | 822                   | 206                     | 752                       |                            | 1197              | 0.687 | 992                 | 819                             | 44.8              | 2.4             | 35.959    | E                             |
| C - B4226/Pontypridd Road | 815                   | 204                     | 984                       |                            | 1055              | 0.772 | 1048                | 759                             | 137.1             | 78.8            | 372.656   | F                             |
| D - A4226/Port Road       | 888                   | 222                     | 756                       | 0.00                       | 1041              | 0.853 | 1033                | 1275                            | 130.3             | 94.0            | 392.016   | F                             |

# Base - 2038 B+D+CMF H, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 354.27             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D24 | 2038 B+D+CMF H | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 718                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 948                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 847                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1473                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 246                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 571                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 450                 |
|      | D - A4226/Port Road       | 372                    | 678                   | 422                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.99    | 86.30         | 18.5            | F       | 659                     | 988                           |
| B - A4226/Port Road W     | 0.98    | 63.58         | 17.9            | F       | 870                     | 1305                          |
| C - B4226/Pontypridd Road | 0.91    | 32.49         | 7.9             | D       | 777                     | 1166                          |
| D - A4226/Port Road       | 1.41    | 857.00        | 305.7           | F       | 1352                    | 2028                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 541                   | 135                     | 932                       |                            | 865               | 0.625 | 534                 | 545                             | 0.0               | 1.7             | 11.096    | B                             |
| B - A4226/Port Road W     | 714                   | 178                     | 742                       |                            | 1203              | 0.593 | 708                 | 723                             | 0.0               | 1.4             | 7.274     | A                             |
| C - B4226/Pontypridd Road | 638                   | 159                     | 706                       |                            | 1245              | 0.512 | 634                 | 744                             | 0.0               | 1.0             | 5.866     | A                             |
| D - A4226/Port Road       | 1109                  | 277                     | 393                       | 0.00                       | 1257              | 0.882 | 1084                | 947                             | 0.0               | 6.3             | 18.954    | C                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 645                   | 161                     | 1037                      |                            | 798               | 0.809 | 637                 | 626                             | 1.7               | 3.9             | 22.029    | C                             |
| B - A4226/Port Road W     | 852                   | 213                     | 857                       |                            | 1127              | 0.757 | 846                 | 817                             | 1.4               | 3.0             | 12.706    | B                             |
| C - B4226/Pontypridd Road | 761                   | 190                     | 844                       |                            | 1151              | 0.661 | 758                 | 859                             | 1.0               | 1.9             | 9.102     | A                             |
| D - A4226/Port Road       | 1324                  | 331                     | 470                       | 0.00                       | 1211              | 1.094 | 1193                | 1131                            | 6.3               | 39.2            | 81.170    | F                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 791                   | 198                     | 1038                      |                            | 798               | 0.991 | 752                 | 681                             | 3.9               | 13.6            | 56.080    | F                             |
| B - A4226/Port Road W     | 1044                  | 261                     | 939                       |                            | 1072              | 0.974 | 1004                | 851                             | 3.0               | 13.0            | 39.872    | E                             |
| C - B4226/Pontypridd Road | 933                   | 233                     | 1000                      |                            | 1045              | 0.893 | 914                 | 943                             | 1.9               | 6.6             | 24.685    | C                             |
| D - A4226/Port Road       | 1622                  | 405                     | 565                       | 0.00                       | 1155              | 1.405 | 1154                | 1348                            | 39.2              | 156.1           | 312.485   | F                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 791                   | 198                     | 1037                      |                            | 798               | 0.990 | 771                 | 686                             | 13.6              | 18.5            | 86.301    | F                             |
| B - A4226/Port Road W     | 1044                  | 261                     | 953                       |                            | 1062              | 0.982 | 1024                | 855                             | 13.0              | 17.9            | 63.578    | F                             |
| C - B4226/Pontypridd Road | 933                   | 233                     | 1021                      |                            | 1030              | 0.905 | 927                 | 956                             | 6.6               | 7.9             | 32.486    | D                             |
| D - A4226/Port Road       | 1622                  | 405                     | 574                       | 0.00                       | 1149              | 1.411 | 1149                | 1374                            | 156.1             | 274.3           | 667.321   | F                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 645                   | 161                     | 1047                      |                            | 792               | 0.815 | 698                 | 642                             | 18.5              | 5.4             | 48.881    | E                             |
| B - A4226/Port Road W     | 852                   | 213                     | 908                       |                            | 1092              | 0.780 | 908                 | 837                             | 17.9              | 3.9             | 24.566    | C                             |
| C - B4226/Pontypridd Road | 761                   | 190                     | 911                       |                            | 1105              | 0.689 | 784                 | 906                             | 7.9               | 2.3             | 11.947    | B                             |
| D - A4226/Port Road       | 1324                  | 331                     | 491                       | 0.00                       | 1199              | 1.105 | 1199                | 1204                            | 274.3             | 305.7           | 857.000   | F                             |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 541                   | 135                     | 1057                      |                            | 786               | 0.688 | 552                 | 591                             | 5.4               | 2.4             | 16.789    | C                             |
| B - A4226/Port Road W     | 714                   | 178                     | 805                       |                            | 1161              | 0.615 | 723                 | 805                             | 3.9               | 1.6             | 8.465     | A                             |
| C - B4226/Pontypridd Road | 638                   | 159                     | 724                       |                            | 1233              | 0.517 | 643                 | 804                             | 2.3               | 1.1             | 6.164     | A                             |
| D - A4226/Port Road       | 1109                  | 277                     | 399                       | 0.00                       | 1253              | 0.885 | 1249                | 967                             | 305.7             | 270.7           | 831.040   | F                             |

# Base - 2038 B+CA, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 545.75             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D25 | 2038 B+CA     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 774                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1195                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1149                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1252                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 405                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 730                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 521                 |
|      | D - A4226/Port Road       | 415                    | 489                   | 348                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.03    | 115.94        | 28.1            | F       | 710                     | 1065                          |
| B - A4226/Port Road W     | 1.26    | 498.86        | 151.0           | F       | 1097                    | 1645                          |
| C - B4226/Pontypridd Road | 1.40    | 915.63        | 240.6           | F       | 1055                    | 1582                          |
| D - A4226/Port Road       | 1.24    | 516.70        | 159.2           | F       | 1149                    | 1723                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 583                   | 146                     | 849                       |                            | 917               | 0.635 | 576                 | 661                             | 0.0               | 1.8             | 10.831    | B                             |
| B - A4226/Port Road W     | 900                   | 225                     | 735                       |                            | 1207              | 0.745 | 888                 | 689                             | 0.0               | 2.9             | 11.303    | B                             |
| C - B4226/Pontypridd Road | 865                   | 216                     | 965                       |                            | 1068              | 0.810 | 849                 | 659                             | 0.0               | 4.0             | 16.016    | C                             |
| D - A4226/Port Road       | 943                   | 236                     | 585                       | 0.00                       | 1143              | 0.825 | 925                 | 1229                            | 0.0               | 4.5             | 16.269    | C                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 696                   | 174                     | 964                       |                            | 845               | 0.824 | 686                 | 748                             | 1.8               | 4.3             | 22.390    | C                             |
| B - A4226/Port Road W     | 1074                  | 269                     | 865                       |                            | 1121              | 0.958 | 1039                | 784                             | 2.9               | 11.7            | 35.677    | E                             |
| C - B4226/Pontypridd Road | 1033                  | 258                     | 1135                      |                            | 952               | 1.085 | 930                 | 769                             | 4.0               | 29.9            | 79.935    | F                             |
| D - A4226/Port Road       | 1126                  | 281                     | 650                       | 0.00                       | 1104              | 1.019 | 1062                | 1415                            | 4.5               | 20.4            | 54.856    | F                             |

**07:45 - 08:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 852                   | 213                     | 989                       |                            | 829               | 1.028 | 795                 | 758                             | 4.3               | 18.5            | 66.633    | F                             |
| B - A4226/Port Road W     | 1316                  | 329                     | 968                       |                            | 1052              | 1.250 | 1048                | 816                             | 11.7              | 78.5            | 166.053   | F                             |
| C - B4226/Pontypridd Road | 1265                  | 316                     | 1199                      |                            | 908               | 1.393 | 907                 | 817                             | 29.9              | 119.4           | 305.801   | F                             |
| D - A4226/Port Road       | 1378                  | 345                     | 639                       | 0.00                       | 1111              | 1.241 | 1108                | 1468                            | 20.4              | 88.0            | 186.209   | F                             |

**08:00 - 08:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 852                   | 213                     | 990                       |                            | 828               | 1.029 | 814                 | 758                             | 18.5              | 28.1            | 115.938   | F                             |
| B - A4226/Port Road W     | 1316                  | 329                     | 984                       |                            | 1041              | 1.263 | 1041                | 820                             | 78.5              | 147.2           | 395.424   | F                             |
| C - B4226/Pontypridd Road | 1265                  | 316                     | 1204                      |                            | 905               | 1.398 | 905                 | 822                             | 119.4             | 209.4           | 659.522   | F                             |
| D - A4226/Port Road       | 1378                  | 345                     | 637                       | 0.00                       | 1112              | 1.240 | 1111                | 1472                            | 88.0              | 154.8           | 400.369   | F                             |

**08:15 - 08:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 696                   | 174                     | 989                       |                            | 829               | 0.840 | 780                 | 760                             | 28.1              | 7.2             | 80.010    | F                             |
| B - A4226/Port Road W     | 1074                  | 269                     | 955                       |                            | 1061              | 1.013 | 1059                | 813                             | 147.2             | 151.0           | 498.860   | F                             |
| C - B4226/Pontypridd Road | 1033                  | 258                     | 1199                      |                            | 908               | 1.137 | 908                 | 815                             | 209.4             | 240.6           | 890.446   | F                             |
| D - A4226/Port Road       | 1126                  | 281                     | 641                       | 0.00                       | 1109              | 1.015 | 1108                | 1467                            | 154.8             | 159.2           | 516.696   | F                             |

**08:30 - 08:45**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 583                   | 146                     | 982                       |                            | 833               | 0.699 | 601                 | 769                             | 7.2               | 2.6             | 17.384    | C                             |
| B - A4226/Port Road W     | 900                   | 225                     | 803                       |                            | 1162              | 0.774 | 1155                | 780                             | 151.0             | 87.3            | 372.972   | F                             |
| C - B4226/Pontypridd Road | 865                   | 216                     | 1177                      |                            | 924               | 0.937 | 920                 | 780                             | 240.6             | 227.0           | 915.627   | F                             |
| D - A4226/Port Road       | 943                   | 236                     | 660                       | 0.00                       | 1098              | 0.858 | 1091                | 1437                            | 159.2             | 122.2           | 465.189   | F                             |



# Base - 2038 B+CA, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 487.74             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D26 | 2038 B+CA     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 780                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 958                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 845                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1569                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 308                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 581                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 448                 |
|      | D - A4226/Port Road       | 410                    | 713                   | 445                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.07    | 160.05        | 40.2            | F       | 716                     | 1074                          |
| B - A4226/Port Road W     | 1.01    | 86.18         | 25.6            | F       | 879                     | 1319                          |
| C - B4226/Pontypridd Road | 0.93    | 42.31         | 10.3            | E       | 775                     | 1163                          |
| D - A4226/Port Road       | 1.50    | 1135.68       | 402.5           | F       | 1440                    | 2160                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 587                   | 147                     | 965                       |                            | 844               | 0.696 | 578                 | 569                             | 0.0               | 2.3             | 13.716    | B                             |
| B - A4226/Port Road W     | 721                   | 180                     | 800                       |                            | 1164              | 0.620 | 715                 | 743                             | 0.0               | 1.6             | 7.992     | A                             |
| C - B4226/Pontypridd Road | 636                   | 159                     | 759                       |                            | 1209              | 0.526 | 632                 | 756                             | 0.0               | 1.1             | 6.207     | A                             |
| D - A4226/Port Road       | 1181                  | 295                     | 393                       | 0.00                       | 1257              | 0.940 | 1141                | 998                             | 0.0               | 10.0            | 26.044    | D                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 701                   | 175                     | 1035                      |                            | 800               | 0.877 | 687                 | 639                             | 2.3               | 5.9             | 29.997    | D                             |
| B - A4226/Port Road W     | 861                   | 215                     | 907                       |                            | 1093              | 0.788 | 854                 | 814                             | 1.6               | 3.5             | 14.769    | B                             |
| C - B4226/Pontypridd Road | 760                   | 190                     | 905                       |                            | 1110              | 0.685 | 756                 | 856                             | 1.1               | 2.1             | 10.086    | B                             |
| D - A4226/Port Road       | 1411                  | 353                     | 470                       | 0.00                       | 1211              | 1.165 | 1203                | 1190                            | 10.0              | 61.8            | 119.142   | F                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 859                   | 215                     | 1029                      |                            | 803               | 1.069 | 783                 | 688                             | 5.9               | 24.9            | 86.471    | F                             |
| B - A4226/Port Road W     | 1055                  | 264                     | 973                       |                            | 1049              | 1.006 | 1001                | 839                             | 3.5               | 17.1            | 49.523    | E                             |
| C - B4226/Pontypridd Road | 930                   | 233                     | 1051                      |                            | 1009              | 0.922 | 906                 | 922                             | 2.1               | 8.2             | 29.820    | D                             |
| D - A4226/Port Road       | 1728                  | 432                     | 560                       | 0.00                       | 1157              | 1.493 | 1157                | 1397                            | 61.8              | 204.4           | 421.264   | F                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 859                   | 215                     | 1028                      |                            | 804               | 1.068 | 797                 | 694                             | 24.9              | 40.2            | 160.049   | F                             |
| B - A4226/Port Road W     | 1055                  | 264                     | 984                       |                            | 1042              | 1.012 | 1020                | 842                             | 17.1              | 25.6            | 86.185    | F                             |
| C - B4226/Pontypridd Road | 930                   | 233                     | 1072                      |                            | 995               | 0.935 | 922                 | 932                             | 8.2               | 10.3            | 42.309    | E                             |
| D - A4226/Port Road       | 1728                  | 432                     | 571                       | 0.00                       | 1151              | 1.501 | 1151                | 1423                            | 204.4             | 348.5           | 852.708   | F                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 701                   | 175                     | 1035                      |                            | 799               | 0.877 | 779                 | 657                             | 40.2              | 20.7            | 145.237   | F                             |
| B - A4226/Port Road W     | 861                   | 215                     | 981                       |                            | 1044              | 0.825 | 942                 | 834                             | 25.6              | 5.6             | 46.760    | E                             |
| C - B4226/Pontypridd Road | 760                   | 190                     | 1006                      |                            | 1040              | 0.730 | 789                 | 916                             | 10.3              | 2.9             | 15.896    | C                             |
| D - A4226/Port Road       | 1411                  | 353                     | 498                       | 0.00                       | 1195              | 1.181 | 1195                | 1298                            | 348.5             | 402.5           | 1124.852  | F                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 587                   | 147                     | 1047                      |                            | 792               | 0.741 | 657                 | 603                             | 20.7              | 3.3             | 38.321    | E                             |
| B - A4226/Port Road W     | 721                   | 180                     | 896                       |                            | 1100              | 0.655 | 736                 | 808                             | 5.6               | 2.0             | 10.341    | B                             |
| C - B4226/Pontypridd Road | 636                   | 159                     | 805                       |                            | 1177              | 0.540 | 643                 | 826                             | 2.9               | 1.2             | 6.835     | A                             |
| D - A4226/Port Road       | 1181                  | 295                     | 401                       | 0.00                       | 1252              | 0.943 | 1249                | 1047                            | 402.5             | 385.5           | 1135.684  | F                             |

# Base - 2038 B+D+CA L, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 580.10             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D27 | 2038 B+D+CA L | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 777                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1200                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1153                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1283                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 408                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 735                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 525                 |
|      | D - A4226/Port Road       | 424                    | 502                   | 357                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.03    | 120.92        | 29.6            | F       | 713                     | 1069                          |
| B - A4226/Port Road W     | 1.27    | 517.53        | 157.2           | F       | 1101                    | 1652                          |
| C - B4226/Pontypridd Road | 1.40    | 941.05        | 246.2           | F       | 1058                    | 1587                          |
| D - A4226/Port Road       | 1.27    | 592.30        | 185.8           | F       | 1177                    | 1766                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 585                   | 146                     | 864                       |                            | 908               | 0.644 | 578                 | 667                             | 0.0               | 1.8             | 11.189    | B                             |
| B - A4226/Port Road W     | 903                   | 226                     | 743                       |                            | 1202              | 0.752 | 892                 | 698                             | 0.0               | 3.0             | 11.602    | B                             |
| C - B4226/Pontypridd Road | 868                   | 217                     | 970                       |                            | 1065              | 0.815 | 852                 | 665                             | 0.0               | 4.1             | 16.430    | C                             |
| D - A4226/Port Road       | 966                   | 241                     | 585                       | 0.00                       | 1143              | 0.845 | 946                 | 1237                            | 0.0               | 5.0             | 17.741    | C                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 699                   | 175                     | 971                       |                            | 840               | 0.831 | 688                 | 749                             | 1.8               | 4.5             | 23.293    | C                             |
| B - A4226/Port Road W     | 1079                  | 270                     | 870                       |                            | 1117              | 0.965 | 1041                | 788                             | 3.0               | 12.4            | 37.443    | E                             |
| C - B4226/Pontypridd Road | 1037                  | 259                     | 1140                      |                            | 949               | 1.093 | 928                 | 771                             | 4.1               | 31.3            | 83.076    | F                             |
| D - A4226/Port Road       | 1153                  | 288                     | 647                       | 0.00                       | 1106              | 1.043 | 1074                | 1421                            | 5.0               | 25.0            | 63.425    | F                             |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 855                   | 214                     | 990                       |                            | 828               | 1.033 | 796                 | 756                             | 4.5               | 19.3            | 68.899    | F                             |
| B - A4226/Port Road W     | 1321                  | 330                     | 970                       |                            | 1051              | 1.257 | 1047                | 816                             | 12.4              | 81.0            | 171.583   | F                             |
| C - B4226/Pontypridd Road | 1270                  | 317                     | 1202                      |                            | 907               | 1.400 | 906                 | 816                             | 31.3              | 122.2           | 314.632   | F                             |
| D - A4226/Port Road       | 1413                  | 353                     | 636                       | 0.00                       | 1113              | 1.270 | 1111                | 1472                            | 25.0              | 100.5           | 212.761   | F                             |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 855                   | 214                     | 992                       |                            | 827               | 1.034 | 814                 | 756                             | 19.3              | 29.6            | 120.920   | F                             |
| B - A4226/Port Road W     | 1321                  | 330                     | 986                       |                            | 1040              | 1.270 | 1040                | 820                             | 81.0              | 151.3           | 407.306   | F                             |
| C - B4226/Pontypridd Road | 1270                  | 317                     | 1206                      |                            | 904               | 1.404 | 904                 | 820                             | 122.2             | 213.6           | 674.688   | F                             |
| D - A4226/Port Road       | 1413                  | 353                     | 634                       | 0.00                       | 1114              | 1.268 | 1114                | 1476                            | 100.5             | 175.2           | 452.457   | F                             |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 699                   | 175                     | 991                       |                            | 828               | 0.844 | 786                 | 757                             | 29.6              | 7.6             | 86.655    | F                             |
| B - A4226/Port Road W     | 1079                  | 270                     | 962                       |                            | 1056              | 1.021 | 1055                | 815                             | 151.3             | 157.2           | 517.527   | F                             |
| C - B4226/Pontypridd Road | 1037                  | 259                     | 1202                      |                            | 906               | 1.144 | 906                 | 815                             | 213.6             | 246.2           | 911.263   | F                             |
| D - A4226/Port Road       | 1153                  | 288                     | 637                       | 0.00                       | 1112              | 1.037 | 1111                | 1472                            | 175.2             | 185.8           | 592.297   | F                             |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 585                   | 146                     | 984                       |                            | 832               | 0.703 | 605                 | 767                             | 7.6               | 2.6             | 17.914    | C                             |
| B - A4226/Port Road W     | 903                   | 226                     | 808                       |                            | 1159              | 0.779 | 1152                | 781                             | 157.2             | 95.2            | 395.859   | F                             |
| C - B4226/Pontypridd Road | 868                   | 217                     | 1180                      |                            | 922               | 0.942 | 918                 | 780                             | 246.2             | 233.7           | 941.052   | F                             |
| D - A4226/Port Road       | 966                   | 241                     | 657                       | 0.00                       | 1100              | 0.878 | 1094                | 1441                            | 185.8             | 153.8           | 559.320   | F                             |

# Base - 2038 B+D+CA L, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 510.32             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D28 | 2038 B+D+CA L | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 785                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 970                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 854                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1583                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data



### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 313                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 593                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 457                 |
|      | D - A4226/Port Road       | 413                    | 720                   | 449                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.08    | 169.00        | 42.9            | F       | 720                     | 1080                          |
| B - A4226/Port Road W     | 1.03    | 97.90         | 30.1            | F       | 890                     | 1335                          |
| C - B4226/Pontypridd Road | 0.95    | 48.92         | 12.1            | E       | 784                     | 1175                          |
| D - A4226/Port Road       | 1.51    | 1181.20       | 416.8           | F       | 1453                    | 2179                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 591                   | 148                     | 971                       |                            | 840               | 0.703 | 582                 | 571                             | 0.0               | 2.3             | 14.079    | B                             |
| B - A4226/Port Road W     | 730                   | 183                     | 806                       |                            | 1160              | 0.629 | 724                 | 747                             | 0.0               | 1.7             | 8.212     | A                             |
| C - B4226/Pontypridd Road | 643                   | 161                     | 771                       |                            | 1201              | 0.536 | 638                 | 758                             | 0.0               | 1.1             | 6.371     | A                             |
| D - A4226/Port Road       | 1192                  | 298                     | 393                       | 0.00                       | 1257              | 0.948 | 1149                | 1017                            | 0.0               | 10.8            | 27.362    | D                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 706                   | 176                     | 1036                      |                            | 799               | 0.883 | 691                 | 638                             | 2.3               | 6.1             | 31.027    | D                             |
| B - A4226/Port Road W     | 872                   | 218                     | 912                       |                            | 1090              | 0.800 | 864                 | 815                             | 1.7               | 3.7             | 15.545    | C                             |
| C - B4226/Pontypridd Road | 768                   | 192                     | 919                       |                            | 1100              | 0.698 | 763                 | 856                             | 1.1               | 2.2             | 10.596    | B                             |
| D - A4226/Port Road       | 1423                  | 356                     | 470                       | 0.00                       | 1211              | 1.175 | 1205                | 1213                            | 10.8              | 65.4            | 125.465   | F                             |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 864                   | 216                     | 1030                      |                            | 803               | 1.077 | 784                 | 686                             | 6.1               | 26.3            | 90.112    | F                             |
| B - A4226/Port Road W     | 1068                  | 267                     | 975                       |                            | 1047              | 1.020 | 1006                | 839                             | 3.7               | 19.3            | 54.054    | F                             |
| C - B4226/Pontypridd Road | 940                   | 235                     | 1062                      |                            | 1002              | 0.938 | 912                 | 919                             | 2.2               | 9.3             | 32.972    | D                             |
| D - A4226/Port Road       | 1743                  | 436                     | 558                       | 0.00                       | 1159              | 1.504 | 1159                | 1416                            | 65.4              | 211.5           | 437.225   | F                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 864                   | 216                     | 1029                      |                            | 803               | 1.076 | 798                 | 692                             | 26.3              | 42.9            | 169.000   | F                             |
| B - A4226/Port Road W     | 1068                  | 267                     | 985                       |                            | 1041              | 1.026 | 1025                | 841                             | 19.3              | 30.1            | 97.901    | F                             |
| C - B4226/Pontypridd Road | 940                   | 235                     | 1082                      |                            | 989               | 0.951 | 929                 | 928                             | 9.3               | 12.1            | 48.921    | E                             |
| D - A4226/Port Road       | 1743                  | 436                     | 568                       | 0.00                       | 1153              | 1.512 | 1153                | 1442                            | 211.5             | 359.0           | 879.562   | F                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 706                   | 176                     | 1035                      |                            | 800               | 0.883 | 781                 | 659                             | 42.9              | 24.2            | 158.483   | F                             |
| B - A4226/Port Road W     | 872                   | 218                     | 982                       |                            | 1043              | 0.836 | 967                 | 833                             | 30.1              | 6.3             | 59.838    | F                             |
| C - B4226/Pontypridd Road | 768                   | 192                     | 1032                      |                            | 1023              | 0.751 | 803                 | 918                             | 12.1              | 3.2             | 18.723    | C                             |
| D - A4226/Port Road       | 1423                  | 356                     | 502                       | 0.00                       | 1192              | 1.194 | 1192                | 1333                            | 359.0             | 416.8           | 1162.537  | F                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 591                   | 148                     | 1047                      |                            | 792               | 0.746 | 674                 | 603                             | 24.2              | 3.4             | 46.507    | E                             |
| B - A4226/Port Road W     | 730                   | 183                     | 910                       |                            | 1091              | 0.670 | 747                 | 811                             | 6.3               | 2.1             | 11.065    | B                             |
| C - B4226/Pontypridd Road | 643                   | 161                     | 826                       |                            | 1164              | 0.553 | 651                 | 832                             | 3.2               | 1.3             | 7.143     | A                             |
| D - A4226/Port Road       | 1192                  | 298                     | 402                       | 0.00                       | 1252              | 0.952 | 1249                | 1074                            | 416.8             | 402.6           | 1181.204  | F                             |

# Base - 2038 B+D+CA M, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 606.45             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D29 | 2038 B+D+CA M | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 779                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1203                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1155                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1308                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 410                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 738                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 527                 |
|      | D - A4226/Port Road       | 432                    | 512                   | 364                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.04    | 123.96        | 30.5            | F       | 715                     | 1072                          |
| B - A4226/Port Road W     | 1.27    | 529.04        | 161.1           | F       | 1104                    | 1656                          |
| C - B4226/Pontypridd Road | 1.41    | 955.67        | 249.4           | F       | 1060                    | 1590                          |
| D - A4226/Port Road       | 1.29    | 656.61        | 208.4           | F       | 1200                    | 1800                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 586                   | 147                     | 875                       |                            | 901               | 0.651 | 579                 | 672                             | 0.0               | 1.9             | 11.471    | B                             |
| B - A4226/Port Road W     | 906                   | 226                     | 749                       |                            | 1198              | 0.756 | 894                 | 704                             | 0.0               | 3.0             | 11.815    | B                             |
| C - B4226/Pontypridd Road | 870                   | 217                     | 974                       |                            | 1062              | 0.819 | 853                 | 669                             | 0.0               | 4.2             | 16.676    | C                             |
| D - A4226/Port Road       | 985                   | 246                     | 585                       | 0.00                       | 1143              | 0.862 | 962                 | 1242                            | 0.0               | 5.6             | 19.103    | C                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 700                   | 175                     | 976                       |                            | 837               | 0.836 | 689                 | 751                             | 1.9               | 4.6             | 23.898    | C                             |
| B - A4226/Port Road W     | 1081                  | 270                     | 874                       |                            | 1115              | 0.970 | 1042                | 791                             | 3.0               | 12.9            | 38.604    | E                             |
| C - B4226/Pontypridd Road | 1038                  | 260                     | 1143                      |                            | 947               | 1.097 | 927                 | 773                             | 4.2               | 32.1            | 84.915    | F                             |
| D - A4226/Port Road       | 1176                  | 294                     | 645                       | 0.00                       | 1107              | 1.062 | 1081                | 1425                            | 5.6               | 29.3            | 71.223    | F                             |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 858                   | 214                     | 991                       |                            | 828               | 1.036 | 797                 | 755                             | 4.6               | 19.8            | 70.301    | F                             |
| B - A4226/Port Road W     | 1325                  | 331                     | 972                       |                            | 1050              | 1.262 | 1046                | 816                             | 12.9              | 82.5            | 175.107   | F                             |
| C - B4226/Pontypridd Road | 1272                  | 318                     | 1203                      |                            | 906               | 1.404 | 905                 | 815                             | 32.1              | 123.8           | 319.765   | F                             |
| D - A4226/Port Road       | 1440                  | 360                     | 634                       | 0.00                       | 1114              | 1.293 | 1112                | 1474                            | 29.3              | 111.3           | 236.396   | F                             |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 858                   | 214                     | 992                       |                            | 827               | 1.037 | 815                 | 755                             | 19.8              | 30.5            | 123.960   | F                             |
| B - A4226/Port Road W     | 1325                  | 331                     | 987                       |                            | 1040              | 1.274 | 1039                | 819                             | 82.5              | 153.8           | 414.738   | F                             |
| C - B4226/Pontypridd Road | 1272                  | 318                     | 1207                      |                            | 903               | 1.408 | 903                 | 819                             | 123.8             | 216.0           | 683.454   | F                             |
| D - A4226/Port Road       | 1440                  | 360                     | 632                       | 0.00                       | 1115              | 1.292 | 1115                | 1478                            | 111.3             | 192.6           | 497.240   | F                             |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 700                   | 175                     | 991                       |                            | 827               | 0.846 | 790                 | 756                             | 30.5              | 8.0             | 90.743    | F                             |
| B - A4226/Port Road W     | 1081                  | 270                     | 966                       |                            | 1053              | 1.027 | 1052                | 815                             | 153.8             | 161.1           | 529.040   | F                             |
| C - B4226/Pontypridd Road | 1038                  | 260                     | 1204                      |                            | 905               | 1.147 | 905                 | 815                             | 216.0             | 249.4           | 923.251   | F                             |
| D - A4226/Port Road       | 1176                  | 294                     | 635                       | 0.00                       | 1113              | 1.056 | 1113                | 1474                            | 192.6             | 208.4           | 656.613   | F                             |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 586                   | 147                     | 984                       |                            | 832               | 0.705 | 608                 | 766                             | 8.0               | 2.7             | 18.262    | C                             |
| B - A4226/Port Road W     | 906                   | 226                     | 811                       |                            | 1157              | 0.783 | 1150                | 782                             | 161.1             | 100.1           | 410.086   | F                             |
| C - B4226/Pontypridd Road | 870                   | 217                     | 1181                      |                            | 921               | 0.944 | 917                 | 779                             | 249.4             | 237.5           | 955.672   | F                             |
| D - A4226/Port Road       | 985                   | 246                     | 654                       | 0.00                       | 1101              | 0.894 | 1096                | 1444                            | 208.4             | 180.6           | 639.400   | F                             |

# Base - 2038 B+D+CA M, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 530.09             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D30 | 2038 B+D+CA M | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 789                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 979                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 862                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1595                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 317                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 602                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 465                 |
|      | D - A4226/Port Road       | 415                    | 726                   | 453                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.08    | 176.86        | 45.2            | F       | 724                     | 1086                          |
| B - A4226/Port Road W     | 1.04    | 107.65        | 33.8            | F       | 898                     | 1348                          |
| C - B4226/Pontypridd Road | 0.96    | 55.23         | 13.9            | F       | 791                     | 1186                          |
| D - A4226/Port Road       | 1.52    | 1220.72       | 429.2           | F       | 1464                    | 2195                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 594                   | 149                     | 976                       |                            | 837               | 0.710 | 584                 | 572                             | 0.0               | 2.4             | 14.404    | B                             |
| B - A4226/Port Road W     | 737                   | 184                     | 811                       |                            | 1157              | 0.637 | 730                 | 750                             | 0.0               | 1.7             | 8.396     | A                             |
| C - B4226/Pontypridd Road | 649                   | 162                     | 781                       |                            | 1194              | 0.543 | 644                 | 760                             | 0.0               | 1.2             | 6.512     | A                             |
| D - A4226/Port Road       | 1201                  | 300                     | 393                       | 0.00                       | 1257              | 0.955 | 1155                | 1032                            | 0.0               | 11.5            | 28.565    | D                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 709                   | 177                     | 1037                      |                            | 798               | 0.889 | 694                 | 638                             | 2.4               | 6.4             | 31.947    | D                             |
| B - A4226/Port Road W     | 880                   | 220                     | 915                       |                            | 1087              | 0.809 | 871                 | 816                             | 1.7               | 3.9             | 16.204    | C                             |
| C - B4226/Pontypridd Road | 775                   | 194                     | 930                       |                            | 1092              | 0.709 | 770                 | 857                             | 1.2               | 2.4             | 11.049    | B                             |
| D - A4226/Port Road       | 1434                  | 358                     | 470                       | 0.00                       | 1211              | 1.184 | 1205                | 1231                            | 11.5              | 68.6            | 131.109   | F                             |



### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 869                   | 217                     | 1031                      |                            | 802               | 1.083 | 784                 | 684                             | 6.4               | 27.4            | 93.323    | F                             |
| B - A4226/Port Road W     | 1078                  | 269                     | 977                       |                            | 1046              | 1.030 | 1009                | 838                             | 3.9               | 21.1            | 57.774    | F                             |
| C - B4226/Pontypridd Road | 949                   | 237                     | 1069                      |                            | 997               | 0.952 | 917                 | 917                             | 2.4               | 10.4            | 35.849    | E                             |
| D - A4226/Port Road       | 1756                  | 439                     | 555                       | 0.00                       | 1160              | 1.513 | 1160                | 1431                            | 68.6              | 217.6           | 451.117   | F                             |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 869                   | 217                     | 1030                      |                            | 803               | 1.082 | 798                 | 690                             | 27.4              | 45.2            | 176.861   | F                             |
| B - A4226/Port Road W     | 1078                  | 269                     | 987                       |                            | 1040              | 1.036 | 1027                | 841                             | 21.1              | 33.8            | 107.649   | F                             |
| C - B4226/Pontypridd Road | 949                   | 237                     | 1088                      |                            | 984               | 0.964 | 935                 | 926                             | 10.4              | 13.9            | 55.227    | F                             |
| D - A4226/Port Road       | 1756                  | 439                     | 566                       | 0.00                       | 1154              | 1.522 | 1154                | 1457                            | 217.6             | 368.1           | 902.832   | F                             |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 709                   | 177                     | 1035                      |                            | 799               | 0.887 | 781                 | 661                             | 45.2              | 27.2            | 170.203   | F                             |
| B - A4226/Port Road W     | 880                   | 220                     | 983                       |                            | 1042              | 0.844 | 987                 | 833                             | 33.8              | 7.1             | 72.207    | F                             |
| C - B4226/Pontypridd Road | 775                   | 194                     | 1052                      |                            | 1009              | 0.768 | 816                 | 919                             | 13.9              | 3.6             | 21.999    | C                             |
| D - A4226/Port Road       | 1434                  | 358                     | 506                       | 0.00                       | 1190              | 1.205 | 1190                | 1362                            | 368.1             | 429.2           | 1195.242  | F                             |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 594                   | 149                     | 1048                      |                            | 791               | 0.751 | 689                 | 603                             | 27.2              | 3.6             | 55.110    | F                             |
| B - A4226/Port Road W     | 737                   | 184                     | 923                       |                            | 1082              | 0.681 | 756                 | 813                             | 7.1               | 2.2             | 11.786    | B                             |
| C - B4226/Pontypridd Road | 649                   | 162                     | 842                       |                            | 1152              | 0.563 | 658                 | 838                             | 3.6               | 1.3             | 7.435     | A                             |
| D - A4226/Port Road       | 1201                  | 300                     | 403                       | 0.00                       | 1251              | 0.960 | 1248                | 1097                            | 429.2             | 417.3           | 1220.722  | F                             |

# Base - 2038 B+D+CA H, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 626.78             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D31 | 2038 B+D+CA H | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 780                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1206                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1157                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1326                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 411                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 741                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 529                 |
|      | D - A4226/Port Road       | 437                    | 520                   | 369                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.04    | 126.09        | 31.1            | F       | 716                     | 1074                          |
| B - A4226/Port Road W     | 1.28    | 538.53        | 164.3           | F       | 1107                    | 1660                          |
| C - B4226/Pontypridd Road | 1.41    | 968.65        | 252.2           | F       | 1062                    | 1593                          |
| D - A4226/Port Road       | 1.31    | 703.24        | 224.8           | F       | 1217                    | 1825                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 587                   | 147                     | 883                       |                            | 896               | 0.656 | 580                 | 675                             | 0.0               | 1.9             | 11.678    | B                             |
| B - A4226/Port Road W     | 908                   | 227                     | 753                       |                            | 1195              | 0.760 | 896                 | 710                             | 0.0               | 3.1             | 11.984    | B                             |
| C - B4226/Pontypridd Road | 871                   | 218                     | 977                       |                            | 1060              | 0.822 | 854                 | 672                             | 0.0               | 4.3             | 16.898    | C                             |
| D - A4226/Port Road       | 998                   | 250                     | 585                       | 0.00                       | 1143              | 0.873 | 974                 | 1246                            | 0.0               | 6.1             | 20.191    | C                             |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 701                   | 175                     | 979                       |                            | 835               | 0.840 | 690                 | 751                             | 1.9               | 4.7             | 24.308    | C                             |
| B - A4226/Port Road W     | 1084                  | 271                     | 876                       |                            | 1114              | 0.974 | 1043                | 793                             | 3.1               | 13.3            | 39.540    | E                             |
| C - B4226/Pontypridd Road | 1040                  | 260                     | 1146                      |                            | 945               | 1.101 | 926                 | 774                             | 4.3               | 32.9            | 86.562    | F                             |
| D - A4226/Port Road       | 1192                  | 298                     | 644                       | 0.00                       | 1108              | 1.076 | 1086                | 1428                            | 6.1               | 32.6            | 77.176    | F                             |

### 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 859                   | 215                     | 992                       |                            | 827               | 1.039 | 797                 | 754                             | 4.7               | 20.1            | 71.269    | F                             |
| B - A4226/Port Road W     | 1328                  | 332                     | 973                       |                            | 1049              | 1.265 | 1046                | 817                             | 13.3              | 83.8            | 178.052   | F                             |
| C - B4226/Pontypridd Road | 1274                  | 318                     | 1204                      |                            | 905               | 1.408 | 904                 | 814                             | 32.9              | 125.3           | 324.343   | F                             |
| D - A4226/Port Road       | 1460                  | 365                     | 632                       | 0.00                       | 1115              | 1.310 | 1113                | 1476                            | 32.6              | 119.2           | 254.058   | F                             |

### 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 859                   | 215                     | 993                       |                            | 826               | 1.039 | 815                 | 753                             | 20.1              | 31.1            | 126.090   | F                             |
| B - A4226/Port Road W     | 1328                  | 332                     | 988                       |                            | 1039              | 1.278 | 1039                | 820                             | 83.8              | 156.0           | 420.968   | F                             |
| C - B4226/Pontypridd Road | 1274                  | 318                     | 1208                      |                            | 902               | 1.412 | 902                 | 819                             | 125.3             | 218.2           | 691.222   | F                             |
| D - A4226/Port Road       | 1460                  | 365                     | 630                       | 0.00                       | 1116              | 1.308 | 1116                | 1480                            | 119.2             | 205.3           | 529.960   | F                             |

### 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 701                   | 175                     | 992                       |                            | 827               | 0.848 | 793                 | 755                             | 31.1              | 8.2             | 93.633    | F                             |
| B - A4226/Port Road W     | 1084                  | 271                     | 969                       |                            | 1052              | 1.031 | 1051                | 816                             | 156.0             | 164.3           | 538.527   | F                             |
| C - B4226/Pontypridd Road | 1040                  | 260                     | 1205                      |                            | 904               | 1.150 | 904                 | 814                             | 218.2             | 252.2           | 933.851   | F                             |
| D - A4226/Port Road       | 1192                  | 298                     | 633                       | 0.00                       | 1114              | 1.070 | 1114                | 1477                            | 205.3             | 224.8           | 703.243   | F                             |

### 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 587                   | 147                     | 986                       |                            | 831               | 0.707 | 609                 | 764                             | 8.2               | 2.7             | 18.536    | C                             |
| B - A4226/Port Road W     | 908                   | 227                     | 813                       |                            | 1156              | 0.785 | 1149                | 782                             | 164.3             | 104.1           | 421.911   | F                             |
| C - B4226/Pontypridd Road | 871                   | 218                     | 1182                      |                            | 920               | 0.947 | 916                 | 779                             | 252.2             | 240.9           | 968.653   | F                             |
| D - A4226/Port Road       | 998                   | 250                     | 653                       | 0.00                       | 1102              | 0.905 | 1097                | 1446                            | 224.8             | 200.1           | 697.282   | F                             |

# Base - 2038 B+D+CA H, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 541.98             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D32 | 2038 B+D+CA H | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 791                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 986                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 867                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1602                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 319                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 609                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 470                 |
|      | D - A4226/Port Road       | 417                    | 729                   | 455                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.09    | 180.39        | 46.3            | F       | 726                     | 1089                          |
| B - A4226/Port Road W     | 1.04    | 115.38        | 36.9            | F       | 905                     | 1357                          |
| C - B4226/Pontypridd Road | 0.97    | 59.81         | 15.3            | F       | 796                     | 1193                          |
| D - A4226/Port Road       | 1.53    | 1244.01       | 436.4           | F       | 1470                    | 2205                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 596                   | 149                     | 979                       |                            | 835               | 0.713 | 586                 | 573                             | 0.0               | 2.5             | 14.561    | B                             |
| B - A4226/Port Road W     | 742                   | 186                     | 813                       |                            | 1155              | 0.642 | 735                 | 751                             | 0.0               | 1.8             | 8.525     | A                             |
| C - B4226/Pontypridd Road | 653                   | 163                     | 787                       |                            | 1190              | 0.549 | 648                 | 761                             | 0.0               | 1.2             | 6.606     | A                             |
| D - A4226/Port Road       | 1206                  | 302                     | 393                       | 0.00                       | 1257              | 0.959 | 1158                | 1042                            | 0.0               | 11.9            | 29.297    | D                             |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 711                   | 178                     | 1038                      |                            | 798               | 0.891 | 695                 | 638                             | 2.5               | 6.5             | 32.355    | D                             |
| B - A4226/Port Road W     | 886                   | 222                     | 917                       |                            | 1086              | 0.816 | 877                 | 816                             | 1.8               | 4.1             | 16.694    | C                             |
| C - B4226/Pontypridd Road | 779                   | 195                     | 938                       |                            | 1087              | 0.717 | 774                 | 857                             | 1.2               | 2.4             | 11.371    | B                             |
| D - A4226/Port Road       | 1440                  | 360                     | 469                       | 0.00                       | 1212              | 1.189 | 1206                | 1243                            | 11.9              | 70.5            | 134.480   | F                             |

**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 871                   | 218                     | 1032                      |                            | 802               | 1.086 | 785                 | 683                             | 6.5               | 28.0            | 94.754    | F                             |
| B - A4226/Port Road W     | 1086                  | 271                     | 978                       |                            | 1045              | 1.038 | 1011                | 838                             | 4.1               | 22.6            | 60.660    | F                             |
| C - B4226/Pontypridd Road | 955                   | 239                     | 1074                      |                            | 994               | 0.961 | 920                 | 916                             | 2.4               | 11.1            | 37.871    | E                             |
| D - A4226/Port Road       | 1764                  | 441                     | 553                       | 0.00                       | 1161              | 1.519 | 1161                | 1441                            | 70.5              | 221.2           | 459.117   | F                             |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 871                   | 218                     | 1030                      |                            | 803               | 1.085 | 798                 | 689                             | 28.0              | 46.3            | 180.389   | F                             |
| B - A4226/Port Road W     | 1086                  | 271                     | 987                       |                            | 1040              | 1.044 | 1029                | 841                             | 22.6              | 36.9            | 115.378   | F                             |
| C - B4226/Pontypridd Road | 955                   | 239                     | 1092                      |                            | 982               | 0.973 | 938                 | 924                             | 11.1              | 15.3            | 59.810    | F                             |
| D - A4226/Port Road       | 1764                  | 441                     | 564                       | 0.00                       | 1155              | 1.527 | 1155                | 1466                            | 221.2             | 373.3           | 916.261   | F                             |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 711                   | 178                     | 1035                      |                            | 800               | 0.889 | 782                 | 662                             | 46.3              | 28.5            | 175.345   | F                             |
| B - A4226/Port Road W     | 886                   | 222                     | 984                       |                            | 1042              | 0.851 | 1002                | 833                             | 36.9              | 7.9             | 82.777    | F                             |
| C - B4226/Pontypridd Road | 779                   | 195                     | 1066                      |                            | 999               | 0.780 | 825                 | 920                             | 15.3              | 3.9             | 24.932    | C                             |
| D - A4226/Port Road       | 1440                  | 360                     | 509                       | 0.00                       | 1188              | 1.212 | 1188                | 1383                            | 373.3             | 436.4           | 1214.460  | F                             |

**17:30 - 17:45**

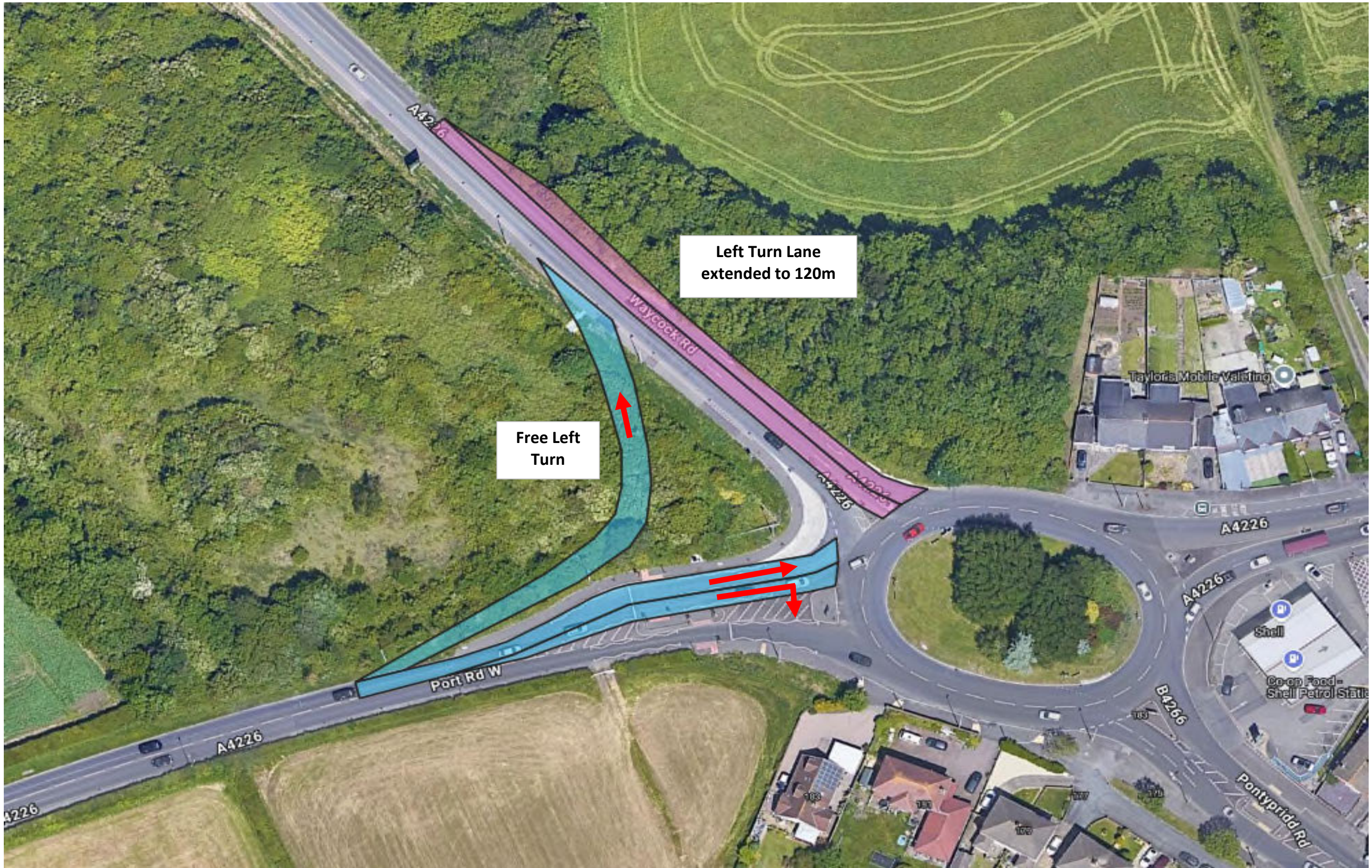
| Arm                       | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|---------------------------|-----------------------|-------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|-------------------------------|
| A - A4226/Waycock Road    | 596                   | 149                     | 1048                      |                            | 792               | 0.752 | 695                 | 604                             | 28.5              | 3.6             | 59.183    | F                             |
| B - A4226/Port Road W     | 742                   | 186                     | 929                       |                            | 1078              | 0.688 | 765                 | 814                             | 7.9               | 2.3             | 12.358    | B                             |
| C - B4226/Pontypridd Road | 653                   | 163                     | 853                       |                            | 1145              | 0.570 | 663                 | 840                             | 3.9               | 1.4             | 7.643     | A                             |
| D - A4226/Port Road       | 1206                  | 302                     | 404                       | 0.00                       | 1251              | 0.964 | 1248                | 1113                            | 436.4             | 426.0           | 1244.012  | F                             |





# Appendix P





Left Turn Lane  
extended to 120m

Free Left  
Turn



# Appendix Q

| <b>Junctions 9</b>                                                                                                                                                      |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>ARCADY 9 - Roundabout Module</b>                                                                                                                                     |  |
| Version: 9.5.1.7462<br>© Copyright TRL Limited, 2019                                                                                                                    |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>+44 (0)1344 379777   software@trl.co.uk   www.trlsoftware.co.uk                 |  |
| <b>The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution</b> |  |

**Filename:** WX 2028\_B+D Standard OpA2.j9

**Path:** K:\T23\Jobs\T23.135 Weycock Cross TA\Analysis\Modelling\2025\Waycock + Dev\Arcady

**Report generation date:** 28/03/2025 11:24:39

- 
- »Base - 2028 B, AM
  - »Base - 2028 B, PM
  - »Base - 2028 B+C, AM
  - »Base - 2028 B+C, PM
  - »Base - 2028 B+D L, AM
  - »Base - 2028 B+D L, PM
  - »Base - 2028 B+D M, AM
  - »Base - 2028 B+D M, PM
  - »Base - 2028 B+D H, AM
  - »Base - 2028 B+D H, PM
  - »Base - 2028 B+D+C L, AM
  - »Base - 2028 B+D+C L, PM
  - »Base - 2028 B+D+C M, AM
  - »Base - 2028 B+D+C M, PM
  - »Base - 2028 B+D+C H, AM
  - »Base - 2028 B+D+C H, PM

## Summary of junction performance

|                           | AM                  |             |           |      |     | PM     |             |           |      |     |
|---------------------------|---------------------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
|                           | Set ID              | Queue (PCU) | Delay (s) | RFC  | LOS | Set ID | Queue (PCU) | Delay (s) | RFC  | LOS |
|                           | Base - 2028 B       |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D1                  | 1.8         | 11.73     | 0.64 | B   | D2     | 2.5         | 13.32     | 0.71 | B   |
| B - A4226/Port Road W     |                     | 1.6         | 7.45      | 0.61 | A   |        | 2.8         | 11.50     | 0.74 | B   |
| C - B4226/Pontypridd Road |                     | 2.2         | 9.06      | 0.68 | A   |        | 2.3         | 10.39     | 0.70 | B   |
| D - A4226/Port Road       |                     | 2.1         | 11.01     | 0.67 | B   |        | 1.4         | 7.23      | 0.58 | A   |
|                           | Base - 2028 B+C     |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D3                  | 3.1         | 18.63     | 0.76 | C   | D4     | 5.3         | 26.14     | 0.85 | D   |
| B - A4226/Port Road W     |                     | 3.0         | 12.08     | 0.75 | B   |        | 4.5         | 18.20     | 0.83 | C   |
| C - B4226/Pontypridd Road |                     | 4.8         | 18.97     | 0.83 | C   |        | 3.3         | 14.74     | 0.77 | B   |
| D - A4226/Port Road       |                     | 2.9         | 14.06     | 0.75 | B   |        | 1.9         | 8.87      | 0.66 | A   |
|                           | Base - 2028 B+D L   |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D5                  | 1.9         | 12.48     | 0.65 | B   | D6     | 2.6         | 13.95     | 0.72 | B   |
| B - A4226/Port Road W     |                     | 1.7         | 7.66      | 0.62 | A   |        | 3.0         | 12.27     | 0.75 | B   |
| C - B4226/Pontypridd Road |                     | 2.2         | 9.25      | 0.69 | A   |        | 2.5         | 11.11     | 0.72 | B   |
| D - A4226/Port Road       |                     | 2.3         | 11.86     | 0.70 | B   |        | 1.4         | 7.40      | 0.59 | A   |
|                           | Base - 2028 B+D M   |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D7                  | 2.0         | 13.11     | 0.67 | B   | D8     | 2.8         | 14.54     | 0.73 | B   |
| B - A4226/Port Road W     |                     | 1.7         | 7.84      | 0.63 | A   |        | 3.2         | 12.92     | 0.76 | B   |
| C - B4226/Pontypridd Road |                     | 2.3         | 9.44      | 0.69 | A   |        | 2.6         | 11.73     | 0.73 | B   |
| D - A4226/Port Road       |                     | 2.5         | 12.62     | 0.72 | B   |        | 1.5         | 7.55      | 0.60 | A   |
|                           | Base - 2028 B+D H   |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D9                  | 2.1         | 13.61     | 0.67 | B   | D10    | 2.9         | 14.96     | 0.74 | B   |
| B - A4226/Port Road W     |                     | 1.7         | 7.95      | 0.63 | A   |        | 3.3         | 13.40     | 0.77 | B   |
| C - B4226/Pontypridd Road |                     | 2.3         | 9.55      | 0.70 | A   |        | 2.8         | 12.23     | 0.74 | B   |
| D - A4226/Port Road       |                     | 2.7         | 13.26     | 0.73 | B   |        | 1.5         | 7.67      | 0.60 | A   |
|                           | Base - 2028 B+D+C L |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D11                 | 3.4         | 20.45     | 0.78 | C   | D12    | 5.8         | 28.54     | 0.86 | D   |
| B - A4226/Port Road W     |                     | 3.1         | 12.61     | 0.76 | B   |        | 5.0         | 20.08     | 0.84 | C   |
| C - B4226/Pontypridd Road |                     | 5.1         | 19.88     | 0.84 | C   |        | 3.6         | 16.18     | 0.79 | C   |
| D - A4226/Port Road       |                     | 3.3         | 15.45     | 0.77 | C   |        | 2.0         | 9.13      | 0.67 | A   |
|                           | Base - 2028 B+D+C M |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D13                 | 3.7         | 22.11     | 0.79 | C   | D14    | 6.3         | 30.66     | 0.87 | D   |
| B - A4226/Port Road W     |                     | 3.3         | 13.09     | 0.77 | B   |        | 5.5         | 21.75     | 0.86 | C   |
| C - B4226/Pontypridd Road |                     | 5.3         | 20.57     | 0.85 | C   |        | 4.0         | 17.57     | 0.81 | C   |
| D - A4226/Port Road       |                     | 3.6         | 16.73     | 0.79 | C   |        | 2.0         | 9.34      | 0.67 | A   |
|                           | Base - 2028 B+D+C H |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D15                 | 3.9         | 23.48     | 0.80 | C   | D16    | 6.6         | 32.34     | 0.88 | D   |
| B - A4226/Port Road W     |                     | 3.3         | 13.40     | 0.77 | B   |        | 5.9         | 23.18     | 0.86 | C   |
| C - B4226/Pontypridd Road |                     | 5.4         | 21.05     | 0.85 | C   |        | 4.2         | 18.61     | 0.82 | C   |
| D - A4226/Port Road       |                     | 3.9         | 17.85     | 0.80 | C   |        | 2.1         | 9.52      | 0.68 | A   |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

### File Description

|                    |                            |
|--------------------|----------------------------|
| <b>Title</b>       | Weycock Cross              |
| <b>Location</b>    | Barry                      |
| <b>Site number</b> |                            |
| <b>Date</b>        | 16/11/2023                 |
| <b>Version</b>     |                            |
| <b>Status</b>      | (new file)                 |
| <b>Identifier</b>  |                            |
| <b>Client</b>      | Persimmon Homes East Wales |
| <b>Jobnumber</b>   | T23.135                    |
| <b>Enumerator</b>  | ATRANS\katiewilliams       |
| <b>Description</b> |                            |

## Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m              | kph         | PCU                 | PCU                   | perHour    | s                   | -Min              | perMin              |

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Demand Set Summary

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1  | 2028 B        | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D2  | 2028 B        | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D3  | 2028 B+C      | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D4  | 2028 B+C      | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D5  | 2028 B+D L    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D6  | 2028 B+D L    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D7  | 2028 B+D M    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D8  | 2028 B+D M    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D9  | 2028 B+D H    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D10 | 2028 B+D H    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D11 | 2028 B+D+C L  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D12 | 2028 B+D+C L  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D13 | 2028 B+D+C M  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D14 | 2028 B+D+C M  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D15 | 2028 B+D+C H  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D16 | 2028 B+D+C H  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

### Analysis Set Details

| ID | Name | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|------|-------------------|---------------------------------|-------------------------------------|
| A1 | Base | ✓                 | 100.000                         | 100.000                             |



# Base - 2028 B, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 9.72               | A            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name                  | Description |
|-----|-----------------------|-------------|
| A   | A4226/Waycock Road    |             |
| B   | A4226/Port Road W     |             |
| C   | B4226/Pontypridd Road |             |
| D   | A4226/Port Road       |             |

### Roundabout Geometry

| Arm                       | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|---------------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| A - A4226/Waycock Road    | 3.45                             | 7.83                | 120.0                           | 155.0                | 33.4                              | 22.3                               |           |
| B - A4226/Port Road W     | 3.98                             | 6.94                | 30.0                            | 22.9                 | 33.2                              | 22.2                               |           |
| C - B4226/Pontypridd Road | 4.31                             | 6.26                | 28.8                            | 183.9                | 33.3                              | 23.1                               |           |
| D - A4226/Port Road       | 3.88                             | 6.68                | 100.0                           | 9.4                  | 33.2                              | 33.7                               |           |

### Bypass

| Arm                       | Arm has bypass | Bypass utilisation (%) |
|---------------------------|----------------|------------------------|
| A - A4226/Waycock Road    |                |                        |
| B - A4226/Port Road W     |                |                        |
| C - B4226/Pontypridd Road |                |                        |
| D - A4226/Port Road       | ✓              | 100                    |

### Pelican/Puffin Crossings

| Arm                 | Space between crossing and junc. entry (Signalised) (PCU) | Amber time preceding red (s) | Amber time regarded as green (s) | Time from traffic red start to green man start (s) | Time period green man shown (s) | Clearance Period (s) | Traffic minimum green (s) |
|---------------------|-----------------------------------------------------------|------------------------------|----------------------------------|----------------------------------------------------|---------------------------------|----------------------|---------------------------|
| D - A4226/Port Road | 12.00                                                     | 3.00                         | 2.90                             | 1.00                                               | 6.00                            | 6.00                 | 7.00                      |

## Slope / Intercept / Capacity

### Arm Intercept Adjustments

| Arm                       | Type       | Reason | Percentage intercept adjustment (%) |
|---------------------------|------------|--------|-------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                               |
| B - A4226/Port Road W     | Percentage |        | 95.00                               |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                               |
| D - A4226/Port Road       | Percentage |        | 91.00                               |

### Roundabout Slope and Intercept used in model

| Arm                       | Final slope | Final intercept (PCU/hr) |
|---------------------------|-------------|--------------------------|
| A - A4226/Waycock Road    | 0.816       | 1912                     |
| B - A4226/Port Road W     | 0.715       | 1852                     |
| C - B4226/Pontypridd Road | 0.718       | 1818                     |
| D - A4226/Port Road       | 0.658       | 1659                     |

The slope and intercept shown above include any corrections and adjustments.

### Arm Capacity Adjustments

| Arm                       | Type       | Reason | Percentage capacity adjustment (%) |
|---------------------------|------------|--------|------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                              |
| B - A4226/Port Road W     | Percentage |        | 95.00                              |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                              |
| D - A4226/Port Road       | Percentage |        | 91.00                              |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2028 B        | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 505                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 715                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 795                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 887                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 160                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 279                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 207                 |
|      | D - A4226/Port Road       | 263                    | 370                   | 254                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.64    | 11.73         | 1.8             | B       | 463                     | 694                           |
| B - A4226/Port Road W     | 0.61    | 7.45          | 1.6             | A       | 656                     | 984                           |
| C - B4226/Pontypridd Road | 0.68    | 9.06          | 2.2             | A       | 730                     | 1094                          |
| D - A4226/Port Road       | 0.67    | 11.01         | 2.1             | B       | 814                     | 859                           |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 380                   | 380                      | 95                      | 0                      | 198                       | 686                       |                            | 1082              | 0.351 | 378                 | 336                             | 0.0               |     |
| B - A4226/Port Road W     | 538                   | 538                      | 135                     | 0                      | 0                         | 477                       |                            | 1436              | 0.375 | 536                 | 587                             | 0.0               |     |
| C - B4226/Pontypridd Road | 599                   | 599                      | 150                     | 0                      | 0                         | 444                       |                            | 1424              | 0.420 | 596                 | 569                             | 0.0               |     |
| D - A4226/Port Road       | 668                   | 470                      | 117                     | 198                    | 0                         | 555                       | 0.00                       | 1177              | 0.399 | 467                 | 484                             | 0.0               |     |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 454                   | 454                      | 113                     | 0                      | 236                       | 822                       |                            | 994               | 0.457 | 452                 | 403                             | 0.6               |     |
| B - A4226/Port Road W     | 643                   | 643                      | 161                     | 0                      | 0                         | 571                       |                            | 1372              | 0.469 | 642                 | 703                             | 0.6               |     |
| C - B4226/Pontypridd Road | 715                   | 715                      | 179                     | 0                      | 0                         | 531                       |                            | 1364              | 0.524 | 713                 | 682                             | 0.7               |     |
| D - A4226/Port Road       | 797                   | 561                      | 140                     | 236                    | 0                         | 665                       | 0.00                       | 1111              | 0.505 | 560                 | 580                             | 0.7               |     |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 556                   | 556                      | 139                     | 0                      | 290                       | 1003                      |                            | 875               | 0.635 | 552                 | 492                             | 0.9               |     |
| B - A4226/Port Road W     | 787                   | 787                      | 197                     | 0                      | 0                         | 697                       |                            | 1286              | 0.612 | 784                 | 858                             | 0.9               |     |
| C - B4226/Pontypridd Road | 875                   | 875                      | 219                     | 0                      | 0                         | 649                       |                            | 1284              | 0.682 | 871                 | 833                             | 1.1               |     |
| D - A4226/Port Road       | 977                   | 687                      | 172                     | 290                    | 0                         | 812                       | 0.00                       | 1023              | 0.672 | 683                 | 708                             | 1.0               |     |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 556                   | 556                      | 139                     | 0                      | 290                       | 1008                      |                            | 872               | 0.637 | 555                 | 494                             | 1.7               |     |
| B - A4226/Port Road W     | 787                   | 787                      | 197                     | 0                      | 0                         | 701                       |                            | 1283              | 0.613 | 787                 | 863                             | 1.6               |     |
| C - B4226/Pontypridd Road | 875                   | 875                      | 219                     | 0                      | 0                         | 652                       |                            | 1282              | 0.683 | 875                 | 837                             | 2.1               |     |
| D - A4226/Port Road       | 977                   | 687                      | 172                     | 290                    | 0                         | 816                       | 0.00                       | 1021              | 0.673 | 687                 | 711                             | 2.0               |     |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 454                   | 454                      | 113                     | 0                      | 236                       | 829                       |                            | 989               | 0.459 | 457                 | 406                             | 1.8               |     |
| B - A4226/Port Road W     | 643                   | 643                      | 161                     | 0                      | 0                         | 577                       |                            | 1368              | 0.470 | 646                 | 709                             | 1.6               |     |
| C - B4226/Pontypridd Road | 715                   | 715                      | 179                     | 0                      | 0                         | 535                       |                            | 1362              | 0.525 | 719                 | 688                             | 2.2               |     |
| D - A4226/Port Road       | 797                   | 561                      | 140                     | 236                    | 0                         | 670                       | 0.00                       | 1108              | 0.506 | 565                 | 584                             | 2.1               |     |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 380                   | 380                      | 95                      | 0                      | 198                       | 692                       |                            | 1078              | 0.352 | 381                 | 339                             | 0.9               |     |
| B - A4226/Port Road W     | 538                   | 538                      | 135                     | 0                      | 0                         | 481                       |                            | 1433              | 0.376 | 539                 | 592                             | 0.9               |     |
| C - B4226/Pontypridd Road | 599                   | 599                      | 150                     | 0                      | 0                         | 447                       |                            | 1422              | 0.421 | 600                 | 574                             | 1.1               |     |
| D - A4226/Port Road       | 668                   | 470                      | 117                     | 198                    | 0                         | 559                       | 0.00                       | 1174              | 0.400 | 471                 | 488                             | 1.1               |     |

# Base - 2028 B, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 10.48              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2028 B        | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 631                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 807                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 733                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 791                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 188                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 454                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 360                 |
|      | D - A4226/Port Road       | 170                    | 380                   | 240                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.71    | 13.32         | 2.5             | B       | 579                     | 868                           |
| B - A4226/Port Road W     | 0.74    | 11.50         | 2.8             | B       | 741                     | 1111                          |
| C - B4226/Pontypridd Road | 0.70    | 10.39         | 2.3             | B       | 673                     | 1009                          |
| D - A4226/Port Road       | 0.58    | 7.23          | 1.4             | A       | 726                     | 855                           |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|
| A - A4226/Waycock Road    | 475                   | 475                      | 119                     | 0                      | 128                       | 580                       |                            | 1151              | 0.412 | 472                 | 255                             | 0.0               |
| B - A4226/Port Road W     | 608                   | 608                      | 152                     | 0                      | 0                         | 556                       |                            | 1382              | 0.440 | 604                 | 496                             | 0.0               |
| C - B4226/Pontypridd Road | 552                   | 552                      | 138                     | 0                      | 0                         | 571                       |                            | 1337              | 0.413 | 549                 | 589                             | 0.0               |
| D - A4226/Port Road       | 596                   | 468                      | 117                     | 128                    | 0                         | 369                       | 0.00                       | 1288              | 0.363 | 465                 | 751                             | 0.0               |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|
| A - A4226/Waycock Road    | 567                   | 567                      | 142                     | 0                      | 153                       | 695                       |                            | 1076              | 0.527 | 565                 | 305                             | 0.7               |
| B - A4226/Port Road W     | 726                   | 726                      | 181                     | 0                      | 0                         | 666                       |                            | 1307              | 0.555 | 724                 | 594                             | 0.8               |
| C - B4226/Pontypridd Road | 659                   | 659                      | 165                     | 0                      | 0                         | 684                       |                            | 1260              | 0.523 | 657                 | 706                             | 0.7               |
| D - A4226/Port Road       | 711                   | 558                      | 140                     | 153                    | 0                         | 442                       | 0.00                       | 1244              | 0.449 | 557                 | 899                             | 0.6               |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 694                   | 694                      | 174                     | 0                      | 187                       | 849                       |                            | 975               | 0.712 | 689                 | 372                             | 1.1               |     |
| B - A4226/Port Road W     | 889                   | 889                      | 222                     | 0                      | 0                         | 813                       |                            | 1207              | 0.736 | 883                 | 725                             | 1.2               |     |
| C - B4226/Pontypridd Road | 807                   | 807                      | 202                     | 0                      | 0                         | 835                       |                            | 1157              | 0.697 | 802                 | 861                             | 1.1               |     |
| D - A4226/Port Road       | 871                   | 684                      | 171                     | 187                    | 0                         | 540                       | 0.00                       | 1186              | 0.577 | 682                 | 1097                            | 0.8               |     |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 694                   | 694                      | 174                     | 0                      | 187                       | 852                       |                            | 973               | 0.713 | 694                 | 374                             | 2.4               |     |
| B - A4226/Port Road W     | 889                   | 889                      | 222                     | 0                      | 0                         | 818                       |                            | 1204              | 0.738 | 888                 | 729                             | 2.7               |     |
| C - B4226/Pontypridd Road | 807                   | 807                      | 202                     | 0                      | 0                         | 840                       |                            | 1154              | 0.700 | 807                 | 866                             | 2.2               |     |
| D - A4226/Port Road       | 871                   | 684                      | 171                     | 187                    | 0                         | 543                       | 0.00                       | 1184              | 0.577 | 684                 | 1104                            | 1.3               |     |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 567                   | 567                      | 142                     | 0                      | 153                       | 699                       |                            | 1073              | 0.528 | 572                 | 308                             | 2.5               |     |
| B - A4226/Port Road W     | 726                   | 726                      | 181                     | 0                      | 0                         | 673                       |                            | 1302              | 0.557 | 732                 | 598                             | 2.8               |     |
| C - B4226/Pontypridd Road | 659                   | 659                      | 165                     | 0                      | 0                         | 692                       |                            | 1255              | 0.525 | 664                 | 713                             | 2.3               |     |
| D - A4226/Port Road       | 711                   | 558                      | 140                     | 153                    | 0                         | 447                       | 0.00                       | 1242              | 0.450 | 560                 | 909                             | 1.4               |     |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 475                   | 475                      | 119                     | 0                      | 128                       | 584                       |                            | 1148              | 0.413 | 477                 | 257                             | 1.2               |     |
| B - A4226/Port Road W     | 608                   | 608                      | 152                     | 0                      | 0                         | 561                       |                            | 1378              | 0.441 | 610                 | 500                             | 1.3               |     |
| C - B4226/Pontypridd Road | 552                   | 552                      | 138                     | 0                      | 0                         | 576                       |                            | 1334              | 0.414 | 553                 | 594                             | 1.1               |     |
| D - A4226/Port Road       | 596                   | 468                      | 117                     | 128                    | 0                         | 372                       | 0.00                       | 1286              | 0.363 | 469                 | 758                             | 0.8               |     |



# Base - 2028 B+C, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 15.64              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D3 | 2028 B+C      | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 568                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 829                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 870                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1035                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 223                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 393                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 282                 |
|      | D - A4226/Port Road       | 344                    | 413                   | 278                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.76    | 18.63         | 3.1             | C       | 521                     | 782                           |
| B - A4226/Port Road W     | 0.75    | 12.08         | 3.0             | B       | 761                     | 1141                          |
| C - B4226/Pontypridd Road | 0.83    | 18.97         | 4.8             | C       | 799                     | 1198                          |
| D - A4226/Port Road       | 0.75    | 14.06         | 2.9             | B       | 950                     | 951                           |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 428                   | 428                      | 107                     | 0                      | 259                       | 736                       |                            | 1050              | 0.407 | 425                 | 336                             | 0.0               |     |
| B - A4226/Port Road W     | 624                   | 624                      | 156                     | 0                      | 0                         | 542                       |                            | 1392              | 0.448 | 621                 | 619                             | 0.0               |     |
| C - B4226/Pontypridd Road | 655                   | 655                      | 164                     | 0                      | 0                         | 576                       |                            | 1334              | 0.491 | 651                 | 587                             | 0.0               |     |
| D - A4226/Port Road       | 779                   | 520                      | 130                     | 259                    | 0                         | 555                       | 0.00                       | 1177              | 0.442 | 517                 | 672                             | 0.0               |     |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 511                   | 511                      | 128                     | 0                      | 309                       | 881                       |                            | 955               | 0.535 | 509                 | 402                             | 0.7               |     |
| B - A4226/Port Road W     | 745                   | 745                      | 186                     | 0                      | 0                         | 649                       |                            | 1319              | 0.565 | 743                 | 741                             | 0.8               |     |
| C - B4226/Pontypridd Road | 782                   | 782                      | 196                     | 0                      | 0                         | 689                       |                            | 1257              | 0.623 | 780                 | 703                             | 1.0               |     |
| D - A4226/Port Road       | 930                   | 621                      | 155                     | 309                    | 0                         | 664                       | 0.00                       | 1111              | 0.559 | 619                 | 805                             | 0.8               |     |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 625                   | 625                      | 156                     | 0                      | 379                       | 1073                      |                            | 830               | 0.754 | 618                 | 489                             | 1.2               |     |
| B - A4226/Port Road W     | 913                   | 913                      | 228                     | 0                      | 0                         | 789                       |                            | 1223              | 0.746 | 906                 | 902                             | 1.3               |     |
| C - B4226/Pontypridd Road | 958                   | 958                      | 240                     | 0                      | 0                         | 840                       |                            | 1154              | 0.830 | 947                 | 856                             | 1.7               |     |
| D - A4226/Port Road       | 1140                  | 761                      | 190                     | 379                    | 0                         | 807                       | 0.00                       | 1026              | 0.742 | 755                 | 979                             | 1.3               |     |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 625                   | 625                      | 156                     | 0                      | 379                       | 1082                      |                            | 824               | 0.759 | 625                 | 494                             | 3.0               |     |
| B - A4226/Port Road W     | 913                   | 913                      | 228                     | 0                      | 0                         | 797                       |                            | 1218              | 0.749 | 912                 | 910                             | 2.9               |     |
| C - B4226/Pontypridd Road | 958                   | 958                      | 240                     | 0                      | 0                         | 846                       |                            | 1149              | 0.834 | 957                 | 863                             | 4.5               |     |
| D - A4226/Port Road       | 1140                  | 761                      | 190                     | 379                    | 0                         | 815                       | 0.00                       | 1021              | 0.745 | 760                 | 988                             | 2.8               |     |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 511                   | 511                      | 128                     | 0                      | 309                       | 894                       |                            | 946               | 0.540 | 518                 | 409                             | 3.1               |     |
| B - A4226/Port Road W     | 745                   | 745                      | 186                     | 0                      | 0                         | 660                       |                            | 1312              | 0.568 | 752                 | 753                             | 3.0               |     |
| C - B4226/Pontypridd Road | 782                   | 782                      | 196                     | 0                      | 0                         | 699                       |                            | 1250              | 0.626 | 795                 | 713                             | 4.8               |     |
| D - A4226/Port Road       | 930                   | 621                      | 155                     | 309                    | 0                         | 676                       | 0.00                       | 1104              | 0.562 | 627                 | 817                             | 2.9               |     |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 428                   | 428                      | 107                     | 0                      | 259                       | 743                       |                            | 1045              | 0.409 | 430                 | 339                             | 1.2               |     |
| B - A4226/Port Road W     | 624                   | 624                      | 156                     | 0                      | 0                         | 548                       |                            | 1388              | 0.450 | 626                 | 625                             | 1.4               |     |
| C - B4226/Pontypridd Road | 655                   | 655                      | 164                     | 0                      | 0                         | 581                       |                            | 1330              | 0.493 | 658                 | 593                             | 1.8               |     |
| D - A4226/Port Road       | 779                   | 520                      | 130                     | 259                    | 0                         | 561                       | 0.00                       | 1174              | 0.443 | 522                 | 679                             | 1.3               |     |

# Base - 2028 B+C, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 16.46              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D4 | 2028 B+C      | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 704                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 844                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 753                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 920                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 261                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 491                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 380                 |
|      | D - A4226/Port Road       | 215                    | 431                   | 273                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.85    | 26.14         | 5.3             | D       | 646                     | 969                           |
| B - A4226/Port Road W     | 0.83    | 18.20         | 4.5             | C       | 774                     | 1162                          |
| C - B4226/Pontypridd Road | 0.77    | 14.74         | 3.3             | B       | 691                     | 1036                          |
| D - A4226/Port Road       | 0.66    | 8.87          | 1.9             | A       | 844                     | 971                           |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 530                   | 530                      | 133                     | 0                      | 162                       | 643                       |                            | 1110              | 0.477 | 526                 | 255                             | 0.0               |     |
| B - A4226/Port Road W     | 635                   | 635                      | 159                     | 0                      | 0                         | 635                       |                            | 1328              | 0.478 | 632                 | 534                             | 0.0               |     |
| C - B4226/Pontypridd Road | 567                   | 567                      | 142                     | 0                      | 0                         | 653                       |                            | 1281              | 0.443 | 564                 | 614                             | 0.0               |     |
| D - A4226/Port Road       | 693                   | 531                      | 133                     | 162                    | 0                         | 369                       | 0.00                       | 1288              | 0.412 | 528                 | 848                             | 0.0               |     |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 633                   | 633                      | 158                     | 0                      | 193                       | 770                       |                            | 1027              | 0.616 | 630                 | 305                             | 0.9               |     |
| B - A4226/Port Road W     | 759                   | 759                      | 190                     | 0                      | 0                         | 761                       |                            | 1243              | 0.610 | 756                 | 639                             | 0.9               |     |
| C - B4226/Pontypridd Road | 677                   | 677                      | 169                     | 0                      | 0                         | 782                       |                            | 1193              | 0.567 | 675                 | 735                             | 0.8               |     |
| D - A4226/Port Road       | 827                   | 634                      | 158                     | 193                    | 0                         | 442                       | 0.00                       | 1245              | 0.509 | 633                 | 1015                            | 0.7               |     |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 775                   | 775                      | 194                     | 0                      | 237                       | 940                       |                            | 916               | 0.846 | 762                 | 371                             | 1.6               |     |
| B - A4226/Port Road W     | 929                   | 929                      | 232                     | 0                      | 0                         | 923                       |                            | 1133              | 0.820 | 919                 | 779                             | 1.6               |     |
| C - B4226/Pontypridd Road | 829                   | 829                      | 207                     | 0                      | 0                         | 949                       |                            | 1079              | 0.768 | 822                 | 893                             | 1.3               |     |
| D - A4226/Port Road       | 1013                  | 776                      | 194                     | 237                    | 0                         | 538                       | 0.00                       | 1187              | 0.654 | 773                 | 1233                            | 1.0               |     |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 775                   | 775                      | 194                     | 0                      | 237                       | 945                       |                            | 913               | 0.849 | 773                 | 374                             | 4.9               |     |
| B - A4226/Port Road W     | 929                   | 929                      | 232                     | 0                      | 0                         | 933                       |                            | 1125              | 0.826 | 928                 | 784                             | 4.2               |     |
| C - B4226/Pontypridd Road | 829                   | 829                      | 207                     | 0                      | 0                         | 960                       |                            | 1072              | 0.773 | 828                 | 902                             | 3.1               |     |
| D - A4226/Port Road       | 1013                  | 776                      | 194                     | 237                    | 0                         | 542                       | 0.00                       | 1184              | 0.655 | 776                 | 1246                            | 1.9               |     |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 633                   | 633                      | 158                     | 0                      | 193                       | 776                       |                            | 1023              | 0.619 | 647                 | 309                             | 5.3               |     |
| B - A4226/Port Road W     | 759                   | 759                      | 190                     | 0                      | 0                         | 776                       |                            | 1232              | 0.616 | 770                 | 647                             | 4.5               |     |
| C - B4226/Pontypridd Road | 677                   | 677                      | 169                     | 0                      | 0                         | 798                       |                            | 1182              | 0.573 | 685                 | 748                             | 3.3               |     |
| D - A4226/Port Road       | 827                   | 634                      | 158                     | 193                    | 0                         | 449                       | 0.00                       | 1241              | 0.511 | 637                 | 1034                            | 1.9               |     |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 530                   | 530                      | 133                     | 0                      | 162                       | 648                       |                            | 1107              | 0.479 | 533                 | 257                             | 1.7               |     |
| B - A4226/Port Road W     | 635                   | 635                      | 159                     | 0                      | 0                         | 642                       |                            | 1323              | 0.480 | 638                 | 539                             | 1.7               |     |
| C - B4226/Pontypridd Road | 567                   | 567                      | 142                     | 0                      | 0                         | 661                       |                            | 1276              | 0.444 | 569                 | 620                             | 1.4               |     |
| D - A4226/Port Road       | 693                   | 531                      | 133                     | 162                    | 0                         | 373                       | 0.00                       | 1286              | 0.413 | 532                 | 857                             | 1.1               |     |

# Base - 2028 B+D L, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 10.23              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D5 | 2028 B+D L    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 508                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 719                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 798                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 918                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data



### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 163                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 283                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 210                 |
|      | D - A4226/Port Road       | 272                    | 383                   | 263                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.65    | 12.48         | 1.9             | B       | 466                     | 699                           |
| B - A4226/Port Road W     | 0.62    | 7.66          | 1.7             | A       | 660                     | 990                           |
| C - B4226/Pontypridd Road | 0.69    | 9.25          | 2.2             | A       | 732                     | 1099                          |
| D - A4226/Port Road       | 0.70    | 11.86         | 2.3             | B       | 842                     | 889                           |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 382                   | 382                      | 96                      | 0                      | 205                       | 702                       |                            | 1071              | 0.357 | 380                 | 336                             | 0.0               |     |
| B - A4226/Port Road W     | 541                   | 541                      | 135                     | 0                      | 0                         | 486                       |                            | 1430              | 0.379 | 539                 | 596                             | 0.0               |     |
| C - B4226/Pontypridd Road | 601                   | 601                      | 150                     | 0                      | 0                         | 449                       |                            | 1421              | 0.423 | 598                 | 576                             | 0.0               |     |
| D - A4226/Port Road       | 691                   | 486                      | 122                     | 205                    | 0                         | 555                       | 0.00                       | 1177              | 0.413 | 483                 | 491                             | 0.0               |     |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 456                   | 456                      | 114                     | 0                      | 245                       | 841                       |                            | 981               | 0.465 | 455                 | 403                             | 0.6               |     |
| B - A4226/Port Road W     | 646                   | 646                      | 162                     | 0                      | 0                         | 582                       |                            | 1364              | 0.474 | 645                 | 714                             | 0.6               |     |
| C - B4226/Pontypridd Road | 717                   | 717                      | 179                     | 0                      | 0                         | 537                       |                            | 1360              | 0.527 | 716                 | 690                             | 0.7               |     |
| D - A4226/Port Road       | 825                   | 581                      | 145                     | 245                    | 0                         | 665                       | 0.00                       | 1111              | 0.523 | 579                 | 588                             | 0.7               |     |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 559                   | 559                      | 140                     | 0                      | 299                       | 1027                      |                            | 860               | 0.650 | 555                 | 492                             | 0.9               |     |
| B - A4226/Port Road W     | 792                   | 792                      | 198                     | 0                      | 0                         | 710                       |                            | 1277              | 0.620 | 789                 | 872                             | 0.9               |     |
| C - B4226/Pontypridd Road | 879                   | 879                      | 220                     | 0                      | 0                         | 657                       |                            | 1279              | 0.687 | 874                 | 842                             | 1.1               |     |
| D - A4226/Port Road       | 1011                  | 711                      | 178                     | 299                    | 0                         | 812                       | 0.00                       | 1023              | 0.695 | 707                 | 719                             | 1.1               |     |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 559                   | 559                      | 140                     | 0                      | 299                       | 1033                      |                            | 856               | 0.653 | 559                 | 494                             | 1.8               |     |
| B - A4226/Port Road W     | 792                   | 792                      | 198                     | 0                      | 0                         | 714                       |                            | 1274              | 0.621 | 792                 | 877                             | 1.6               |     |
| C - B4226/Pontypridd Road | 879                   | 879                      | 220                     | 0                      | 0                         | 659                       |                            | 1277              | 0.688 | 879                 | 847                             | 2.2               |     |
| D - A4226/Port Road       | 1011                  | 711                      | 178                     | 299                    | 0                         | 816                       | 0.00                       | 1021              | 0.697 | 711                 | 722                             | 2.2               |     |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 456                   | 456                      | 114                     | 0                      | 245                       | 849                       |                            | 975               | 0.468 | 460                 | 406                             | 1.9               |     |
| B - A4226/Port Road W     | 646                   | 646                      | 162                     | 0                      | 0                         | 588                       |                            | 1360              | 0.475 | 649                 | 721                             | 1.7               |     |
| C - B4226/Pontypridd Road | 717                   | 717                      | 179                     | 0                      | 0                         | 542                       |                            | 1357              | 0.529 | 722                 | 696                             | 2.2               |     |
| D - A4226/Port Road       | 825                   | 581                      | 145                     | 245                    | 0                         | 670                       | 0.00                       | 1108              | 0.524 | 585                 | 593                             | 2.3               |     |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 382                   | 382                      | 96                      | 0                      | 205                       | 708                       |                            | 1067              | 0.358 | 383                 | 339                             | 0.9               |     |
| B - A4226/Port Road W     | 541                   | 541                      | 135                     | 0                      | 0                         | 490                       |                            | 1427              | 0.379 | 543                 | 602                             | 0.9               |     |
| C - B4226/Pontypridd Road | 601                   | 601                      | 150                     | 0                      | 0                         | 452                       |                            | 1418              | 0.424 | 602                 | 581                             | 1.2               |     |
| D - A4226/Port Road       | 691                   | 486                      | 122                     | 205                    | 0                         | 559                       | 0.00                       | 1174              | 0.414 | 488                 | 495                             | 1.1               |     |

# Base - 2028 B+D L, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 11.03              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D6 | 2028 B+D L    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 636                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 819                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 742                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 804                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 193                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 466                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 369                 |
|      | D - A4226/Port Road       | 173                    | 386                   | 244                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.72    | 13.95         | 2.6             | B       | 583                     | 875                           |
| B - A4226/Port Road W     | 0.75    | 12.27         | 3.0             | B       | 752                     | 1127                          |
| C - B4226/Pontypridd Road | 0.72    | 11.11         | 2.5             | B       | 681                     | 1021                          |
| D - A4226/Port Road       | 0.59    | 7.40          | 1.4             | A       | 738                     | 869                           |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 479                   | 479                      | 120                     | 0                      | 130                       | 588                       |                            | 1146              | 0.418 | 476                 | 255                             | 0.0               |     |
| B - A4226/Port Road W     | 617                   | 617                      | 154                     | 0                      | 0                         | 563                       |                            | 1377              | 0.448 | 613                 | 500                             | 0.0               |     |
| C - B4226/Pontypridd Road | 559                   | 559                      | 140                     | 0                      | 0                         | 584                       |                            | 1328              | 0.421 | 556                 | 592                             | 0.0               |     |
| D - A4226/Port Road       | 605                   | 475                      | 119                     | 130                    | 0                         | 369                       | 0.00                       | 1288              | 0.369 | 473                 | 771                             | 0.0               |     |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 571                   | 571                      | 143                     | 0                      | 156                       | 704                       |                            | 1070              | 0.534 | 570                 | 305                             | 0.7               |     |
| B - A4226/Port Road W     | 736                   | 736                      | 184                     | 0                      | 0                         | 674                       |                            | 1302              | 0.566 | 734                 | 599                             | 0.8               |     |
| C - B4226/Pontypridd Road | 667                   | 667                      | 167                     | 0                      | 0                         | 699                       |                            | 1250              | 0.534 | 665                 | 709                             | 0.7               |     |
| D - A4226/Port Road       | 723                   | 567                      | 142                     | 156                    | 0                         | 442                       | 0.00                       | 1244              | 0.456 | 566                 | 923                             | 0.6               |     |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 700                   | 700                      | 175                     | 0                      | 190                       | 860                       |                            | 968               | 0.723 | 694                 | 372                             | 1.2               |     |
| B - A4226/Port Road W     | 902                   | 902                      | 225                     | 0                      | 0                         | 823                       |                            | 1201              | 0.751 | 895                 | 732                             | 1.3               |     |
| C - B4226/Pontypridd Road | 817                   | 817                      | 204                     | 0                      | 0                         | 853                       |                            | 1145              | 0.713 | 812                 | 865                             | 1.1               |     |
| D - A4226/Port Road       | 885                   | 695                      | 174                     | 190                    | 0                         | 539                       | 0.00                       | 1186              | 0.586 | 693                 | 1125                            | 0.8               |     |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 700                   | 700                      | 175                     | 0                      | 190                       | 863                       |                            | 966               | 0.724 | 700                 | 374                             | 2.6               |     |
| B - A4226/Port Road W     | 902                   | 902                      | 225                     | 0                      | 0                         | 828                       |                            | 1197              | 0.753 | 901                 | 735                             | 2.9               |     |
| C - B4226/Pontypridd Road | 817                   | 817                      | 204                     | 0                      | 0                         | 859                       |                            | 1141              | 0.716 | 817                 | 871                             | 2.4               |     |
| D - A4226/Port Road       | 885                   | 695                      | 174                     | 190                    | 0                         | 543                       | 0.00                       | 1184              | 0.587 | 695                 | 1133                            | 1.4               |     |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 571                   | 571                      | 143                     | 0                      | 156                       | 708                       |                            | 1067              | 0.535 | 577                 | 308                             | 2.6               |     |
| B - A4226/Port Road W     | 736                   | 736                      | 184                     | 0                      | 0                         | 681                       |                            | 1297              | 0.568 | 743                 | 604                             | 3.0               |     |
| C - B4226/Pontypridd Road | 667                   | 667                      | 167                     | 0                      | 0                         | 708                       |                            | 1244              | 0.536 | 672                 | 717                             | 2.5               |     |
| D - A4226/Port Road       | 723                   | 567                      | 142                     | 156                    | 0                         | 447                       | 0.00                       | 1242              | 0.457 | 570                 | 933                             | 1.4               |     |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 479                   | 479                      | 120                     | 0                      | 130                       | 592                       |                            | 1143              | 0.419 | 480                 | 257                             | 1.2               |     |
| B - A4226/Port Road W     | 617                   | 617                      | 154                     | 0                      | 0                         | 568                       |                            | 1374              | 0.449 | 619                 | 504                             | 1.4               |     |
| C - B4226/Pontypridd Road | 559                   | 559                      | 140                     | 0                      | 0                         | 589                       |                            | 1325              | 0.422 | 560                 | 597                             | 1.2               |     |
| D - A4226/Port Road       | 605                   | 475                      | 119                     | 130                    | 0                         | 372                       | 0.00                       | 1286              | 0.369 | 476                 | 777                             | 0.9               |     |

# Base - 2028 B+D M, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 10.68              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D7 | 2028 B+D M    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 510                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 723                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 801                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 943                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 165                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 287                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 213                 |
|      | D - A4226/Port Road       | 280                    | 393                   | 270                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.67    | 13.11         | 2.0             | B       | 468                     | 701                           |
| B - A4226/Port Road W     | 0.63    | 7.84          | 1.7             | A       | 663                     | 995                           |
| C - B4226/Pontypridd Road | 0.69    | 9.44          | 2.3             | A       | 735                     | 1103                          |
| D - A4226/Port Road       | 0.72    | 12.62         | 2.5             | B       | 865                     | 913                           |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 384                   | 384                      | 96                      | 0                      | 211                       | 715                       |                            | 1063              | 0.361 | 381                 | 336                             | 0.0               |     |
| B - A4226/Port Road W     | 544                   | 544                      | 136                     | 0                      | 0                         | 492                       |                            | 1425              | 0.382 | 542                 | 604                             | 0.0               |     |
| C - B4226/Pontypridd Road | 603                   | 603                      | 151                     | 0                      | 0                         | 453                       |                            | 1418              | 0.425 | 600                 | 581                             | 0.0               |     |
| D - A4226/Port Road       | 710                   | 499                      | 125                     | 211                    | 0                         | 555                       | 0.00                       | 1177              | 0.424 | 496                 | 498                             | 0.0               |     |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 458                   | 458                      | 115                     | 0                      | 252                       | 856                       |                            | 971               | 0.472 | 457                 | 403                             | 0.6               |     |
| B - A4226/Port Road W     | 650                   | 650                      | 162                     | 0                      | 0                         | 590                       |                            | 1359              | 0.478 | 649                 | 723                             | 0.6               |     |
| C - B4226/Pontypridd Road | 720                   | 720                      | 180                     | 0                      | 0                         | 543                       |                            | 1357              | 0.531 | 719                 | 696                             | 0.8               |     |
| D - A4226/Port Road       | 848                   | 596                      | 149                     | 252                    | 0                         | 665                       | 0.00                       | 1111              | 0.536 | 594                 | 596                             | 0.7               |     |



## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 561                   | 561                      | 140                     | 0                      | 308                       | 1045                      |                            | 848               | 0.662 | 557                 | 492                             | 0.9               |     |
| B - A4226/Port Road W     | 796                   | 796                      | 199                     | 0                      | 0                         | 719                       |                            | 1271              | 0.626 | 793                 | 882                             | 0.9               |     |
| C - B4226/Pontypridd Road | 882                   | 882                      | 221                     | 0                      | 0                         | 663                       |                            | 1275              | 0.692 | 878                 | 849                             | 1.1               |     |
| D - A4226/Port Road       | 1038                  | 730                      | 182                     | 308                    | 0                         | 812                       | 0.00                       | 1023              | 0.714 | 725                 | 728                             | 1.2               |     |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 561                   | 561                      | 140                     | 0                      | 308                       | 1051                      |                            | 844               | 0.665 | 561                 | 494                             | 1.9               |     |
| B - A4226/Port Road W     | 796                   | 796                      | 199                     | 0                      | 0                         | 724                       |                            | 1268              | 0.628 | 796                 | 888                             | 1.7               |     |
| C - B4226/Pontypridd Road | 882                   | 882                      | 221                     | 0                      | 0                         | 666                       |                            | 1272              | 0.693 | 882                 | 854                             | 2.2               |     |
| D - A4226/Port Road       | 1038                  | 730                      | 182                     | 308                    | 0                         | 816                       | 0.00                       | 1021              | 0.715 | 730                 | 732                             | 2.4               |     |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 458                   | 458                      | 115                     | 0                      | 252                       | 865                       |                            | 965               | 0.475 | 462                 | 406                             | 2.0               |     |
| B - A4226/Port Road W     | 650                   | 650                      | 162                     | 0                      | 0                         | 597                       |                            | 1354              | 0.480 | 653                 | 731                             | 1.7               |     |
| C - B4226/Pontypridd Road | 720                   | 720                      | 180                     | 0                      | 0                         | 547                       |                            | 1354              | 0.532 | 725                 | 703                             | 2.3               |     |
| D - A4226/Port Road       | 848                   | 596                      | 149                     | 252                    | 0                         | 670                       | 0.00                       | 1108              | 0.538 | 601                 | 602                             | 2.5               |     |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 384                   | 384                      | 96                      | 0                      | 211                       | 721                       |                            | 1059              | 0.362 | 385                 | 339                             | 0.9               |     |
| B - A4226/Port Road W     | 544                   | 544                      | 136                     | 0                      | 0                         | 497                       |                            | 1422              | 0.383 | 546                 | 609                             | 1.0               |     |
| C - B4226/Pontypridd Road | 603                   | 603                      | 151                     | 0                      | 0                         | 457                       |                            | 1415              | 0.426 | 605                 | 586                             | 1.2               |     |
| D - A4226/Port Road       | 710                   | 499                      | 125                     | 211                    | 0                         | 559                       | 0.00                       | 1174              | 0.425 | 501                 | 502                             | 1.2               |     |

# Base - 2028 B+D M, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 11.52              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D8 | 2028 B+D M    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 640                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 828                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 749                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 816                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 197                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 475                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 376                 |
|      | D - A4226/Port Road       | 176                    | 392                   | 247                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.73    | 14.54         | 2.8             | B       | 587                     | 880                           |
| B - A4226/Port Road W     | 0.76    | 12.92         | 3.2             | B       | 760                     | 1140                          |
| C - B4226/Pontypridd Road | 0.73    | 11.73         | 2.6             | B       | 687                     | 1031                          |
| D - A4226/Port Road       | 0.60    | 7.55          | 1.5             | A       | 749                     | 881                           |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( ) |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-------|
| A - A4226/Waycock Road    | 482                   | 482                      | 120                     | 0                      | 133                       | 594                       |                            | 1142              | 0.422 | 479                 | 254                             | 0.0               |       |
| B - A4226/Port Road W     | 623                   | 623                      | 156                     | 0                      | 0                         | 568                       |                            | 1374              | 0.454 | 620                 | 505                             | 0.0               |       |
| C - B4226/Pontypridd Road | 564                   | 564                      | 141                     | 0                      | 0                         | 594                       |                            | 1322              | 0.427 | 561                 | 594                             | 0.0               |       |
| D - A4226/Port Road       | 614                   | 482                      | 120                     | 133                    | 0                         | 369                       | 0.00                       | 1288              | 0.374 | 479                 | 785                             | 0.0               |       |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( ) |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-------|
| A - A4226/Waycock Road    | 575                   | 575                      | 144                     | 0                      | 158                       | 712                       |                            | 1065              | 0.540 | 573                 | 305                             | 0.7               |       |
| B - A4226/Port Road W     | 744                   | 744                      | 186                     | 0                      | 0                         | 681                       |                            | 1297              | 0.574 | 742                 | 605                             | 0.8               |       |
| C - B4226/Pontypridd Road | 673                   | 673                      | 168                     | 0                      | 0                         | 711                       |                            | 1242              | 0.542 | 672                 | 712                             | 0.7               |       |
| D - A4226/Port Road       | 734                   | 575                      | 144                     | 158                    | 0                         | 442                       | 0.00                       | 1244              | 0.462 | 574                 | 940                             | 0.6               |       |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 704                   | 704                      | 176                     | 0                      | 194                       | 870                       |                            | 962               | 0.732 | 698                 | 372                             | 1.2               |     |
| B - A4226/Port Road W     | 912                   | 912                      | 228                     | 0                      | 0                         | 830                       |                            | 1196              | 0.763 | 905                 | 738                             | 1.3               |     |
| C - B4226/Pontypridd Road | 825                   | 825                      | 206                     | 0                      | 0                         | 866                       |                            | 1136              | 0.726 | 819                 | 868                             | 1.2               |     |
| D - A4226/Port Road       | 898                   | 705                      | 176                     | 194                    | 0                         | 539                       | 0.00                       | 1186              | 0.594 | 702                 | 1146                            | 0.9               |     |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 704                   | 704                      | 176                     | 0                      | 194                       | 873                       |                            | 960               | 0.734 | 704                 | 374                             | 2.7               |     |
| B - A4226/Port Road W     | 912                   | 912                      | 228                     | 0                      | 0                         | 835                       |                            | 1192              | 0.765 | 911                 | 742                             | 3.1               |     |
| C - B4226/Pontypridd Road | 825                   | 825                      | 206                     | 0                      | 0                         | 873                       |                            | 1131              | 0.729 | 824                 | 874                             | 2.5               |     |
| D - A4226/Port Road       | 898                   | 705                      | 176                     | 194                    | 0                         | 543                       | 0.00                       | 1184              | 0.595 | 705                 | 1154                            | 1.4               |     |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 575                   | 575                      | 144                     | 0                      | 158                       | 717                       |                            | 1062              | 0.541 | 581                 | 308                             | 2.8               |     |
| B - A4226/Port Road W     | 744                   | 744                      | 186                     | 0                      | 0                         | 688                       |                            | 1292              | 0.576 | 752                 | 610                             | 3.2               |     |
| C - B4226/Pontypridd Road | 673                   | 673                      | 168                     | 0                      | 0                         | 720                       |                            | 1236              | 0.545 | 679                 | 720                             | 2.6               |     |
| D - A4226/Port Road       | 734                   | 575                      | 144                     | 158                    | 0                         | 447                       | 0.00                       | 1241              | 0.463 | 578                 | 952                             | 1.5               |     |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 482                   | 482                      | 120                     | 0                      | 133                       | 599                       |                            | 1139              | 0.423 | 483                 | 257                             | 1.2               |     |
| B - A4226/Port Road W     | 623                   | 623                      | 156                     | 0                      | 0                         | 573                       |                            | 1370              | 0.455 | 626                 | 509                             | 1.4               |     |
| C - B4226/Pontypridd Road | 564                   | 564                      | 141                     | 0                      | 0                         | 599                       |                            | 1318              | 0.428 | 566                 | 600                             | 1.2               |     |
| D - A4226/Port Road       | 614                   | 482                      | 120                     | 133                    | 0                         | 372                       | 0.00                       | 1286              | 0.375 | 483                 | 793                             | 0.9               |     |

# Base - 2028 B+D H, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 11.04              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D9 | 2028 B+D H    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 511                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 725                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 803                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 961                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 166                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 289                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 215                 |
|      | D - A4226/Port Road       | 285                    | 401                   | 275                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.67    | 13.61         | 2.1             | B       | 468                     | 703                           |
| B - A4226/Port Road W     | 0.63    | 7.95          | 1.7             | A       | 665                     | 998                           |
| C - B4226/Pontypridd Road | 0.70    | 9.55          | 2.3             | A       | 737                     | 1105                          |
| D - A4226/Port Road       | 0.73    | 13.26         | 2.7             | B       | 882                     | 930                           |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 384                   | 384                      | 96                      | 0                      | 215                       | 725                       |                            | 1057              | 0.364 | 382                 | 336                             | 0.0               |     |
| B - A4226/Port Road W     | 546                   | 546                      | 136                     | 0                      | 0                         | 497                       |                            | 1422              | 0.384 | 543                 | 610                             | 0.0               |     |
| C - B4226/Pontypridd Road | 605                   | 605                      | 151                     | 0                      | 0                         | 455                       |                            | 1416              | 0.427 | 602                 | 585                             | 0.0               |     |
| D - A4226/Port Road       | 723                   | 509                      | 127                     | 215                    | 0                         | 555                       | 0.00                       | 1177              | 0.432 | 506                 | 502                             | 0.0               |     |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 459                   | 459                      | 115                     | 0                      | 256                       | 868                       |                            | 963               | 0.476 | 458                 | 403                             | 0.6               |     |
| B - A4226/Port Road W     | 652                   | 652                      | 163                     | 0                      | 0                         | 595                       |                            | 1355              | 0.481 | 651                 | 730                             | 0.6               |     |
| C - B4226/Pontypridd Road | 722                   | 722                      | 180                     | 0                      | 0                         | 545                       |                            | 1355              | 0.533 | 720                 | 700                             | 0.8               |     |
| D - A4226/Port Road       | 864                   | 608                      | 152                     | 256                    | 0                         | 665                       | 0.00                       | 1111              | 0.547 | 606                 | 601                             | 0.8               |     |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 562                   | 562                      | 141                     | 0                      | 314                       | 1059                      |                            | 839               | 0.670 | 558                 | 492                             | 0.9               |     |
| B - A4226/Port Road W     | 798                   | 798                      | 200                     | 0                      | 0                         | 726                       |                            | 1267              | 0.630 | 795                 | 891                             | 0.9               |     |
| C - B4226/Pontypridd Road | 884                   | 884                      | 221                     | 0                      | 0                         | 666                       |                            | 1272              | 0.695 | 880                 | 855                             | 1.2               |     |
| D - A4226/Port Road       | 1058                  | 744                      | 186                     | 314                    | 0                         | 812                       | 0.00                       | 1023              | 0.728 | 739                 | 734                             | 1.2               |     |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 562                   | 562                      | 141                     | 0                      | 314                       | 1066                      |                            | 834               | 0.674 | 562                 | 494                             | 2.0               |     |
| B - A4226/Port Road W     | 798                   | 798                      | 200                     | 0                      | 0                         | 731                       |                            | 1263              | 0.632 | 798                 | 897                             | 1.7               |     |
| C - B4226/Pontypridd Road | 884                   | 884                      | 221                     | 0                      | 0                         | 669                       |                            | 1270              | 0.696 | 884                 | 860                             | 2.3               |     |
| D - A4226/Port Road       | 1058                  | 744                      | 186                     | 314                    | 0                         | 816                       | 0.00                       | 1021              | 0.729 | 744                 | 738                             | 2.6               |     |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 459                   | 459                      | 115                     | 0                      | 256                       | 878                       |                            | 957               | 0.480 | 463                 | 406                             | 2.1               |     |
| B - A4226/Port Road W     | 652                   | 652                      | 163                     | 0                      | 0                         | 603                       |                            | 1350              | 0.483 | 655                 | 738                             | 1.7               |     |
| C - B4226/Pontypridd Road | 722                   | 722                      | 180                     | 0                      | 0                         | 550                       |                            | 1352              | 0.534 | 726                 | 708                             | 2.3               |     |
| D - A4226/Port Road       | 864                   | 608                      | 152                     | 256                    | 0                         | 670                       | 0.00                       | 1108              | 0.549 | 613                 | 606                             | 2.7               |     |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 384                   | 384                      | 96                      | 0                      | 215                       | 731                       |                            | 1052              | 0.365 | 386                 | 339                             | 1.0               |     |
| B - A4226/Port Road W     | 546                   | 546                      | 136                     | 0                      | 0                         | 502                       |                            | 1419              | 0.385 | 547                 | 615                             | 1.0               |     |
| C - B4226/Pontypridd Road | 605                   | 605                      | 151                     | 0                      | 0                         | 459                       |                            | 1414              | 0.428 | 606                 | 590                             | 1.2               |     |
| D - A4226/Port Road       | 723                   | 509                      | 127                     | 215                    | 0                         | 559                       | 0.00                       | 1174              | 0.433 | 511                 | 506                             | 1.3               |     |



# Base - 2028 B+D H, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 11.89              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D10 | 2028 B+D H    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 642                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 834                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 755                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 824                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 199                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 481                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 382                 |
|      | D - A4226/Port Road       | 177                    | 396                   | 250                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.74    | 14.96         | 2.9             | B       | 589                     | 883                           |
| B - A4226/Port Road W     | 0.77    | 13.40         | 3.3             | B       | 765                     | 1148                          |
| C - B4226/Pontypridd Road | 0.74    | 12.23         | 2.8             | B       | 693                     | 1039                          |
| D - A4226/Port Road       | 0.60    | 7.67          | 1.5             | A       | 756                     | 891                           |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 483                   | 483                      | 121                     | 0                      | 133                       | 599                       |                            | 1138              | 0.424 | 480                 | 254                             | 0.0               |     |
| B - A4226/Port Road W     | 628                   | 628                      | 157                     | 0                      | 0                         | 572                       |                            | 1371              | 0.458 | 625                 | 508                             | 0.0               |     |
| C - B4226/Pontypridd Road | 568                   | 568                      | 142                     | 0                      | 0                         | 600                       |                            | 1318              | 0.431 | 565                 | 597                             | 0.0               |     |
| D - A4226/Port Road       | 620                   | 487                      | 122                     | 133                    | 0                         | 369                       | 0.00                       | 1288              | 0.378 | 485                 | 796                             | 0.0               |     |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 577                   | 577                      | 144                     | 0                      | 159                       | 718                       |                            | 1061              | 0.544 | 575                 | 305                             | 0.8               |     |
| B - A4226/Port Road W     | 750                   | 750                      | 187                     | 0                      | 0                         | 685                       |                            | 1294              | 0.579 | 748                 | 608                             | 0.8               |     |
| C - B4226/Pontypridd Road | 679                   | 679                      | 170                     | 0                      | 0                         | 718                       |                            | 1237              | 0.549 | 677                 | 715                             | 0.8               |     |
| D - A4226/Port Road       | 741                   | 582                      | 145                     | 159                    | 0                         | 442                       | 0.00                       | 1245              | 0.467 | 581                 | 953                             | 0.6               |     |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 706                   | 706                      | 177                     | 0                      | 195                       | 878                       |                            | 957               | 0.738 | 700                 | 371                             | 1.2               |     |
| B - A4226/Port Road W     | 918                   | 918                      | 230                     | 0                      | 0                         | 835                       |                            | 1192              | 0.770 | 911                 | 742                             | 1.4               |     |
| C - B4226/Pontypridd Road | 831                   | 831                      | 208                     | 0                      | 0                         | 875                       |                            | 1130              | 0.736 | 825                 | 871                             | 1.2               |     |
| D - A4226/Port Road       | 907                   | 712                      | 178                     | 195                    | 0                         | 539                       | 0.00                       | 1186              | 0.600 | 710                 | 1161                            | 0.9               |     |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 706                   | 706                      | 177                     | 0                      | 195                       | 881                       |                            | 955               | 0.740 | 706                 | 374                             | 2.8               |     |
| B - A4226/Port Road W     | 918                   | 918                      | 230                     | 0                      | 0                         | 841                       |                            | 1188              | 0.773 | 918                 | 746                             | 3.2               |     |
| C - B4226/Pontypridd Road | 831                   | 831                      | 208                     | 0                      | 0                         | 882                       |                            | 1125              | 0.739 | 831                 | 877                             | 2.7               |     |
| D - A4226/Port Road       | 907                   | 712                      | 178                     | 195                    | 0                         | 543                       | 0.00                       | 1184              | 0.602 | 712                 | 1170                            | 1.5               |     |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 577                   | 577                      | 144                     | 0                      | 159                       | 723                       |                            | 1058              | 0.545 | 583                 | 308                             | 2.9               |     |
| B - A4226/Port Road W     | 750                   | 750                      | 187                     | 0                      | 0                         | 693                       |                            | 1289              | 0.582 | 757                 | 613                             | 3.3               |     |
| C - B4226/Pontypridd Road | 679                   | 679                      | 170                     | 0                      | 0                         | 728                       |                            | 1230              | 0.552 | 685                 | 723                             | 2.8               |     |
| D - A4226/Port Road       | 741                   | 582                      | 145                     | 159                    | 0                         | 447                       | 0.00                       | 1241              | 0.469 | 584                 | 965                             | 1.5               |     |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 483                   | 483                      | 121                     | 0                      | 133                       | 604                       |                            | 1135              | 0.425 | 485                 | 257                             | 1.3               |     |
| B - A4226/Port Road W     | 628                   | 628                      | 157                     | 0                      | 0                         | 577                       |                            | 1368              | 0.459 | 630                 | 512                             | 1.4               |     |
| C - B4226/Pontypridd Road | 568                   | 568                      | 142                     | 0                      | 0                         | 605                       |                            | 1314              | 0.433 | 570                 | 602                             | 1.3               |     |
| D - A4226/Port Road       | 620                   | 487                      | 122                     | 133                    | 0                         | 373                       | 0.00                       | 1286              | 0.379 | 488                 | 803                             | 0.9               |     |

# Base - 2028 B+D+C L, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Waycock Cross | Standard Roundabout |                       | A, B, C, D | 16.75              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D11 | 2028 B+D+C L  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 571                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 833                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 874                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1066                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 226                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 397                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 286                 |
|      | D - A4226/Port Road       | 353                    | 426                   | 287                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.78    | 20.45         | 3.4             | C       | 524                     | 785                           |
| B - A4226/Port Road W     | 0.76    | 12.61         | 3.1             | B       | 764                     | 1147                          |
| C - B4226/Pontypridd Road | 0.84    | 19.88         | 5.1             | C       | 802                     | 1203                          |
| D - A4226/Port Road       | 0.77    | 15.45         | 3.3             | C       | 978                     | 981                           |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( ) |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-------|
| A - A4226/Waycock Road    | 430                   | 430                      | 107                     | 0                      | 266                       | 752                       |                            | 1039              | 0.413 | 427                 | 336                             | 0.0               |       |
| B - A4226/Port Road W     | 627                   | 627                      | 157                     | 0                      | 0                         | 551                       |                            | 1386              | 0.453 | 624                 | 628                             | 0.0               |       |
| C - B4226/Pontypridd Road | 658                   | 658                      | 165                     | 0                      | 0                         | 581                       |                            | 1331              | 0.495 | 654                 | 593                             | 0.0               |       |
| D - A4226/Port Road       | 803                   | 537                      | 134                     | 266                    | 0                         | 555                       | 0.00                       | 1177              | 0.456 | 533                 | 680                             | 0.0               |       |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( ) |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-------|
| A - A4226/Waycock Road    | 513                   | 513                      | 128                     | 0                      | 317                       | 901                       |                            | 942               | 0.545 | 511                 | 402                             | 0.7               |       |
| B - A4226/Port Road W     | 749                   | 749                      | 187                     | 0                      | 0                         | 659                       |                            | 1312              | 0.571 | 747                 | 752                             | 0.8               |       |
| C - B4226/Pontypridd Road | 786                   | 786                      | 196                     | 0                      | 0                         | 695                       |                            | 1252              | 0.627 | 783                 | 711                             | 1.0               |       |
| D - A4226/Port Road       | 958                   | 641                      | 160                     | 317                    | 0                         | 664                       | 0.00                       | 1112              | 0.577 | 639                 | 815                             | 0.8               |       |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 628                   | 628                      | 157                     | 0                      | 389                       | 1096                      |                            | 815               | 0.771 | 620                 | 489                             | 1.2               |     |
| B - A4226/Port Road W     | 917                   | 917                      | 229                     | 0                      | 0                         | 801                       |                            | 1215              | 0.755 | 911                 | 915                             | 1.3               |     |
| C - B4226/Pontypridd Road | 962                   | 962                      | 241                     | 0                      | 0                         | 847                       |                            | 1149              | 0.838 | 950                 | 865                             | 1.7               |     |
| D - A4226/Port Road       | 1174                  | 785                      | 196                     | 389                    | 0                         | 807                       | 0.00                       | 1026              | 0.765 | 778                 | 991                             | 1.4               |     |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 628                   | 628                      | 157                     | 0                      | 389                       | 1106                      |                            | 808               | 0.777 | 627                 | 494                             | 3.2               |     |
| B - A4226/Port Road W     | 917                   | 917                      | 229                     | 0                      | 0                         | 810                       |                            | 1210              | 0.758 | 917                 | 923                             | 3.0               |     |
| C - B4226/Pontypridd Road | 962                   | 962                      | 241                     | 0                      | 0                         | 854                       |                            | 1144              | 0.841 | 961                 | 872                             | 4.7               |     |
| D - A4226/Port Road       | 1174                  | 785                      | 196                     | 389                    | 0                         | 815                       | 0.00                       | 1021              | 0.769 | 784                 | 1000                            | 3.1               |     |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 513                   | 513                      | 128                     | 0                      | 317                       | 915                       |                            | 932               | 0.550 | 521                 | 409                             | 3.4               |     |
| B - A4226/Port Road W     | 749                   | 749                      | 187                     | 0                      | 0                         | 671                       |                            | 1304              | 0.574 | 756                 | 765                             | 3.1               |     |
| C - B4226/Pontypridd Road | 786                   | 786                      | 196                     | 0                      | 0                         | 706                       |                            | 1245              | 0.631 | 799                 | 722                             | 5.1               |     |
| D - A4226/Port Road       | 958                   | 641                      | 160                     | 317                    | 0                         | 676                       | 0.00                       | 1104              | 0.580 | 648                 | 828                             | 3.3               |     |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 430                   | 430                      | 107                     | 0                      | 266                       | 760                       |                            | 1034              | 0.416 | 432                 | 340                             | 1.3               |     |
| B - A4226/Port Road W     | 627                   | 627                      | 157                     | 0                      | 0                         | 557                       |                            | 1381              | 0.454 | 629                 | 635                             | 1.4               |     |
| C - B4226/Pontypridd Road | 658                   | 658                      | 165                     | 0                      | 0                         | 587                       |                            | 1327              | 0.496 | 661                 | 600                             | 1.8               |     |
| D - A4226/Port Road       | 803                   | 537                      | 134                     | 266                    | 0                         | 560                       | 0.00                       | 1174              | 0.457 | 539                 | 687                             | 1.4               |     |

# Base - 2028 B+D+C L, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 17.87              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D12 | 2028 B+D+C L  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 709                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 856                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 762                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 934                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data



### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 266                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 503                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 389                 |
|      | D - A4226/Port Road       | 218                    | 438                   | 277                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.86    | 28.54         | 5.8             | D       | 650                     | 975                           |
| B - A4226/Port Road W     | 0.84    | 20.08         | 5.0             | C       | 786                     | 1178                          |
| C - B4226/Pontypridd Road | 0.79    | 16.18         | 3.6             | C       | 699                     | 1049                          |
| D - A4226/Port Road       | 0.67    | 9.13          | 2.0             | A       | 857                     | 986                           |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 534                   | 534                      | 133                     | 0                      | 164                       | 651                       |                            | 1105              | 0.483 | 530                 | 254                             | 0.0               |     |
| B - A4226/Port Road W     | 645                   | 645                      | 161                     | 0                      | 0                         | 642                       |                            | 1324              | 0.487 | 641                 | 539                             | 0.0               |     |
| C - B4226/Pontypridd Road | 574                   | 574                      | 143                     | 0                      | 0                         | 666                       |                            | 1272              | 0.451 | 570                 | 617                             | 0.0               |     |
| D - A4226/Port Road       | 703                   | 539                      | 135                     | 164                    | 0                         | 369                       | 0.00                       | 1288              | 0.418 | 536                 | 867                             | 0.0               |     |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 637                   | 637                      | 159                     | 0                      | 196                       | 780                       |                            | 1021              | 0.624 | 634                 | 304                             | 1.0               |     |
| B - A4226/Port Road W     | 770                   | 770                      | 192                     | 0                      | 0                         | 768                       |                            | 1238              | 0.622 | 767                 | 645                             | 0.9               |     |
| C - B4226/Pontypridd Road | 685                   | 685                      | 171                     | 0                      | 0                         | 797                       |                            | 1183              | 0.579 | 683                 | 738                             | 0.8               |     |
| D - A4226/Port Road       | 840                   | 644                      | 161                     | 196                    | 0                         | 442                       | 0.00                       | 1245              | 0.517 | 642                 | 1038                            | 0.7               |     |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 780                   | 780                      | 195                     | 0                      | 240                       | 952                       |                            | 908               | 0.859 | 766                 | 370                             | 1.7               |     |
| B - A4226/Port Road W     | 943                   | 943                      | 236                     | 0                      | 0                         | 931                       |                            | 1127              | 0.836 | 931                 | 786                             | 1.6               |     |
| C - B4226/Pontypridd Road | 839                   | 839                      | 210                     | 0                      | 0                         | 966                       |                            | 1068              | 0.786 | 831                 | 896                             | 1.4               |     |
| D - A4226/Port Road       | 1028                  | 788                      | 197                     | 240                    | 0                         | 537                       | 0.00                       | 1188              | 0.664 | 785                 | 1259                            | 1.1               |     |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 780                   | 780                      | 195                     | 0                      | 240                       | 957                       |                            | 905               | 0.862 | 778                 | 374                             | 5.3               |     |
| B - A4226/Port Road W     | 943                   | 943                      | 236                     | 0                      | 0                         | 943                       |                            | 1119              | 0.842 | 941                 | 792                             | 4.6               |     |
| C - B4226/Pontypridd Road | 839                   | 839                      | 210                     | 0                      | 0                         | 978                       |                            | 1059              | 0.792 | 838                 | 906                             | 3.4               |     |
| D - A4226/Port Road       | 1028                  | 788                      | 197                     | 240                    | 0                         | 542                       | 0.00                       | 1184              | 0.666 | 788                 | 1274                            | 1.9               |     |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 637                   | 637                      | 159                     | 0                      | 196                       | 787                       |                            | 1016              | 0.627 | 653                 | 310                             | 5.8               |     |
| B - A4226/Port Road W     | 770                   | 770                      | 192                     | 0                      | 0                         | 786                       |                            | 1226              | 0.628 | 783                 | 654                             | 5.0               |     |
| C - B4226/Pontypridd Road | 685                   | 685                      | 171                     | 0                      | 0                         | 816                       |                            | 1170              | 0.585 | 694                 | 753                             | 3.6               |     |
| D - A4226/Port Road       | 840                   | 644                      | 161                     | 196                    | 0                         | 449                       | 0.00                       | 1240              | 0.519 | 647                 | 1060                            | 2.0               |     |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 534                   | 534                      | 133                     | 0                      | 164                       | 656                       |                            | 1101              | 0.484 | 537                 | 257                             | 1.8               |     |
| B - A4226/Port Road W     | 645                   | 645                      | 161                     | 0                      | 0                         | 649                       |                            | 1319              | 0.489 | 648                 | 544                             | 1.7               |     |
| C - B4226/Pontypridd Road | 574                   | 574                      | 143                     | 0                      | 0                         | 674                       |                            | 1267              | 0.453 | 576                 | 623                             | 1.4               |     |
| D - A4226/Port Road       | 703                   | 539                      | 135                     | 164                    | 0                         | 373                       | 0.00                       | 1286              | 0.419 | 541                 | 877                             | 1.1               |     |

# Base - 2028 B+D+C M, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 17.74              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D13 | 2028 B+D+C M  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 573                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 837                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 876                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1090                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 228                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 401                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 288                 |
|      | D - A4226/Port Road       | 360                    | 436                   | 294                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.79    | 22.11         | 3.7             | C       | 525                     | 788                           |
| B - A4226/Port Road W     | 0.77    | 13.09         | 3.3             | B       | 768                     | 1152                          |
| C - B4226/Pontypridd Road | 0.85    | 20.57         | 5.3             | C       | 804                     | 1206                          |
| D - A4226/Port Road       | 0.79    | 16.73         | 3.6             | C       | 1000                    | 1005                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 431                   | 431                      | 108                     | 0                      | 271                       | 765                       |                            | 1031              | 0.418 | 428                 | 336                             | 0.0               |     |
| B - A4226/Port Road W     | 630                   | 630                      | 158                     | 0                      | 0                         | 557                       |                            | 1381              | 0.456 | 627                 | 636                             | 0.0               |     |
| C - B4226/Pontypridd Road | 660                   | 660                      | 165                     | 0                      | 0                         | 585                       |                            | 1328              | 0.497 | 656                 | 599                             | 0.0               |     |
| D - A4226/Port Road       | 821                   | 550                      | 137                     | 271                    | 0                         | 555                       | 0.00                       | 1177              | 0.467 | 546                 | 686                             | 0.0               |     |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 515                   | 515                      | 129                     | 0                      | 324                       | 916                       |                            | 932               | 0.552 | 513                 | 402                             | 0.7               |     |
| B - A4226/Port Road W     | 752                   | 752                      | 188                     | 0                      | 0                         | 667                       |                            | 1306              | 0.576 | 750                 | 761                             | 0.9               |     |
| C - B4226/Pontypridd Road | 788                   | 788                      | 197                     | 0                      | 0                         | 701                       |                            | 1249              | 0.631 | 785                 | 717                             | 1.0               |     |
| D - A4226/Port Road       | 980                   | 656                      | 164                     | 324                    | 0                         | 664                       | 0.00                       | 1112              | 0.590 | 654                 | 822                             | 0.9               |     |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 630                   | 630                      | 158                     | 0                      | 396                       | 1113                      |                            | 803               | 0.785 | 622                 | 489                             | 1.3               |     |
| B - A4226/Port Road W     | 922                   | 922                      | 230                     | 0                      | 0                         | 810                       |                            | 1209              | 0.762 | 915                 | 925                             | 1.4               |     |
| C - B4226/Pontypridd Road | 965                   | 965                      | 241                     | 0                      | 0                         | 853                       |                            | 1145              | 0.843 | 952                 | 872                             | 1.7               |     |
| D - A4226/Port Road       | 1200                  | 804                      | 201                     | 396                    | 0                         | 806                       | 0.00                       | 1026              | 0.783 | 796                 | 999                             | 1.4               |     |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 630                   | 630                      | 158                     | 0                      | 396                       | 1124                      |                            | 796               | 0.792 | 629                 | 494                             | 3.4               |     |
| B - A4226/Port Road W     | 922                   | 922                      | 230                     | 0                      | 0                         | 819                       |                            | 1203              | 0.766 | 921                 | 934                             | 3.1               |     |
| C - B4226/Pontypridd Road | 965                   | 965                      | 241                     | 0                      | 0                         | 860                       |                            | 1140              | 0.846 | 963                 | 880                             | 4.9               |     |
| D - A4226/Port Road       | 1200                  | 804                      | 201                     | 396                    | 0                         | 815                       | 0.00                       | 1021              | 0.787 | 803                 | 1008                            | 3.4               |     |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 515                   | 515                      | 129                     | 0                      | 324                       | 932                       |                            | 922               | 0.558 | 524                 | 410                             | 3.7               |     |
| B - A4226/Port Road W     | 752                   | 752                      | 188                     | 0                      | 0                         | 681                       |                            | 1297              | 0.580 | 760                 | 775                             | 3.3               |     |
| C - B4226/Pontypridd Road | 788                   | 788                      | 197                     | 0                      | 0                         | 712                       |                            | 1241              | 0.634 | 801                 | 729                             | 5.3               |     |
| D - A4226/Port Road       | 980                   | 656                      | 164                     | 324                    | 0                         | 677                       | 0.00                       | 1104              | 0.594 | 665                 | 836                             | 3.6               |     |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 431                   | 431                      | 108                     | 0                      | 271                       | 773                       |                            | 1025              | 0.420 | 433                 | 340                             | 1.3               |     |
| B - A4226/Port Road W     | 630                   | 630                      | 158                     | 0                      | 0                         | 564                       |                            | 1377              | 0.458 | 632                 | 643                             | 1.4               |     |
| C - B4226/Pontypridd Road | 660                   | 660                      | 165                     | 0                      | 0                         | 591                       |                            | 1324              | 0.498 | 663                 | 605                             | 1.8               |     |
| D - A4226/Port Road       | 821                   | 550                      | 137                     | 271                    | 0                         | 560                       | 0.00                       | 1174              | 0.468 | 552                 | 693                             | 1.5               |     |

# Base - 2028 B+D+C M, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 19.14              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D14 | 2028 B+D+C M  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 713                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 865                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 770                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 944                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 270                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 512                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 397                 |
|      | D - A4226/Port Road       | 220                    | 443                   | 280                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.87    | 30.66         | 6.3             | D       | 654                     | 981                           |
| B - A4226/Port Road W     | 0.86    | 21.75         | 5.5             | C       | 794                     | 1191                          |
| C - B4226/Pontypridd Road | 0.81    | 17.57         | 4.0             | C       | 707                     | 1060                          |
| D - A4226/Port Road       | 0.67    | 9.34          | 2.0             | A       | 866                     | 997                           |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 537                   | 537                      | 134                     | 0                      | 166                       | 657                       |                            | 1101              | 0.487 | 533                 | 254                             | 0.0               |     |
| B - A4226/Port Road W     | 651                   | 651                      | 163                     | 0                      | 0                         | 647                       |                            | 1320              | 0.493 | 647                 | 543                             | 0.0               |     |
| C - B4226/Pontypridd Road | 580                   | 580                      | 145                     | 0                      | 0                         | 676                       |                            | 1266              | 0.458 | 576                 | 619                             | 0.0               |     |
| D - A4226/Port Road       | 711                   | 545                      | 136                     | 166                    | 0                         | 369                       | 0.00                       | 1288              | 0.423 | 542                 | 883                             | 0.0               |     |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 641                   | 641                      | 160                     | 0                      | 198                       | 787                       |                            | 1016              | 0.630 | 638                 | 304                             | 1.0               |     |
| B - A4226/Port Road W     | 778                   | 778                      | 194                     | 0                      | 0                         | 775                       |                            | 1233              | 0.631 | 775                 | 650                             | 1.0               |     |
| C - B4226/Pontypridd Road | 692                   | 692                      | 173                     | 0                      | 0                         | 809                       |                            | 1175              | 0.589 | 690                 | 741                             | 0.8               |     |
| D - A4226/Port Road       | 849                   | 651                      | 163                     | 198                    | 0                         | 442                       | 0.00                       | 1245              | 0.523 | 649                 | 1057                            | 0.7               |     |



**16:45 - 17:00**

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 785                   | 785                      | 196                     | 0                      | 242                       | 960                       |                            | 903               | 0.869 | 769                 | 370                             | 1.7               |     |
| B - A4226/Port Road W     | 953                   | 953                      | 238                     | 0                      | 0                         | 938                       |                            | 1122              | 0.849 | 939                 | 791                             | 1.7               |     |
| C - B4226/Pontypridd Road | 848                   | 848                      | 212                     | 0                      | 0                         | 979                       |                            | 1059              | 0.801 | 839                 | 899                             | 1.4               |     |
| D - A4226/Port Road       | 1039                  | 797                      | 199                     | 242                    | 0                         | 537                       | 0.00                       | 1188              | 0.671 | 794                 | 1281                            | 1.1               |     |

**17:00 - 17:15**

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 785                   | 785                      | 196                     | 0                      | 242                       | 966                       |                            | 900               | 0.872 | 782                 | 374                             | 5.7               |     |
| B - A4226/Port Road W     | 953                   | 953                      | 238                     | 0                      | 0                         | 950                       |                            | 1114              | 0.855 | 951                 | 797                             | 5.0               |     |
| C - B4226/Pontypridd Road | 848                   | 848                      | 212                     | 0                      | 0                         | 992                       |                            | 1050              | 0.807 | 847                 | 909                             | 3.7               |     |
| D - A4226/Port Road       | 1039                  | 797                      | 199                     | 242                    | 0                         | 542                       | 0.00                       | 1185              | 0.673 | 797                 | 1297                            | 2.0               |     |

**17:15 - 17:30**

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 641                   | 641                      | 160                     | 0                      | 198                       | 794                       |                            | 1011              | 0.634 | 658                 | 310                             | 6.3               |     |
| B - A4226/Port Road W     | 778                   | 778                      | 194                     | 0                      | 0                         | 794                       |                            | 1221              | 0.637 | 792                 | 659                             | 5.5               |     |
| C - B4226/Pontypridd Road | 692                   | 692                      | 173                     | 0                      | 0                         | 829                       |                            | 1161              | 0.596 | 702                 | 757                             | 4.0               |     |
| D - A4226/Port Road       | 849                   | 651                      | 163                     | 198                    | 0                         | 450                       | 0.00                       | 1240              | 0.525 | 655                 | 1081                            | 2.0               |     |

**17:30 - 17:45**

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 537                   | 537                      | 134                     | 0                      | 166                       | 663                       |                            | 1097              | 0.489 | 540                 | 257                             | 1.9               |     |
| B - A4226/Port Road W     | 651                   | 651                      | 163                     | 0                      | 0                         | 655                       |                            | 1315              | 0.495 | 655                 | 548                             | 1.8               |     |
| C - B4226/Pontypridd Road | 580                   | 580                      | 145                     | 0                      | 0                         | 684                       |                            | 1260              | 0.460 | 582                 | 626                             | 1.5               |     |
| D - A4226/Port Road       | 711                   | 545                      | 136                     | 166                    | 0                         | 373                       | 0.00                       | 1286              | 0.424 | 547                 | 893                             | 1.1               |     |

# Base - 2028 B+D+C H, AM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 18.53              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D15 | 2028 B+D+C H  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 574                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 839                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 878                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1108                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 125                   | 220                       | 229                 |
|      | B - A4226/Port Road W     | 137                    | 16                    | 283                       | 403                 |
|      | C - B4226/Pontypridd Road | 312                    | 273                   | 3                         | 290                 |
|      | D - A4226/Port Road       | 365                    | 444                   | 299                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.80    | 23.48         | 3.9             | C       | 526                     | 789                           |
| B - A4226/Port Road W     | 0.77    | 13.40         | 3.3             | B       | 770                     | 1155                          |
| C - B4226/Pontypridd Road | 0.85    | 21.05         | 5.4             | C       | 806                     | 1209                          |
| D - A4226/Port Road       | 0.80    | 17.85         | 3.9             | C       | 1017                    | 1023                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 432                   | 432                      | 108                     | 0                      | 275                       | 774                       |                            | 1024              | 0.422 | 429                 | 336                             | 0.0               |     |
| B - A4226/Port Road W     | 632                   | 632                      | 158                     | 0                      | 0                         | 562                       |                            | 1378              | 0.458 | 628                 | 641                             | 0.0               |     |
| C - B4226/Pontypridd Road | 661                   | 661                      | 165                     | 0                      | 0                         | 588                       |                            | 1326              | 0.499 | 657                 | 602                             | 0.0               |     |
| D - A4226/Port Road       | 834                   | 559                      | 140                     | 275                    | 0                         | 555                       | 0.00                       | 1177              | 0.475 | 556                 | 690                             | 0.0               |     |

#### 07:30 - 07:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 516                   | 516                      | 129                     | 0                      | 328                       | 927                       |                            | 925               | 0.558 | 513                 | 402                             | 0.7               |     |
| B - A4226/Port Road W     | 754                   | 754                      | 189                     | 0                      | 0                         | 673                       |                            | 1303              | 0.579 | 752                 | 768                             | 0.9               |     |
| C - B4226/Pontypridd Road | 789                   | 789                      | 197                     | 0                      | 0                         | 703                       |                            | 1247              | 0.633 | 786                 | 721                             | 1.0               |     |
| D - A4226/Port Road       | 996                   | 668                      | 167                     | 328                    | 0                         | 664                       | 0.00                       | 1112              | 0.601 | 666                 | 826                             | 0.9               |     |

## 07:45 - 08:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 631                   | 631                      | 158                     | 0                      | 402                       | 1127                      |                            | 794               | 0.795 | 622                 | 489                             | 1.3               |     |
| B - A4226/Port Road W     | 924                   | 924                      | 231                     | 0                      | 0                         | 816                       |                            | 1205              | 0.766 | 917                 | 933                             | 1.4               |     |
| C - B4226/Pontypridd Road | 967                   | 967                      | 242                     | 0                      | 0                         | 856                       |                            | 1143              | 0.846 | 954                 | 877                             | 1.7               |     |
| D - A4226/Port Road       | 1220                  | 818                      | 205                     | 402                    | 0                         | 806                       | 0.00                       | 1027              | 0.797 | 809                 | 1004                            | 1.5               |     |

## 08:00 - 08:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 631                   | 631                      | 158                     | 0                      | 402                       | 1138                      |                            | 787               | 0.803 | 630                 | 494                             | 3.6               |     |
| B - A4226/Port Road W     | 924                   | 924                      | 231                     | 0                      | 0                         | 826                       |                            | 1199              | 0.771 | 923                 | 943                             | 3.2               |     |
| C - B4226/Pontypridd Road | 967                   | 967                      | 242                     | 0                      | 0                         | 863                       |                            | 1138              | 0.850 | 965                 | 885                             | 5.0               |     |
| D - A4226/Port Road       | 1220                  | 818                      | 205                     | 402                    | 0                         | 815                       | 0.00                       | 1021              | 0.801 | 817                 | 1014                            | 3.7               |     |

## 08:15 - 08:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 516                   | 516                      | 129                     | 0                      | 328                       | 944                       |                            | 913               | 0.564 | 526                 | 410                             | 3.9               |     |
| B - A4226/Port Road W     | 754                   | 754                      | 189                     | 0                      | 0                         | 687                       |                            | 1293              | 0.583 | 762                 | 783                             | 3.3               |     |
| C - B4226/Pontypridd Road | 789                   | 789                      | 197                     | 0                      | 0                         | 715                       |                            | 1239              | 0.637 | 804                 | 734                             | 5.4               |     |
| D - A4226/Port Road       | 996                   | 668                      | 167                     | 328                    | 0                         | 677                       | 0.00                       | 1104              | 0.605 | 677                 | 841                             | 3.9               |     |

## 08:30 - 08:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 432                   | 432                      | 108                     | 0                      | 275                       | 783                       |                            | 1019              | 0.424 | 434                 | 340                             | 1.4               |     |
| B - A4226/Port Road W     | 632                   | 632                      | 158                     | 0                      | 0                         | 568                       |                            | 1374              | 0.460 | 634                 | 649                             | 1.5               |     |
| C - B4226/Pontypridd Road | 661                   | 661                      | 165                     | 0                      | 0                         | 593                       |                            | 1322              | 0.500 | 664                 | 609                             | 1.9               |     |
| D - A4226/Port Road       | 834                   | 559                      | 140                     | 275                    | 0                         | 561                       | 0.00                       | 1174              | 0.477 | 562                 | 697                             | 1.6               |     |

# Base - 2028 B+D+C H, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 20.16              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D16 | 2028 B+D+C H  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 715                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 872                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 775                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 953                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 129                   | 314                       | 272                 |
|      | B - A4226/Port Road W     | 110                    | 10                    | 233                       | 519                 |
|      | C - B4226/Pontypridd Road | 230                    | 143                   | 0                         | 402                 |
|      | D - A4226/Port Road       | 222                    | 447                   | 283                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.88    | 32.34         | 6.6             | D       | 656                     | 984                           |
| B - A4226/Port Road W     | 0.86    | 23.18         | 5.9             | C       | 800                     | 1200                          |
| C - B4226/Pontypridd Road | 0.82    | 18.61         | 4.2             | C       | 711                     | 1067                          |
| D - A4226/Port Road       | 0.68    | 9.52          | 2.1             | A       | 875                     | 1006                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 538                   | 538                      | 135                     | 0                      | 167                       | 662                       |                            | 1098              | 0.490 | 534                 | 254                             | 0.0               |     |
| B - A4226/Port Road W     | 657                   | 657                      | 164                     | 0                      | 0                         | 651                       |                            | 1318              | 0.498 | 653                 | 546                             | 0.0               |     |
| C - B4226/Pontypridd Road | 583                   | 583                      | 146                     | 0                      | 0                         | 682                       |                            | 1261              | 0.463 | 580                 | 621                             | 0.0               |     |
| D - A4226/Port Road       | 717                   | 550                      | 138                     | 167                    | 0                         | 369                       | 0.00                       | 1288              | 0.427 | 547                 | 893                             | 0.0               |     |

#### 16:30 - 16:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 642                   | 642                      | 161                     | 0                      | 200                       | 793                       |                            | 1012              | 0.635 | 639                 | 304                             | 1.0               |     |
| B - A4226/Port Road W     | 784                   | 784                      | 196                     | 0                      | 0                         | 779                       |                            | 1230              | 0.637 | 781                 | 653                             | 1.0               |     |
| C - B4226/Pontypridd Road | 697                   | 697                      | 174                     | 0                      | 0                         | 817                       |                            | 1170              | 0.596 | 694                 | 743                             | 0.9               |     |
| D - A4226/Port Road       | 857                   | 657                      | 164                     | 200                    | 0                         | 442                       | 0.00                       | 1245              | 0.528 | 656                 | 1069                            | 0.7               |     |

### 16:45 - 17:00

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 787                   | 787                      | 197                     | 0                      | 244                       | 968                       |                            | 898               | 0.876 | 770                 | 369                             | 1.8               |     |
| B - A4226/Port Road W     | 960                   | 960                      | 240                     | 0                      | 0                         | 943                       |                            | 1119              | 0.858 | 946                 | 795                             | 1.7               |     |
| C - B4226/Pontypridd Road | 853                   | 853                      | 213                     | 0                      | 0                         | 987                       |                            | 1053              | 0.810 | 843                 | 901                             | 1.4               |     |
| D - A4226/Port Road       | 1049                  | 805                      | 201                     | 244                    | 0                         | 536                       | 0.00                       | 1188              | 0.677 | 801                 | 1295                            | 1.1               |     |

### 17:00 - 17:15

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 787                   | 787                      | 197                     | 0                      | 244                       | 973                       |                            | 895               | 0.880 | 784                 | 373                             | 5.9               |     |
| B - A4226/Port Road W     | 960                   | 960                      | 240                     | 0                      | 0                         | 956                       |                            | 1110              | 0.865 | 958                 | 802                             | 5.3               |     |
| C - B4226/Pontypridd Road | 853                   | 853                      | 213                     | 0                      | 0                         | 1002                      |                            | 1043              | 0.818 | 852                 | 912                             | 3.9               |     |
| D - A4226/Port Road       | 1049                  | 805                      | 201                     | 244                    | 0                         | 542                       | 0.00                       | 1185              | 0.679 | 805                 | 1312                            | 2.0               |     |

### 17:15 - 17:30

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 642                   | 642                      | 161                     | 0                      | 200                       | 801                       |                            | 1007              | 0.638 | 661                 | 311                             | 6.6               |     |
| B - A4226/Port Road W     | 784                   | 784                      | 196                     | 0                      | 0                         | 799                       |                            | 1217              | 0.644 | 800                 | 663                             | 5.9               |     |
| C - B4226/Pontypridd Road | 697                   | 697                      | 174                     | 0                      | 0                         | 839                       |                            | 1154              | 0.603 | 707                 | 760                             | 4.2               |     |
| D - A4226/Port Road       | 857                   | 657                      | 164                     | 200                    | 0                         | 451                       | 0.00                       | 1239              | 0.530 | 661                 | 1096                            | 2.1               |     |

### 17:30 - 17:45

| Arm                       | Total Demand (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | q ( |
|---------------------------|-----------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----|
| A - A4226/Waycock Road    | 538                   | 538                      | 135                     | 0                      | 167                       | 668                       |                            | 1094              | 0.492 | 542                 | 257                             | 1.9               |     |
| B - A4226/Port Road W     | 657                   | 657                      | 164                     | 0                      | 0                         | 658                       |                            | 1312              | 0.500 | 660                 | 551                             | 1.9               |     |
| C - B4226/Pontypridd Road | 583                   | 583                      | 146                     | 0                      | 0                         | 691                       |                            | 1256              | 0.465 | 586                 | 628                             | 1.6               |     |
| D - A4226/Port Road       | 717                   | 550                      | 138                     | 167                    | 0                         | 373                       | 0.00                       | 1286              | 0.428 | 552                 | 904                             | 1.2               |     |



| Junctions 9                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ARCADY 9 - Roundabout Module                                                                                                                                     |
| Version: 9.5.1.7462<br>© Copyright TRL Limited, 2019                                                                                                             |
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**Filename:** WX 2038\_B+D Standard OpA2.j9

**Path:** K:\T23\Jobs\T23.135 Weycock Cross TA\Analysis\Modelling\2025\Waycock + Dev\Arcady

**Report generation date:** 28/03/2025 11:27:51

»Base - 2038 B, AM  
 »Base - 2038 B, PM  
 »Base - 2038 B+C, AM  
 »Base - 2038 B+C, PM  
 »Base - 2038 B+D L, AM  
 »Base - 2038 B+D L, PM  
 »Base - 2038 B+D M, AM  
 »Base - 2038 B+D M, PM  
 »Base - 2038 B+D H, AM  
 »Base - 2038 B+D H, PM  
 »Base - 2038 B+D+C L, AM  
 »Base - 2038 B+D+C L, PM  
 »Base - 2038 B+D+C M, AM  
 »Base - 2038 B+D+C M, PM  
 »Base - 2038 B+D+C H, AM  
 »Base - 2038 B+D+C H, PM  
 »Base - 2038 B+CMF, AM  
 »Base - 2038 B+CMF, PM  
 »Base - 2038 B+D+CMF L, AM  
 »Base - 2038 B+D+CMF L, PM  
 »Base - 2038 B+D+CMF M, AM  
 »Base - 2038 B+D+CMF M, PM  
 »Base - 2038 B+D+CMF H, AM  
 »Base - 2038 B+D+CMF H, PM  
 »Base - 2038 B+CA, AM  
 »Base - 2038 B+CA, PM  
 »Base - 2038 B+D+CA L, AM  
 »Base - 2038 B+D+CA L, PM  
 »Base - 2038 B+D+CA M, AM  
 »Base - 2038 B+D+CA M, PM  
 »Base - 2038 B+D+CA H, AM  
 »Base - 2038 B+D+CA H, PM

## Summary of junction performance

|  | AM | PM |
|--|----|----|
|--|----|----|

|                           | Set ID                | Queue (PCU) | Delay (s) | RFC  | LOS | Set ID | Queue (PCU) | Delay (s) | RFC  | LOS |
|---------------------------|-----------------------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
|                           | Base - 2038 B         |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D1                    | 2.5         | 15.86     | 0.72 | C   | D2     | 3.7         | 18.56     | 0.79 | C   |
| B - A4226/Port Road W     |                       | 2.4         | 10.28     | 0.70 | B   |        | 5.2         | 20.67     | 0.85 | C   |
| C - B4226/Pontypridd Road |                       | 2.9         | 11.58     | 0.75 | B   |        | 3.2         | 13.89     | 0.77 | B   |
| D - A4226/Port Road       |                       | 3.0         | 15.26     | 0.75 | C   |        | 1.7         | 8.62      | 0.63 | A   |
|                           | Base - 2038 B+C       |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D3                    | 5.2         | 30.22     | 0.85 | D   | D4     | 10.4        | 48.92     | 0.93 | E   |
| B - A4226/Port Road W     |                       | 5.3         | 20.94     | 0.85 | C   |        | 11.8        | 45.56     | 0.95 | E   |
| C - B4226/Pontypridd Road |                       | 8.4         | 31.84     | 0.91 | D   |        | 5.1         | 21.83     | 0.85 | C   |
| D - A4226/Port Road       |                       | 4.6         | 21.41     | 0.83 | C   |        | 2.5         | 11.00     | 0.71 | B   |
|                           | Base - 2038 B+D L     |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D5                    | 2.8         | 17.24     | 0.74 | C   | D6     | 3.9         | 19.84     | 0.80 | C   |
| B - A4226/Port Road W     |                       | 2.5         | 10.67     | 0.71 | B   |        | 5.8         | 23.08     | 0.86 | C   |
| C - B4226/Pontypridd Road |                       | 3.0         | 11.90     | 0.75 | B   |        | 3.5         | 15.17     | 0.79 | C   |
| D - A4226/Port Road       |                       | 3.4         | 16.92     | 0.78 | C   |        | 1.8         | 8.87      | 0.64 | A   |
|                           | Base - 2038 B+D M     |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D7                    | 3.0         | 18.44     | 0.75 | C   | D8     | 4.2         | 21.01     | 0.81 | C   |
| B - A4226/Port Road W     |                       | 2.5         | 11.02     | 0.72 | B   |        | 6.5         | 25.37     | 0.88 | D   |
| C - B4226/Pontypridd Road |                       | 3.1         | 12.20     | 0.76 | B   |        | 3.8         | 16.31     | 0.80 | C   |
| D - A4226/Port Road       |                       | 3.8         | 18.47     | 0.80 | C   |        | 1.9         | 9.09      | 0.65 | A   |
|                           | Base - 2038 B+D H     |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D9                    | 3.1         | 19.40     | 0.76 | C   | D10    | 4.3         | 21.78     | 0.82 | C   |
| B - A4226/Port Road W     |                       | 2.6         | 11.23     | 0.72 | B   |        | 6.9         | 26.96     | 0.89 | D   |
| C - B4226/Pontypridd Road |                       | 3.2         | 12.38     | 0.76 | B   |        | 4.1         | 17.24     | 0.81 | C   |
| D - A4226/Port Road       |                       | 4.2         | 19.84     | 0.81 | C   |        | 1.9         | 9.24      | 0.66 | A   |
|                           | Base - 2038 B+D+C L   |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D11                   | 6.0         | 34.77     | 0.87 | D   | D12    | 12.0        | 55.47     | 0.95 | F   |
| B - A4226/Port Road W     |                       | 5.8         | 22.53     | 0.86 | C   |        | 14.2        | 53.30     | 0.96 | F   |
| C - B4226/Pontypridd Road |                       | 9.1         | 34.16     | 0.92 | D   |        | 5.7         | 24.53     | 0.86 | C   |
| D - A4226/Port Road       |                       | 5.4         | 24.55     | 0.85 | C   |        | 2.6         | 11.39     | 0.72 | B   |
|                           | Base - 2038 B+D+C M   |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D13                   | 6.8         | 38.99     | 0.89 | E   | D14    | 13.6        | 61.81     | 0.96 | F   |
| B - A4226/Port Road W     |                       | 6.1         | 23.74     | 0.87 | C   |        | 16.5        | 60.47     | 0.98 | F   |
| C - B4226/Pontypridd Road |                       | 9.5         | 35.58     | 0.92 | E   |        | 6.4         | 27.11     | 0.88 | D   |
| D - A4226/Port Road       |                       | 6.1         | 27.63     | 0.87 | D   |        | 2.7         | 11.77     | 0.73 | B   |
|                           | Base - 2038 B+D+C H   |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D15                   | 7.4         | 42.51     | 0.90 | E   | D16    | 14.5        | 65.38     | 0.97 | F   |
| B - A4226/Port Road W     |                       | 6.3         | 24.74     | 0.87 | C   |        | 18.4        | 65.99     | 0.99 | F   |
| C - B4226/Pontypridd Road |                       | 9.8         | 36.90     | 0.92 | E   |        | 6.8         | 29.00     | 0.89 | D   |
| D - A4226/Port Road       |                       | 6.9         | 30.44     | 0.89 | D   |        | 2.8         | 11.97     | 0.74 | B   |
|                           | Base - 2038 B+CMF     |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D17                   | 17.1        | 80.55     | 0.99 | F   | D18    | 56.7        | 242.01    | 1.16 | F   |
| B - A4226/Port Road W     |                       | 79.1        | 216.01    | 1.14 | F   |        | 15.4        | 57.12     | 0.97 | F   |
| C - B4226/Pontypridd Road |                       | 122.0       | 448.06    | 1.23 | F   |        | 5.0         | 20.94     | 0.84 | C   |
| D - A4226/Port Road       |                       | 3.9         | 16.97     | 0.80 | C   |        | 34.3        | 99.08     | 1.03 | F   |
|                           | Base - 2038 B+D+CMF L |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D19                   | 21.6        | 97.80     | 1.01 | F   | D20    | 60.4        | 270.31    | 1.17 | F   |
| B - A4226/Port Road W     |                       | 83.1        | 227.08    | 1.15 | F   |        | 17.9        | 64.78     | 0.98 | F   |
| C - B4226/Pontypridd Road |                       | 123.9       | 455.91    | 1.23 | F   |        | 5.6         | 23.24     | 0.86 | C   |
| D - A4226/Port Road       |                       | 4.4         | 18.93     | 0.82 | C   |        | 38.4        | 108.39    | 1.04 | F   |
|                           | Base - 2038 B+D+CMF M |             |           |      |     |        |             |           |      |     |
| A - A4226/Waycock Road    | D21                   | 25.5        | 112.84    | 1.03 | F   | D22    | 63.4        | 298.48    | 1.18 | F   |

|                           |                       |       |        |      |   |     |       |        |      |   |
|---------------------------|-----------------------|-------|--------|------|---|-----|-------|--------|------|---|
| B - A4226/Port Road W     |                       | 86.3  | 245.06 | 1.15 | F |     | 20.2  | 71.60  | 0.99 | F |
| C - B4226/Pontypridd Road |                       | 126.0 | 464.49 | 1.23 | F |     | 6.1   | 25.27  | 0.87 | D |
| D - A4226/Port Road       |                       | 4.9   | 20.75  | 0.84 | C |     | 42.0  | 116.38 | 1.05 | F |
|                           | Base - 2038 B+D+CMF H |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D23                   | 28.8  | 124.92 | 1.04 | F | D24 | 65.0  | 315.48 | 1.18 | F |
| B - A4226/Port Road W     |                       | 87.8  | 256.68 | 1.16 | F |     | 21.9  | 76.12  | 1.00 | F |
| C - B4226/Pontypridd Road |                       | 127.1 | 468.99 | 1.23 | F |     | 6.6   | 26.99  | 0.88 | D |
| D - A4226/Port Road       |                       | 5.4   | 22.42  | 0.85 | C |     | 44.4  | 121.84 | 1.05 | F |
|                           | Base - 2038 B+CA      |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D25                   | 52.4  | 202.00 | 1.12 | F | D26 | 114.5 | 571.22 | 1.29 | F |
| B - A4226/Port Road W     |                       | 173.6 | 567.95 | 1.29 | F |     | 27.3  | 91.75  | 1.02 | F |
| C - B4226/Pontypridd Road |                       | 227.1 | 886.10 | 1.35 | F |     | 7.7   | 31.86  | 0.90 | D |
| D - A4226/Port Road       |                       | 4.9   | 19.80  | 0.84 | C |     | 72.1  | 183.69 | 1.11 | F |
|                           | Base - 2038 B+D+CA L  |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D27                   | 60.6  | 232.84 | 1.14 | F | D28 | 119.5 | 599.05 | 1.30 | F |
| B - A4226/Port Road W     |                       | 178.3 | 586.20 | 1.29 | F |     | 31.8  | 103.52 | 1.03 | F |
| C - B4226/Pontypridd Road |                       | 229.4 | 901.49 | 1.35 | F |     | 8.8   | 35.99  | 0.92 | E |
| D - A4226/Port Road       |                       | 5.6   | 22.52  | 0.86 | C |     | 77.3  | 195.39 | 1.12 | F |
|                           | Base - 2038 B+D+CA M  |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D29                   | 67.0  | 257.80 | 1.17 | F | D30 | 123.6 | 623.91 | 1.31 | F |
| B - A4226/Port Road W     |                       | 181.0 | 598.29 | 1.29 | F |     | 35.6  | 113.31 | 1.04 | F |
| C - B4226/Pontypridd Road |                       | 229.9 | 907.62 | 1.35 | F |     | 9.9   | 39.98  | 0.93 | E |
| D - A4226/Port Road       |                       | 6.4   | 25.20  | 0.87 | D |     | 82.1  | 206.68 | 1.13 | F |
|                           | Base - 2038 B+D+CA H  |       |        |      |   |     |       |        |      |   |
| A - A4226/Waycock Road    | D31                   | 71.7  | 276.37 | 1.18 | F | D32 | 125.7 | 636.97 | 1.31 | F |
| B - A4226/Port Road W     |                       | 183.3 | 608.42 | 1.29 | F |     | 38.6  | 121.14 | 1.05 | F |
| C - B4226/Pontypridd Road |                       | 230.8 | 914.49 | 1.35 | F |     | 10.7  | 42.86  | 0.94 | E |
| D - A4226/Port Road       |                       | 7.1   | 27.61  | 0.89 | D |     | 84.5  | 215.64 | 1.13 | F |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

### File Description

|             |                            |
|-------------|----------------------------|
| Title       | Weycock Cross              |
| Location    | Barry                      |
| Site number |                            |
| Date        | 16/11/2023                 |
| Version     |                            |
| Status      | (new file)                 |
| Identifier  |                            |
| Client      | Persimmon Homes East Wales |
| Jobnumber   | T23.135                    |
| Enumerator  | ATRANS\katiewilliams       |
| Description |                            |

## Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m              | kph         | PCU                 | PCU                   | perHour    | s                   | -Min              | perMin              |

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

### Demand Set Summary

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1  | 2038 B         | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D2  | 2038 B         | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D3  | 2038 B+C       | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D4  | 2038 B+C       | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D5  | 2038 B+D L     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D6  | 2038 B+D L     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D7  | 2038 B+D M     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D8  | 2038 B+D M     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D9  | 2038 B+D H     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D10 | 2038 B+D H     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D11 | 2038 B+D+C L   | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D12 | 2038 B+D+C L   | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D13 | 2038 B+D+C M   | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D14 | 2038 B+D+C M   | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D15 | 2038 B+D+C H   | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D16 | 2038 B+D+C H   | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D17 | 2038 B+CMF     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D18 | 2038 B+CMF     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D19 | 2038 B+D+CMF L | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D20 | 2038 B+D+CMF L | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D21 | 2038 B+D+CMF M | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D22 | 2038 B+D+CMF M | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D23 | 2038 B+D+CMF H | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D24 | 2038 B+D+CMF H | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D25 | 2038 B+CA      | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D26 | 2038 B+CA      | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |
| D27 | 2038 B+D+CA L  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |
| D28 | 2038 B+D+CA L  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

|     |               |    |                          |             |       |       |    |   |
|-----|---------------|----|--------------------------|-------------|-------|-------|----|---|
| D29 | 2038 B+D+CA M | AM | 07:30-08:30<br>peak hour | ONE<br>HOUR | 07:15 | 08:45 | 15 | ✓ |
| D30 | 2038 B+D+CA M | PM | 16:30-17:30<br>peak hour | ONE<br>HOUR | 16:15 | 17:45 | 15 | ✓ |
| D31 | 2038 B+D+CA H | AM | 07:30-08:30<br>peak hour | ONE<br>HOUR | 07:15 | 08:45 | 15 | ✓ |
| D32 | 2038 B+D+CA H | PM | 16:30-17:30<br>peak hour | ONE<br>HOUR | 16:15 | 17:45 | 15 | ✓ |

### Analysis Set Details

| ID | Name | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|------|-------------------|---------------------------------|-------------------------------------|
| A1 | Base | ✓                 | 100.000                         | 100.000                             |

## Base - 2038 B, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 13.13              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Arms

### Arms

| Arm | Name                  | Description |
|-----|-----------------------|-------------|
| A   | A4226/Waycock Road    |             |
| B   | A4226/Port Road W     |             |
| C   | B4226/Pontypridd Road |             |
| D   | A4226/Port Road       |             |

### Roundabout Geometry

| Arm                    | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|------------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| A - A4226/Waycock Road | 3.45                             | 7.83                | 120.0                           | 155.0                | 33.4                              | 22.3                               |           |
| B - A4226/Port Road W  | 3.98                             | 6.94                | 20.6                            | 22.9                 | 33.2                              | 22.2                               |           |

|                           |      |      |      |       |      |      |  |
|---------------------------|------|------|------|-------|------|------|--|
| C - B4226/Pontypridd Road | 4.31 | 6.26 | 28.8 | 183.9 | 33.3 | 23.1 |  |
| D - A4226/Port Road       | 3.88 | 6.68 | 72.0 | 9.4   | 33.2 | 33.7 |  |

## Bypass

| Arm                       | Arm has bypass | Bypass utilisation (%) |
|---------------------------|----------------|------------------------|
| A - A4226/Waycock Road    |                |                        |
| B - A4226/Port Road W     |                |                        |
| C - B4226/Pontypridd Road |                |                        |
| D - A4226/Port Road       | ✓              | 100                    |

## Pelican/Puffin Crossings

| Arm                 | Space between crossing and junc. entry (Signalised) (PCU) | Amber time preceding red (s) | Amber time regarded as green (s) | Time from traffic red start to green man start (s) | Time period green man shown (s) | Clearance Period (s) | Traffic minimum green (s) |
|---------------------|-----------------------------------------------------------|------------------------------|----------------------------------|----------------------------------------------------|---------------------------------|----------------------|---------------------------|
| D - A4226/Port Road | 12.00                                                     | 3.00                         | 2.90                             | 1.00                                               | 6.00                            | 6.00                 | 7.00                      |

## Slope / Intercept / Capacity

### Arm Intercept Adjustments

| Arm                       | Type       | Reason | Percentage intercept adjustment (%) |
|---------------------------|------------|--------|-------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                               |
| B - A4226/Port Road W     | Percentage |        | 95.00                               |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                               |
| D - A4226/Port Road       | Percentage |        | 91.00                               |

### Roundabout Slope and Intercept used in model

| Arm                       | Final slope | Final intercept (PCU/hr) |
|---------------------------|-------------|--------------------------|
| A - A4226/Waycock Road    | 0.816       | 1912                     |
| B - A4226/Port Road W     | 0.701       | 1787                     |
| C - B4226/Pontypridd Road | 0.718       | 1818                     |
| D - A4226/Port Road       | 0.654       | 1638                     |

*The slope and intercept shown above include any corrections and adjustments.*

### Arm Capacity Adjustments

| Arm                       | Type       | Reason | Percentage capacity adjustment (%) |
|---------------------------|------------|--------|------------------------------------|
| A - A4226/Waycock Road    | Percentage |        | 80.00                              |
| B - A4226/Port Road W     | Percentage |        | 95.00                              |
| C - B4226/Pontypridd Road | Percentage |        | 95.00                              |
| D - A4226/Port Road       | Percentage |        | 91.00                              |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2038 B        | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                    | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road |            | ONE HOUR     | ✓            | 540                     | 100.000            |

|                           |  |          |   |     |         |
|---------------------------|--|----------|---|-----|---------|
| B - A4226/Port Road W     |  | ONE HOUR | ✓ | 763 | 100.000 |
| C - B4226/Pontypridd Road |  | ONE HOUR | ✓ | 849 | 100.000 |
| D - A4226/Port Road       |  | ONE HOUR | ✓ | 947 | 100.000 |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 171                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 298                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 221                 |
|      | D - A4226/Port Road       | 281                    | 395                   | 271                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.72    | 15.86         | 2.5             | C       | 496                     | 743                           |
| B - A4226/Port Road W     | 0.70    | 10.28         | 2.4             | B       | 700                     | 1050                          |
| C - B4226/Pontypridd Road | 0.75    | 11.58         | 2.9             | B       | 779                     | 1169                          |
| D - A4226/Port Road       | 0.75    | 15.26         | 3.0             | C       | 869                     | 917                           |

### Main Results for each time segment

07:15 - 07:30



| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 407                     | 407                       | 102                      | 0                        | 212                        | 732                        |                            | 1052               | 0.386 | 404                 | 359                             | 0.0               | 0.6             | 5.706     | A                            |
| B - A4226/Port Road W     | 574                     | 574                       | 144                      | 0                        | 0                          | 509                        |                            | 1358               | 0.423 | 571                 | 627                             | 0.0               | 0.7             | 4.681     | A                            |
| C - B4226/Pontypridd Road | 639                     | 639                       | 160                      | 0                        | 0                          | 473                        |                            | 1404               | 0.455 | 636                 | 607                             | 0.0               | 0.8             | 4.782     | A                            |
| D - A4226/Port Road       | 713                     | 501                       | 125                      | 212                      | 0                          | 592                        | 0.00                       | 1138               | 0.440 | 498                 | 517                             | 0.0               | 0.8             | 5.718     | A                            |

#### 07:30 - 07:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 485                     | 485                       | 121                      | 0                        | 253                        | 877                        |                            | 958                | 0.507 | 484                 | 430                             | 0.6               | 1.0             | 7.811     | A                            |
| B - A4226/Port Road W     | 686                     | 686                       | 171                      | 0                        | 0                          | 609                        |                            | 1291               | 0.531 | 684                 | 751                             | 0.7               | 1.1             | 6.076     | A                            |
| C - B4226/Pontypridd Road | 763                     | 763                       | 191                      | 0                        | 0                          | 567                        |                            | 1340               | 0.570 | 761                 | 727                             | 0.8               | 1.3             | 6.352     | A                            |
| D - A4226/Port Road       | 851                     | 599                       | 150                      | 253                      | 0                          | 709                        | 0.00                       | 1069               | 0.560 | 597                 | 619                             | 0.8               | 1.3             | 7.761     | A                            |

#### 07:45 - 08:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 595                     | 595                       | 149                      | 0                        | 309                        | 1068                       |                            | 833                | 0.714 | 589                 | 524                             | 1.0               | 2.4             | 14.912    | B                            |
| B - A4226/Port Road W     | 840                     | 840                       | 210                      | 0                        | 0                          | 742                        |                            | 1203               | 0.698 | 835                 | 915                             | 1.1               | 2.3             | 9.936     | A                            |
| C - B4226/Pontypridd Road | 935                     | 935                       | 234                      | 0                        | 0                          | 691                        |                            | 1255               | 0.745 | 929                 | 886                             | 1.3               | 2.9             | 11.100    | B                            |
| D - A4226/Port Road       | 1043                    | 733                       | 183                      | 309                      | 0                          | 866                        | 0.00                       | 976                | 0.751 | 727                 | 755                             | 1.3               | 2.9             | 14.402    | B                            |

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 595                     | 595                       | 149                      | 0                        | 309                        | 1076                       |                            | 827                | 0.719 | 594                 | 527                             | 2.4               | 2.5             | 15.858    | C                            |
| B - A4226/Port Road W     | 840                     | 840                       | 210                      | 0                        | 0                          | 748                        |                            | 1199               | 0.701 | 840                 | 922                             | 2.3               | 2.4             | 10.285    | B                            |
| C - B4226/Pontypridd Road | 935                     | 935                       | 234                      | 0                        | 0                          | 696                        |                            | 1252               | 0.747 | 935                 | 893                             | 2.9               | 2.9             | 11.583    | B                            |

|                     |      |     |     |     |   |     |      |     |       |     |     |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|-----|-------|-----|-----|-----|-----|--------|---|
| D - A4226/Port Road | 1043 | 733 | 183 | 309 | 0 | 871 | 0.00 | 973 | 0.754 | 733 | 759 | 2.9 | 3.0 | 15.260 | C |
|---------------------|------|-----|-----|-----|---|-----|------|-----|-------|-----|-----|-----|-----|--------|---|

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 485                     | 485                       | 121                      | 0                        | 253                        | 888                        |                            | 950                | 0.511 | 491                 | 434                             | 2.5               | 1.1             | 8.193     | A                            |
| B - A4226/Port Road W     | 686                     | 686                       | 171                      | 0                        | 0                          | 618                        |                            | 1285               | 0.534 | 691                 | 761                             | 2.4               | 1.2             | 6.264     | A                            |
| C - B4226/Pontypridd Road | 763                     | 763                       | 191                      | 0                        | 0                          | 573                        |                            | 1336               | 0.571 | 770                 | 736                             | 2.9               | 1.4             | 6.584     | A                            |
| D - A4226/Port Road       | 851                     | 599                       | 150                      | 253                      | 0                          | 717                        | 0.00                       | 1064               | 0.563 | 605                 | 626                             | 3.0               | 1.3             | 8.128     | A                            |

#### 08:30 - 08:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 407                     | 407                       | 102                      | 0                        | 212                        | 739                        |                            | 1047               | 0.388 | 408                 | 362                             | 1.1               | 0.7             | 5.828     | A                            |
| B - A4226/Port Road W     | 574                     | 574                       | 144                      | 0                        | 0                          | 514                        |                            | 1355               | 0.424 | 576                 | 633                             | 1.2               | 0.8             | 4.759     | A                            |
| C - B4226/Pontypridd Road | 639                     | 639                       | 160                      | 0                        | 0                          | 477                        |                            | 1401               | 0.456 | 641                 | 613                             | 1.4               | 0.9             | 4.870     | A                            |
| D - A4226/Port Road       | 713                     | 501                       | 125                      | 212                      | 0                          | 597                        | 0.00                       | 1135               | 0.442 | 503                 | 521                             | 1.3               | 0.8             | 5.840     | A                            |

## Base - 2038 B, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 15.33              | C            |

Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2038 B        | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 672                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 860                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 780                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 841                     | 100.000            |

Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

Origin-Destination Data

Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 200                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 483                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 383                 |
|      | D - A4226/Port Road       | 181                    | 404                   | 255                       | 1                   |

Vehicle Mix

Heavy Vehicle Percentages

| From | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

# Results

## Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.79    | 18.56         | 3.7             | C       | 617                     | 925                           |
| B - A4226/Port Road W     | 0.85    | 20.67         | 5.2             | C       | 789                     | 1184                          |
| C - B4226/Pontypridd Road | 0.77    | 13.89         | 3.2             | B       | 716                     | 1074                          |
| D - A4226/Port Road       | 0.63    | 8.62          | 1.7             | A       | 772                     | 908                           |

## Main Results for each time segment

### 16:15 - 16:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 506                     | 506                       | 126                      | 0                        | 136                        | 616                        |                            | 1127               | 0.449 | 503                 | 272                             | 0.0               | 0.8             | 5.940     | A                            |
| B - A4226/Port Road W     | 647                     | 647                       | 162                      | 0                        | 0                          | 591                        |                            | 1303               | 0.497 | 644                 | 528                             | 0.0               | 1.0             | 5.483     | A                            |
| C - B4226/Pontypridd Road | 587                     | 587                       | 147                      | 0                        | 0                          | 608                        |                            | 1312               | 0.448 | 584                 | 626                             | 0.0               | 0.8             | 4.940     | A                            |
| D - A4226/Port Road       | 633                     | 497                       | 124                      | 136                      | 0                          | 394                        | 0.00                       | 1257               | 0.395 | 494                 | 799                             | 0.0               | 0.7             | 4.736     | A                            |

### 16:30 - 16:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 604                     | 604                       | 151                      | 0                        | 163                        | 738                        |                            | 1048               | 0.577 | 602                 | 325                             | 0.8               | 1.4             | 8.323     | A                            |
| B - A4226/Port Road W     | 773                     | 773                       | 193                      | 0                        | 0                          | 708                        |                            | 1226               | 0.631 | 770                 | 632                             | 1.0               | 1.7             | 7.946     | A                            |
| C - B4226/Pontypridd Road | 701                     | 701                       | 175                      | 0                        | 0                          | 728                        |                            | 1230               | 0.570 | 699                 | 750                             | 0.8               | 1.3             | 6.778     | A                            |
| D - A4226/Port Road       | 756                     | 593                       | 148                      | 163                      | 0                          | 471                        | 0.00                       | 1210               | 0.490 | 592                 | 956                             | 0.7               | 1.0             | 5.846     | A                            |

### 16:45 - 17:00

| Arm                    | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road | 740                     | 740                       | 185                      | 0                        | 199                        | 902                        |                            | 941                | 0.786 | 731                 | 396                             | 1.4               | 3.5             | 17.126    | C                            |
| B - A4226/Port Road W  | 947                     | 947                       | 237                      | 0                        | 0                          | 862                        |                            | 1123               | 0.843 | 934                 | 771                             | 1.7               | 4.8             | 18.202    | C                            |

|                           |     |     |     |     |   |     |      |      |       |     |      |     |     |        |   |
|---------------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|
| C - B4226/Pontypridd Road | 859 | 859 | 215 | 0   | 0 | 884 |      | 1124 | 0.764 | 852 | 913  | 1.3 | 3.1 | 12.948 | B |
| D - A4226/Port Road       | 926 | 727 | 182 | 199 | 0 | 574 | 0.00 | 1149 | 0.632 | 724 | 1162 | 1.0 | 1.7 | 8.449  | A |

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 740                    | 740                      | 185                     | 0                      | 199                       | 906                       |                            | 938               | 0.788 | 739                 | 399                             | 3.5               | 3.7             | 18.559    | C                            |
| B - A4226/Port Road W     | 947                    | 947                      | 237                     | 0                      | 0                         | 869                       |                            | 1118              | 0.847 | 945                 | 776                             | 4.8               | 5.2             | 20.674    | C                            |
| C - B4226/Pontypridd Road | 859                    | 859                      | 215                     | 0                      | 0                         | 894                       |                            | 1117              | 0.769 | 858                 | 921                             | 3.1               | 3.2             | 13.889    | B                            |
| D - A4226/Port Road       | 926                    | 727                      | 182                     | 199                    | 0                         | 579                       | 0.00                       | 1147              | 0.634 | 727                 | 1173                            | 1.7               | 1.7             | 8.618     | A                            |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 604                    | 604                      | 151                     | 0                      | 163                       | 744                       |                            | 1044              | 0.579 | 613                 | 330                             | 3.7               | 1.5             | 8.828     | A                            |
| B - A4226/Port Road W     | 773                    | 773                      | 193                     | 0                      | 0                         | 718                       |                            | 1219              | 0.634 | 787                 | 639                             | 5.2               | 1.8             | 8.679     | A                            |
| C - B4226/Pontypridd Road | 701                    | 701                      | 175                     | 0                      | 0                         | 743                       |                            | 1220              | 0.575 | 709                 | 762                             | 3.2               | 1.4             | 7.161     | A                            |
| D - A4226/Port Road       | 756                    | 593                      | 148                     | 163                    | 0                         | 479                       | 0.00                       | 1206              | 0.492 | 596                 | 973                             | 1.7               | 1.0             | 5.967     | A                            |

#### 17:30 - 17:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 506                    | 506                      | 126                     | 0                      | 136                       | 621                       |                            | 1124              | 0.450 | 508                 | 274                             | 1.5               | 0.9             | 6.082     | A                            |
| B - A4226/Port Road W     | 647                    | 647                      | 162                     | 0                      | 0                         | 597                       |                            | 1299              | 0.498 | 651                 | 533                             | 1.8               | 1.0             | 5.636     | A                            |
| C - B4226/Pontypridd Road | 587                    | 587                      | 147                     | 0                      | 0                         | 615                       |                            | 1307              | 0.449 | 589                 | 633                             | 1.4               | 0.8             | 5.046     | A                            |
| D - A4226/Port Road       | 633                    | 497                      | 124                     | 136                    | 0                         | 398                       | 0.00                       | 1254              | 0.396 | 498                 | 807                             | 1.0               | 0.7             | 4.800     | A                            |

## Base - 2038 B+C, AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|------|------|-------------|
|----------|------|------|-------------|

|         |                     |                                              |                                                                                                                  |
|---------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 25.57              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D3 | 2038 B+C      | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 603                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 876                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 924                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1094                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

## Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 234                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 411                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 296                 |
|      | D - A4226/Port Road       | 361                    | 438                   | 295                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.85    | 30.22         | 5.2             | D       | 553                     | 830                           |
| B - A4226/Port Road W     | 0.85    | 20.94         | 5.3             | C       | 804                     | 1206                          |
| C - B4226/Pontypridd Road | 0.91    | 31.84         | 8.4             | D       | 848                     | 1272                          |
| D - A4226/Port Road       | 0.83    | 21.41         | 4.6             | C       | 1004                    | 1009                          |

### Main Results for each time segment

07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 454                    | 454                      | 113                        | 0                      | 272                       | 782                       |                            | 1020              | 0.445 | 451                 | 358                             | 0.0               | 0.8             | 6.526     | A                            |
| B - A4226/Port Road W     | 659                    | 659                      | 165                        | 0                      | 0                         | 574                       |                            | 1315              | 0.501 | 655                 | 659                             | 0.0               | 1.0             | 5.586     | A                            |
| C - B4226/Pontypridd Road | 696                    | 696                      | 174                        | 0                      | 0                         | 604                       |                            | 1315              | 0.529 | 691                 | 625                             | 0.0               | 1.1             | 5.899     | A                            |
| D - A4226/Port Road       | 824                    | 552                      | 138                        | 272                    | 0                         | 592                       | 0.00                       | 1139              | 0.485 | 548                 | 704                             | 0.0               | 0.9             | 6.189     | A                            |

07:30 - 07:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 542                     | 542                       | 136                      | 0                        | 325                        | 936                        |                            | 919                | 0.590 | 540                 | 429                             | 0.8               | 1.5             | 9.776     | A                            |
| B - A4226/Port Road W     | 788                     | 788                       | 197                      | 0                        | 0                          | 687                        |                            | 1240               | 0.635 | 785                 | 789                             | 1.0               | 1.8             | 8.094     | A                            |
| C - B4226/Pontypridd Road | 831                     | 831                       | 208                      | 0                        | 0                          | 723                        |                            | 1233               | 0.674 | 827                 | 748                             | 1.1               | 2.1             | 9.037     | A                            |
| D - A4226/Port Road       | 983                     | 659                       | 165                      | 325                      | 0                          | 708                        | 0.00                       | 1069               | 0.616 | 656                 | 842                             | 0.9               | 1.6             | 8.850     | A                            |

07:45 - 08:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 664                     | 664                       | 166                      | 0                        | 397                        | 1133                       |                            | 790                | 0.840 | 651                 | 518                             | 1.5               | 4.6             | 24.915    | C                            |
| B - A4226/Port Road W     | 964                     | 964                       | 241                      | 0                        | 0                          | 831                        |                            | 1144               | 0.843 | 952                 | 954                             | 1.8               | 4.9             | 18.219    | C                            |
| C - B4226/Pontypridd Road | 1018                    | 1018                      | 254                      | 0                        | 0                          | 876                        |                            | 1129               | 0.902 | 997                 | 906                             | 2.1               | 7.3             | 24.875    | C                            |
| D - A4226/Port Road       | 1205                    | 807                       | 202                      | 397                      | 0                          | 855                        | 0.00                       | 982                | 0.822 | 797                 | 1018                            | 1.6               | 4.2             | 18.829    | C                            |

08:00 - 08:15

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 664                     | 664                       | 166                      | 0                        | 397                        | 1148                       |                            | 781                | 0.851 | 662                 | 525                             | 4.6               | 5.2             | 30.221    | D                            |
| B - A4226/Port Road W     | 964                     | 964                       | 241                      | 0                        | 0                          | 842                        |                            | 1136               | 0.849 | 963                 | 967                             | 4.9               | 5.3             | 20.945    | C                            |
| C - B4226/Pontypridd Road | 1018                    | 1018                      | 254                      | 0                        | 0                          | 888                        |                            | 1121               | 0.908 | 1013                | 918                             | 7.3               | 8.4             | 31.836    | D                            |
| D - A4226/Port Road       | 1205                    | 807                       | 202                      | 397                      | 0                          | 868                        | 0.00                       | 974                | 0.828 | 806                 | 1033                            | 4.2               | 4.6             | 21.405    | C                            |

08:15 - 08:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 542                     | 542                       | 136                      | 0                        | 325                        | 959                        |                            | 904                | 0.600 | 557                 | 442                             | 5.2               | 1.6             | 11.187    | B                            |
| B - A4226/Port Road W     | 788                     | 788                       | 197                      | 0                        | 0                          | 706                        |                            | 1227               | 0.642 | 801                 | 810                             | 5.3               | 1.9             | 8.975     | A                            |
| C - B4226/Pontypridd Road | 831                     | 831                       | 208                      | 0                        | 0                          | 741                        |                            | 1221               | 0.680 | 856                 | 766                             | 8.4               | 2.3             | 10.767    | B                            |



|                     |     |     |     |     |   |     |      |      |       |     |     |     |     |       |   |
|---------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|-------|---|
| D - A4226/Port Road | 983 | 659 | 165 | 325 | 0 | 731 | 0.00 | 1056 | 0.624 | 670 | 866 | 4.6 | 1.7 | 9.802 | A |
|---------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|-------|---|

08:30 - 08:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 454                    | 454                      | 113                        | 0                      | 272                       | 791                       |                            | 1013              | 0.448 | 457                 | 363                             | 1.6               | 0.9             | 6.747     | A                            |
| B - A4226/Port Road W     | 659                    | 659                      | 165                        | 0                      | 0                         | 581                       |                            | 1310              | 0.503 | 663                 | 667                             | 1.9               | 1.1             | 5.759     | A                            |
| C - B4226/Pontypridd Road | 696                    | 696                      | 174                        | 0                      | 0                         | 612                       |                            | 1310              | 0.531 | 700                 | 632                             | 2.3               | 1.2             | 6.119     | A                            |
| D - A4226/Port Road       | 824                    | 552                      | 138                        | 272                    | 0                         | 599                       | 0.00                       | 1134              | 0.487 | 555                 | 713                             | 1.7               | 1.0             | 6.384     | A                            |

## Base - 2038 B+C, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 30.91              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D4 | 2038 B+C      | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 745                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 897                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 800                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 970                     | 100.000            |

Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

Origin-Destination Data

Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 273                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 520                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 403                 |
|      | D - A4226/Port Road       | 226                    | 455                   | 288                       | 1                   |

Vehicle Mix

Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

Results

Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.93    | 48.92         | 10.4            | E       | 684                     | 1025                          |
| B - A4226/Port Road W     | 0.95    | 45.56         | 11.8            | E       | 823                     | 1235                          |
| C - B4226/Pontypridd Road | 0.85    | 21.83         | 5.1             | C       | 734                     | 1101                          |
| D - A4226/Port Road       | 0.71    | 11.00         | 2.5             | B       | 890                     | 1024                          |

## Main Results for each time segment

### 16:15 - 16:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/h r) | Capacity (PCU /hr) | RF C  | Throughput (PCU/h r) | Throughput (exit side) (PCU/h r) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|-----------------------------|--------------------|-------|----------------------|----------------------------------|--------------------|------------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 561                     | 561                       | 140                      | 0                        | 170                        | 679                        |                             | 1087               | 0.516 | 556                  | 272                              | 0.0                | 1.1              | 7.021     | A                            |
| B - A4226/Port Road W     | 675                     | 675                       | 169                      | 0                        | 0                          | 670                        |                             | 1251               | 0.540 | 671                  | 566                              | 0.0                | 1.2              | 6.223     | A                            |
| C - B4226/Pontypridd Road | 602                     | 602                       | 151                      | 0                        | 0                          | 690                        |                             | 1256               | 0.479 | 599                  | 650                              | 0.0                | 0.9              | 5.467     | A                            |
| D - A4226/Port Road       | 730                     | 560                       | 140                      | 170                      | 0                          | 394                        | 0.00                        | 1257               | 0.446 | 557                  | 895                              | 0.0                | 0.8              | 5.153     | A                            |

### 16:30 - 16:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/h r) | Capacity (PCU /hr) | RF C  | Throughput (PCU/h r) | Throughput (exit side) (PCU/h r) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|-----------------------------|--------------------|-------|----------------------|----------------------------------|--------------------|------------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 670                     | 670                       | 167                      | 0                        | 203                        | 813                        |                             | 999                | 0.670 | 666                  | 325                              | 1.1                | 2.0              | 11.132    | B                            |
| B - A4226/Port Road W     | 806                     | 806                       | 202                      | 0                        | 0                          | 802                        |                             | 1163               | 0.693 | 802                  | 677                              | 1.2                | 2.2              | 9.972     | A                            |
| C - B4226/Pontypridd Road | 719                     | 719                       | 180                      | 0                        | 0                          | 825                        |                             | 1164               | 0.618 | 716                  | 779                              | 0.9                | 1.6              | 8.027     | A                            |
| D - A4226/Port Road       | 872                     | 669                       | 167                      | 203                      | 0                          | 471                        | 0.00                        | 1211               | 0.553 | 667                  | 1071                             | 0.8                | 1.2              | 6.643     | A                            |

### 16:45 - 17:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/h r) | Capacity (PCU /hr) | RF C  | Throughput (PCU/h r) | Throughput (exit side) (PCU/h r) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|-----------------------------|--------------------|-------|----------------------|----------------------------------|--------------------|------------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 820                     | 820                       | 205                      | 0                        | 249                        | 992                        |                             | 883                | 0.929 | 794                  | 392                              | 2.0                | 8.6              | 35.173    | E                            |
| B - A4226/Port Road W     | 988                     | 988                       | 247                      | 0                        | 0                          | 964                        |                             | 1055               | 0.936 | 959                  | 822                              | 2.2                | 9.3              | 31.440    | D                            |
| C - B4226/Pontypridd Road | 881                     | 881                       | 220                      | 0                        | 0                          | 986                        |                             | 1054               | 0.836 | 869                  | 937                              | 1.6                | 4.5              | 18.466    | C                            |
| D - A4226/Port Road       | 1068                    | 819                       | 205                      | 249                      | 0                          | 569                        | 0.00                        | 1152               | 0.711 | 815                  | 1286                             | 1.2                | 2.4              | 10.586    | B                            |

### 17:00 - 17:15

| Arm                    | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/h r) | Capacity (PCU /hr) | RF C  | Throughput (PCU/h r) | Throughput (exit side) (PCU/h r) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsignalled level of service |
|------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|-----------------------------|--------------------|-------|----------------------|----------------------------------|--------------------|------------------|-----------|------------------------------|
| A - A4226/Waycock Road | 820                     | 820                       | 205                      | 0                        | 249                        | 998                        |                             | 878                | 0.934 | 813                  | 398                              | 8.6                | 10.4             | 48.925    | E                            |
| B - A4226/Port Road W  | 988                     | 988                       | 247                      | 0                        | 0                          | 980                        |                             | 1044               | 0.946 | 978                  | 830                              | 9.3                | 11.8             | 45.564    | E                            |

|                           |      |     |     |     |   |      |      |      |       |     |      |     |     |        |   |
|---------------------------|------|-----|-----|-----|---|------|------|------|-------|-----|------|-----|-----|--------|---|
| C - B4226/Pontypridd Road | 881  | 881 | 220 | 0   | 0 | 1006 |      | 1040 | 0.847 | 879 | 952  | 4.5 | 5.1 | 21.832 | C |
| D - A4226/Port Road       | 1068 | 819 | 205 | 249 | 0 | 577  | 0.00 | 1148 | 0.714 | 819 | 1308 | 2.4 | 2.5 | 10.996 | B |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 670                    | 670                      | 167                     | 0                      | 203                       | 823                       |                            | 993               | 0.675 | 702                 | 335                             | 10.4              | 2.3             | 14.289    | B                            |
| B - A4226/Port Road W     | 806                    | 806                      | 202                     | 0                      | 0                         | 834                       |                            | 1142              | 0.706 | 843                 | 691                             | 11.8              | 2.5             | 13.606    | B                            |
| C - B4226/Pontypridd Road | 719                    | 719                      | 180                     | 0                      | 0                         | 869                       |                            | 1134              | 0.634 | 732                 | 809                             | 5.1               | 1.8             | 9.264     | A                            |
| D - A4226/Port Road       | 872                    | 669                      | 167                     | 203                    | 0                         | 485                       | 0.00                       | 1202              | 0.556 | 674                 | 1116                            | 2.5               | 1.3             | 6.907     | A                            |

#### 17:30 - 17:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 561                    | 561                      | 140                     | 0                      | 170                       | 685                       |                            | 1082              | 0.518 | 565                 | 275                             | 2.3               | 1.1             | 7.319     | A                            |
| B - A4226/Port Road W     | 675                    | 675                      | 169                     | 0                      | 0                         | 679                       |                            | 1245              | 0.542 | 681                 | 572                             | 2.5               | 1.2             | 6.510     | A                            |
| C - B4226/Pontypridd Road | 602                    | 602                      | 151                     | 0                      | 0                         | 700                       |                            | 1249              | 0.482 | 606                 | 659                             | 1.8               | 0.9             | 5.641     | A                            |
| D - A4226/Port Road       | 730                    | 560                      | 140                     | 170                    | 0                         | 398                       | 0.00                       | 1254              | 0.447 | 562                 | 908                             | 1.3               | 0.8             | 5.251     | A                            |

## Base - 2038 B+D L, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|----------|------|---------------|-----------------------|-----------|--------------------|--------------|
|----------|------|---------------|-----------------------|-----------|--------------------|--------------|

|   |               |                     |  |            |       |   |
|---|---------------|---------------------|--|------------|-------|---|
| 1 | Weycock Cross | Standard Roundabout |  | A, B, C, D | 14.09 | B |
|---|---------------|---------------------|--|------------|-------|---|

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D5 | 2038 B+D L    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 543                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 767                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 852                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 978                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 174                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 302                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 224                 |
|      | D - A4226/Port Road       | 290                    | 408                   | 280                       | 0                   |

## Vehicle Mix

## Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.74    | 17.24         | 2.8             | C       | 498                     | 747                           |
| B - A4226/Port Road W     | 0.71    | 10.67         | 2.5             | B       | 704                     | 1056                          |
| C - B4226/Pontypridd Road | 0.75    | 11.90         | 3.0             | B       | 782                     | 1173                          |
| D - A4226/Port Road       | 0.78    | 16.92         | 3.4             | C       | 897                     | 947                           |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 409                    | 409                      | 102                        | 0                      | 218                       | 748                       |                            | 1041              | 0.393 | 406                 | 359                             | 0.0               | 0.7             | 5.825     | A                            |
| B - A4226/Port Road W     | 577                    | 577                      | 144                        | 0                      | 0                         | 518                       |                            | 1352              | 0.427 | 574                 | 637                             | 0.0               | 0.8             | 4.735     | A                            |
| C - B4226/Pontypridd Road | 641                    | 641                      | 160                        | 0                      | 0                         | 478                       |                            | 1400              | 0.458 | 638                 | 614                             | 0.0               | 0.9             | 4.819     | A                            |
| D - A4226/Port Road       | 736                    | 518                      | 129                        | 218                    | 0                         | 592                       | 0.00                       | 1138              | 0.455 | 515                 | 524                             | 0.0               | 0.8             | 5.865     | A                            |

#### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 488                    | 488                      | 122                        | 0                      | 261                       | 896                       |                            | 945               | 0.517 | 486                 | 430                             | 0.7               | 1.1             | 8.071     | A                            |
| B - A4226/Port Road W     | 690                    | 690                      | 172                        | 0                      | 0                         | 620                       |                            | 1284              | 0.537 | 688                 | 763                             | 0.8               | 1.2             | 6.183     | A                            |
| C - B4226/Pontypridd Road | 766                    | 766                      | 192                        | 0                      | 0                         | 573                       |                            | 1336              | 0.573 | 764                 | 735                             | 0.9               | 1.4             | 6.430     | A                            |

|                     |     |     |     |     |   |     |      |      |       |     |     |     |     |       |   |
|---------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|-------|---|
| D - A4226/Port Road | 879 | 618 | 155 | 261 | 0 | 709 | 0.00 | 1069 | 0.579 | 616 | 628 | 0.8 | 1.4 | 8.092 | A |
|---------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|-------|---|

#### 07:45 - 08:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 598                     | 598                       | 149                      | 0                        | 319                        | 1091                       |                            | 818                | 0.731 | 592                 | 524                             | 1.1               | 2.6             | 16.014    | C                            |
| B - A4226/Port Road W     | 844                     | 844                       | 211                      | 0                        | 0                          | 754                        |                            | 1195               | 0.707 | 840                 | 929                             | 1.2               | 2.4             | 10.271    | B                            |
| C - B4226/Pontypridd Road | 938                     | 938                       | 235                      | 0                        | 0                          | 699                        |                            | 1250               | 0.750 | 932                 | 895                             | 1.4               | 2.9             | 11.372    | B                            |
| D - A4226/Port Road       | 1077                    | 758                       | 189                      | 319                      | 0                          | 865                        | 0.00                       | 976                | 0.776 | 750                 | 765                             | 1.4               | 3.3             | 15.756    | C                            |

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 598                     | 598                       | 149                      | 0                        | 319                        | 1100                       |                            | 812                | 0.737 | 597                 | 527                             | 2.6               | 2.8             | 17.236    | C                            |
| B - A4226/Port Road W     | 844                     | 844                       | 211                      | 0                        | 0                          | 761                        |                            | 1190               | 0.710 | 844                 | 936                             | 2.4               | 2.5             | 10.672    | B                            |
| C - B4226/Pontypridd Road | 938                     | 938                       | 235                      | 0                        | 0                          | 703                        |                            | 1247               | 0.752 | 938                 | 902                             | 2.9               | 3.0             | 11.897    | B                            |
| D - A4226/Port Road       | 1077                    | 758                       | 189                      | 319                      | 0                          | 871                        | 0.00                       | 973                | 0.779 | 757                 | 770                             | 3.3               | 3.4             | 16.923    | C                            |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 488                     | 488                       | 122                      | 0                        | 261                        | 909                        |                            | 936                | 0.521 | 495                 | 434                             | 2.8               | 1.1             | 8.530     | A                            |
| B - A4226/Port Road W     | 690                     | 690                       | 172                      | 0                        | 0                          | 630                        |                            | 1277               | 0.540 | 694                 | 774                             | 2.5               | 1.2             | 6.398     | A                            |
| C - B4226/Pontypridd Road | 766                     | 766                       | 192                      | 0                        | 0                          | 580                        |                            | 1331               | 0.575 | 772                 | 745                             | 3.0               | 1.4             | 6.677     | A                            |
| D - A4226/Port Road       | 879                     | 618                       | 155                      | 261                      | 0                          | 717                        | 0.00                       | 1064               | 0.581 | 626                 | 635                             | 3.4               | 1.4             | 8.549     | A                            |

#### 08:30 - 08:45

| Arm                    | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road | 409                     | 409                       | 102                      | 0                        | 218                        | 756                        |                            | 1036               | 0.394 | 411                 | 362                             | 1.1               | 0.7             | 5.955     | A                            |

|                           |     |     |     |     |   |     |      |      |       |     |     |     |     |       |   |
|---------------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|-------|---|
| B - A4226/Port Road W     | 577 | 577 | 144 | 0   | 0 | 523 |      | 1349 | 0.428 | 579 | 643 | 1.2 | 0.8 | 4.817 | A |
| C - B4226/Pontypridd Road | 641 | 641 | 160 | 0   | 0 | 483 |      | 1397 | 0.459 | 644 | 620 | 1.4 | 0.9 | 4.910 | A |
| D - A4226/Port Road       | 736 | 518 | 129 | 218 | 0 | 598 | 0.00 | 1135 | 0.456 | 520 | 529 | 1.4 | 0.9 | 6.002 | A |

## Base - 2038 B+D L, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 16.63              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D6 | 2038 B+D L    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 677                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 872                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 789                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 855                     | 100.000            |

### Demand overview (Pedestrians)





|                           |     |     |     |     |     |     |      |      |       |     |     |     |     |       |   |
|---------------------------|-----|-----|-----|-----|-----|-----|------|------|-------|-----|-----|-----|-----|-------|---|
| A - A4226/Waycock Road    | 510 | 510 | 127 | 0   | 139 | 625 |      | 1122 | 0.454 | 506 | 272 | 0.0 | 0.9 | 6.028 | A |
| B - A4226/Port Road W     | 656 | 656 | 164 | 0   | 0   | 598 |      | 1299 | 0.505 | 652 | 533 | 0.0 | 1.0 | 5.596 | A |
| C - B4226/Pontypridd Road | 594 | 594 | 149 | 0   | 0   | 621 |      | 1303 | 0.456 | 591 | 629 | 0.0 | 0.8 | 5.045 | A |
| D - A4226/Port Road       | 644 | 505 | 126 | 139 | 0   | 394 | 0.00 | 1257 | 0.402 | 503 | 818 | 0.0 | 0.7 | 4.788 | A |

#### 16:30 - 16:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 609                    | 609                      | 152                     | 0                      | 165                       | 748                       |                            | 1041              | 0.584 | 606                 | 325                             | 0.9               | 1.4             | 8.529     | A                            |
| B - A4226/Port Road W     | 784                    | 784                      | 196                     | 0                      | 0                         | 716                       |                            | 1220              | 0.642 | 781                 | 638                             | 1.0               | 1.8             | 8.227     | A                            |
| C - B4226/Pontypridd Road | 709                    | 709                      | 177                     | 0                      | 0                         | 743                       |                            | 1220              | 0.582 | 707                 | 754                             | 0.8               | 1.4             | 7.016     | A                            |
| D - A4226/Port Road       | 769                    | 603                      | 151                     | 165                    | 0                         | 471                       | 0.00                       | 1210              | 0.498 | 602                 | 979                             | 0.7               | 1.0             | 5.941     | A                            |

#### 16:45 - 17:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 745                    | 745                      | 186                     | 0                      | 203                       | 913                       |                            | 934               | 0.798 | 736                 | 395                             | 1.4               | 3.7             | 18.113    | C                            |
| B - A4226/Port Road W     | 960                    | 960                      | 240                     | 0                      | 0                         | 871                       |                            | 1117              | 0.860 | 946                 | 778                             | 1.8               | 5.3             | 19.814    | C                            |
| C - B4226/Pontypridd Road | 869                    | 869                      | 217                     | 0                      | 0                         | 901                       |                            | 1112              | 0.781 | 861                 | 916                             | 1.4               | 3.3             | 13.945    | B                            |
| D - A4226/Port Road       | 941                    | 739                      | 185                     | 203                    | 0                         | 573                       | 0.00                       | 1150              | 0.643 | 736                 | 1189                            | 1.0               | 1.8             | 8.680     | A                            |

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 745                    | 745                      | 186                     | 0                      | 203                       | 918                       |                            | 931               | 0.801 | 745                 | 399                             | 3.7               | 3.9             | 19.845    | C                            |
| B - A4226/Port Road W     | 960                    | 960                      | 240                     | 0                      | 0                         | 879                       |                            | 1112              | 0.864 | 958                 | 784                             | 5.3               | 5.8             | 23.078    | C                            |
| C - B4226/Pontypridd Road | 869                    | 869                      | 217                     | 0                      | 0                         | 912                       |                            | 1104              | 0.787 | 868                 | 925                             | 3.3               | 3.5             | 15.165    | C                            |
| D - A4226/Port Road       | 941                    | 739                      | 185                     | 203                    | 0                         | 578                       | 0.00                       | 1147              | 0.644 | 739                 | 1202                            | 1.8               | 1.8             | 8.872     | A                            |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass demand and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 609                     | 609                       | 152                      | 0                           | 165                        | 755                        |                            | 1037               | 0.587 | 618                 | 331                             | 3.9               | 1.5             | 9.108     | A                            |
| B - A4226/Port Road W     | 784                     | 784                       | 196                      | 0                           | 0                          | 727                        |                            | 1213               | 0.646 | 800                 | 646                             | 5.8               | 1.9             | 9.132     | A                            |
| C - B4226/Pontypridd Road | 709                     | 709                       | 177                      | 0                           | 0                          | 760                        |                            | 1208               | 0.587 | 718                 | 767                             | 3.5               | 1.5             | 7.483     | A                            |
| D - A4226/Port Road       | 769                     | 603                       | 151                      | 165                         | 0                          | 479                        | 0.00                       | 1206               | 0.500 | 606                 | 999                             | 1.8               | 1.0             | 6.074     | A                            |

17:30 - 17:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass demand and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 510                     | 510                       | 127                      | 0                           | 139                        | 630                        |                            | 1119               | 0.456 | 512                 | 274                             | 1.5               | 0.9             | 6.180     | A                            |
| B - A4226/Port Road W     | 656                     | 656                       | 164                      | 0                           | 0                          | 604                        |                            | 1295               | 0.507 | 660                 | 538                             | 1.9               | 1.1             | 5.764     | A                            |
| C - B4226/Pontypridd Road | 594                     | 594                       | 149                      | 0                           | 0                          | 628                        |                            | 1298               | 0.458 | 596                 | 636                             | 1.5               | 0.9             | 5.161     | A                            |
| D - A4226/Port Road       | 644                     | 505                       | 126                      | 139                         | 0                          | 398                        | 0.00                       | 1254               | 0.403 | 507                 | 827                             | 1.0               | 0.7             | 4.852     | A                            |

## Base - 2038 B+D M, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 14.96              | B            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D7 | 2038 B+D M    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 545                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 771                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 855                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1002                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 176                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 306                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 227                 |
|      | D - A4226/Port Road       | 297                    | 418                   | 287                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.75    | 18.44         | 3.0             | C       | 500                     | 750                           |
| B - A4226/Port Road W     | 0.72    | 11.02         | 2.5             | B       | 707                     | 1061                          |
| C - B4226/Pontypridd Road | 0.76    | 12.20         | 3.1             | B       | 785                     | 1177                          |
| D - A4226/Port Road       | 0.80    | 18.47         | 3.8             | C       | 919                     | 970                           |

## Main Results for each time segment

### 07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 410                    | 410                      | 103                     | 0                       | 224                       | 761                       |                            | 1033              | 0.397 | 408                 | 359                             | 0.0               | 0.7             | 5.915     | A                            |
| B - A4226/Port Road W     | 580                    | 580                      | 145                     | 0                       | 0                         | 524                       |                            | 1348              | 0.431 | 577                 | 644                             | 0.0               | 0.8             | 4.780     | A                            |
| C - B4226/Pontypridd Road | 644                    | 644                      | 161                     | 0                       | 0                         | 483                       |                            | 1397              | 0.461 | 640                 | 619                             | 0.0               | 0.9             | 4.852     | A                            |
| D - A4226/Port Road       | 754                    | 531                      | 133                     | 224                     | 0                         | 592                       | 0.00                       | 1138              | 0.466 | 527                 | 531                             | 0.0               | 0.9             | 5.984     | A                            |

### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 490                    | 490                      | 122                     | 0                       | 267                       | 911                       |                            | 935               | 0.524 | 488                 | 429                             | 0.7               | 1.1             | 8.282     | A                            |
| B - A4226/Port Road W     | 693                    | 693                      | 173                     | 0                       | 0                         | 628                       |                            | 1279              | 0.542 | 691                 | 771                             | 0.8               | 1.2             | 6.275     | A                            |
| C - B4226/Pontypridd Road | 769                    | 769                      | 192                     | 0                       | 0                         | 578                       |                            | 1332              | 0.577 | 767                 | 741                             | 0.9               | 1.4             | 6.501     | A                            |
| D - A4226/Port Road       | 901                    | 634                      | 158                     | 267                     | 0                         | 709                       | 0.00                       | 1069              | 0.593 | 631                 | 636                             | 0.9               | 1.5             | 8.366     | A                            |

### 07:45 - 08:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 600                    | 600                      | 150                     | 0                       | 327                       | 1109                      |                            | 806               | 0.744 | 593                 | 524                             | 1.1               | 2.8             | 16.943    | C                            |
| B - A4226/Port Road W     | 849                    | 849                      | 212                     | 0                       | 0                         | 763                       |                            | 1189              | 0.714 | 844                 | 939                             | 1.2               | 2.5             | 10.566    | B                            |
| C - B4226/Pontypridd Road | 941                    | 941                      | 235                     | 0                       | 0                         | 705                       |                            | 1246              | 0.756 | 935                 | 902                             | 1.4               | 3.0             | 11.628    | B                            |

|                     |      |     |     |     |   |     |      |     |       |     |     |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|-----|-------|-----|-----|-----|-----|--------|---|
| D - A4226/Port Road | 1103 | 776 | 194 | 327 | 0 | 865 | 0.00 | 976 | 0.795 | 767 | 775 | 1.5 | 3.6 | 16.964 | C |
|---------------------|------|-----|-----|-----|---|-----|------|-----|-------|-----|-----|-----|-----|--------|---|

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 600                    | 600                      | 150                        | 0                       | 327                       | 1119                      |                            | 799               | 0.751 | 599                 | 527                             | 2.8               | 3.0             | 18.436    | C                            |
| B - A4226/Port Road W     | 849                    | 849                      | 212                        | 0                       | 0                         | 771                       |                            | 1184              | 0.717 | 849                 | 947                             | 2.5               | 2.5             | 11.016    | B                            |
| C - B4226/Pontypridd Road | 941                    | 941                      | 235                        | 0                       | 0                         | 710                       |                            | 1243              | 0.758 | 941                 | 910                             | 3.0               | 3.1             | 12.202    | B                            |
| D - A4226/Port Road       | 1103                   | 776                      | 194                        | 327                     | 0                         | 871                       | 0.00                       | 973               | 0.798 | 775                 | 780                             | 3.6               | 3.8             | 18.465    | C                            |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 490                    | 490                      | 122                        | 0                       | 267                       | 926                       |                            | 925               | 0.529 | 497                 | 434                             | 3.0               | 1.2             | 8.812     | A                            |
| B - A4226/Port Road W     | 693                    | 693                      | 173                        | 0                       | 0                         | 639                       |                            | 1271              | 0.545 | 698                 | 784                             | 2.5               | 1.3             | 6.510     | A                            |
| C - B4226/Pontypridd Road | 769                    | 769                      | 192                        | 0                       | 0                         | 585                       |                            | 1328              | 0.579 | 775                 | 752                             | 3.1               | 1.4             | 6.765     | A                            |
| D - A4226/Port Road       | 901                    | 634                      | 158                        | 267                     | 0                         | 717                       | 0.00                       | 1064              | 0.596 | 643                 | 644                             | 3.8               | 1.5             | 8.915     | A                            |

#### 08:30 - 08:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 410                    | 410                      | 103                        | 0                       | 224                       | 769                       |                            | 1028              | 0.399 | 412                 | 362                             | 1.2               | 0.7             | 6.055     | A                            |
| B - A4226/Port Road W     | 580                    | 580                      | 145                        | 0                       | 0                         | 530                       |                            | 1344              | 0.432 | 582                 | 651                             | 1.3               | 0.8             | 4.866     | A                            |
| C - B4226/Pontypridd Road | 644                    | 644                      | 161                        | 0                       | 0                         | 487                       |                            | 1394              | 0.462 | 646                 | 625                             | 1.4               | 0.9             | 4.945     | A                            |
| D - A4226/Port Road       | 754                    | 531                      | 133                        | 224                     | 0                         | 598                       | 0.00                       | 1135              | 0.468 | 533                 | 536                             | 1.5               | 0.9             | 6.135     | A                            |

## Base - 2038 B+D M, PM

### Data Errors and Warnings

| Severity | Area     | Item                     | Description                                                                                                      |
|----------|----------|--------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry | A - A4226/Waycock Road - | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

|         |                     |                                           |                                                                                                                  |
|---------|---------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------|
|         |                     | Roundabout Geometry                       |                                                                                                                  |
| Warning | Geometry            | D - A4226/Port Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 17.84              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D8 | 2038 B+D M    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 681                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 881                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 796                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 867                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

## Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 209                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 504                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 399                 |
|      | D - A4226/Port Road       | 187                    | 416                   | 263                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.81    | 21.01         | 4.2             | C       | 625                     | 937                           |
| B - A4226/Port Road W     | 0.88    | 25.37         | 6.5             | D       | 808                     | 1213                          |
| C - B4226/Pontypridd Road | 0.80    | 16.31         | 3.8             | C       | 730                     | 1096                          |
| D - A4226/Port Road       | 0.65    | 9.09          | 1.9             | A       | 796                     | 936                           |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 513                    | 513                      | 128                        | 0                      | 141                       | 631                       |                            | 1118              | 0.459 | 509                 | 272                             | 0.0               | 0.9             | 6.102     | A                            |
| B - A4226/Port Road W     | 663                    | 663                      | 166                        | 0                      | 0                         | 604                       |                            | 1295              | 0.512 | 659                 | 537                             | 0.0               | 1.0             | 5.687     | A                            |
| C - B4226/Pontypridd Road | 599                    | 599                      | 150                        | 0                      | 0                         | 631                       |                            | 1297              | 0.462 | 596                 | 632                             | 0.0               | 0.9             | 5.129     | A                            |
| D - A4226/Port Road       | 653                    | 512                      | 128                        | 141                    | 0                         | 394                       | 0.00                       | 1257              | 0.407 | 509                 | 833                             | 0.0               | 0.7             | 4.829     | A                            |



**16:30 - 16:45**

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 612                     | 612                       | 153                      | 0                        | 168                        | 756                        |                            | 1036               | 0.591 | 610                 | 325                             | 0.9               | 1.5             | 8.705     | A                            |
| B - A4226/Port Road W     | 792                     | 792                       | 198                      | 0                        | 0                          | 723                        |                            | 1216               | 0.652 | 789                 | 643                             | 1.0               | 1.8             | 8.466     | A                            |
| C - B4226/Pontypridd Road | 716                     | 716                       | 179                      | 0                        | 0                          | 755                        |                            | 1212               | 0.591 | 713                 | 757                             | 0.9               | 1.4             | 7.210     | A                            |
| D - A4226/Port Road       | 779                     | 611                       | 153                      | 168                      | 0                          | 471                        | 0.00                       | 1210               | 0.505 | 610                 | 997                             | 0.7               | 1.0             | 6.019     | A                            |

**16:45 - 17:00**

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 750                     | 750                       | 187                      | 0                        | 206                        | 923                        |                            | 927                | 0.809 | 740                 | 395                             | 1.5               | 3.9             | 18.984    | C                            |
| B - A4226/Port Road W     | 970                     | 970                       | 242                      | 0                        | 0                          | 879                        |                            | 1111               | 0.873 | 954                 | 784                             | 1.8               | 5.8             | 21.268    | C                            |
| C - B4226/Pontypridd Road | 876                     | 876                       | 219                      | 0                        | 0                          | 914                        |                            | 1103               | 0.794 | 868                 | 920                             | 1.4               | 3.6             | 14.804    | B                            |
| D - A4226/Port Road       | 955                     | 749                       | 187                      | 206                      | 0                          | 572                        | 0.00                       | 1150               | 0.651 | 745                 | 1209                            | 1.0               | 1.8             | 8.875     | A                            |

**17:00 - 17:15**

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 750                     | 750                       | 187                      | 0                        | 206                        | 928                        |                            | 924                | 0.811 | 749                 | 399                             | 3.9               | 4.2             | 21.014    | C                            |
| B - A4226/Port Road W     | 970                     | 970                       | 242                      | 0                        | 0                          | 888                        |                            | 1106               | 0.877 | 968                 | 789                             | 5.8               | 6.5             | 25.373    | D                            |
| C - B4226/Pontypridd Road | 876                     | 876                       | 219                      | 0                        | 0                          | 926                        |                            | 1095               | 0.800 | 875                 | 929                             | 3.6               | 3.8             | 16.308    | C                            |
| D - A4226/Port Road       | 955                     | 749                       | 187                      | 206                      | 0                          | 578                        | 0.00                       | 1147               | 0.653 | 749                 | 1223                            | 1.8               | 1.9             | 9.089     | A                            |

**17:15 - 17:30**

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 612                     | 612                       | 153                      | 0                        | 168                        | 763                        |                            | 1032               | 0.593 | 623                 | 332                             | 4.2               | 1.5             | 9.356     | A                            |
| B - A4226/Port Road W     | 792                     | 792                       | 198                      | 0                        | 0                          | 735                        |                            | 1207               | 0.656 | 810                 | 651                             | 6.5               | 2.0             | 9.546     | A                            |
| C - B4226/Pontypridd Road | 716                     | 716                       | 179                      | 0                        | 0                          | 774                        |                            | 1199               | 0.597 | 725                 | 771                             | 3.8               | 1.5             | 7.763     | A                            |

|                     |     |     |     |     |   |     |      |      |       |     |      |     |     |       |   |
|---------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|-------|---|
| D - A4226/Port Road | 779 | 611 | 153 | 168 | 0 | 480 | 0.00 | 1205 | 0.507 | 615 | 1019 | 1.9 | 1.0 | 6.167 | A |
|---------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|-------|---|

17:30 - 17:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 513                    | 513                      | 128                        | 0                      | 141                       | 637                       |                            | 1114              | 0.460 | 515                 | 275                             | 1.5               | 0.9             | 6.262     | A                            |
| B - A4226/Port Road W     | 663                    | 663                      | 166                        | 0                      | 0                         | 610                       |                            | 1291              | 0.514 | 667                 | 542                             | 2.0               | 1.1             | 5.867     | A                            |
| C - B4226/Pontypridd Road | 599                    | 599                      | 150                        | 0                      | 0                         | 638                       |                            | 1291              | 0.464 | 602                 | 639                             | 1.5               | 0.9             | 5.254     | A                            |
| D - A4226/Port Road       | 653                    | 512                      | 128                        | 141                    | 0                         | 398                       | 0.00                       | 1254              | 0.408 | 513                 | 842                             | 1.0               | 0.7             | 4.900     | A                            |

## Base - 2038 B+D H, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 15.68              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D9 | 2038 B+D H    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

|                              |                               |                    |                           |
|------------------------------|-------------------------------|--------------------|---------------------------|
| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|

|   |   |                |      |
|---|---|----------------|------|
| ✓ | ✓ | HV Percentages | 2.00 |
|---|---|----------------|------|

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 546                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 773                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 857                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1021                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 177                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 308                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 229                 |
|      | D - A4226/Port Road       | 303                    | 426                   | 292                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.76    | 19.40         | 3.1             | C       | 501                     | 752                           |
| B - A4226/Port Road W     | 0.72    | 11.23         | 2.6             | B       | 709                     | 1064                          |
| C - B4226/Pontypridd Road | 0.76    | 12.38         | 3.2             | B       | 786                     | 1180                          |
| D - A4226/Port Road       | 0.81    | 19.84         | 4.2             | C       | 937                     | 988                           |

## Main Results for each time segment

### 07:15 - 07:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 411                     | 411                       | 103                      | 0                        | 228                        | 771                        |                            | 1027               | 0.400 | 408                 | 359                             | 0.0               | 0.7             | 5.981     | A                            |
| B - A4226/Port Road W     | 582                     | 582                       | 145                      | 0                        | 0                          | 529                        |                            | 1345               | 0.433 | 579                 | 650                             | 0.0               | 0.8             | 4.808     | A                            |
| C - B4226/Pontypridd Road | 645                     | 645                       | 161                      | 0                        | 0                          | 485                        |                            | 1396               | 0.462 | 642                 | 623                             | 0.0               | 0.9             | 4.872     | A                            |
| D - A4226/Port Road       | 769                     | 541                       | 135                      | 228                      | 0                          | 592                        | 0.00                       | 1138               | 0.475 | 537                 | 534                             | 0.0               | 0.9             | 6.080     | A                            |

### 07:30 - 07:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 491                     | 491                       | 123                      | 0                        | 272                        | 923                        |                            | 927                | 0.529 | 489                 | 429                             | 0.7               | 1.1             | 8.439     | A                            |
| B - A4226/Port Road W     | 695                     | 695                       | 174                      | 0                        | 0                          | 633                        |                            | 1275               | 0.545 | 693                 | 779                             | 0.8               | 1.2             | 6.333     | A                            |
| C - B4226/Pontypridd Road | 771                     | 771                       | 193                      | 0                        | 0                          | 581                        |                            | 1331               | 0.579 | 768                 | 746                             | 0.9               | 1.4             | 6.544     | A                            |
| D - A4226/Port Road       | 918                     | 645                       | 161                      | 272                      | 0                          | 709                        | 0.00                       | 1069               | 0.604 | 643                 | 640                             | 0.9               | 1.5             | 8.590     | A                            |

### 07:45 - 08:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 601                     | 601                       | 150                      | 0                        | 334                        | 1122                       |                            | 797                | 0.754 | 594                 | 524                             | 1.1               | 2.9             | 17.671    | C                            |
| B - A4226/Port Road W     | 851                     | 851                       | 213                      | 0                        | 0                          | 769                        |                            | 1185               | 0.718 | 846                 | 947                             | 1.2               | 2.5             | 10.746    | B                            |
| C - B4226/Pontypridd Road | 944                     | 944                       | 236                      | 0                        | 0                          | 708                        |                            | 1244               | 0.759 | 937                 | 907                             | 1.4               | 3.1             | 11.779    | B                            |
| D - A4226/Port Road       | 1124                    | 791                       | 198                      | 334                      | 0                          | 865                        | 0.00                       | 976                | 0.810 | 781                 | 780                             | 1.5               | 3.9             | 18.003    | C                            |

### 08:00 - 08:15

| Arm | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|-----|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
|-----|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|

|                           |      |     |     |     |     |      |      |      |       |     |     |     |     |        |   |
|---------------------------|------|-----|-----|-----|-----|------|------|------|-------|-----|-----|-----|-----|--------|---|
| A - A4226/Waycock Road    | 601  | 601 | 150 | 0   | 334 | 1133 |      | 790  | 0.761 | 600 | 527 | 2.9 | 3.1 | 19.401 | C |
| B - A4226/Port Road W     | 851  | 851 | 213 | 0   | 0   | 778  |      | 1179 | 0.722 | 851 | 956 | 2.5 | 2.6 | 11.231 | B |
| C - B4226/Pontypridd Road | 944  | 944 | 236 | 0   | 0   | 713  |      | 1240 | 0.761 | 943 | 915 | 3.1 | 3.2 | 12.382 | B |
| D - A4226/Port Road       | 1124 | 791 | 198 | 334 | 0   | 871  | 0.00 | 973  | 0.813 | 790 | 786 | 3.9 | 4.2 | 19.835 | C |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 491                    | 491                      | 123                     | 0                       | 272                       | 939                       |                            | 917               | 0.535 | 498                 | 434                             | 3.1               | 1.2             | 9.032     | A                            |
| B - A4226/Port Road W     | 695                    | 695                      | 174                     | 0                       | 0                         | 646                       |                            | 1267              | 0.548 | 700                 | 792                             | 2.6               | 1.3             | 6.585     | A                            |
| C - B4226/Pontypridd Road | 771                    | 771                      | 193                     | 0                       | 0                         | 588                       |                            | 1325              | 0.581 | 777                 | 758                             | 3.2               | 1.4             | 6.817     | A                            |
| D - A4226/Port Road       | 918                    | 645                      | 161                     | 272                     | 0                         | 717                       | 0.00                       | 1064              | 0.607 | 656                 | 648                             | 4.2               | 1.6             | 9.225     | A                            |

#### 08:30 - 08:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 411                    | 411                      | 103                     | 0                       | 228                       | 779                       |                            | 1021              | 0.402 | 413                 | 362                             | 1.2               | 0.7             | 6.128     | A                            |
| B - A4226/Port Road W     | 582                    | 582                      | 145                     | 0                       | 0                         | 535                       |                            | 1341              | 0.434 | 584                 | 657                             | 1.3               | 0.8             | 4.899     | A                            |
| C - B4226/Pontypridd Road | 645                    | 645                      | 161                     | 0                       | 0                         | 490                       |                            | 1393              | 0.463 | 647                 | 629                             | 1.4               | 0.9             | 4.968     | A                            |
| D - A4226/Port Road       | 769                    | 541                      | 135                     | 228                     | 0                         | 598                       | 0.00                       | 1135              | 0.476 | 543                 | 540                             | 1.6               | 0.9             | 6.242     | A                            |

## Base - 2038 B+D H, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 18.69              | C            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D10 | 2038 B+D H    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 683                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 887                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 802                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 874                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 211                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 510                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 405                 |
|      | D - A4226/Port Road       | 188                    | 420                   | 265                       | 1                   |

## Vehicle Mix

## Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.82    | 21.78         | 4.3             | C       | 627                     | 940                           |
| B - A4226/Port Road W     | 0.89    | 26.96         | 6.9             | D       | 814                     | 1221                          |
| C - B4226/Pontypridd Road | 0.81    | 17.24         | 4.1             | C       | 736                     | 1104                          |
| D - A4226/Port Road       | 0.66    | 9.24          | 1.9             | A       | 802                     | 944                           |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 514                    | 514                      | 129                        | 0                      | 142                       | 636                       |                            | 1115              | 0.461 | 511                 | 272                             | 0.0               | 0.9             | 6.145     | A                            |
| B - A4226/Port Road W     | 668                    | 668                      | 167                        | 0                      | 0                         | 607                       |                            | 1293              | 0.516 | 664                 | 540                             | 0.0               | 1.1             | 5.742     | A                            |
| C - B4226/Pontypridd Road | 604                    | 604                      | 151                        | 0                      | 0                         | 637                       |                            | 1293              | 0.467 | 600                 | 634                             | 0.0               | 0.9             | 5.191     | A                            |
| D - A4226/Port Road       | 658                    | 516                      | 129                        | 142                    | 0                         | 394                       | 0.00                       | 1257              | 0.411 | 514                 | 843                             | 0.0               | 0.7             | 4.858     | A                            |

#### 16:30 - 16:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 614                    | 614                      | 154                        | 0                      | 169                       | 761                       |                            | 1033              | 0.595 | 612                 | 325                             | 0.9               | 1.5             | 8.813     | A                            |
| B - A4226/Port Road W     | 797                    | 797                      | 199                        | 0                      | 0                         | 727                       |                            | 1213              | 0.657 | 794                 | 646                             | 1.1               | 1.9             | 8.617     | A                            |
| C - B4226/Pontypridd Road | 721                    | 721                      | 180                        | 0                      | 0                         | 762                       |                            | 1207              | 0.597 | 719                 | 759                             | 0.9               | 1.5             | 7.359     | A                            |

|                     |     |     |     |     |   |     |      |      |       |     |      |     |     |       |   |
|---------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|-------|---|
| D - A4226/Port Road | 786 | 617 | 154 | 169 | 0 | 471 | 0.00 | 1210 | 0.510 | 615 | 1009 | 0.7 | 1.0 | 6.073 | A |
|---------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|-------|---|

#### 16:45 - 17:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 752                    | 752                      | 188                        | 0                       | 207                       | 929                       |                            | 923               | 0.815 | 742                 | 395                             | 1.5               | 4.1             | 19.545    | C                            |
| B - A4226/Port Road W     | 977                    | 977                      | 244                        | 0                       | 0                         | 883                       |                            | 1109              | 0.881 | 959                 | 788                             | 1.9               | 6.2             | 22.228    | C                            |
| C - B4226/Pontypridd Road | 883                    | 883                      | 221                        | 0                       | 0                         | 921                       |                            | 1098              | 0.804 | 874                 | 921                             | 1.5               | 3.8             | 15.487    | C                            |
| D - A4226/Port Road       | 962                    | 755                      | 189                        | 207                     | 0                         | 572                       | 0.00                       | 1150              | 0.657 | 752                 | 1223                            | 1.0               | 1.9             | 9.013     | A                            |

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 752                    | 752                      | 188                        | 0                       | 207                       | 934                       |                            | 920               | 0.817 | 751                 | 399                             | 4.1               | 4.3             | 21.777    | C                            |
| B - A4226/Port Road W     | 977                    | 977                      | 244                        | 0                       | 0                         | 892                       |                            | 1103              | 0.885 | 974                 | 793                             | 6.2               | 6.9             | 26.956    | D                            |
| C - B4226/Pontypridd Road | 883                    | 883                      | 221                        | 0                       | 0                         | 935                       |                            | 1089              | 0.811 | 882                 | 931                             | 3.8               | 4.1             | 17.238    | C                            |
| D - A4226/Port Road       | 962                    | 755                      | 189                        | 207                     | 0                         | 578                       | 0.00                       | 1147              | 0.659 | 755                 | 1238                            | 1.9               | 1.9             | 9.239     | A                            |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 614                    | 614                      | 154                        | 0                       | 169                       | 769                       |                            | 1028              | 0.597 | 625                 | 332                             | 4.3               | 1.6             | 9.509     | A                            |
| B - A4226/Port Road W     | 797                    | 797                      | 199                        | 0                       | 0                         | 739                       |                            | 1205              | 0.662 | 817                 | 655                             | 6.9               | 2.0             | 9.825     | A                            |
| C - B4226/Pontypridd Road | 721                    | 721                      | 180                        | 0                       | 0                         | 782                       |                            | 1193              | 0.604 | 731                 | 774                             | 4.1               | 1.6             | 7.979     | A                            |
| D - A4226/Port Road       | 786                    | 617                      | 154                        | 169                     | 0                         | 481                       | 0.00                       | 1205              | 0.512 | 620                 | 1033                            | 1.9               | 1.1             | 6.228     | A                            |

#### 17:30 - 17:45

| Arm                    | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|------------------------|------------------------|--------------------------|----------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road | 514                    | 514                      | 129                        | 0                       | 142                       | 641                       |                            | 1111              | 0.463 | 517                 | 275                             | 1.6               | 0.9             | 6.309     | A                            |



|                           |     |     |     |     |   |     |      |      |       |     |     |     |     |       |   |
|---------------------------|-----|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|-------|---|
| B - A4226/Port Road W     | 668 | 668 | 167 | 0   | 0 | 613 |      | 1289 | 0.518 | 672 | 545 | 2.0 | 1.1 | 5.932 | A |
| C - B4226/Pontypridd Road | 604 | 604 | 151 | 0   | 0 | 644 |      | 1287 | 0.469 | 606 | 641 | 1.6 | 0.9 | 5.325 | A |
| D - A4226/Port Road       | 658 | 516 | 129 | 142 | 0 | 398 | 0.00 | 1254 | 0.412 | 518 | 853 | 1.1 | 0.7 | 4.929 | A |

## Base - 2038 B+D+C L, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 28.32              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D11 | 2038 B+D+C L  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 606                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 881                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 928                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1125                    | 100.000            |

### Demand overview (Pedestrians)



|                           |     |     |     |     |     |     |      |      |       |     |     |     |     |       |   |
|---------------------------|-----|-----|-----|-----|-----|-----|------|------|-------|-----|-----|-----|-----|-------|---|
| A - A4226/Waycock Road    | 456 | 456 | 114 | 0   | 279 | 798 |      | 1009 | 0.452 | 453 | 358 | 0.0 | 0.8 | 6.676 | A |
| B - A4226/Port Road W     | 663 | 663 | 166 | 0   | 0   | 582 |      | 1309 | 0.507 | 659 | 668 | 0.0 | 1.0 | 5.667 | A |
| C - B4226/Pontypridd Road | 699 | 699 | 175 | 0   | 0   | 610 |      | 1310 | 0.533 | 694 | 631 | 0.0 | 1.2 | 5.964 | A |
| D - A4226/Port Road       | 847 | 568 | 142 | 279 | 0   | 592 | 0.00 | 1139 | 0.499 | 564 | 713 | 0.0 | 1.0 | 6.360 | A |

#### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 545                    | 545                      | 136                     | 0                      | 333                       | 955                       |                            | 906               | 0.601 | 542                 | 429                             | 0.8               | 1.5             | 10.177    | B                            |
| B - A4226/Port Road W     | 792                    | 792                      | 198                     | 0                      | 0                         | 697                       |                            | 1233              | 0.642 | 789                 | 800                             | 1.0               | 1.8             | 8.296     | A                            |
| C - B4226/Pontypridd Road | 834                    | 834                      | 209                     | 0                      | 0                         | 731                       |                            | 1228              | 0.679 | 831                 | 756                             | 1.2               | 2.1             | 9.218     | A                            |
| D - A4226/Port Road       | 1011                   | 679                      | 170                     | 333                    | 0                         | 708                       | 0.00                       | 1070              | 0.635 | 676                 | 853                             | 1.0               | 1.7             | 9.274     | A                            |

#### 07:45 - 08:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 667                    | 667                      | 167                     | 0                      | 407                       | 1155                      |                            | 776               | 0.860 | 652                 | 517                             | 1.5               | 5.2             | 27.514    | D                            |
| B - A4226/Port Road W     | 970                    | 970                      | 242                     | 0                      | 0                         | 841                       |                            | 1137              | 0.853 | 956                 | 966                             | 1.8               | 5.2             | 19.233    | C                            |
| C - B4226/Pontypridd Road | 1022                   | 1022                     | 255                     | 0                      | 0                         | 884                       |                            | 1124              | 0.909 | 999                 | 914                             | 2.1               | 7.7             | 26.074    | D                            |
| D - A4226/Port Road       | 1239                   | 831                      | 208                     | 407                    | 0                         | 853                       | 0.00                       | 983               | 0.846 | 819                 | 1030                            | 1.7               | 4.9             | 20.946    | C                            |

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 667                    | 667                      | 167                     | 0                      | 407                       | 1171                      |                            | 765               | 0.872 | 664                 | 525                             | 5.2               | 6.0             | 34.769    | D                            |
| B - A4226/Port Road W     | 970                    | 970                      | 242                     | 0                      | 0                         | 854                       |                            | 1128              | 0.860 | 968                 | 981                             | 5.2               | 5.8             | 22.533    | C                            |
| C - B4226/Pontypridd Road | 1022                   | 1022                     | 255                     | 0                      | 0                         | 896                       |                            | 1116              | 0.916 | 1016                | 927                             | 7.7               | 9.1             | 34.157    | D                            |
| D - A4226/Port Road       | 1239                   | 831                      | 208                     | 407                    | 0                         | 867                       | 0.00                       | 975               | 0.853 | 829                 | 1045                            | 4.9               | 5.4             | 24.553    | C                            |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/h r) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|-----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 545                     | 545                       | 136                      | 0                        | 333                        | 982                        |                             | 889                | 0.613 | 562                 | 443                             | 6.0                | 1.7              | 12.002    | B                            |
| B - A4226/Port Road W     | 792                     | 792                       | 198                      | 0                        | 0                          | 720                        |                             | 1218               | 0.650 | 807                 | 825                             | 5.8                | 2.0              | 9.343     | A                            |
| C - B4226/Pontypridd Road | 834                     | 834                       | 209                      | 0                        | 0                          | 750                        |                             | 1215               | 0.687 | 861                 | 776                             | 9.1                | 2.3              | 11.221    | B                            |
| D - A4226/Port Road       | 1011                    | 679                       | 170                      | 333                      | 0                          | 732                        | 0.00                        | 1055               | 0.643 | 693                 | 879                             | 5.4                | 1.9              | 10.511    | B                            |

08:30 - 08:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/h r) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|-----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 456                     | 456                       | 114                      | 0                        | 279                        | 808                        |                             | 1002               | 0.455 | 459                 | 363                             | 1.7                | 0.9              | 6.924     | A                            |
| B - A4226/Port Road W     | 663                     | 663                       | 166                      | 0                        | 0                          | 590                        |                             | 1304               | 0.509 | 667                 | 677                             | 2.0                | 1.1              | 5.854     | A                            |
| C - B4226/Pontypridd Road | 699                     | 699                       | 175                      | 0                        | 0                          | 618                        |                             | 1305               | 0.535 | 703                 | 639                             | 2.3                | 1.2              | 6.198     | A                            |
| D - A4226/Port Road       | 847                     | 568                       | 142                      | 279                      | 0                          | 599                        | 0.00                        | 1134               | 0.501 | 572                 | 722                             | 1.9                | 1.0              | 6.581     | A                            |

# Base - 2038 B+D+C L, PM

## Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 35.08              | E            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D12 | 2038 B+D+C L  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 750                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 909                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 809                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 984                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 278                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 532                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 412                 |
|      | D - A4226/Port Road       | 229                    | 462                   | 292                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.95    | 55.47         | 12.0            | F       | 688                     | 1032                          |
| B - A4226/Port Road W     | 0.96    | 53.30         | 14.2            | F       | 834                     | 1251                          |
| C - B4226/Pontypridd Road | 0.86    | 24.53         | 5.7             | C       | 742                     | 1114                          |
| D - A4226/Port Road       | 0.72    | 11.39         | 2.6             | B       | 903                     | 1039                          |

## Main Results for each time segment

### 16:15 - 16:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 565                    | 565                      | 141                     | 0                       | 172                       | 687                       |                            | 1081              | 0.522 | 560                 | 272                             | 0.0               | 1.1             | 7.144     | A                            |
| B - A4226/Port Road W     | 684                    | 684                      | 171                     | 0                       | 0                         | 676                       |                            | 1247              | 0.549 | 679                 | 571                             | 0.0               | 1.2             | 6.366     | A                            |
| C - B4226/Pontypridd Road | 609                    | 609                      | 152                     | 0                       | 0                         | 703                       |                            | 1248              | 0.488 | 605                 | 653                             | 0.0               | 0.9             | 5.590     | A                            |
| D - A4226/Port Road       | 741                    | 568                      | 142                     | 172                     | 0                         | 393                       | 0.00                       | 1257              | 0.452 | 565                 | 914                             | 0.0               | 0.8             | 5.221     | A                            |

### 16:30 - 16:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 674                    | 674                      | 169                     | 0                       | 206                       | 823                       |                            | 993               | 0.679 | 670                 | 325                             | 1.1               | 2.1             | 11.496    | B                            |
| B - A4226/Port Road W     | 817                    | 817                      | 204                     | 0                       | 0                         | 810                       |                            | 1158              | 0.706 | 813                 | 684                             | 1.2               | 2.3             | 10.409    | B                            |
| C - B4226/Pontypridd Road | 727                    | 727                      | 182                     | 0                       | 0                         | 840                       |                            | 1153              | 0.631 | 724                 | 782                             | 0.9               | 1.7             | 8.357     | A                            |
| D - A4226/Port Road       | 885                    | 679                      | 170                     | 206                     | 0                         | 471                       | 0.00                       | 1211              | 0.561 | 677                 | 1094                            | 0.8               | 1.3             | 6.762     | A                            |

### 16:45 - 17:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 826                    | 826                      | 206                     | 0                       | 252                       | 1003                      |                            | 875               | 0.944 | 796                 | 391                             | 2.1               | 9.5             | 38.170    | E                            |
| B - A4226/Port Road W     | 1001                   | 1001                     | 250                     | 0                       | 0                         | 970                       |                            | 1051              | 0.952 | 968                 | 829                             | 2.3               | 10.6            | 34.815    | D                            |
| C - B4226/Pontypridd Road | 891                    | 891                      | 223                     | 0                       | 0                         | 1000                      |                            | 1045              | 0.853 | 877                 | 938                             | 1.7               | 5.0             | 20.145    | C                            |

|                     |      |     |     |     |   |     |      |      |       |     |      |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|
| D - A4226/Port Road | 1083 | 831 | 208 | 252 | 0 | 568 | 0.00 | 1153 | 0.721 | 826 | 1309 | 1.3 | 2.5 | 10.917 | B |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 826                    | 826                      | 206                        | 0                      | 252                       | 1010                      |                            | 871               | 0.948 | 816                 | 397                             | 9.5               | 12.0            | 55.467    | F                            |
| B - A4226/Port Road W     | 1001                   | 1001                     | 250                        | 0                      | 0                         | 988                       |                            | 1039              | 0.963 | 987                 | 837                             | 10.6              | 14.2            | 53.299    | F                            |
| C - B4226/Pontypridd Road | 891                    | 891                      | 223                        | 0                      | 0                         | 1021                      |                            | 1030              | 0.865 | 888                 | 954                             | 5.0               | 5.7             | 24.534    | C                            |
| D - A4226/Port Road       | 1083                   | 831                      | 208                        | 252                    | 0                         | 576                       | 0.00                       | 1148              | 0.724 | 831                 | 1333                            | 2.5               | 2.6             | 11.389    | B                            |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 674                    | 674                      | 169                        | 0                      | 206                       | 834                       |                            | 986               | 0.684 | 713                 | 337                             | 12.0              | 2.4             | 15.553    | C                            |
| B - A4226/Port Road W     | 817                    | 817                      | 204                        | 0                      | 0                         | 847                       |                            | 1133              | 0.721 | 863                 | 699                             | 14.2              | 2.7             | 15.576    | C                            |
| C - B4226/Pontypridd Road | 727                    | 727                      | 182                        | 0                      | 0                         | 893                       |                            | 1118              | 0.651 | 743                 | 817                             | 5.7               | 1.9             | 9.990     | A                            |
| D - A4226/Port Road       | 885                    | 679                      | 170                        | 206                    | 0                         | 487                       | 0.00                       | 1201              | 0.565 | 684                 | 1148                            | 2.6               | 1.3             | 7.067     | A                            |

#### 17:30 - 17:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 565                    | 565                      | 141                        | 0                      | 172                       | 694                       |                            | 1077              | 0.524 | 569                 | 275                             | 2.4               | 1.2             | 7.462     | A                            |
| B - A4226/Port Road W     | 684                    | 684                      | 171                        | 0                      | 0                         | 686                       |                            | 1240              | 0.552 | 690                 | 577                             | 2.7               | 1.3             | 6.689     | A                            |
| C - B4226/Pontypridd Road | 609                    | 609                      | 152                        | 0                      | 0                         | 714                       |                            | 1240              | 0.491 | 613                 | 662                             | 1.9               | 1.0             | 5.792     | A                            |
| D - A4226/Port Road       | 741                    | 568                      | 142                        | 172                    | 0                         | 399                       | 0.00                       | 1254              | 0.453 | 570                 | 928                             | 1.3               | 0.8             | 5.315     | A                            |

## Base - 2038 B+D+C M, AM

### Data Errors and Warnings

| Severity | Area     | Item                     | Description                                                                                                      |
|----------|----------|--------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry | A - A4226/Waycock Road - | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

|         |                     |                                           |                                                                                                                  |
|---------|---------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------|
|         |                     | Roundabout Geometry                       |                                                                                                                  |
| Warning | Geometry            | D - A4226/Port Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 30.67              | D            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D13 | 2038 B+D+C M  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 608                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 884                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 930                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1150                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data



## Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 239                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 419                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 302                 |
|      | D - A4226/Port Road       | 378                    | 461                   | 311                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.89    | 38.99         | 6.8             | E       | 558                     | 837                           |
| B - A4226/Port Road W     | 0.87    | 23.74         | 6.1             | C       | 811                     | 1217                          |
| C - B4226/Pontypridd Road | 0.92    | 35.58         | 9.5             | E       | 853                     | 1280                          |
| D - A4226/Port Road       | 0.87    | 27.63         | 6.1             | D       | 1055                    | 1063                          |

### Main Results for each time segment

07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 458                    | 458                      | 114                        | 0                      | 285                       | 810                       |                            | 1001              | 0.457 | 454                 | 358                             | 0.0               | 0.9             | 6.794     | A                            |
| B - A4226/Port Road W     | 666                    | 666                      | 166                        | 0                      | 0                         | 589                       |                            | 1305              | 0.510 | 661                 | 676                             | 0.0               | 1.1             | 5.724     | A                            |
| C - B4226/Pontypridd Road | 700                    | 700                      | 175                        | 0                      | 0                         | 614                       |                            | 1308              | 0.535 | 696                 | 636                             | 0.0               | 1.2             | 6.002     | A                            |
| D - A4226/Port Road       | 866                    | 581                      | 145                        | 285                    | 0                         | 592                       | 0.00                       | 1139              | 0.510 | 577                 | 718                             | 0.0               | 1.0             | 6.501     | A                            |

07:30 - 07:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 547                     | 547                       | 137                      | 0                        | 340                        | 970                        |                            | 897                | 0.610 | 544                 | 429                             | 0.9               | 1.6             | 10.501    | B                            |
| B - A4226/Port Road W     | 795                     | 795                       | 199                      | 0                        | 0                          | 705                        |                            | 1228               | 0.647 | 792                 | 809                             | 1.1               | 1.8             | 8.443     | A                            |
| C - B4226/Pontypridd Road | 836                     | 836                       | 209                      | 0                        | 0                          | 735                        |                            | 1225               | 0.682 | 832                 | 762                             | 1.2               | 2.1             | 9.326     | A                            |
| D - A4226/Port Road       | 1034                    | 694                       | 174                      | 340                      | 0                          | 708                        | 0.00                       | 1070               | 0.649 | 691                 | 859                             | 1.0               | 1.8             | 9.633     | A                            |

07:45 - 08:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 669                     | 669                       | 167                      | 0                        | 416                        | 1171                       |                            | 765                | 0.875 | 653                 | 517                             | 1.6               | 5.7             | 29.751    | D                            |
| B - A4226/Port Road W     | 973                     | 973                       | 243                      | 0                        | 0                          | 849                        |                            | 1132               | 0.860 | 959                 | 975                             | 1.8               | 5.5             | 19.971    | C                            |
| C - B4226/Pontypridd Road | 1024                    | 1024                      | 256                      | 0                        | 0                          | 888                        |                            | 1121               | 0.914 | 1001                | 920                             | 2.1               | 8.0             | 26.782    | D                            |
| D - A4226/Port Road       | 1266                    | 850                       | 212                      | 416                      | 0                          | 853                        | 0.00                       | 984                | 0.864 | 835                 | 1036                            | 1.8               | 5.5             | 22.886    | C                            |

08:00 - 08:15

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 669                     | 669                       | 167                      | 0                        | 416                        | 1189                       |                            | 754                | 0.888 | 665                 | 525                             | 5.7               | 6.8             | 38.991    | E                            |
| B - A4226/Port Road W     | 973                     | 973                       | 243                      | 0                        | 0                          | 863                        |                            | 1122               | 0.867 | 971                 | 991                             | 5.5               | 6.1             | 23.741    | C                            |
| C - B4226/Pontypridd Road | 1024                    | 1024                      | 256                      | 0                        | 0                          | 901                        |                            | 1112               | 0.921 | 1018                | 933                             | 8.0               | 9.5             | 35.585    | E                            |
| D - A4226/Port Road       | 1266                    | 850                       | 212                      | 416                      | 0                          | 867                        | 0.00                       | 975                | 0.872 | 847                 | 1052                            | 5.5               | 6.1             | 27.628    | D                            |

08:15 - 08:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 547                     | 547                       | 137                      | 0                        | 340                        | 1000                       |                            | 877                | 0.623 | 567                 | 443                             | 6.8               | 1.8             | 12.762    | B                            |
| B - A4226/Port Road W     | 795                     | 795                       | 199                      | 0                        | 0                          | 731                        |                            | 1210               | 0.657 | 811                 | 836                             | 6.1               | 2.0             | 9.637     | A                            |
| C - B4226/Pontypridd Road | 836                     | 836                       | 209                      | 0                        | 0                          | 757                        |                            | 1211               | 0.691 | 864                 | 785                             | 9.5               | 2.4             | 11.520    | B                            |

|                     |      |     |     |     |   |     |      |      |       |     |     |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|--------|---|
| D - A4226/Port Road | 1034 | 694 | 174 | 340 | 0 | 733 | 0.00 | 1055 | 0.658 | 710 | 888 | 6.1 | 2.0 | 11.171 | B |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|--------|---|

08:30 - 08:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 458                     | 458                       | 114                      | 0                        | 285                        | 821                        |                            | 994                | 0.461 | 461                 | 363                             | 1.8               | 0.9             | 7.064     | A                            |
| B - A4226/Port Road W     | 666                     | 666                       | 166                      | 0                        | 0                          | 598                        |                            | 1299               | 0.512 | 669                 | 685                             | 2.0               | 1.1             | 5.923     | A                            |
| C - B4226/Pontypridd Road | 700                     | 700                       | 175                      | 0                        | 0                          | 622                        |                            | 1303               | 0.538 | 705                 | 645                             | 2.4               | 1.2             | 6.243     | A                            |
| D - A4226/Port Road       | 866                     | 581                       | 145                      | 285                      | 0                          | 599                        | 0.00                       | 1134               | 0.512 | 585                 | 727                             | 2.0               | 1.1             | 6.744     | A                            |

## Base - 2038 B+D+C M, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 39.02              | E            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D14 | 2038 B+D+C M  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

|                              |                               |                    |                           |
|------------------------------|-------------------------------|--------------------|---------------------------|
| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|

|   |   |                |      |
|---|---|----------------|------|
| ✓ | ✓ | HV Percentages | 2.00 |
|---|---|----------------|------|

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 754                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 918                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 817                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 996                     | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 282                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 541                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 420                 |
|      | D - A4226/Port Road       | 231                    | 468                   | 296                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.96    | 61.81         | 13.6            | F       | 692                     | 1038                          |
| B - A4226/Port Road W     | 0.98    | 60.47         | 16.5            | F       | 842                     | 1264                          |
| C - B4226/Pontypridd Road | 0.88    | 27.11         | 6.4             | D       | 750                     | 1125                          |
| D - A4226/Port Road       | 0.73    | 11.77         | 2.7             | B       | 914                     | 1053                          |

## Main Results for each time segment

### 16:15 - 16:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 568                     | 568                       | 142                      | 0                        | 174                        | 695                        |                            | 1076               | 0.527 | 563                 | 271                             | 0.0               | 1.1             | 7.250     | A                            |
| B - A4226/Port Road W     | 691                     | 691                       | 173                      | 0                        | 0                          | 682                        |                            | 1243               | 0.556 | 686                 | 575                             | 0.0               | 1.2             | 6.485     | A                            |
| C - B4226/Pontypridd Road | 615                     | 615                       | 154                      | 0                        | 0                          | 712                        |                            | 1241               | 0.496 | 611                 | 656                             | 0.0               | 1.0             | 5.698     | A                            |
| D - A4226/Port Road       | 750                     | 576                       | 144                      | 174                      | 0                          | 393                        | 0.00                       | 1257               | 0.458 | 573                 | 930                             | 0.0               | 0.8             | 5.269     | A                            |

### 16:30 - 16:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 678                     | 678                       | 169                      | 0                        | 208                        | 832                        |                            | 987                | 0.687 | 674                 | 325                             | 1.1               | 2.2             | 11.825    | B                            |
| B - A4226/Port Road W     | 825                     | 825                       | 206                      | 0                        | 0                          | 817                        |                            | 1153               | 0.716 | 820                 | 689                             | 1.2               | 2.4             | 10.783    | B                            |
| C - B4226/Pontypridd Road | 734                     | 734                       | 184                      | 0                        | 0                          | 852                        |                            | 1146               | 0.641 | 731                 | 785                             | 1.0               | 1.7             | 8.649     | A                            |
| D - A4226/Port Road       | 895                     | 688                       | 172                      | 208                      | 0                          | 471                        | 0.00                       | 1211               | 0.568 | 686                 | 1112                            | 0.8               | 1.3             | 6.875     | A                            |

### 16:45 - 17:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 830                     | 830                       | 208                      | 0                        | 254                        | 1013                       |                            | 868                | 0.956 | 797                 | 390                             | 2.2               | 10.5            | 41.032    | E                            |
| B - A4226/Port Road W     | 1011                    | 1011                      | 253                      | 0                        | 0                          | 976                        |                            | 1047               | 0.965 | 973                 | 834                             | 2.4               | 11.9            | 37.753    | E                            |
| C - B4226/Pontypridd Road | 900                     | 900                       | 225                      | 0                        | 0                          | 1009                       |                            | 1038               | 0.867 | 884                 | 940                             | 1.7               | 5.5             | 21.676    | C                            |
| D - A4226/Port Road       | 1097                    | 842                       | 211                      | 254                      | 0                          | 567                        | 0.00                       | 1154               | 0.730 | 837                 | 1327                            | 1.3               | 2.6             | 11.254    | B                            |

### 17:00 - 17:15

| Arm | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|-----|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
|-----|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|

|                           |      |      |     |     |     |      |      |      |       |     |      |      |      |        |   |
|---------------------------|------|------|-----|-----|-----|------|------|------|-------|-----|------|------|------|--------|---|
| A - A4226/Waycock Road    | 830  | 830  | 208 | 0   | 254 | 1021 |      | 864  | 0.961 | 818 | 396  | 10.5 | 13.6 | 61.810 | F |
| B - A4226/Port Road W     | 1011 | 1011 | 253 | 0   | 0   | 995  |      | 1034 | 0.977 | 992 | 843  | 11.9 | 16.5 | 60.474 | F |
| C - B4226/Pontypridd Road | 900  | 900  | 225 | 0   | 0   | 1031 |      | 1023 | 0.879 | 896 | 956  | 5.5  | 6.4  | 27.105 | D |
| D - A4226/Port Road       | 1097 | 842  | 211 | 254 | 0   | 575  | 0.00 | 1149 | 0.733 | 842 | 1352 | 2.6  | 2.7  | 11.773 | B |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 678                    | 678                      | 169                     | 0                      | 208                       | 843                       |                            | 979               | 0.692 | 722                 | 338                             | 13.6              | 2.5             | 16.963    | C                            |
| B - A4226/Port Road W     | 825                    | 825                      | 206                     | 0                      | 0                         | 859                       |                            | 1125              | 0.734 | 879                 | 707                             | 16.5              | 2.9             | 17.823    | C                            |
| C - B4226/Pontypridd Road | 734                    | 734                      | 184                     | 0                      | 0                         | 913                       |                            | 1104              | 0.665 | 752                 | 826                             | 6.4               | 2.1             | 10.722    | B                            |
| D - A4226/Port Road       | 895                    | 688                      | 172                     | 208                    | 0                         | 489                       | 0.00                       | 1200              | 0.573 | 693                 | 1176                            | 2.7               | 1.4             | 7.218     | A                            |

#### 17:30 - 17:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 568                    | 568                      | 142                     | 0                      | 174                       | 702                       |                            | 1072              | 0.530 | 573                 | 275                             | 2.5               | 1.2             | 7.597     | A                            |
| B - A4226/Port Road W     | 691                    | 691                      | 173                     | 0                      | 0                         | 692                       |                            | 1236              | 0.559 | 698                 | 582                             | 2.9               | 1.3             | 6.842     | A                            |
| C - B4226/Pontypridd Road | 615                    | 615                      | 154                     | 0                      | 0                         | 724                       |                            | 1233              | 0.499 | 619                 | 666                             | 2.1               | 1.0             | 5.926     | A                            |
| D - A4226/Port Road       | 750                    | 576                      | 144                     | 174                    | 0                         | 399                       | 0.00                       | 1253              | 0.460 | 578                 | 944                             | 1.4               | 0.9             | 5.379     | A                            |

## Base - 2038 B+D+C H, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

# Junction Network

## Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 32.75              | D            |

## Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

# Traffic Demand

## Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D15 | 2038 B+D+C H  | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

## Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 609                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 887                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 932                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1168                    | 100.000            |

## Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

# Origin-Destination Data

## Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 240                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 422                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 304                 |
|      | D - A4226/Port Road       | 383                    | 469                   | 316                       | 0                   |

# Vehicle Mix

## Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.90    | 42.51         | 7.4             | E       | 559                     | 838                           |
| B - A4226/Port Road W     | 0.87    | 24.74         | 6.3             | C       | 814                     | 1221                          |
| C - B4226/Pontypridd Road | 0.92    | 36.90         | 9.8             | E       | 855                     | 1283                          |
| D - A4226/Port Road       | 0.89    | 30.44         | 6.9             | D       | 1072                    | 1080                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 458                    | 458                      | 115                        | 0                      | 288                       | 820                       |                            | 995               | 0.461 | 455                 | 358                             | 0.0               | 0.9             | 6.881     | A                            |
| B - A4226/Port Road W     | 668                    | 668                      | 167                        | 0                      | 0                         | 593                       |                            | 1302              | 0.513 | 663                 | 682                             | 0.0               | 1.1             | 5.771     | A                            |
| C - B4226/Pontypridd Road | 702                    | 702                      | 175                        | 0                      | 0                         | 617                       |                            | 1306              | 0.537 | 697                 | 640                             | 0.0               | 1.2             | 6.037     | A                            |
| D - A4226/Port Road       | 879                    | 591                      | 148                        | 288                    | 0                         | 592                       | 0.00                       | 1139              | 0.519 | 587                 | 722                             | 0.0               | 1.1             | 6.611     | A                            |

#### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 547                    | 547                      | 137                        | 0                      | 344                       | 982                       |                            | 889               | 0.616 | 545                 | 429                             | 0.9               | 1.6             | 10.749    | B                            |
| B - A4226/Port Road W     | 797                    | 797                      | 199                        | 0                      | 0                         | 710                       |                            | 1224              | 0.651 | 794                 | 816                             | 1.1               | 1.9             | 8.561     | A                            |
| C - B4226/Pontypridd Road | 838                    | 838                      | 209                        | 0                      | 0                         | 738                       |                            | 1223              | 0.685 | 834                 | 766                             | 1.2               | 2.2             | 9.423     | A                            |



|                     |      |     |     |     |   |     |      |      |       |     |     |     |     |       |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|-------|---|
| D - A4226/Port Road | 1050 | 706 | 176 | 344 | 0 | 708 | 0.00 | 1070 | 0.660 | 702 | 864 | 1.1 | 1.9 | 9.926 | A |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|-------|---|

#### 07:45 - 08:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 671                    | 671                      | 168                     | 0                       | 422                       | 1184                      |                            | 757               | 0.885 | 653                 | 516                             | 1.6               | 6.1             | 31.505    | D                            |
| B - A4226/Port Road W     | 977                    | 977                      | 244                     | 0                       | 0                         | 854                       |                            | 1129              | 0.865 | 961                 | 983                             | 1.9               | 5.7             | 20.570    | C                            |
| C - B4226/Pontypridd Road | 1026                   | 1026                     | 257                     | 0                       | 0                         | 891                       |                            | 1119              | 0.917 | 1002                | 924                             | 2.2               | 8.2             | 27.432    | D                            |
| D - A4226/Port Road       | 1286                   | 864                      | 216                     | 422                     | 0                         | 852                       | 0.00                       | 984               | 0.878 | 848                 | 1041                            | 1.9               | 6.0             | 24.555    | C                            |

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 671                    | 671                      | 168                     | 0                       | 422                       | 1202                      |                            | 745               | 0.900 | 665                 | 525                             | 6.1               | 7.4             | 42.509    | E                            |
| B - A4226/Port Road W     | 977                    | 977                      | 244                     | 0                       | 0                         | 869                       |                            | 1118              | 0.873 | 974                 | 999                             | 5.7               | 6.3             | 24.744    | C                            |
| C - B4226/Pontypridd Road | 1026                   | 1026                     | 257                     | 0                       | 0                         | 904                       |                            | 1110              | 0.925 | 1020                | 938                             | 8.2               | 9.8             | 36.904    | E                            |
| D - A4226/Port Road       | 1286                   | 864                      | 216                     | 422                     | 0                         | 866                       | 0.00                       | 975               | 0.886 | 861                 | 1058                            | 6.0               | 6.9             | 30.439    | D                            |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 547                    | 547                      | 137                     | 0                       | 344                       | 1015                      |                            | 867               | 0.631 | 570                 | 444                             | 7.4               | 1.8             | 13.422    | B                            |
| B - A4226/Port Road W     | 797                    | 797                      | 199                     | 0                       | 0                         | 739                       |                            | 1205              | 0.662 | 814                 | 846                             | 6.3               | 2.1             | 9.884     | A                            |
| C - B4226/Pontypridd Road | 838                    | 838                      | 209                     | 0                       | 0                         | 762                       |                            | 1207              | 0.694 | 868                 | 792                             | 9.8               | 2.4             | 11.798    | B                            |
| D - A4226/Port Road       | 1050                   | 706                      | 176                     | 344                     | 0                         | 734                       | 0.00                       | 1054              | 0.670 | 725                 | 895                             | 6.9               | 2.1             | 11.762    | B                            |

#### 08:30 - 08:45

| Arm                    | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road | 458                    | 458                      | 115                     | 0                       | 288                       | 832                       |                            | 987               | 0.465 | 462                 | 363                             | 1.8               | 0.9             | 7.166     | A                            |

|                           |     |     |     |     |   |     |      |      |           |     |     |     |     |           |   |
|---------------------------|-----|-----|-----|-----|---|-----|------|------|-----------|-----|-----|-----|-----|-----------|---|
| B - A4226/Port Road W     | 668 | 668 | 167 | 0   | 0 | 602 |      | 1296 | 0.5<br>15 | 672 | 691 | 2.1 | 1.1 | 5.9<br>78 | A |
| C - B4226/Pontypridd Road | 702 | 702 | 175 | 0   | 0 | 625 |      | 1300 | 0.5<br>40 | 707 | 649 | 2.4 | 1.2 | 6.2<br>87 | A |
| D - A4226/Port Road       | 879 | 591 | 148 | 288 | 0 | 600 | 0.00 | 1134 | 0.5<br>21 | 595 | 732 | 2.1 | 1.1 | 6.8<br>76 | A |

## Base - 2038 B+D+C H, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 41.73              | E            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D16 | 2038 B+D+C H  | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 756                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 925                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 822                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1003                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

**Demand (PCU/hr)**

|      |                           |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | To                     |                       |                           |                     |
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 284                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 548                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 425                 |
|      | D - A4226/Port Road       | 233                    | 471                   | 298                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

| From | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.97    | 65.38         | 14.5            | F       | 694                     | 1041                          |
| B - A4226/Port Road W     | 0.99    | 65.99         | 18.4            | F       | 849                     | 1273                          |
| C - B4226/Pontypridd Road | 0.89    | 29.00         | 6.8             | D       | 754                     | 1131                          |
| D - A4226/Port Road       | 0.74    | 11.97         | 2.8             | B       | 920                     | 1060                          |

### Main Results for each time segment

**16:15 - 16:30**

| Arm | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C | Throughput (PCU/hr) | Throughput (exit side) (PCU/h) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|-----|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|------|---------------------|--------------------------------|-------------------|-----------------|-----------|------------------------------|
|-----|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|------|---------------------|--------------------------------|-------------------|-----------------|-----------|------------------------------|

|                           |     |     |     |     |     |     |      |      |       |     |     |     |     |       |   |
|---------------------------|-----|-----|-----|-----|-----|-----|------|------|-------|-----|-----|-----|-----|-------|---|
| A - A4226/Waycock Road    | 569 | 569 | 142 | 0   | 175 | 698 |      | 1074 | 0.530 | 565 | 271 | 0.0 | 1.2 | 7.305 | A |
| B - A4226/Port Road W     | 696 | 696 | 174 | 0   | 0   | 685 |      | 1241 | 0.561 | 691 | 577 | 0.0 | 1.3 | 6.566 | A |
| C - B4226/Pontypridd Road | 619 | 619 | 155 | 0   | 0   | 719 |      | 1236 | 0.501 | 615 | 658 | 0.0 | 1.0 | 5.773 | A |
| D - A4226/Port Road       | 755 | 580 | 145 | 175 | 0   | 393 | 0.00 | 1257 | 0.461 | 576 | 940 | 0.0 | 0.9 | 5.296 | A |

#### 16:30 - 16:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 680                    | 680                      | 170                     | 0                      | 209                       | 836                       |                            | 984               | 0.691 | 675                 | 325                             | 1.2               | 2.2             | 11.997    | B                            |
| B - A4226/Port Road W     | 832                    | 832                      | 208                     | 0                      | 0                         | 820                       |                            | 1151              | 0.723 | 827                 | 691                             | 1.3               | 2.5             | 11.052    | B                            |
| C - B4226/Pontypridd Road | 739                    | 739                      | 185                     | 0                      | 0                         | 860                       |                            | 1140              | 0.648 | 736                 | 787                             | 1.0               | 1.8             | 8.853     | A                            |
| D - A4226/Port Road       | 902                    | 692                      | 173                     | 209                    | 0                         | 471                       | 0.00                       | 1211              | 0.572 | 690                 | 1125                            | 0.9               | 1.3             | 6.934     | A                            |

#### 16:45 - 17:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 832                    | 832                      | 208                     | 0                      | 257                       | 1018                      |                            | 865               | 0.962 | 797                 | 390                             | 2.2               | 11.0            | 42.546    | E                            |
| B - A4226/Port Road W     | 1018                   | 1018                     | 255                     | 0                      | 0                         | 979                       |                            | 1045              | 0.974 | 977                 | 837                             | 2.5               | 12.9            | 39.941    | E                            |
| C - B4226/Pontypridd Road | 905                    | 905                      | 226                     | 0                      | 0                         | 1016                      |                            | 1034              | 0.876 | 889                 | 940                             | 1.8               | 5.8             | 22.774    | C                            |
| D - A4226/Port Road       | 1104                   | 848                      | 212                     | 257                    | 0                         | 566                       | 0.00                       | 1154              | 0.734 | 842                 | 1339                            | 1.3               | 2.7             | 11.419    | B                            |

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 832                    | 832                      | 208                     | 0                      | 257                       | 1026                      |                            | 860               | 0.968 | 818                 | 396                             | 11.0              | 14.5            | 65.385    | F                            |
| B - A4226/Port Road W     | 1018                   | 1018                     | 255                     | 0                      | 0                         | 998                       |                            | 1032              | 0.986 | 996                 | 846                             | 12.9              | 18.4            | 65.986    | F                            |
| C - B4226/Pontypridd Road | 905                    | 905                      | 226                     | 0                      | 0                         | 1038                      |                            | 1019              | 0.888 | 901                 | 957                             | 5.8               | 6.8             | 29.004    | D                            |
| D - A4226/Port Road       | 1104                   | 848                      | 212                     | 257                    | 0                         | 574                       | 0.00                       | 1149              | 0.738 | 847                 | 1365                            | 2.7               | 2.8             | 11.967    | B                            |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass demand (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|-------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 680                     | 680                       | 170                      | 0                       | 209                        | 848                        |                            | 976                | 0.696 | 728                 | 340                             | 14.5              | 2.5             | 17.818    | C                            |
| B - A4226/Port Road W     | 832                     | 832                       | 208                      | 0                       | 0                          | 866                        |                            | 1121               | 0.742 | 893                 | 710                             | 18.4              | 3.1             | 19.834    | C                            |
| C - B4226/Pontypridd Road | 739                     | 739                       | 185                      | 0                       | 0                          | 928                        |                            | 1094               | 0.676 | 758                 | 831                             | 6.8               | 2.2             | 11.297    | B                            |
| D - A4226/Port Road       | 902                     | 692                       | 173                      | 209                     | 0                          | 490                        | 0.00                       | 1199               | 0.577 | 698                 | 1195                            | 2.8               | 1.4             | 7.299     | A                            |

17:30 - 17:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass demand (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|-------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 569                     | 569                       | 142                      | 0                       | 175                        | 705                        |                            | 1069               | 0.532 | 574                 | 276                             | 2.5               | 1.2             | 7.662     | A                            |
| B - A4226/Port Road W     | 696                     | 696                       | 174                      | 0                       | 0                          | 695                        |                            | 1234               | 0.564 | 703                 | 584                             | 3.1               | 1.3             | 6.951     | A                            |
| C - B4226/Pontypridd Road | 619                     | 619                       | 155                      | 0                       | 0                          | 731                        |                            | 1228               | 0.504 | 623                 | 668                             | 2.2               | 1.0             | 6.018     | A                            |
| D - A4226/Port Road       | 755                     | 580                       | 145                      | 175                     | 0                          | 399                        | 0.00                       | 1253               | 0.463 | 582                 | 956                             | 1.4               | 0.9             | 5.412     | A                            |

## Base - 2038 B+CMF, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 199.15             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D17 | 2038 B+CMF    | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 711                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1082                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1074                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1105                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 342                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 617                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 446                 |
|      | D - A4226/Port Road       | 335                    | 446                   | 324                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 0.99    | 80.55         | 17.1            | F       | 652                     | 979                           |
| B - A4226/Port Road W     | 1.14    | 216.01        | 79.1            | F       | 993                     | 1489                          |
| C - B4226/Pontypridd Road | 1.23    | 448.06        | 122.0           | F       | 986                     | 1479                          |
| D - A4226/Port Road       | 0.80    | 16.97         | 3.9             | C       | 1014                    | 1060                          |

## Main Results for each time segment

### 07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 535                    | 535                      | 134                     | 0                       | 252                       | 808                       |                            | 1002              | 0.534 | 531                 | 357                             | 0.0               | 1.2             | 7.897     | A                            |
| B - A4226/Port Road W     | 815                    | 815                      | 204                     | 0                       | 0                         | 675                       |                            | 1247              | 0.653 | 807                 | 663                             | 0.0               | 1.9             | 8.313     | A                            |
| C - B4226/Pontypridd Road | 809                    | 809                      | 202                     | 0                       | 0                         | 837                       |                            | 1156              | 0.700 | 800                 | 645                             | 0.0               | 2.3             | 10.202    | B                            |
| D - A4226/Port Road       | 832                    | 580                      | 145                     | 252                     | 0                         | 589                       | 0.00                       | 1140              | 0.508 | 576                 | 1047                            | 0.0               | 1.0             | 6.466     | A                            |

### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 639                    | 639                      | 160                     | 0                       | 301                       | 963                       |                            | 901               | 0.709 | 634                 | 421                             | 1.2               | 2.4             | 13.828    | B                            |
| B - A4226/Port Road W     | 973                    | 973                      | 243                     | 0                       | 0                         | 808                       |                            | 1159              | 0.839 | 961                 | 790                             | 1.9               | 4.8             | 17.802    | C                            |
| C - B4226/Pontypridd Road | 966                    | 966                      | 241                     | 0                       | 0                         | 998                       |                            | 1046              | 0.923 | 941                 | 771                             | 2.3               | 8.5             | 30.156    | D                            |
| D - A4226/Port Road       | 993                    | 692                      | 173                     | 301                     | 0                         | 695                       | 0.00                       | 1077              | 0.643 | 689                 | 1244                            | 1.0               | 1.8             | 9.404     | A                            |

### 07:45 - 08:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 783                    | 783                      | 196                     | 0                       | 369                       | 1121                      |                            | 798               | 0.981 | 743                 | 440                             | 2.4               | 12.3            | 49.783    | E                            |
| B - A4226/Port Road W     | 1191                   | 1191                     | 298                     | 0                       | 0                         | 960                       |                            | 1058              | 1.126 | 1042                | 905                             | 4.8               | 42.0            | 93.615    | F                            |
| C - B4226/Pontypridd Road | 1183                   | 1183                     | 296                     | 0                       | 0                         | 1109                      |                            | 970               | 1.219 | 964                 | 893                             | 8.5               | 63.2            | 146.175   | F                            |

|                     |      |     |     |     |   |     |      |      |       |     |      |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|
| D - A4226/Port Road | 1217 | 848 | 212 | 369 | 0 | 721 | 0.00 | 1062 | 0.798 | 840 | 1352 | 1.8 | 3.7 | 16.026 | C |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 783                    | 783                      | 196                     | 0                      | 369                       | 1128                      |                            | 793               | 0.987 | 764                 | 439                             | 12.3              | 17.1            | 80.550    | F                            |
| B - A4226/Port Road W     | 1191                   | 1191                     | 298                     | 0                      | 0                         | 979                       |                            | 1045              | 1.140 | 1043                | 913                             | 42.0              | 79.1            | 216.011   | F                            |
| C - B4226/Pontypridd Road | 1183                   | 1183                     | 296                     | 0                      | 0                         | 1119                      |                            | 963               | 1.228 | 963                 | 903                             | 63.2              | 118.3           | 348.695   | F                            |
| D - A4226/Port Road       | 1217                   | 848                      | 212                     | 369                    | 0                         | 720                       | 0.00                       | 1062              | 0.798 | 847                 | 1362                            | 3.7               | 3.9             | 16.970    | C                            |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 639                    | 639                      | 160                     | 0                      | 301                       | 979                       |                            | 891               | 0.717 | 696                 | 444                             | 17.1              | 2.8             | 24.326    | C                            |
| B - A4226/Port Road W     | 973                    | 973                      | 243                     | 0                      | 0                         | 863                       |                            | 1123              | 0.866 | 1108                | 812                             | 79.1              | 45.3            | 202.929   | F                            |
| C - B4226/Pontypridd Road | 966                    | 966                      | 241                     | 0                      | 0                         | 1134                      |                            | 953               | 1.013 | 951                 | 837                             | 118.3             | 122.0           | 448.063   | F                            |
| D - A4226/Port Road       | 993                    | 692                      | 173                     | 301                    | 0                         | 723                       | 0.00                       | 1061              | 0.653 | 700                 | 1362                            | 3.9               | 2.0             | 10.392    | B                            |

#### 08:30 - 08:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 535                    | 535                      | 134                     | 0                      | 252                       | 888                       |                            | 950               | 0.563 | 541                 | 460                             | 2.8               | 1.4             | 9.316     | A                            |
| B - A4226/Port Road W     | 815                    | 815                      | 204                     | 0                      | 0                         | 687                       |                            | 1239              | 0.657 | 987                 | 741                             | 45.3              | 2.1             | 28.177    | D                            |
| C - B4226/Pontypridd Road | 809                    | 809                      | 202                     | 0                      | 0                         | 972                       |                            | 1064              | 0.760 | 1055                | 703                             | 122.0             | 60.6            | 313.743   | F                            |
| D - A4226/Port Road       | 832                    | 580                      | 145                     | 252                    | 0                         | 766                       | 0.00                       | 1035              | 0.560 | 582                 | 1261                            | 2.0               | 1.3             | 8.163     | A                            |

## Base - 2038 B+CMF, PM

### Data Errors and Warnings

| Severity | Area     | Item                     | Description                                                                                                      |
|----------|----------|--------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry | A - A4226/Waycock Road - | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |



|         |                     |                                           |                                                                                                                  |
|---------|---------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------|
|         |                     | Roundabout Geometry                       |                                                                                                                  |
| Warning | Geometry            | D - A4226/Port Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 98.55              | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D18 | 2038 B+CMF    | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 707                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 921                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 825                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1440                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

## Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 235                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 544                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 428                 |
|      | D - A4226/Port Road       | 365                    | 662                   | 412                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.16    | 242.01        | 56.7            | F       | 649                     | 973                           |
| B - A4226/Port Road W     | 0.97    | 57.12         | 15.4            | F       | 845                     | 1268                          |
| C - B4226/Pontypridd Road | 0.84    | 20.94         | 5.0             | C       | 757                     | 1136                          |
| D - A4226/Port Road       | 1.03    | 99.08         | 34.3            | F       | 1321                    | 1480                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 532                    | 532                      | 133                        | 0                      | 275                       | 924                       |                            | 927               | 0.574 | 527                 | 271                             | 0.0               | 1.4             | 9.238     | A                            |
| B - A4226/Port Road W     | 693                    | 693                      | 173                        | 0                      | 0                         | 732                       |                            | 1209              | 0.573 | 688                 | 719                             | 0.0               | 1.3             | 6.914     | A                            |
| C - B4226/Pontypridd Road | 621                    | 621                      | 155                        | 0                      | 0                         | 679                       |                            | 1264              | 0.491 | 617                 | 742                             | 0.0               | 1.0             | 5.553     | A                            |
| D - A4226/Port Road       | 1084                   | 809                      | 202                        | 275                    | 0                         | 393                       | 0.00                       | 1257              | 0.644 | 802                 | 903                             | 0.0               | 1.8             | 7.852     | A                            |

**16:30 - 16:45**

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 636                     | 636                       | 159                      | 0                        | 328                        | 1105                       |                            | 809                | 0.786 | 627                 | 325                             | 1.4               | 3.5             | 19.750    | C                            |
| B - A4226/Port Road W     | 828                     | 828                       | 207                      | 0                        | 0                          | 873                        |                            | 1116               | 0.742 | 822                 | 859                             | 1.3               | 2.8             | 12.172    | B                            |
| C - B4226/Pontypridd Road | 742                     | 742                       | 185                      | 0                        | 0                          | 810                        |                            | 1174               | 0.632 | 739                 | 885                             | 1.0               | 1.7             | 8.242     | A                            |
| D - A4226/Port Road       | 1295                    | 966                       | 242                      | 328                      | 0                          | 471                        | 0.00                       | 1211               | 0.798 | 959                 | 1078                            | 1.8               | 3.7             | 13.954    | B                            |

**16:45 - 17:00**

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 778                     | 778                       | 195                      | 0                        | 402                        | 1289                       |                            | 689                | 1.130 | 673                 | 392                             | 3.5               | 29.8            | 105.690   | F                            |
| B - A4226/Port Road W     | 1014                    | 1014                      | 254                      | 0                        | 0                          | 969                        |                            | 1052               | 0.964 | 978                 | 993                             | 2.8               | 11.8            | 37.880    | E                            |
| C - B4226/Pontypridd Road | 908                     | 908                       | 227                      | 0                        | 0                          | 939                        |                            | 1086               | 0.837 | 897                 | 1007                            | 1.7               | 4.6             | 18.083    | C                            |
| D - A4226/Port Road       | 1586                    | 1184                      | 296                      | 402                      | 0                          | 569                        | 0.00                       | 1153               | 1.027 | 1112                | 1268                            | 3.7               | 21.7            | 53.382    | F                            |

**17:00 - 17:15**

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 778                     | 778                       | 195                      | 0                        | 402                        | 1312                       |                            | 673                | 1.156 | 671                 | 397                             | 29.8              | 56.7            | 242.011   | F                            |
| B - A4226/Port Road W     | 1014                    | 1014                      | 254                      | 0                        | 0                          | 976                        |                            | 1047               | 0.968 | 1000                | 1008                            | 11.8              | 15.4            | 57.118    | F                            |
| C - B4226/Pontypridd Road | 908                     | 908                       | 227                      | 0                        | 0                          | 955                        |                            | 1075               | 0.845 | 907                 | 1021                            | 4.6               | 5.0             | 20.942    | C                            |
| D - A4226/Port Road       | 1586                    | 1184                      | 296                      | 402                      | 0                          | 576                        | 0.00                       | 1148               | 1.031 | 1133                | 1285                            | 21.7              | 34.3            | 99.076    | F                            |

**17:15 - 17:30**

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 636                     | 636                       | 159                      | 0                        | 328                        | 1234                       |                            | 724                | 0.877 | 711                 | 336                             | 56.7              | 37.7            | 236.518   | F                            |
| B - A4226/Port Road W     | 828                     | 828                       | 207                      | 0                        | 0                          | 989                        |                            | 1038               | 0.797 | 872                 | 956                             | 15.4              | 4.4             | 26.082    | D                            |
| C - B4226/Pontypridd Road | 742                     | 742                       | 185                      | 0                        | 0                          | 875                        |                            | 1130               | 0.656 | 754                 | 987                             | 5.0               | 2.0             | 9.892     | A                            |

|                     |      |     |     |     |   |     |      |      |       |      |      |      |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|------|------|------|-----|--------|---|
| D - A4226/Port Road | 1295 | 966 | 242 | 328 | 0 | 485 | 0.00 | 1202 | 0.804 | 1085 | 1144 | 34.3 | 4.7 | 46.484 | E |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|------|------|------|-----|--------|---|

17:30 - 17:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 532                     | 532                       | 133                      | 0                        | 275                        | 944                        |                            | 914                | 0.583 | 677                 | 276                             | 37.7              | 1.5             | 28.844    | D                            |
| B - A4226/Port Road W     | 693                     | 693                       | 173                      | 0                        | 0                          | 860                        |                            | 1124               | 0.617 | 704                 | 761                             | 4.4               | 1.7             | 8.880     | A                            |
| C - B4226/Pontypridd Road | 621                     | 621                       | 155                      | 0                        | 0                          | 740                        |                            | 1222               | 0.508 | 625                 | 824                             | 2.0               | 1.1             | 6.085     | A                            |
| D - A4226/Port Road       | 1084                    | 809                       | 202                      | 275                      | 0                          | 399                        | 0.00                       | 1253               | 0.646 | 821                 | 966                             | 4.7               | 1.9             | 8.581     | A                            |

## Base - 2038 B+D+CMF L, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 206.57             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D19 | 2038 B+D+CMF L | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

|                              |                               |                    |                           |
|------------------------------|-------------------------------|--------------------|---------------------------|
| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|

|   |   |                |      |
|---|---|----------------|------|
| ✓ | ✓ | HV Percentages | 2.00 |
|---|---|----------------|------|

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 714                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1086                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1077                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1136                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 345                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 621                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 449                 |
|      | D - A4226/Port Road       | 344                    | 459                   | 333                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.01    | 97.80         | 21.6            | F       | 655                     | 983                           |
| B - A4226/Port Road W     | 1.15    | 227.08        | 83.1            | F       | 997                     | 1495                          |
| C - B4226/Pontypridd Road | 1.23    | 455.91        | 123.9           | F       | 988                     | 1483                          |
| D - A4226/Port Road       | 0.82    | 18.93         | 4.4             | C       | 1042                    | 1090                          |

## Main Results for each time segment

### 07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 538                    | 538                      | 134                     | 0                      | 259                       | 824                       |                            | 992               | 0.542 | 533                 | 357                             | 0.0               | 1.2             | 8.110     | A                            |
| B - A4226/Port Road W     | 818                    | 818                      | 204                     | 0                      | 0                         | 684                       |                            | 1242              | 0.658 | 810                 | 673                             | 0.0               | 1.9             | 8.473     | A                            |
| C - B4226/Pontypridd Road | 811                    | 811                      | 203                     | 0                      | 0                         | 842                       |                            | 1152              | 0.704 | 801                 | 652                             | 0.0               | 2.4             | 10.352    | B                            |
| D - A4226/Port Road       | 855                    | 596                      | 149                     | 259                    | 0                         | 589                       | 0.00                       | 1140              | 0.523 | 592                 | 1055                            | 0.0               | 1.1             | 6.651     | A                            |

### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 642                    | 642                      | 160                     | 0                      | 309                       | 982                       |                            | 889               | 0.722 | 636                 | 421                             | 1.2               | 2.6             | 14.594    | B                            |
| B - A4226/Port Road W     | 976                    | 976                      | 244                     | 0                      | 0                         | 818                       |                            | 1153              | 0.847 | 964                 | 801                             | 1.9               | 5.1             | 18.597    | C                            |
| C - B4226/Pontypridd Road | 968                    | 968                      | 242                     | 0                      | 0                         | 1003                      |                            | 1042              | 0.929 | 942                 | 778                             | 2.4               | 8.9             | 31.250    | D                            |
| D - A4226/Port Road       | 1021                   | 712                      | 178                     | 309                    | 0                         | 694                       | 0.00                       | 1078              | 0.661 | 709                 | 1251                            | 1.1               | 1.9             | 9.871     | A                            |

### 07:45 - 08:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 786                    | 786                      | 197                     | 0                      | 379                       | 1144                      |                            | 783               | 1.004 | 738                 | 438                             | 2.6               | 14.5            | 56.481    | F                            |
| B - A4226/Port Road W     | 1196                   | 1196                     | 299                     | 0                      | 0                         | 965                       |                            | 1054              | 1.134 | 1040                | 917                             | 5.1               | 44.0            | 97.657    | F                            |
| C - B4226/Pontypridd Road | 1186                   | 1186                     | 296                     | 0                      | 0                         | 1107                      |                            | 971               | 1.221 | 965                 | 898                             | 8.9               | 64.0            | 148.225   | F                            |
| D - A4226/Port Road       | 1251                   | 872                      | 218                     | 379                    | 0                         | 719                       | 0.00                       | 1063              | 0.820 | 863                 | 1354                            | 1.9               | 4.2             | 17.598    | C                            |

### 08:00 - 08:15

| Arm | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|-----|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
|-----|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|

|                           |      |      |     |     |     |      |      |      |       |      |      |      |       |         |   |
|---------------------------|------|------|-----|-----|-----|------|------|------|-------|------|------|------|-------|---------|---|
| A - A4226/Waycock Road    | 786  | 786  | 197 | 0   | 379 | 1152 |      | 778  | 1.010 | 758  | 438  | 14.5 | 21.6  | 97.802  | F |
| B - A4226/Port Road W     | 1196 | 1196 | 299 | 0   | 0   | 985  |      | 1041 | 1.148 | 1039 | 925  | 44.0 | 83.1  | 227.079 | F |
| C - B4226/Pontypridd Road | 1186 | 1186 | 296 | 0   | 0   | 1117 |      | 965  | 1.229 | 964  | 908  | 64.0 | 119.4 | 352.010 | F |
| D - A4226/Port Road       | 1251 | 872  | 218 | 379 | 0   | 718  | 0.00 | 1063 | 0.820 | 871  | 1363 | 4.2  | 4.4   | 18.933  | C |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 642                    | 642                      | 160                     | 0                      | 309                       | 999                       |                            | 878               | 0.731 | 716                 | 441                             | 21.6              | 3.1             | 31.968    | D                            |
| B - A4226/Port Road W     | 976                    | 976                      | 244                     | 0                      | 0                         | 887                       |                            | 1106              | 0.883 | 1093                | 827                             | 83.1              | 54.0            | 225.619   | F                            |
| C - B4226/Pontypridd Road | 968                    | 968                      | 242                     | 0                      | 0                         | 1135                      |                            | 953               | 1.016 | 951                 | 845                             | 119.4             | 123.9           | 455.907   | F                            |
| D - A4226/Port Road       | 1021                   | 712                      | 178                     | 309                    | 0                         | 718                       | 0.00                       | 1063              | 0.670 | 721                 | 1367                            | 4.4               | 2.1             | 11.011    | B                            |

#### 08:30 - 08:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 538                    | 538                      | 134                     | 0                      | 259                       | 898                       |                            | 943               | 0.570 | 544                 | 457                             | 3.1               | 1.4             | 9.576     | A                            |
| B - A4226/Port Road W     | 818                    | 818                      | 204                     | 0                      | 0                         | 697                       |                            | 1233              | 0.663 | 1025                | 746                             | 54.0              | 2.1             | 41.745    | E                            |
| C - B4226/Pontypridd Road | 811                    | 811                      | 203                     | 0                      | 0                         | 1003                      |                            | 1042              | 0.778 | 1034                | 719                             | 123.9             | 68.2            | 336.232   | F                            |
| D - A4226/Port Road       | 855                    | 596                      | 149                     | 259                    | 0                         | 757                       | 0.00                       | 1041              | 0.573 | 599                 | 1280                            | 2.1               | 1.4             | 8.387     | A                            |

## Base - 2038 B+D+CMF L, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 109.30             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D20 | 2038 B+D+CMF L | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 712                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 933                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 834                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1454                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 240                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 556                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 437                 |
|      | D - A4226/Port Road       | 368                    | 669                   | 416                       | 1                   |

## Vehicle Mix



## Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.17    | 270.31        | 60.4            | F       | 653                     | 980                           |
| B - A4226/Port Road W     | 0.98    | 64.78         | 17.9            | F       | 856                     | 1284                          |
| C - B4226/Pontypridd Road | 0.86    | 23.24         | 5.6             | C       | 765                     | 1148                          |
| D - A4226/Port Road       | 1.04    | 108.39        | 38.4            | F       | 1334                    | 1495                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 536                    | 536                      | 134                     | 0                       | 277                       | 932                       |                            | 921               | 0.582 | 530                 | 271                             | 0.0               | 1.4             | 9.444     | A                            |
| B - A4226/Port Road W     | 702                    | 702                      | 176                     | 0                       | 0                         | 739                       |                            | 1205              | 0.583 | 697                 | 724                             | 0.0               | 1.4             | 7.087     | A                            |
| C - B4226/Pontypridd Road | 628                    | 628                      | 157                     | 0                       | 0                         | 691                       |                            | 1255              | 0.500 | 624                 | 744                             | 0.0               | 1.0             | 5.684     | A                            |
| D - A4226/Port Road       | 1095                   | 818                      | 204                     | 277                     | 0                         | 393                       | 0.00                       | 1257              | 0.651 | 810                 | 922                             | 0.0               | 1.8             | 7.988     | A                            |

#### 16:30 - 16:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 640                    | 640                      | 160                     | 0                       | 331                       | 1114                      |                            | 803               | 0.797 | 631                 | 325                             | 1.4               | 3.7             | 20.781    | C                            |
| B - A4226/Port Road W     | 839                    | 839                      | 210                     | 0                       | 0                         | 880                       |                            | 1111              | 0.755 | 832                 | 865                             | 1.4               | 3.0             | 12.799    | B                            |
| C - B4226/Pontypridd Road | 750                    | 750                      | 187                     | 0                       | 0                         | 825                       |                            | 1164              | 0.644 | 747                 | 888                             | 1.0               | 1.8             | 8.585     | A                            |

|                     |      |     |     |     |   |     |      |      |       |     |      |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|
| D - A4226/Port Road | 1307 | 976 | 244 | 331 | 0 | 471 | 0.00 | 1211 | 0.806 | 968 | 1101 | 1.8 | 3.9 | 14.446 | B |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|

#### 16:45 - 17:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 784                    | 784                      | 196                     | 0                       | 405                       | 1293                      |                            | 686               | 1.143 | 672                 | 391                             | 3.7               | 31.8            | 111.652   | F                            |
| B - A4226/Port Road W     | 1027                   | 1027                     | 257                     | 0                       | 0                         | 970                       |                            | 1051              | 0.977 | 986                 | 995                             | 3.0               | 13.3            | 41.232    | E                            |
| C - B4226/Pontypridd Road | 918                    | 918                      | 230                     | 0                       | 0                         | 951                       |                            | 1078              | 0.852 | 905                 | 1005                            | 1.8               | 5.0             | 19.597    | C                            |
| D - A4226/Port Road       | 1601                   | 1196                     | 299                     | 405                     | 0                         | 567                       | 0.00                       | 1153              | 1.037 | 1117                | 1289                            | 3.9               | 23.6            | 56.724    | F                            |

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 784                    | 784                      | 196                     | 0                       | 405                       | 1316                      |                            | 671               | 1.168 | 669                 | 397                             | 31.8              | 60.4            | 258.334   | F                            |
| B - A4226/Port Road W     | 1027                   | 1027                     | 257                     | 0                       | 0                         | 976                       |                            | 1047              | 0.981 | 1009                | 1009                            | 13.3              | 17.9            | 64.783    | F                            |
| C - B4226/Pontypridd Road | 918                    | 918                      | 230                     | 0                       | 0                         | 967                       |                            | 1067              | 0.861 | 916                 | 1018                            | 5.0               | 5.6             | 23.242    | C                            |
| D - A4226/Port Road       | 1601                   | 1196                     | 299                     | 405                     | 0                         | 575                       | 0.00                       | 1148              | 1.041 | 1137                | 1308                            | 23.6              | 38.4            | 108.391   | F                            |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 640                    | 640                      | 160                     | 0                       | 331                       | 1259                      |                            | 708               | 0.904 | 696                 | 337                             | 60.4              | 46.4            | 270.311   | F                            |
| B - A4226/Port Road W     | 839                    | 839                      | 210                     | 0                       | 0                         | 987                       |                            | 1040              | 0.807 | 892                 | 968                             | 17.9              | 4.7             | 30.373    | D                            |
| C - B4226/Pontypridd Road | 750                    | 750                      | 187                     | 0                       | 0                         | 890                       |                            | 1119              | 0.670 | 764                 | 988                             | 5.6               | 2.1             | 10.528    | B                            |
| D - A4226/Port Road       | 1307                   | 976                      | 244                     | 331                     | 0                         | 487                       | 0.00                       | 1201              | 0.813 | 1109                | 1167                            | 38.4              | 5.1             | 57.442    | F                            |

#### 17:30 - 17:45

| Arm                    | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road | 536                    | 536                      | 134                     | 0                       | 277                       | 954                       |                            | 907               | 0.591 | 715                 | 276                             | 46.4              | 1.6             | 45.294    | E                            |

|                           |      |     |     |     |   |     |      |      |       |     |     |     |     |       |   |
|---------------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|-----|-----|-----|-------|---|
| B - A4226/Port Road W     | 702  | 702 | 176 | 0   | 0 | 896 |      | 1101 | 0.638 | 714 | 774 | 4.7 | 1.8 | 9.675 | A |
| C - B4226/Pontypridd Road | 628  | 628 | 157 | 0   | 0 | 766 |      | 1204 | 0.521 | 632 | 843 | 2.1 | 1.1 | 6.353 | A |
| D - A4226/Port Road       | 1095 | 818 | 204 | 277 | 0 | 399 | 0.00 | 1253 | 0.652 | 830 | 998 | 5.1 | 1.9 | 8.813 | A |

## Base - 2038 B+D+CMF M, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 215.93             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D21 | 2038 B+D+CMF M | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 716                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1090                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1080                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1160                    | 100.000            |

### Demand overview (Pedestrians)



|                           |     |     |     |     |     |     |      |      |       |     |      |     |     |        |   |
|---------------------------|-----|-----|-----|-----|-----|-----|------|------|-------|-----|------|-----|-----|--------|---|
| A - A4226/Waycock Road    | 539 | 539 | 135 | 0   | 264 | 837 |      | 984  | 0.548 | 534 | 357  | 0.0 | 1.2 | 8.282  | A |
| B - A4226/Port Road W     | 821 | 821 | 205 | 0   | 0   | 690 |      | 1237 | 0.663 | 813 | 680  | 0.0 | 2.0 | 8.614  | A |
| C - B4226/Pontypridd Road | 813 | 813 | 203 | 0   | 0   | 846 |      | 1149 | 0.707 | 804 | 657  | 0.0 | 2.4 | 10.496 | B |
| D - A4226/Port Road       | 873 | 609 | 152 | 264 | 0   | 589 | 0.00 | 1140 | 0.534 | 604 | 1061 | 0.0 | 1.2 | 6.805  | A |

#### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 644                    | 644                      | 161                     | 0                      | 316                       | 997                       |                            | 879               | 0.732 | 638                 | 420                             | 1.2               | 2.7             | 15.224    | C                            |
| B - A4226/Port Road W     | 980                    | 980                      | 245                     | 0                      | 0                         | 825                       |                            | 1147              | 0.854 | 967                 | 809                             | 2.0               | 5.3             | 19.313    | C                            |
| C - B4226/Pontypridd Road | 971                    | 971                      | 243                     | 0                      | 0                         | 1008                      |                            | 1039              | 0.935 | 943                 | 784                             | 2.4               | 9.3             | 32.325    | D                            |
| D - A4226/Port Road       | 1043                   | 727                      | 182                     | 316                    | 0                         | 693                       | 0.00                       | 1078              | 0.674 | 724                 | 1258                            | 1.2               | 2.0             | 10.263    | B                            |

#### 07:45 - 08:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 788                    | 788                      | 197                     | 0                      | 386                       | 1160                      |                            | 772               | 1.021 | 734                 | 437                             | 2.7               | 16.3            | 62.074    | F                            |
| B - A4226/Port Road W     | 1200                   | 1200                     | 300                     | 0                      | 0                         | 969                       |                            | 1052              | 1.141 | 1038                | 925                             | 5.3               | 45.7            | 101.063   | F                            |
| C - B4226/Pontypridd Road | 1189                   | 1189                     | 297                     | 0                      | 0                         | 1106                      |                            | 972               | 1.223 | 966                 | 901                             | 9.3               | 65.0            | 150.492   | F                            |
| D - A4226/Port Road       | 1277                   | 891                      | 223                     | 386                    | 0                         | 717                       | 0.00                       | 1064              | 0.837 | 880                 | 1355                            | 2.0               | 4.7             | 18.988    | C                            |

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 788                    | 788                      | 197                     | 0                      | 386                       | 1170                      |                            | 766               | 1.029 | 751                 | 437                             | 16.3              | 25.5            | 112.838   | F                            |
| B - A4226/Port Road W     | 1200                   | 1200                     | 300                     | 0                      | 0                         | 988                       |                            | 1039              | 1.155 | 1038                | 934                             | 45.7              | 86.3            | 236.146   | F                            |
| C - B4226/Pontypridd Road | 1189                   | 1189                     | 297                     | 0                      | 0                         | 1114                      |                            | 966               | 1.231 | 966                 | 911                             | 65.0              | 120.8           | 355.997   | F                            |
| D - A4226/Port Road       | 1277                   | 891                      | 223                     | 386                    | 0                         | 717                       | 0.00                       | 1064              | 0.837 | 890                 | 1363                            | 4.7               | 4.9             | 20.753    | C                            |

#### 08:15 - 08:30

| Arm | Total Dem | Junction | Junction | Bypass | Bypass | Circulating | Pedestrian | Capacity | RF C | Throughput | Throughput | Start | End | Delay (s) | Unsignalled |
|-----|-----------|----------|----------|--------|--------|-------------|------------|----------|------|------------|------------|-------|-----|-----------|-------------|
|-----|-----------|----------|----------|--------|--------|-------------|------------|----------|------|------------|------------|-------|-----|-----------|-------------|

|                           | and<br>(PCU<br>/hr) | dema<br>nd<br>(PCU<br>/hr) | Arriv<br>als<br>(PCU<br>) | dem<br>and<br>(PCU<br>/hr) | exit<br>flow<br>(PCU<br>/hr) | flow<br>(PCU/<br>hr) | dema<br>nd<br>(Ped/h<br>r) | (PCU<br>/hr) |       | (PCU/h<br>r) | (exit<br>side)<br>(PCU/h<br>r) | que<br>ue<br>(PC<br>U) | que<br>ue<br>(PC<br>U) |         | level<br>of<br>service |
|---------------------------|---------------------|----------------------------|---------------------------|----------------------------|------------------------------|----------------------|----------------------------|--------------|-------|--------------|--------------------------------|------------------------|------------------------|---------|------------------------|
| A - A4226/Waycock Road    | 644                 | 644                        | 161                       | 0                          | 316                          | 1014                 |                            | 868          | 0.742 | 733          | 438                            | 25.5                   | 3.3                    | 41.314  | E                      |
| B - A4226/Port Road W     | 980                 | 980                        | 245                       | 0                          | 0                            | 908                  |                            | 1092         | 0.897 | 1079         | 839                            | 86.3                   | 61.5                   | 245.059 | F                      |
| C - B4226/Pontypridd Road | 971                 | 971                        | 243                       | 0                          | 0                            | 1135                 |                            | 952          | 1.020 | 950          | 852                            | 120.8                  | 126.0                  | 464.492 | F                      |
| D - A4226/Port Road       | 1043                | 727                        | 182                       | 316                        | 0                            | 714                  | 0.00                       | 1066         | 0.682 | 738          | 1372                           | 4.9                    | 2.3                    | 11.545  | B                      |

08:30 - 08:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass demand (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/h r) | Capacity (PCU /hr) | RF C  | Throug hput (PCU/h r) | Throug hput (exit side) (PCU/h r) | Sta rt que ue (PC U) | En d que ue (PC U) | Delat y (s) | Unsign alised level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|-------------------------|----------------------------|----------------------------|-----------------------------|--------------------|-------|-----------------------|-----------------------------------|----------------------|--------------------|-------------|--------------------------------|
| A - A4226/Waycock Road    | 539                     | 539                       | 135                      | 0                       | 264                        | 906                        |                             | 938                | 0.575 | 546                   | 455                               | 3.3                  | 1.4                | 9.780       | A                              |
| B - A4226/Port Road W     | 821                     | 821                       | 205                      | 0                       | 0                          | 704                        |                             | 1228               | 0.668 | 1058                  | 748                               | 61.5                 | 2.2                | 57.676      | F                              |
| C - B4226/Pontypridd Road | 813                     | 813                       | 203                      | 0                       | 0                          | 1029                       |                             | 1024               | 0.794 | 1016                  | 733                               | 126.0                | 75.3               | 358.271     | F                              |
| D - A4226/Port Road       | 873                     | 609                       | 152                      | 264                     | 0                          | 749                        | 0.00                        | 1045               | 0.583 | 612                   | 1297                              | 2.3                  | 1.5                | 8.558       | A                              |

## Base - 2038 B+D+CMF M, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 119.30             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D22 | 2038 B+D+CMF M | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 716                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 942                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 841                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1466                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 244                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 565                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 444                 |
|      | D - A4226/Port Road       | 371                    | 674                   | 420                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.18    | 298.48        | 63.4            | F       | 657                     | 986                           |
| B - A4226/Port Road W     | 0.99    | 71.60         | 20.2            | F       | 864                     | 1297                          |
| C - B4226/Pontypridd Road | 0.87    | 25.27         | 6.1             | D       | 772                     | 1158                          |
| D - A4226/Port Road       | 1.05    | 116.38        | 42.0            | F       | 1345                    | 1507                          |

## Main Results for each time segment

### 16:15 - 16:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 539                    | 539                      | 135                     | 0                       | 279                       | 939                       |                            | 917               | 0.588 | 533                 | 271                             | 0.0               | 1.4             | 9.618     | A                            |
| B - A4226/Port Road W     | 709                    | 709                      | 177                     | 0                       | 0                         | 745                       |                            | 1201              | 0.590 | 703                 | 728                             | 0.0               | 1.4             | 7.231     | A                            |
| C - B4226/Pontypridd Road | 633                    | 633                      | 158                     | 0                       | 0                         | 701                       |                            | 1249              | 0.507 | 629                 | 747                             | 0.0               | 1.0             | 5.789     | A                            |
| D - A4226/Port Road       | 1104                   | 824                      | 206                     | 279                     | 0                         | 393                       | 0.00                       | 1257              | 0.656 | 817                 | 937                             | 0.0               | 1.9             | 8.102     | A                            |

### 16:30 - 16:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 644                    | 644                      | 161                     | 0                       | 334                       | 1122                      |                            | 798               | 0.807 | 634                 | 325                             | 1.4               | 3.9             | 21.688    | C                            |
| B - A4226/Port Road W     | 847                    | 847                      | 212                     | 0                       | 0                         | 887                       |                            | 1106              | 0.765 | 840                 | 869                             | 1.4               | 3.1             | 13.340    | B                            |
| C - B4226/Pontypridd Road | 756                    | 756                      | 189                     | 0                       | 0                         | 836                       |                            | 1156              | 0.654 | 753                 | 891                             | 1.0               | 1.8             | 8.869     | A                            |
| D - A4226/Port Road       | 1318                   | 984                      | 246                     | 334                     | 0                         | 470                       | 0.00                       | 1211              | 0.813 | 976                 | 1118                            | 1.9               | 4.0             | 14.872    | B                            |

### 16:45 - 17:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 788                    | 788                      | 197                     | 0                       | 408                       | 1297                      |                            | 683               | 1.154 | 670                 | 390                             | 3.9               | 33.3            | 116.521   | F                            |
| B - A4226/Port Road W     | 1037                   | 1037                     | 259                     | 0                       | 0                         | 972                       |                            | 1050              | 0.988 | 991                 | 995                             | 3.1               | 14.6            | 44.111    | E                            |
| C - B4226/Pontypridd Road | 926                    | 926                      | 231                     | 0                       | 0                         | 960                       |                            | 1072              | 0.864 | 912                 | 1003                            | 1.8               | 5.4             | 20.878    | C                            |



|                     |      |      |     |     |   |     |      |      |       |      |      |     |      |        |   |
|---------------------|------|------|-----|-----|---|-----|------|------|-------|------|------|-----|------|--------|---|
| D - A4226/Port Road | 1614 | 1206 | 301 | 408 | 0 | 566 | 0.00 | 1154 | 1.045 | 1121 | 1305 | 4.0 | 25.3 | 59.571 | F |
|---------------------|------|------|-----|-----|---|-----|------|------|-------|------|------|-----|------|--------|---|

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 788                    | 788                      | 197                     | 0                      | 408                       | 1318                      |                            | 670               | 1.177 | 668                 | 396                             | 33.3              | 63.4            | 271.623   | F                            |
| B - A4226/Port Road W     | 1037                   | 1037                     | 259                     | 0                      | 0                         | 977                       |                            | 1046              | 0.991 | 1014                | 1009                            | 14.6              | 20.2            | 71.603    | F                            |
| C - B4226/Pontypridd Road | 926                    | 926                      | 231                     | 0                      | 0                         | 976                       |                            | 1061              | 0.873 | 923                 | 1016                            | 5.4               | 6.1             | 25.266    | D                            |
| D - A4226/Port Road       | 1614                   | 1206                     | 301                     | 408                    | 0                         | 575                       | 0.00                       | 1149              | 1.049 | 1139                | 1325                            | 25.3              | 42.0            | 116.381   | F                            |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 644                    | 644                      | 161                     | 0                      | 334                       | 1280                      |                            | 694               | 0.927 | 683                 | 339                             | 63.4              | 53.5            | 298.477   | F                            |
| B - A4226/Port Road W     | 847                    | 847                      | 212                     | 0                      | 0                         | 986                       |                            | 1040              | 0.814 | 908                 | 977                             | 20.2              | 5.0             | 34.908    | D                            |
| C - B4226/Pontypridd Road | 756                    | 756                      | 189                     | 0                      | 0                         | 903                       |                            | 1111              | 0.681 | 772                 | 991                             | 6.1               | 2.2             | 11.103    | B                            |
| D - A4226/Port Road       | 1318                   | 984                      | 246                     | 334                    | 0                         | 489                       | 0.00                       | 1200              | 0.820 | 1130                | 1186                            | 42.0              | 5.6             | 67.975    | F                            |

#### 17:30 - 17:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 539                    | 539                      | 135                     | 0                      | 279                       | 962                       |                            | 902               | 0.598 | 747                 | 276                             | 53.5              | 1.6             | 65.491    | F                            |
| B - A4226/Port Road W     | 709                    | 709                      | 177                     | 0                      | 0                         | 925                       |                            | 1081              | 0.656 | 721                 | 784                             | 5.0               | 2.0             | 10.435    | B                            |
| C - B4226/Pontypridd Road | 633                    | 633                      | 158                     | 0                      | 0                         | 787                       |                            | 1190              | 0.532 | 637                 | 860                             | 2.2               | 1.2             | 6.579     | A                            |
| D - A4226/Port Road       | 1104                   | 824                      | 206                     | 279                    | 0                         | 400                       | 0.00                       | 1253              | 0.658 | 839                 | 1024                            | 5.6               | 2.0             | 9.034     | A                            |

## Base - 2038 B+D+CMF H, AM

### Data Errors and Warnings

| Severity | Area     | Item                     | Description                                                                                                      |
|----------|----------|--------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry | A - A4226/Waycock Road - | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

|         |                     |                                           |                                                                                                                  |
|---------|---------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------|
|         |                     | Roundabout Geometry                       |                                                                                                                  |
| Warning | Geometry            | D - A4226/Port Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 222.06             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D23 | 2038 B+D+CMF H | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 717                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1092                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1082                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1179                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

## Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 348                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 627                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 454                 |
|      | D - A4226/Port Road       | 357                    | 477                   | 345                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.04    | 124.92        | 28.8            | F       | 658                     | 987                           |
| B - A4226/Port Road W     | 1.16    | 256.68        | 87.8            | F       | 1002                    | 1503                          |
| C - B4226/Pontypridd Road | 1.23    | 468.99        | 127.1           | F       | 993                     | 1489                          |
| D - A4226/Port Road       | 0.85    | 22.42         | 5.4             | C       | 1082                    | 1131                          |

### Main Results for each time segment

07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 540                    | 540                      | 135                        | 0                      | 269                       | 846                       |                            | 977               | 0.552 | 535                 | 357                             | 0.0               | 1.3             | 8.408     | A                            |
| B - A4226/Port Road W     | 822                    | 822                      | 206                        | 0                      | 0                         | 695                       |                            | 1234              | 0.666 | 814                 | 686                             | 0.0               | 2.0             | 8.699     | A                            |
| C - B4226/Pontypridd Road | 815                    | 815                      | 204                        | 0                      | 0                         | 848                       |                            | 1148              | 0.710 | 805                 | 660                             | 0.0               | 2.4             | 10.579    | B                            |
| D - A4226/Port Road       | 888                    | 619                      | 155                        | 269                    | 0                         | 589                       | 0.00                       | 1141              | 0.543 | 614                 | 1065                            | 0.0               | 1.2             | 6.924     | A                            |

07:30 - 07:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 645                     | 645                       | 161                      | 0                        | 321                        | 1008                       |                            | 872                | 0.739 | 638                 | 420                             | 1.3               | 2.8             | 15.715    | C                            |
| B - A4226/Port Road W     | 982                     | 982                       | 245                      | 0                        | 0                          | 830                        |                            | 1144               | 0.858 | 968                 | 816                             | 2.0               | 5.4             | 19.763    | C                            |
| C - B4226/Pontypridd Road | 973                     | 973                       | 243                      | 0                        | 0                          | 1010                       |                            | 1038               | 0.938 | 944                 | 788                             | 2.4               | 9.5             | 32.948    | D                            |
| D - A4226/Port Road       | 1060                    | 739                       | 185                      | 321                      | 0                          | 693                        | 0.00                       | 1079               | 0.685 | 735                 | 1262                            | 1.2               | 2.1             | 10.584    | B                            |

07:45 - 08:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 789                     | 789                       | 197                      | 0                        | 393                        | 1173                       |                            | 764                | 1.033 | 729                 | 437                             | 2.8               | 17.8            | 66.459    | F                            |
| B - A4226/Port Road W     | 1202                    | 1202                      | 301                      | 0                        | 0                          | 971                        |                            | 1051               | 1.144 | 1038                | 932                             | 5.4               | 46.6            | 102.802   | F                            |
| C - B4226/Pontypridd Road | 1191                    | 1191                      | 298                      | 0                        | 0                          | 1105                       |                            | 973                | 1.224 | 968                 | 904                             | 9.5               | 65.5            | 151.636   | F                            |
| D - A4226/Port Road       | 1298                    | 905                       | 226                      | 393                      | 0                          | 717                        | 0.00                       | 1064               | 0.850 | 893                 | 1356                            | 2.1               | 5.1             | 20.214    | C                            |

08:00 - 08:15

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 789                     | 789                       | 197                      | 0                        | 393                        | 1184                       |                            | 757                | 1.043 | 746                 | 436                             | 17.8              | 28.8            | 124.922   | F                            |
| B - A4226/Port Road W     | 1202                    | 1202                      | 301                      | 0                        | 0                          | 988                        |                            | 1039               | 1.157 | 1037                | 941                             | 46.6              | 87.8            | 240.592   | F                            |
| C - B4226/Pontypridd Road | 1191                    | 1191                      | 298                      | 0                        | 0                          | 1112                       |                            | 968                | 1.231 | 967                 | 913                             | 65.5              | 121.5           | 357.775   | F                            |
| D - A4226/Port Road       | 1298                    | 905                       | 226                      | 393                      | 0                          | 716                        | 0.00                       | 1065               | 0.850 | 904                 | 1363                            | 5.1               | 5.4             | 22.423    | C                            |

08:15 - 08:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 645                     | 645                       | 161                      | 0                        | 321                        | 1027                       |                            | 860                | 0.750 | 746                 | 435                             | 28.8              | 3.5             | 50.931    | F                            |
| B - A4226/Port Road W     | 982                     | 982                       | 245                      | 0                        | 0                          | 924                        |                            | 1082               | 0.908 | 1069                | 848                             | 87.8              | 66.0            | 256.682   | F                            |
| C - B4226/Pontypridd Road | 973                     | 973                       | 243                      | 0                        | 0                          | 1135                       |                            | 952                | 1.022 | 950                 | 858                             | 121.5             | 127.1           | 468.993   | F                            |

|                     |      |     |     |     |   |     |      |      |       |     |      |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|
| D - A4226/Port Road | 1060 | 739 | 185 | 321 | 0 | 711 | 0.00 | 1068 | 0.692 | 751 | 1374 | 5.4 | 2.4 | 12.015 | B |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|

08:30 - 08:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 540                    | 540                      | 135                        | 0                      | 269                       | 913                       |                            | 934               | 0.578 | 548                 | 453                             | 3.5               | 1.5             | 9.955     | A                            |
| B - A4226/Port Road W     | 822                    | 822                      | 206                        | 0                      | 0                         | 710                       |                            | 1225              | 0.671 | 1077                | 752                             | 66.0              | 2.3             | 68.998    | F                            |
| C - B4226/Pontypridd Road | 815                    | 815                      | 204                        | 0                      | 0                         | 1045                      |                            | 1014              | 0.804 | 1006                | 742                             | 127.1             | 79.4            | 371.178   | F                            |
| D - A4226/Port Road       | 888                    | 619                      | 155                        | 269                    | 0                         | 744                       | 0.00                       | 1048              | 0.591 | 622                 | 1306                            | 2.4               | 1.5             | 8.712     | A                            |

## Base - 2038 B+D+CMF H, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 125.69             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name  | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|----------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D24 | 2038 B+D+CMF H | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

|                              |                               |                    |                           |
|------------------------------|-------------------------------|--------------------|---------------------------|
| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|

|   |   |                |      |
|---|---|----------------|------|
| ✓ | ✓ | HV Percentages | 2.00 |
|---|---|----------------|------|

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 718                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 948                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 847                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1473                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 246                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 571                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 450                 |
|      | D - A4226/Port Road       | 372                    | 678                   | 422                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.18    | 315.48        | 65.0            | F       | 659                     | 988                           |
| B - A4226/Port Road W     | 1.00    | 76.12         | 21.9            | F       | 870                     | 1305                          |
| C - B4226/Pontypridd Road | 0.88    | 26.99         | 6.6             | D       | 777                     | 1166                          |
| D - A4226/Port Road       | 1.05    | 121.84        | 44.4            | F       | 1352                    | 1515                          |

## Main Results for each time segment

### 16:15 - 16:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 541                     | 541                       | 135                      | 0                        | 280                        | 943                        |                            | 914                | 0.591 | 535                 | 271                             | 0.0               | 1.5             | 9.724     | A                            |
| B - A4226/Port Road W     | 714                     | 714                       | 178                      | 0                        | 0                          | 747                        |                            | 1199               | 0.595 | 708                 | 730                             | 0.0               | 1.5             | 7.325     | A                            |
| C - B4226/Pontypridd Road | 638                     | 638                       | 159                      | 0                        | 0                          | 707                        |                            | 1245               | 0.512 | 634                 | 749                             | 0.0               | 1.0             | 5.868     | A                            |
| D - A4226/Port Road       | 1109                    | 829                       | 207                      | 280                      | 0                          | 393                        | 0.00                       | 1257               | 0.660 | 821                 | 947                             | 0.0               | 1.9             | 8.181     | A                            |

### 16:30 - 16:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 645                     | 645                       | 161                      | 0                        | 334                        | 1127                       |                            | 794                | 0.813 | 635                 | 324                             | 1.5               | 4.0             | 22.260    | C                            |
| B - A4226/Port Road W     | 852                     | 852                       | 213                      | 0                        | 0                          | 890                        |                            | 1104               | 0.772 | 845                 | 872                             | 1.5               | 3.2             | 13.689    | B                            |
| C - B4226/Pontypridd Road | 761                     | 761                       | 190                      | 0                        | 0                          | 843                        |                            | 1152               | 0.661 | 758                 | 893                             | 1.0               | 1.9             | 9.086     | A                            |
| D - A4226/Port Road       | 1324                    | 990                       | 247                      | 334                      | 0                          | 470                        | 0.00                       | 1211               | 0.817 | 981                 | 1130                            | 1.9               | 4.1             | 15.169    | C                            |

### 16:45 - 17:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 791                     | 791                       | 198                      | 0                        | 410                        | 1299                       |                            | 682                | 1.159 | 670                 | 389                             | 4.0               | 34.2            | 119.296   | F                            |
| B - A4226/Port Road W     | 1044                    | 1044                      | 261                      | 0                        | 0                          | 972                        |                            | 1050               | 0.994 | 995                 | 996                             | 3.2               | 15.4            | 45.962    | E                            |
| C - B4226/Pontypridd Road | 933                     | 933                       | 233                      | 0                        | 0                          | 965                        |                            | 1068               | 0.873 | 917                 | 1002                            | 1.9               | 5.8             | 21.932    | C                            |
| D - A4226/Port Road       | 1622                    | 1212                      | 303                      | 410                      | 0                          | 565                        | 0.00                       | 1155               | 1.050 | 1123                | 1317                            | 4.1               | 26.5            | 61.508    | F                            |

### 17:00 - 17:15

| Arm | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|-----|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
|-----|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|

|                           |      |      |     |     |     |      |      |      |       |      |      |      |      |         |   |
|---------------------------|------|------|-----|-----|-----|------|------|------|-------|------|------|------|------|---------|---|
| A - A4226/Waycock Road    | 791  | 791  | 198 | 0   | 410 | 1319 |      | 669  | 1.182 | 667  | 396  | 34.2 | 65.0 | 279.146 | F |
| B - A4226/Port Road W     | 1044 | 1044 | 261 | 0   | 0   | 977  |      | 1046 | 0.998 | 1018 | 1009 | 15.4 | 21.9 | 76.117  | F |
| C - B4226/Pontypridd Road | 933  | 933  | 233 | 0   | 0   | 981  |      | 1057 | 0.882 | 929  | 1014 | 5.8  | 6.6  | 26.988  | D |
| D - A4226/Port Road       | 1622 | 1212 | 303 | 410 | 0   | 574  | 0.00 | 1149 | 1.055 | 1140 | 1337 | 26.5 | 44.4 | 121.836 | F |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 645                     | 645                       | 161                      | 0                        | 334                        | 1294                       |                            | 685                | 0.942 | 675                 | 340                             | 65.0              | 57.8            | 315.479   | F                            |
| B - A4226/Port Road W     | 852                     | 852                       | 213                      | 0                        | 0                          | 984                        |                            | 1042               | 0.818 | 919                 | 984                             | 21.9              | 5.2             | 38.303    | E                            |
| C - B4226/Pontypridd Road | 761                     | 761                       | 190                      | 0                        | 0                          | 911                        |                            | 1105               | 0.689 | 779                 | 992                             | 6.6               | 2.3             | 11.580    | B                            |
| D - A4226/Port Road       | 1324                    | 990                       | 247                      | 334                      | 0                          | 490                        | 0.00                       | 1199               | 0.825 | 1143                | 1199                            | 44.4              | 6.0             | 75.665    | F                            |

#### 17:30 - 17:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 541                     | 541                       | 135                      | 0                        | 280                        | 969                        |                            | 898                | 0.602 | 765                 | 276                             | 57.8              | 1.7             | 80.199    | F                            |
| B - A4226/Port Road W     | 714                     | 714                       | 178                      | 0                        | 0                          | 942                        |                            | 1069               | 0.667 | 726                 | 791                             | 5.2               | 2.1             | 10.955    | B                            |
| C - B4226/Pontypridd Road | 638                     | 638                       | 159                      | 0                        | 0                          | 799                        |                            | 1182               | 0.540 | 642                 | 870                             | 2.3               | 1.2             | 6.746     | A                            |
| D - A4226/Port Road       | 1109                    | 829                       | 207                      | 280                      | 0                          | 400                        | 0.00                       | 1253               | 0.662 | 845                 | 1041                            | 6.0               | 2.0             | 9.206     | A                            |

## Base - 2038 B+CA, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |



## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 429.77             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D25 | 2038 B+CA     | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 774                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1195                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1149                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1252                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 405                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 730                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 521                 |
|      | D - A4226/Port Road       | 415                    | 489                   | 348                       | 0                   |

## Vehicle Mix

## Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.12    | 202.00        | 52.4            | F       | 710                     | 1065                          |
| B - A4226/Port Road W     | 1.29    | 567.95        | 173.6           | F       | 1097                    | 1645                          |
| C - B4226/Pontypridd Road | 1.35    | 886.10        | 227.1           | F       | 1055                    | 1582                          |
| D - A4226/Port Road       | 0.84    | 19.80         | 4.9             | C       | 1149                    | 1152                          |

### Main Results for each time segment

#### 07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 583                    | 583                      | 146                     | 0                      | 312                       | 856                       |                            | 971               | 0.600 | 577                 | 355                             | 0.0               | 1.5             | 9.430     | A                            |
| B - A4226/Port Road W     | 900                    | 900                      | 225                     | 0                      | 0                         | 739                       |                            | 1205              | 0.747 | 888                 | 693                             | 0.0               | 2.9             | 11.382    | B                            |
| C - B4226/Pontypridd Road | 865                    | 865                      | 216                     | 0                      | 0                         | 965                       |                            | 1068              | 0.810 | 849                 | 662                             | 0.0               | 4.0             | 16.034    | C                            |
| D - A4226/Port Road       | 943                    | 630                      | 158                     | 312                    | 0                         | 585                       | 0.00                       | 1143              | 0.552 | 625                 | 1229                            | 0.0               | 1.2             | 7.044     | A                            |

#### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 696                    | 696                      | 174                     | 0                      | 373                       | 1003                      |                            | 875               | 0.795 | 687                 | 396                             | 1.5               | 3.7             | 19.237    | C                            |
| B - A4226/Port Road W     | 1074                   | 1074                     | 269                     | 0                      | 0                         | 882                       |                            | 1110              | 0.968 | 1035                | 808                             | 2.9               | 12.7            | 38.123    | E                            |
| C - B4226/Pontypridd Road | 1033                   | 1033                     | 258                     | 0                      | 0                         | 1133                      |                            | 954               | 1.083 | 931                 | 784                             | 4.0               | 29.6            | 79.078    | F                            |

|                     |      |     |     |     |   |     |      |      |       |     |      |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|
| D - A4226/Port Road | 1126 | 752 | 188 | 373 | 0 | 650 | 0.00 | 1104 | 0.682 | 749 | 1414 | 1.2 | 2.1 | 10.254 | B |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|

#### 07:45 - 08:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsign alised level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|--------------------------------|
| A - A4226/Waycock Road    | 852                     | 852                       | 213                      | 0                        | 457                        | 1166                       |                            | 769                | 1.109 | 750                 | 396                             | 3.7                | 29.2             | 94.580    | F                              |
| B - A4226/Port Road W     | 1316                    | 1316                      | 329                      | 0                        | 0                          | 1002                       |                            | 1030               | 1.278 | 1026                | 914                             | 12.7               | 85.0             | 182.162   | F                              |
| C - B4226/Pontypridd Road | 1265                    | 1265                      | 316                      | 0                        | 0                          | 1160                       |                            | 936                | 1.353 | 935                 | 869                             | 29.6               | 112.3            | 282.962   | F                              |
| D - A4226/Port Road       | 1378                    | 922                       | 230                      | 457                      | 0                          | 651                        | 0.00                       | 1104               | 0.835 | 912                 | 1443                            | 2.1                | 4.6              | 18.241    | C                              |

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsign alised level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|--------------------------------|
| A - A4226/Waycock Road    | 852                     | 852                       | 213                      | 0                        | 457                        | 1175                       |                            | 763                | 1.117 | 759                 | 396                             | 29.2               | 52.4             | 201.999   | F                              |
| B - A4226/Port Road W     | 1316                    | 1316                      | 329                      | 0                        | 0                          | 1013                       |                            | 1022               | 1.287 | 1022                | 921                             | 85.0               | 158.4            | 437.015   | F                              |
| C - B4226/Pontypridd Road | 1265                    | 1265                      | 316                      | 0                        | 0                          | 1161                       |                            | 935                | 1.354 | 934                 | 874                             | 112.3              | 195.0            | 606.475   | F                              |
| D - A4226/Port Road       | 1378                    | 922                       | 230                      | 457                      | 0                          | 650                        | 0.00                       | 1104               | 0.835 | 921                 | 1445                            | 4.6                | 4.9              | 19.798    | C                              |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsign alised level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|--------------------------------|
| A - A4226/Waycock Road    | 696                     | 696                       | 174                      | 0                        | 373                        | 1010                       |                            | 871                | 0.799 | 853                 | 386                             | 52.4               | 13.0             | 143.915   | F                              |
| B - A4226/Port Road W     | 1074                    | 1074                      | 269                      | 0                        | 0                          | 1026                       |                            | 1014               | 1.059 | 1014                | 838                             | 158.4              | 173.6            | 567.951   | F                              |
| C - B4226/Pontypridd Road | 1033                    | 1033                      | 258                      | 0                        | 0                          | 1204                       |                            | 905                | 1.141 | 905                 | 835                             | 195.0              | 227.1            | 844.568   | F                              |
| D - A4226/Port Road       | 1126                    | 752                       | 188                      | 373                      | 0                          | 633                        | 0.00                       | 1114               | 0.675 | 763                 | 1476                            | 4.9                | 2.2              | 10.775    | B                              |

#### 08:30 - 08:45

| Arm                    | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsign alised level of service |
|------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|--------------------------------|
| A - A4226/Waycock Road | 583                     | 583                       | 146                      | 0                        | 312                        | 882                        |                            | 954                | 0.611 | 628                 | 404                             | 13.0               | 1.7              | 13.147    | B                              |

|                           |     |     |     |     |   |      |      |      |       |      |      |       |       |         |   |
|---------------------------|-----|-----|-----|-----|---|------|------|------|-------|------|------|-------|-------|---------|---|
| B - A4226/Port Road W     | 900 | 900 | 225 | 0   | 0 | 785  |      | 1174 | 0.766 | 1167 | 725  | 173.6 | 106.7 | 433.526 | F |
| C - B4226/Pontypridd Road | 865 | 865 | 216 | 0   | 0 | 1201 |      | 907  | 0.954 | 903  | 752  | 227.1 | 217.5 | 886.101 | F |
| D - A4226/Port Road       | 943 | 630 | 158 | 312 | 0 | 653  | 0.00 | 1102 | 0.572 | 633  | 1451 | 2.2   | 1.4   | 7.896   | A |

## Base - 2038 B+CA, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 204.38             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D26 | 2038 B+CA     | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 780                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 958                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 845                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1569                    | 100.000            |

### Demand overview (Pedestrians)



|                           |      |     |     |     |     |     |      |      |       |     |     |     |     |        |   |
|---------------------------|------|-----|-----|-----|-----|-----|------|------|-------|-----|-----|-----|-----|--------|---|
| A - A4226/Waycock Road    | 587  | 587 | 147 | 0   | 309 | 986 |      | 886  | 0.662 | 579 | 271 | 0.0 | 2.0 | 11.960 | B |
| B - A4226/Port Road W     | 721  | 721 | 180 | 0   | 0   | 809 |      | 1158 | 0.623 | 715 | 756 | 0.0 | 1.6 | 8.094  | A |
| C - B4226/Pontypridd Road | 636  | 636 | 159 | 0   | 0   | 759 |      | 1209 | 0.526 | 632 | 765 | 0.0 | 1.1 | 6.210  | A |
| D - A4226/Port Road       | 1181 | 873 | 218 | 309 | 0   | 393 | 0.00 | 1257 | 0.694 | 864 | 998 | 0.0 | 2.2 | 9.022  | A |

#### 16:30 - 16:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 701                    | 701                      | 175                     | 0                      | 369                       | 1175                      |                            | 763               | 0.919 | 678                 | 324                             | 2.0               | 7.7             | 37.293    | E                            |
| B - A4226/Port Road W     | 861                    | 861                      | 215                     | 0                      | 0                         | 954                       |                            | 1061              | 0.811 | 852                 | 899                             | 1.6               | 4.0             | 16.665    | C                            |
| C - B4226/Pontypridd Road | 760                    | 760                      | 190                     | 0                      | 0                         | 900                       |                            | 1113              | 0.683 | 756                 | 906                             | 1.1               | 2.1             | 10.004    | B                            |
| D - A4226/Port Road       | 1411                   | 1042                     | 261                     | 369                    | 0                         | 470                       | 0.00                       | 1211              | 0.860 | 1029                | 1186                            | 2.2               | 5.4             | 18.681    | C                            |

#### 16:45 - 17:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 859                    | 859                      | 215                     | 0                      | 451                       | 1314                      |                            | 672               | 1.278 | 668                 | 387                             | 7.7               | 55.5            | 185.718   | F                            |
| B - A4226/Port Road W     | 1055                   | 1055                     | 264                     | 0                      | 0                         | 988                       |                            | 1039              | 1.015 | 997                 | 994                             | 4.0               | 18.5            | 53.423    | F                            |
| C - B4226/Pontypridd Road | 930                    | 930                      | 233                     | 0                      | 0                         | 1003                      |                            | 1042              | 0.893 | 912                 | 981                             | 2.1               | 6.6             | 24.919    | C                            |
| D - A4226/Port Road       | 1728                   | 1276                     | 319                     | 451                    | 0                         | 563                       | 0.00                       | 1156              | 1.104 | 1138                | 1353                            | 5.4               | 39.8            | 83.679    | F                            |

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 859                    | 859                      | 215                     | 0                      | 451                       | 1326                      |                            | 665               | 1.292 | 664                 | 394                             | 55.5              | 104.1           | 444.236   | F                            |
| B - A4226/Port Road W     | 1055                   | 1055                     | 264                     | 0                      | 0                         | 988                       |                            | 1039              | 1.015 | 1020                | 1002                            | 18.5              | 27.3            | 91.746    | F                            |
| C - B4226/Pontypridd Road | 930                    | 930                      | 233                     | 0                      | 0                         | 1019                      |                            | 1032              | 0.902 | 926                 | 989                             | 6.6               | 7.7             | 31.862    | D                            |
| D - A4226/Port Road       | 1728                   | 1276                     | 319                     | 451                    | 0                         | 572                       | 0.00                       | 1150              | 1.109 | 1147                | 1373                            | 39.8              | 72.1            | 183.685   | F                            |

#### 17:15 - 17:30

| Arm | Total Dem | Junction | Junction | Bypass | Bypass | Circulating | Pedestrian | Capacity | RF C | Throughput | Throughput | Start | End | Delay (s) | Unsignalled |
|-----|-----------|----------|----------|--------|--------|-------------|------------|----------|------|------------|------------|-------|-----|-----------|-------------|
|-----|-----------|----------|----------|--------|--------|-------------|------------|----------|------|------------|------------|-------|-----|-----------|-------------|

|                           | and<br>(PCU<br>/hr) | dema<br>nd<br>(PCU<br>/hr) | Arriv<br>als<br>(PCU<br>) | dem<br>and<br>(PCU<br>/hr) | exit<br>flow<br>(PCU<br>/hr) | flow<br>(PCU/<br>hr) | dema<br>nd<br>(Ped/h<br>r) | (PCU<br>/hr) |       | (PCU/h<br>r) | (exit<br>side)<br>(PCU/h<br>r) | que<br>ue<br>(PC<br>U) | que<br>ue<br>(PC<br>U) |         | level of<br>service |
|---------------------------|---------------------|----------------------------|---------------------------|----------------------------|------------------------------|----------------------|----------------------------|--------------|-------|--------------|--------------------------------|------------------------|------------------------|---------|---------------------|
| A - A4226/Waycock Road    | 701                 | 701                        | 175                       | 0                          | 369                          | 1332                 |                            | 661          | 1.061 | 660          | 343                            | 104.1                  | 114.5                  | 571.222 | F                   |
| B - A4226/Port Road W     | 861                 | 861                        | 215                       | 0                          | 0                            | 997                  |                            | 1033         | 0.834 | 946          | 994                            | 27.3                   | 6.1                    | 53.553  | F                   |
| C - B4226/Pontypridd Road | 760                 | 760                        | 190                       | 0                          | 0                            | 963                  |                            | 1070         | 0.710 | 780          | 981                            | 7.7                    | 2.6                    | 13.274  | B                   |
| D - A4226/Port Road       | 1411                | 1042                       | 261                       | 369                        | 0                            | 494                  | 0.00                       | 1197         | 0.871 | 1180         | 1249                           | 72.1                   | 37.4                   | 169.154 | F                   |

#### 17:30 - 17:45

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass demand (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/h r) | Capacity (PCU /hr) | RF C  | Throug hput (PCU/h r) | Throug hput (exit side) (PCU/h r) | Sta rt que ue (PC U) | En d que ue (PC U) | Delat y (s) | Unsign alised level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|-------------------------|----------------------------|----------------------------|-----------------------------|--------------------|-------|-----------------------|-----------------------------------|----------------------|--------------------|-------------|--------------------------------|
| A - A4226/Waycock Road    | 587                     | 587                       | 147                      | 0                       | 309                        | 1136                       |                             | 788                | 0.745 | 781                   | 276                               | 114.5                | 66.1               | 418.201     | F                              |
| B - A4226/Port Road W     | 721                     | 721                       | 180                      | 0                       | 0                          | 1032                       |                             | 1009               | 0.714 | 735                   | 885                               | 6.1                  | 2.6                | 13.856      | B                              |
| C - B4226/Pontypridd Road | 636                     | 636                       | 159                      | 0                       | 0                          | 854                        |                             | 1144               | 0.556 | 641                   | 913                               | 2.6                  | 1.3                | 7.253       | A                              |
| D - A4226/Port Road       | 1181                    | 873                       | 218                      | 309                     | 0                          | 400                        | 0.00                        | 1253               | 0.697 | 1013                  | 1095                              | 37.4                 | 2.4                | 25.339      | D                              |

## Base - 2038 B+D+CA L, AM

#### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

#### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 442.49             | F            |

#### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D27 | 2038 B+D+CA L | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 777                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1200                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1153                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1283                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 408                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 735                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 525                 |
|      | D - A4226/Port Road       | 424                    | 502                   | 357                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period



| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.14    | 232.84        | 60.6            | F       | 713                     | 1069                          |
| B - A4226/Port Road W     | 1.29    | 586.20        | 178.3           | F       | 1101                    | 1652                          |
| C - B4226/Pontypridd Road | 1.35    | 901.49        | 229.4           | F       | 1058                    | 1587                          |
| D - A4226/Port Road       | 0.86    | 22.52         | 5.6             | C       | 1177                    | 1182                          |

## Main Results for each time segment

### 07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 585                    | 585                      | 146                     | 0                       | 319                       | 872                       |                            | 961               | 0.609 | 579                 | 354                             | 0.0               | 1.6             | 9.728     | A                            |
| B - A4226/Port Road W     | 903                    | 903                      | 226                     | 0                       | 0                         | 748                       |                            | 1199              | 0.753 | 891                 | 703                             | 0.0               | 3.0             | 11.698    | B                            |
| C - B4226/Pontypridd Road | 868                    | 868                      | 217                     | 0                       | 0                         | 971                       |                            | 1064              | 0.816 | 852                 | 668                             | 0.0               | 4.1             | 16.449    | C                            |
| D - A4226/Port Road       | 966                    | 647                      | 162                     | 319                     | 0                         | 585                       | 0.00                       | 1143              | 0.566 | 641                 | 1238                            | 0.0               | 1.3             | 7.264     | A                            |

### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 699                    | 699                      | 175                     | 0                       | 381                       | 1021                      |                            | 863               | 0.809 | 689                 | 395                             | 1.6               | 4.0             | 20.592    | C                            |
| B - A4226/Port Road W     | 1079                   | 1079                     | 270                     | 0                       | 0                         | 892                       |                            | 1103              | 0.978 | 1036                | 818                             | 3.0               | 13.8            | 40.654    | E                            |
| C - B4226/Pontypridd Road | 1037                   | 1037                     | 259                     | 0                       | 0                         | 1137                      |                            | 951               | 1.090 | 930                 | 791                             | 4.1               | 30.8            | 81.776    | F                            |
| D - A4226/Port Road       | 1153                   | 772                      | 193                     | 381                     | 0                         | 647                       | 0.00                       | 1106              | 0.698 | 768                 | 1419                            | 1.3               | 2.3             | 10.773    | B                            |

### 07:45 - 08:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass dem and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|-------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 855                    | 855                      | 214                     | 0                       | 467                       | 1188                      |                            | 754               | 1.134 | 739                 | 395                             | 4.0               | 33.0            | 105.712   | F                            |
| B - A4226/Port Road W     | 1321                   | 1321                     | 330                     | 0                       | 0                         | 1002                      |                            | 1029              | 1.283 | 1027                | 925                             | 13.8              | 87.5            | 188.298   | F                            |
| C - B4226/Pontypridd Road | 1270                   | 1270                     | 317                     | 0                       | 0                         | 1156                      |                            | 938               | 1.354 | 937                 | 873                             | 30.8              | 114.0           | 287.890   | F                            |

|                     |      |     |     |     |   |     |      |      |       |     |      |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|
| D - A4226/Port Road | 1413 | 946 | 236 | 467 | 0 | 650 | 0.00 | 1104 | 0.856 | 934 | 1444 | 2.3 | 5.3 | 20.237 | C |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 855                    | 855                      | 214                     | 0                      | 467                       | 1199                      |                            | 747               | 1.145 | 745                 | 395                             | 33.0              | 60.6            | 232.841   | F                            |
| B - A4226/Port Road W     | 1321                   | 1321                     | 330                     | 0                      | 0                         | 1012                      |                            | 1023              | 1.291 | 1023                | 932                             | 87.5              | 162.0           | 447.260   | F                            |
| C - B4226/Pontypridd Road | 1270                   | 1270                     | 317                     | 0                      | 0                         | 1157                      |                            | 937               | 1.354 | 937                 | 878                             | 114.0             | 197.1           | 612.185   | F                            |
| D - A4226/Port Road       | 1413                   | 946                      | 236                     | 467                    | 0                         | 650                       | 0.00                       | 1104              | 0.856 | 944                 | 1445                            | 5.3               | 5.6             | 22.517    | C                            |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 699                    | 699                      | 175                     | 0                      | 381                       | 1032                      |                            | 856               | 0.816 | 842                 | 385                             | 60.6              | 24.8            | 186.065   | F                            |
| B - A4226/Port Road W     | 1079                   | 1079                     | 270                     | 0                      | 0                         | 1025                      |                            | 1014              | 1.064 | 1014                | 848                             | 162.0             | 178.3           | 586.200   | F                            |
| C - B4226/Pontypridd Road | 1037                   | 1037                     | 259                     | 0                      | 0                         | 1201                      |                            | 908               | 1.142 | 907                 | 838                             | 197.1             | 229.4           | 853.622   | F                            |
| D - A4226/Port Road       | 1153                   | 772                      | 193                     | 381                    | 0                         | 632                       | 0.00                       | 1115              | 0.693 | 785                 | 1476                            | 5.6               | 2.4             | 11.566    | B                            |

#### 08:30 - 08:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 585                    | 585                      | 146                     | 0                      | 319                       | 897                       |                            | 944               | 0.619 | 677                 | 398                             | 24.8              | 1.8             | 19.490    | C                            |
| B - A4226/Port Road W     | 903                    | 903                      | 226                     | 0                      | 0                         | 833                       |                            | 1142              | 0.791 | 1136                | 741                             | 178.3             | 120.2           | 474.033   | F                            |
| C - B4226/Pontypridd Road | 868                    | 868                      | 217                     | 0                      | 0                         | 1205                      |                            | 904               | 0.960 | 900                 | 763                             | 229.4             | 221.4           | 901.488   | F                            |
| D - A4226/Port Road       | 966                    | 647                      | 162                     | 319                    | 0                         | 645                       | 0.00                       | 1107              | 0.584 | 650                 | 1461                            | 2.4               | 1.5             | 8.115     | A                            |

## Base - 2038 B+D+CA L, PM

### Data Errors and Warnings

| Severity | Area     | Item                     | Description                                                                                                      |
|----------|----------|--------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry | A - A4226/Waycock Road - | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

|         |                     |                                           |                                                                                                                  |
|---------|---------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------|
|         |                     | Roundabout Geometry                       |                                                                                                                  |
| Warning | Geometry            | D - A4226/Port Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 217.25             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D28 | 2038 B+D+CA L | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 785                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 970                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 854                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1583                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

## Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 313                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 593                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 457                 |
|      | D - A4226/Port Road       | 413                    | 720                   | 449                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.30    | 599.05        | 119.5           | F       | 720                     | 1080                          |
| B - A4226/Port Road W     | 1.03    | 103.52        | 31.8            | F       | 890                     | 1335                          |
| C - B4226/Pontypridd Road | 0.92    | 35.99         | 8.8             | E       | 784                     | 1175                          |
| D - A4226/Port Road       | 1.12    | 195.39        | 77.3            | F       | 1453                    | 1610                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 591                    | 591                      | 148                        | 0                      | 311                       | 994                       |                            | 881               | 0.671 | 583                 | 271                             | 0.0               | 2.0             | 12.294    | B                            |
| B - A4226/Port Road W     | 730                    | 730                      | 183                        | 0                      | 0                         | 816                       |                            | 1154              | 0.633 | 723                 | 761                             | 0.0               | 1.7             | 8.331     | A                            |
| C - B4226/Pontypridd Road | 643                    | 643                      | 161                        | 0                      | 0                         | 772                       |                            | 1200              | 0.536 | 638                 | 767                             | 0.0               | 1.1             | 6.375     | A                            |
| D - A4226/Port Road       | 1192                   | 881                      | 220                        | 311                    | 0                         | 393                       | 0.00                       | 1257              | 0.701 | 872                 | 1017                            | 0.0               | 2.3             | 9.198     | A                            |

**16:30 - 16:45**

| Arm                       | Total Dem and (PCU /hr) | Junc tion dema nd (PCU /hr) | Junc tion Arriv als (PCU ) | Bypa ss dem and (PCU /hr) | Bypa ss exit flow (PCU /hr) | Circul ating flow (PCU/ hr) | Pedes trian dema nd (Ped/h r) | Capa city (PCU /hr) | RF C  | Throug hput (PCU/h r) | Throug hput (exit side) (PCU/h r) | Sta rt que ue (PC U) | En d que ue (PC U) | Del ay (s) | Unsign alised level of service |
|---------------------------|-------------------------|-----------------------------|----------------------------|---------------------------|-----------------------------|-----------------------------|-------------------------------|---------------------|-------|-----------------------|-----------------------------------|----------------------|--------------------|------------|--------------------------------|
| A - A4226/Waycock Road    | 706                     | 706                         | 176                        | 0                         | 371                         | 1184                        |                               | 757                 | 0.932 | 680                   | 324                               | 2.0                  | 8.4                | 39.985     | E                              |
| B - A4226/Port Road W     | 872                     | 872                         | 218                        | 0                         | 0                           | 960                         |                               | 1058                | 0.824 | 862                   | 904                               | 1.7                  | 4.3                | 17.697     | C                              |
| C - B4226/Pontypridd Road | 768                     | 768                         | 192                        | 0                         | 0                           | 914                         |                               | 1103                | 0.696 | 763                   | 908                               | 1.1                  | 2.2                | 10.485     | B                              |
| D - A4226/Port Road       | 1423                    | 1052                        | 263                        | 371                       | 0                           | 470                         | 0.00                          | 1211                | 0.868 | 1038                  | 1207                              | 2.3                  | 5.7                | 19.489     | C                              |

**16:45 - 17:00**

| Arm                       | Total Dem and (PCU /hr) | Junc tion dema nd (PCU /hr) | Junc tion Arriv als (PCU ) | Bypa ss dem and (PCU /hr) | Bypa ss exit flow (PCU /hr) | Circul ating flow (PCU/ hr) | Pedes trian dema nd (Ped/h r) | Capa city (PCU /hr) | RF C  | Throug hput (PCU/h r) | Throug hput (exit side) (PCU/h r) | Sta rt que ue (PC U) | En d que ue (PC U) | Del ay (s) | Unsign alised level of service |
|---------------------------|-------------------------|-----------------------------|----------------------------|---------------------------|-----------------------------|-----------------------------|-------------------------------|---------------------|-------|-----------------------|-----------------------------------|----------------------|--------------------|------------|--------------------------------|
| A - A4226/Waycock Road    | 864                     | 864                         | 216                        | 0                         | 455                         | 1316                        |                               | 671                 | 1.289 | 667                   | 386                               | 8.4                  | 57.8               | 194.135    | F                              |
| B - A4226/Port Road W     | 1068                    | 1068                        | 267                        | 0                         | 0                           | 988                         |                               | 1039                | 1.028 | 1002                  | 995                               | 4.3                  | 20.8               | 58.082     | F                              |
| C - B4226/Pontypridd Road | 940                     | 940                         | 235                        | 0                         | 0                           | 1013                        |                               | 1036                | 0.908 | 920                   | 978                               | 2.2                  | 7.4                | 27.225     | D                              |
| D - A4226/Port Road       | 1743                    | 1288                        | 322                        | 455                       | 0                           | 561                         | 0.00                          | 1157                | 1.113 | 1141                  | 1371                              | 5.7                  | 42.4               | 87.932     | F                              |

**17:00 - 17:15**

| Arm                       | Total Dem and (PCU /hr) | Junc tion dema nd (PCU /hr) | Junc tion Arriv als (PCU ) | Bypa ss dem and (PCU /hr) | Bypa ss exit flow (PCU /hr) | Circul ating flow (PCU/ hr) | Pedes trian dema nd (Ped/h r) | Capa city (PCU /hr) | RF C  | Throug hput (PCU/h r) | Throug hput (exit side) (PCU/h r) | Sta rt que ue (PC U) | En d que ue (PC U) | Del ay (s) | Unsign alised level of service |
|---------------------------|-------------------------|-----------------------------|----------------------------|---------------------------|-----------------------------|-----------------------------|-------------------------------|---------------------|-------|-----------------------|-----------------------------------|----------------------|--------------------|------------|--------------------------------|
| A - A4226/Waycock Road    | 864                     | 864                         | 216                        | 0                         | 455                         | 1327                        |                               | 664                 | 1.302 | 663                   | 393                               | 57.8                 | 108.1              | 461.424    | F                              |
| B - A4226/Port Road W     | 1068                    | 1068                        | 267                        | 0                         | 0                           | 989                         |                               | 1039                | 1.028 | 1024                  | 1002                              | 20.8                 | 31.8               | 103.524    | F                              |
| C - B4226/Pontypridd Road | 940                     | 940                         | 235                        | 0                         | 0                           | 1028                        |                               | 1026                | 0.917 | 935                   | 985                               | 7.4                  | 8.8                | 35.990     | E                              |
| D - A4226/Port Road       | 1743                    | 1288                        | 322                        | 455                       | 0                           | 571                         | 0.00                          | 1151                | 1.119 | 1149                  | 1392                              | 42.4                 | 77.3               | 195.392    | F                              |

**17:15 - 17:30**

| Arm                       | Total Dem and (PCU /hr) | Junc tion dema nd (PCU /hr) | Junc tion Arriv als (PCU ) | Bypa ss dem and (PCU /hr) | Bypa ss exit flow (PCU /hr) | Circul ating flow (PCU/ hr) | Pedes trian dema nd (Ped/h r) | Capa city (PCU /hr) | RF C  | Throug hput (PCU/h r) | Throug hput (exit side) (PCU/h r) | Sta rt que ue (PC U) | En d que ue (PC U) | Del ay (s) | Unsign alised level of service |
|---------------------------|-------------------------|-----------------------------|----------------------------|---------------------------|-----------------------------|-----------------------------|-------------------------------|---------------------|-------|-----------------------|-----------------------------------|----------------------|--------------------|------------|--------------------------------|
| A - A4226/Waycock Road    | 706                     | 706                         | 176                        | 0                         | 371                         | 1332                        |                               | 661                 | 1.068 | 660                   | 345                               | 108.1                | 119.5              | 599.047    | F                              |
| B - A4226/Port Road W     | 872                     | 872                         | 218                        | 0                         | 0                           | 998                         |                               | 1033                | 0.844 | 971                   | 994                               | 31.8                 | 6.9                | 67.756     | F                              |
| C - B4226/Pontypridd Road | 768                     | 768                         | 192                        | 0                         | 0                           | 987                         |                               | 1053                | 0.729 | 792                   | 982                               | 8.8                  | 2.8                | 14.921     | B                              |

|                     |      |      |     |     |   |     |      |      |       |      |      |      |      |         |   |
|---------------------|------|------|-----|-----|---|-----|------|------|-------|------|------|------|------|---------|---|
| D - A4226/Port Road | 1423 | 1052 | 263 | 371 | 0 | 497 | 0.00 | 1195 | 0.880 | 1180 | 1282 | 77.3 | 45.3 | 188.580 | F |
|---------------------|------|------|-----|-----|---|-----|------|------|-------|------|------|------|------|---------|---|

#### 17:30 - 17:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU/hr) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|----------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 591                    | 591                      | 148                        | 0                      | 311                       | 1176                      |                            | 762               | 0.775 | 756                 | 277                             | 119.5             | 78.3            | 472.767   | F                            |
| B - A4226/Port Road W     | 730                    | 730                      | 183                        | 0                      | 0                         | 1027                      |                            | 1013              | 0.721 | 747                 | 904                             | 6.9               | 2.7             | 14.469    | B                            |
| C - B4226/Pontypridd Road | 643                    | 643                      | 161                        | 0                      | 0                         | 858                       |                            | 1141              | 0.563 | 649                 | 916                             | 2.8               | 1.3             | 7.424     | A                            |
| D - A4226/Port Road       | 1192                   | 881                      | 220                        | 311                    | 0                         | 401                       | 0.00                       | 1252              | 0.703 | 1052                | 1106                            | 45.3              | 2.5             | 35.955    | E                            |

## Base - 2038 B+D+CA M, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 450.37             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D29 | 2038 B+D+CA M | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

|                              |                               |                    |                           |
|------------------------------|-------------------------------|--------------------|---------------------------|
| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|

|   |   |                |      |
|---|---|----------------|------|
| ✓ | ✓ | HV Percentages | 2.00 |
|---|---|----------------|------|

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 779                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1203                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1155                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1308                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 410                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 738                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 527                 |
|      | D - A4226/Port Road       | 432                    | 512                   | 364                       | 0                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.17    | 257.80        | 67.0            | F       | 715                     | 1072                          |
| B - A4226/Port Road W     | 1.29    | 598.29        | 181.0           | F       | 1104                    | 1656                          |
| C - B4226/Pontypridd Road | 1.35    | 907.62        | 229.9           | F       | 1060                    | 1590                          |
| D - A4226/Port Road       | 0.87    | 25.20         | 6.4             | D       | 1200                    | 1206                          |

## Main Results for each time segment

### 07:15 - 07:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 586                    | 586                      | 147                     | 0                      | 325                       | 884                       |                            | 952               | 0.616 | 580                 | 354                             | 0.0               | 1.6             | 9.970     | A                            |
| B - A4226/Port Road W     | 906                    | 906                      | 226                     | 0                      | 0                         | 754                       |                            | 1195              | 0.758 | 893                 | 710                             | 0.0               | 3.1             | 11.925    | B                            |
| C - B4226/Pontypridd Road | 870                    | 870                      | 217                     | 0                      | 0                         | 974                       |                            | 1062              | 0.819 | 853                 | 673                             | 0.0               | 4.2             | 16.696    | C                            |
| D - A4226/Port Road       | 985                    | 659                      | 165                     | 325                    | 0                         | 585                       | 0.00                       | 1143              | 0.577 | 654                 | 1242                            | 0.0               | 1.4             | 7.443     | A                            |

### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 700                    | 700                      | 175                     | 0                      | 388                       | 1035                      |                            | 854               | 0.820 | 690                 | 394                             | 1.6               | 4.2             | 21.751    | C                            |
| B - A4226/Port Road W     | 1081                   | 1081                     | 270                     | 0                      | 0                         | 899                       |                            | 1098              | 0.985 | 1035                | 826                             | 3.1               | 14.6            | 42.512    | E                            |
| C - B4226/Pontypridd Road | 1038                   | 1038                     | 260                     | 0                      | 0                         | 1139                      |                            | 950               | 1.093 | 929                 | 796                             | 4.2               | 31.5            | 83.190    | F                            |
| D - A4226/Port Road       | 1176                   | 788                      | 197                     | 388                    | 0                         | 646                       | 0.00                       | 1107              | 0.712 | 783                 | 1422                            | 1.4               | 2.4             | 11.224    | B                            |

### 07:45 - 08:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 858                    | 858                      | 214                     | 0                      | 476                       | 1205                      |                            | 743               | 1.154 | 731                 | 395                             | 4.2               | 36.0            | 114.781   | F                            |
| B - A4226/Port Road W     | 1325                   | 1325                     | 331                     | 0                      | 0                         | 1002                      |                            | 1030              | 1.287 | 1027                | 933                             | 14.6              | 89.1            | 192.380   | F                            |
| C - B4226/Pontypridd Road | 1272                   | 1272                     | 318                     | 0                      | 0                         | 1154                      |                            | 940               | 1.353 | 939                 | 876                             | 31.5              | 114.7           | 289.797   | F                            |
| D - A4226/Port Road       | 1440                   | 964                      | 241                     | 476                    | 0                         | 650                       | 0.00                       | 1104              | 0.873 | 950                 | 1443                            | 2.4               | 5.9             | 22.089    | C                            |

### 08:00 - 08:15

| Arm | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|-----|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
|-----|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|



|                           |      |      |     |     |     |      |      |      |       |      |      |       |       |         |   |
|---------------------------|------|------|-----|-----|-----|------|------|------|-------|------|------|-------|-------|---------|---|
| A - A4226/Waycock Road    | 858  | 858  | 214 | 0   | 476 | 1217 |      | 735  | 1.166 | 734  | 395  | 36.0  | 67.0  | 257.804 | F |
| B - A4226/Port Road W     | 1325 | 1325 | 331 | 0   | 0   | 1010 |      | 1025 | 1.293 | 1024 | 941  | 89.1  | 164.1 | 453.401 | F |
| C - B4226/Pontypridd Road | 1272 | 1272 | 318 | 0   | 0   | 1153 |      | 940  | 1.353 | 940  | 881  | 114.7 | 197.7 | 613.191 | F |
| D - A4226/Port Road       | 1440 | 964  | 241 | 476 | 0   | 650  | 0.00 | 1104 | 0.873 | 963  | 1443 | 5.9   | 6.4   | 25.197  | D |

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 700                    | 700                      | 175                     | 0                      | 388                       | 1050                      |                            | 845               | 0.829 | 832                 | 385                             | 67.0              | 34.2            | 220.744   | F                            |
| B - A4226/Port Road W     | 1081                   | 1081                     | 270                     | 0                      | 0                         | 1025                      |                            | 1015              | 1.066 | 1014                | 857                             | 164.1             | 181.0           | 598.293   | F                            |
| C - B4226/Pontypridd Road | 1038                   | 1038                     | 260                     | 0                      | 0                         | 1197                      |                            | 910               | 1.141 | 910                 | 842                             | 197.7             | 229.9           | 855.818   | F                            |
| D - A4226/Port Road       | 1176                   | 788                      | 197                     | 388                    | 0                         | 632                       | 0.00                       | 1115              | 0.706 | 803                 | 1475                            | 6.4               | 2.6             | 12.323    | B                            |

#### 08:30 - 08:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 586                    | 586                      | 147                     | 0                      | 325                       | 909                       |                            | 937               | 0.626 | 716                 | 394                             | 34.2              | 1.8             | 29.211    | D                            |
| B - A4226/Port Road W     | 906                    | 906                      | 226                     | 0                      | 0                         | 871                       |                            | 1117              | 0.811 | 1111                | 754                             | 181.0             | 129.7           | 504.284   | F                            |
| C - B4226/Pontypridd Road | 870                    | 870                      | 217                     | 0                      | 0                         | 1209                      |                            | 902               | 0.964 | 898                 | 773                             | 229.9             | 222.8           | 907.625   | F                            |
| D - A4226/Port Road       | 985                    | 659                      | 165                     | 325                    | 0                         | 639                       | 0.00                       | 1111              | 0.594 | 664                 | 1468                            | 2.6               | 1.5             | 8.300     | A                            |

## Base - 2038 B+D+CA M, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 228.95             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D30 | 2038 B+D+CA M | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 789                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 979                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 862                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1595                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 317                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 602                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 465                 |
|      | D - A4226/Port Road       | 415                    | 726                   | 453                       | 1                   |

## Vehicle Mix

## Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
| From |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
|      | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.31    | 623.91        | 123.6           | F       | 724                     | 1086                          |
| B - A4226/Port Road W     | 1.04    | 113.31        | 35.6            | F       | 898                     | 1348                          |
| C - B4226/Pontypridd Road | 0.93    | 39.98         | 9.9             | E       | 791                     | 1186                          |
| D - A4226/Port Road       | 1.13    | 206.68        | 82.1            | F       | 1464                    | 1624                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 594                    | 594                      | 149                     | 0                      | 312                       | 1001                      |                            | 877               | 0.678 | 586                 | 271                             | 0.0               | 2.1             | 12.596    | B                            |
| B - A4226/Port Road W     | 737                    | 737                      | 184                     | 0                      | 0                         | 821                       |                            | 1150              | 0.641 | 730                 | 765                             | 0.0               | 1.8             | 8.529     | A                            |
| C - B4226/Pontypridd Road | 649                    | 649                      | 162                     | 0                      | 0                         | 781                       |                            | 1194              | 0.544 | 644                 | 770                             | 0.0               | 1.2             | 6.515     | A                            |
| D - A4226/Port Road       | 1201                   | 888                      | 222                     | 312                    | 0                         | 393                       | 0.00                       | 1257              | 0.707 | 879                 | 1032                            | 0.0               | 2.3             | 9.366     | A                            |

#### 16:30 - 16:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 709                    | 709                      | 177                     | 0                      | 373                       | 1192                      |                            | 752               | 0.943 | 681                 | 324                             | 2.1               | 9.1             | 42.508    | E                            |
| B - A4226/Port Road W     | 880                    | 880                      | 220                     | 0                      | 0                         | 965                       |                            | 1055              | 0.835 | 869                 | 908                             | 1.8               | 4.5             | 18.579    | C                            |
| C - B4226/Pontypridd Road | 775                    | 775                      | 194                     | 0                      | 0                         | 924                       |                            | 1097              | 0.707 | 770                 | 910                             | 1.2               | 2.3             | 10.910    | B                            |

|                     |      |      |     |     |   |     |      |      |       |      |      |     |     |        |   |
|---------------------|------|------|-----|-----|---|-----|------|------|-------|------|------|-----|-----|--------|---|
| D - A4226/Port Road | 1434 | 1061 | 265 | 373 | 0 | 469 | 0.00 | 1212 | 0.876 | 1046 | 1225 | 2.3 | 6.0 | 20.280 | C |
|---------------------|------|------|-----|-----|---|-----|------|------|-------|------|------|-----|-----|--------|---|

#### 16:45 - 17:00

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsign alised level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|--------------------------------|
| A - A4226/Waycock Road    | 869                     | 869                       | 217                      | 0                        | 457                        | 1318                       |                            | 669                | 1.298 | 666                 | 384                             | 9.1                | 59.9             | 201.564   | F                              |
| B - A4226/Port Road W     | 1078                    | 1078                      | 269                      | 0                        | 0                          | 989                        |                            | 1038               | 1.038 | 1005                | 995                             | 4.5                | 22.7             | 61.918    | F                              |
| C - B4226/Pontypridd Road | 949                     | 949                       | 237                      | 0                        | 0                          | 1019                       |                            | 1031               | 0.920 | 926                 | 976                             | 2.3                | 8.1              | 29.347    | D                              |
| D - A4226/Port Road       | 1756                    | 1299                      | 325                      | 457                      | 0                          | 559                        | 0.00                       | 1158               | 1.122 | 1144                | 1386                            | 6.0                | 44.9             | 91.943    | F                              |

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsign alised level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|--------------------------------|
| A - A4226/Waycock Road    | 869                     | 869                       | 217                      | 0                        | 457                        | 1328                       |                            | 663                | 1.310 | 663                 | 391                             | 59.9               | 111.3            | 475.942   | F                              |
| B - A4226/Port Road W     | 1078                    | 1078                      | 269                      | 0                        | 0                          | 989                        |                            | 1038               | 1.038 | 1026                | 1001                            | 22.7               | 35.6             | 113.310   | F                              |
| C - B4226/Pontypridd Road | 949                     | 949                       | 237                      | 0                        | 0                          | 1034                       |                            | 1022               | 0.929 | 942                 | 982                             | 8.1                | 9.9              | 39.980    | E                              |
| D - A4226/Port Road       | 1756                    | 1299                      | 325                      | 457                      | 0                          | 569                        | 0.00                       | 1152               | 1.128 | 1150                | 1407                            | 44.9               | 82.1             | 206.320   | F                              |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsign alised level of service |
|---------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|--------------------------------|
| A - A4226/Waycock Road    | 709                     | 709                       | 177                      | 0                        | 373                        | 1331                       |                            | 661                | 1.073 | 660                 | 347                             | 111.3              | 123.6            | 623.911   | F                              |
| B - A4226/Port Road W     | 880                     | 880                       | 220                      | 0                        | 0                          | 998                        |                            | 1032               | 0.853 | 991                 | 993                             | 35.6               | 7.9              | 80.844    | F                              |
| C - B4226/Pontypridd Road | 775                     | 775                       | 194                      | 0                        | 0                          | 1006                       |                            | 1040               | 0.745 | 802                 | 983                             | 9.9                | 3.1              | 16.637    | C                              |
| D - A4226/Port Road       | 1434                    | 1061                      | 265                      | 373                      | 0                          | 500                        | 0.00                       | 1193               | 0.889 | 1179                | 1308                            | 82.1               | 52.6             | 206.683   | F                              |

#### 17:30 - 17:45

| Arm                    | Total Dem and (PCU /hr) | Junction demand (PCU /hr) | Junction Arrivals (PCU ) | Bypass dem and (PCU /hr) | Bypass exit flow (PCU /hr) | Circulating flow (PCU/ hr) | Pedestrian demand (Ped/hr) | Capacity (PCU /hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PC U) | End queue (PC U) | Delay (s) | Unsign alised level of service |
|------------------------|-------------------------|---------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------|--------------------|-------|---------------------|---------------------------------|--------------------|------------------|-----------|--------------------------------|
| A - A4226/Waycock Road | 594                     | 594                       | 149                      | 0                        | 312                        | 1212                       |                            | 738                | 0.804 | 732                 | 278                             | 123.6              | 89.0             | 524.004   | F                              |

|                           |      |     |     |     |   |      |      |      |       |      |      |      |     |        |   |
|---------------------------|------|-----|-----|-----|---|------|------|------|-------|------|------|------|-----|--------|---|
| B - A4226/Port Road W     | 737  | 737 | 184 | 0   | 0 | 1023 |      | 1016 | 0.726 | 758  | 922  | 7.9  | 2.8 | 15.084 | C |
| C - B4226/Pontypridd Road | 649  | 649 | 162 | 0   | 0 | 861  |      | 1139 | 0.570 | 656  | 920  | 3.1  | 1.4 | 7.572  | A |
| D - A4226/Port Road       | 1201 | 888 | 222 | 312 | 0 | 402  | 0.00 | 1252 | 0.710 | 1088 | 1115 | 52.6 | 2.6 | 49.770 | E |

## Base - 2038 B+D+CA H, AM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions

| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 457.38             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D31 | 2038 B+D+CA H | AM               | 07:30-08:30 peak hour | ONE HOUR             | 07:15              | 08:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 780                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 1206                    | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 1157                    | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1326                    | 100.000            |

Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

Origin-Destination Data

Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 134                   | 235                       | 411                 |
|      | B - A4226/Port Road W     | 146                    | 17                    | 302                       | 741                 |
|      | C - B4226/Pontypridd Road | 333                    | 292                   | 3                         | 529                 |
|      | D - A4226/Port Road       | 437                    | 520                   | 369                       | 0                   |

Vehicle Mix

Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 0                     | 1                         | 9                   |
|      | B - A4226/Port Road W     | 0                      | 0                     | 2                         | 5                   |
|      | C - B4226/Pontypridd Road | 1                      | 1                     | 0                         | 7                   |
|      | D - A4226/Port Road       | 12                     | 3                     | 1                         | 0                   |

Results

Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.18    | 276.37        | 71.7            | F       | 716                     | 1074                          |
| B - A4226/Port Road W     | 1.29    | 608.42        | 183.3           | F       | 1107                    | 1660                          |
| C - B4226/Pontypridd Road | 1.35    | 914.49        | 230.8           | F       | 1062                    | 1593                          |
| D - A4226/Port Road       | 0.89    | 27.61         | 7.1             | D       | 1217                    | 1224                          |

Main Results for each time segment

07:15 - 07:30

| Arm | Total Demand | Junction demand | Junction Arrivals | Bypass demand | Bypass exit flow | Circulating flow | Pedestrian demand | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | Throughput (exit side) | Start queue | End queue | Delay (s) | Unsignalled level of service |
|-----|--------------|-----------------|-------------------|---------------|------------------|------------------|-------------------|-------------------|-----|---------------------|------------------------|-------------|-----------|-----------|------------------------------|
|-----|--------------|-----------------|-------------------|---------------|------------------|------------------|-------------------|-------------------|-----|---------------------|------------------------|-------------|-----------|-----------|------------------------------|

|                           | (PCU/hr) | (PCU/hr) | (PCU) | (PCU/hr) | (PCU/hr) | (PCU/hr) | (Ped/hr) |      |       |     | (PCU/hr) | (PCU) | (PCU) |        |   |
|---------------------------|----------|----------|-------|----------|----------|----------|----------|------|-------|-----|----------|-------|-------|--------|---|
| A - A4226/Waycock Road    | 587      | 587      | 147   | 0        | 329      | 894      |          | 946  | 0.621 | 581 | 354      | 0.0   | 1.7   | 10.150 | B |
| B - A4226/Port Road W     | 908      | 908      | 227   | 0        | 0        | 759      |          | 1192 | 0.762 | 895 | 716      | 0.0   | 3.1   | 12.111 | B |
| C - B4226/Pontypridd Road | 871      | 871      | 218   | 0        | 0        | 977      |          | 1060 | 0.822 | 854 | 677      | 0.0   | 4.3   | 16.919 | C |
| D - A4226/Port Road       | 998      | 669      | 167   | 329      | 0        | 585      | 0.00     | 1143 | 0.586 | 664 | 1246     | 0.0   | 1.4   | 7.585  | A |

#### 07:30 - 07:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 701                    | 701                      | 175                     | 0                      | 393                       | 1046                      |                            | 847               | 0.828 | 690                 | 393                             | 1.7               | 4.4             | 22.656    | C                            |
| B - A4226/Port Road W     | 1084                   | 1084                     | 271                     | 0                      | 0                         | 904                       |                            | 1095              | 0.990 | 1035                | 832                             | 3.1               | 15.3            | 44.111    | E                            |
| C - B4226/Pontypridd Road | 1040                   | 1040                     | 260                     | 0                      | 0                         | 1140                      |                            | 949               | 1.096 | 929                 | 800                             | 4.3               | 32.1            | 84.475    | F                            |
| D - A4226/Port Road       | 1192                   | 799                      | 200                     | 393                    | 0                         | 644                       | 0.00                       | 1108              | 0.722 | 795                 | 1425                            | 1.4               | 2.5             | 11.590    | B                            |

#### 07:45 - 08:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 859                    | 859                      | 215                     | 0                      | 481                       | 1217                      |                            | 735               | 1.168 | 724                 | 395                             | 4.4               | 38.2            | 121.564   | F                            |
| B - A4226/Port Road W     | 1328                   | 1328                     | 332                     | 0                      | 0                         | 1002                      |                            | 1030              | 1.289 | 1027                | 939                             | 15.3              | 90.4            | 195.768   | F                            |
| C - B4226/Pontypridd Road | 1274                   | 1274                     | 318                     | 0                      | 0                         | 1151                      |                            | 941               | 1.354 | 940                 | 878                             | 32.1              | 115.5           | 291.956   | F                            |
| D - A4226/Port Road       | 1460                   | 979                      | 245                     | 481                    | 0                         | 649                       | 0.00                       | 1105              | 0.886 | 963                 | 1442                            | 2.5               | 6.5             | 23.671    | C                            |

#### 08:00 - 08:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 859                    | 859                      | 215                     | 0                      | 481                       | 1231                      |                            | 726               | 1.182 | 725                 | 395                             | 38.2              | 71.7            | 276.374   | F                            |
| B - A4226/Port Road W     | 1328                   | 1328                     | 332                     | 0                      | 0                         | 1008                      |                            | 1026              | 1.295 | 1025                | 948                             | 90.4              | 166.0           | 458.637   | F                            |
| C - B4226/Pontypridd Road | 1274                   | 1274                     | 318                     | 0                      | 0                         | 1151                      |                            | 942               | 1.353 | 942                 | 883                             | 115.5             | 198.6           | 615.302   | F                            |

|                     |      |     |     |     |   |     |      |      |       |     |      |     |     |        |   |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|
| D - A4226/Port Road | 1460 | 979 | 245 | 481 | 0 | 650 | 0.00 | 1104 | 0.886 | 976 | 1442 | 6.5 | 7.1 | 27.614 | D |
|---------------------|------|-----|-----|-----|---|-----|------|------|-------|-----|------|-----|-----|--------|---|

#### 08:15 - 08:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 701                    | 701                      | 175                     | 0                      | 393                       | 1063                      |                            | 836               | 0.839 | 824                 | 385                             | 71.7              | 41.0            | 246.744   | F                            |
| B - A4226/Port Road W     | 1084                   | 1084                     | 271                     | 0                      | 0                         | 1024                      |                            | 1015              | 1.068 | 1015                | 864                             | 166.0             | 183.3           | 608.419   | F                            |
| C - B4226/Pontypridd Road | 1040                   | 1040                     | 260                     | 0                      | 0                         | 1195                      |                            | 912               | 1.141 | 911                 | 844                             | 198.6             | 230.8           | 859.319   | F                            |
| D - A4226/Port Road       | 1192                   | 799                      | 200                     | 393                    | 0                         | 632                       | 0.00                       | 1115              | 0.717 | 817                 | 1474                            | 7.1               | 2.7             | 12.992    | B                            |

#### 08:30 - 08:45

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 587                    | 587                      | 147                     | 0                      | 329                       | 918                       |                            | 931               | 0.631 | 744                 | 390                             | 41.0              | 1.9             | 41.121    | E                            |
| B - A4226/Port Road W     | 908                    | 908                      | 227                     | 0                      | 0                         | 898                       |                            | 1099              | 0.826 | 1093                | 764                             | 183.3             | 137.1           | 528.617   | F                            |
| C - B4226/Pontypridd Road | 871                    | 871                      | 218                     | 0                      | 0                         | 1211                      |                            | 900               | 0.967 | 896                 | 780                             | 230.8             | 224.5           | 914.490   | F                            |
| D - A4226/Port Road       | 998                    | 669                      | 167                     | 329                    | 0                         | 634                       | 0.00                       | 1113              | 0.601 | 674                 | 1473                            | 2.7               | 1.6             | 8.449     | A                            |

## Base - 2038 B+D+CA H, PM

### Data Errors and Warnings

| Severity | Area                | Item                                         | Description                                                                                                      |
|----------|---------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Warning  | Geometry            | A - A4226/Waycock Road - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Geometry            | D - A4226/Port Road - Roundabout Geometry    | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning  | Pedestrian Crossing | D - A4226/Port Road - Pedestrian crossing    | Pedestrian crossing uses default flow of 0. Is this correct?                                                     |

## Junction Network

### Junctions



| Junction | Name          | Junction type       | Use circulating lanes | Arm order  | Junction Delay (s) | Junction LOS |
|----------|---------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1        | Weycock Cross | Standard Roundabout |                       | A, B, C, D | 236.91             | F            |

### Junction Network Options

| Driving side | Lighting       |
|--------------|----------------|
| Left         | Normal/unknown |

## Traffic Demand

### Demand Set Details

| ID  | Scenario name | Time Period name | Description           | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|-----|---------------|------------------|-----------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D32 | 2038 B+D+CA H | PM               | 16:30-17:30 peak hour | ONE HOUR             | 16:15              | 17:45               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm                       | Linked arm | Profile type | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|---------------------------|------------|--------------|--------------|-------------------------|--------------------|
| A - A4226/Waycock Road    |            | ONE HOUR     | ✓            | 791                     | 100.000            |
| B - A4226/Port Road W     |            | ONE HOUR     | ✓            | 986                     | 100.000            |
| C - B4226/Pontypridd Road |            | ONE HOUR     | ✓            | 867                     | 100.000            |
| D - A4226/Port Road       |            | ONE HOUR     | ✓            | 1602                    | 100.000            |

### Demand overview (Pedestrians)

| Arm                       | Profile type | Average pedestrian flow (Ped/hr) |
|---------------------------|--------------|----------------------------------|
| A - A4226/Waycock Road    |              |                                  |
| B - A4226/Port Road W     |              |                                  |
| C - B4226/Pontypridd Road |              |                                  |
| D - A4226/Port Road       | [ONEHOUR]    | 0.00                             |

## Origin-Destination Data

### Demand (PCU/hr)

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 138                   | 334                       | 319                 |
|      | B - A4226/Port Road W     | 118                    | 11                    | 248                       | 609                 |
|      | C - B4226/Pontypridd Road | 245                    | 152                   | 0                         | 470                 |
|      | D - A4226/Port Road       | 417                    | 729                   | 455                       | 1                   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To                        |                        |                       |                           |                     |
|------|---------------------------|------------------------|-----------------------|---------------------------|---------------------|
|      |                           | A - A4226/Waycock Road | B - A4226/Port Road W | C - B4226/Pontypridd Road | D - A4226/Port Road |
| From | A - A4226/Waycock Road    | 0                      | 4                     | 0                         | 10                  |
|      | B - A4226/Port Road W     | 2                      | 0                     | 1                         | 1                   |
|      | C - B4226/Pontypridd Road | 1                      | 0                     | 0                         | 0                   |
|      | D - A4226/Port Road       | 4                      | 1                     | 0                         | 0                   |

## Results

### Results Summary for whole modelled period

| Arm                       | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) |
|---------------------------|---------|---------------|-----------------|---------|-------------------------|-------------------------------|
| A - A4226/Waycock Road    | 1.31    | 636.97        | 125.7           | F       | 726                     | 1089                          |
| B - A4226/Port Road W     | 1.05    | 121.14        | 38.6            | F       | 905                     | 1357                          |
| C - B4226/Pontypridd Road | 0.94    | 42.86         | 10.7            | E       | 796                     | 1193                          |
| D - A4226/Port Road       | 1.13    | 215.64        | 84.5            | F       | 1470                    | 1631                          |

### Main Results for each time segment

#### 16:15 - 16:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|----------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 596                    | 596                      | 149                     | 0                          | 314                       | 1004                      |                            | 874               | 0.681 | 587                 | 271                             | 0.0               | 2.1             | 12.754    | B                            |
| B - A4226/Port Road W     | 742                    | 742                      | 186                     | 0                          | 0                         | 824                       |                            | 1148              | 0.647 | 735                 | 767                             | 0.0               | 1.8             | 8.667     | A                            |
| C - B4226/Pontypridd Road | 653                    | 653                      | 163                     | 0                          | 0                         | 788                       |                            | 1189              | 0.549 | 648                 | 772                             | 0.0               | 1.2             | 6.610     | A                            |
| D - A4226/Port Road       | 1206                   | 892                      | 223                     | 314                        | 0                         | 393                       | 0.00                       | 1257              | 0.710 | 883                 | 1043                            | 0.0               | 2.4             | 9.450     | A                            |

#### 16:30 - 16:45

| Arm                    | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand and (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RFC   | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|------------------------|------------------------|--------------------------|-------------------------|----------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road | 711                    | 711                      | 178                     | 0                          | 375                       | 1196                      |                            | 749               | 0.949 | 682                 | 324                             | 2.1               | 9.5             | 43.838    | E                            |
| B - A4226/Port Road W  | 886                    | 886                      | 222                     | 0                          | 0                         | 967                       |                            | 1053              | 0.842 | 875                 | 911                             | 1.8               | 4.7             | 19.234    | C                            |

|                           |      |      |     |     |   |     |      |      |       |      |      |     |     |        |   |
|---------------------------|------|------|-----|-----|---|-----|------|------|-------|------|------|-----|-----|--------|---|
| C - B4226/Pontypridd Road | 779  | 779  | 195 | 0   | 0 | 931 |      | 1092 | 0.714 | 775  | 911  | 1.2 | 2.4 | 11.209 | B |
| D - A4226/Port Road       | 1440 | 1065 | 266 | 375 | 0 | 469 | 0.00 | 1212 | 0.879 | 1050 | 1236 | 2.4 | 6.2 | 20.689 | C |

#### 16:45 - 17:00

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 871                    | 871                      | 218                     | 0                      | 459                       | 1320                      |                            | 669               | 1.303 | 665                 | 383                             | 9.5               | 60.9            | 205.488   | F                            |
| B - A4226/Port Road W     | 1086                   | 1086                     | 271                     | 0                      | 0                         | 990                       |                            | 1038              | 1.046 | 1008                | 995                             | 4.7               | 24.2            | 64.935    | F                            |
| C - B4226/Pontypridd Road | 955                    | 955                      | 239                     | 0                      | 0                         | 1024                      |                            | 1028              | 0.928 | 930                 | 974                             | 2.4               | 8.6             | 30.838    | D                            |
| D - A4226/Port Road       | 1764                   | 1305                     | 326                     | 459                    | 0                         | 558                       | 0.00                       | 1159              | 1.126 | 1145                | 1396                            | 6.2               | 46.0            | 93.874    | F                            |

#### 17:00 - 17:15

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 871                    | 871                      | 218                     | 0                      | 459                       | 1328                      |                            | 663               | 1.314 | 662                 | 390                             | 60.9              | 113.0           | 483.518   | F                            |
| B - A4226/Port Road W     | 1086                   | 1086                     | 271                     | 0                      | 0                         | 990                       |                            | 1038              | 1.046 | 1028                | 1001                            | 24.2              | 38.6            | 121.142   | F                            |
| C - B4226/Pontypridd Road | 955                    | 955                      | 239                     | 0                      | 0                         | 1037                      |                            | 1019              | 0.937 | 947                 | 980                             | 8.6               | 10.7            | 42.859    | E                            |
| D - A4226/Port Road       | 1764                   | 1305                     | 326                     | 459                    | 0                         | 568                       | 0.00                       | 1153              | 1.132 | 1151                | 1416                            | 46.0              | 84.5            | 211.540   | F                            |

#### 17:15 - 17:30

| Arm                       | Total Dem and (PCU/hr) | Junction demand (PCU/hr) | Junction Arrivals (PCU) | Bypass demand (PCU/hr) | Bypass exit flow (PCU/hr) | Circulating flow (PCU/hr) | Pedestrian demand (Ped/hr) | Capacity (PCU/hr) | RF C  | Throughput (PCU/hr) | Throughput (exit side) (PCU/hr) | Start queue (PCU) | End queue (PCU) | Delay (s) | Unsignalled level of service |
|---------------------------|------------------------|--------------------------|-------------------------|------------------------|---------------------------|---------------------------|----------------------------|-------------------|-------|---------------------|---------------------------------|-------------------|-----------------|-----------|------------------------------|
| A - A4226/Waycock Road    | 711                    | 711                      | 178                     | 0                      | 375                       | 1331                      |                            | 661               | 1.076 | 660                 | 349                             | 113.0             | 125.7           | 636.974   | F                            |
| B - A4226/Port Road W     | 886                    | 886                      | 222                     | 0                      | 0                         | 999                       |                            | 1032              | 0.859 | 1004                | 993                             | 38.6              | 9.2             | 91.976    | F                            |
| C - B4226/Pontypridd Road | 779                    | 779                      | 195                     | 0                      | 0                         | 1019                      |                            | 1032              | 0.756 | 809                 | 984                             | 10.7              | 3.3             | 18.032    | C                            |
| D - A4226/Port Road       | 1440                   | 1065                     | 266                     | 375                    | 0                         | 502                       | 0.00                       | 1192              | 0.894 | 1178                | 1326                            | 84.5              | 56.2            | 215.639   | F                            |

#### 17:30 - 17:45

| Arm | Total Dem and | Junction demand | Junction Arriv | Bypass dem | Bypass exit | Circulating flow | Pedestrian dema | Capacity | RF C | Throughput | Throughput (exit | Start queue | End queue | Delay (s) | Unsignalled |
|-----|---------------|-----------------|----------------|------------|-------------|------------------|-----------------|----------|------|------------|------------------|-------------|-----------|-----------|-------------|
|-----|---------------|-----------------|----------------|------------|-------------|------------------|-----------------|----------|------|------------|------------------|-------------|-----------|-----------|-------------|

|                           | (PCU/hr) | nd (PCU/hr) | als (PCU) | and (PCU/hr) | flow (PCU/hr) | (PCU/hr) | nd (Ped/hr) | (PCU/hr) |       | (PCU/hr) | side) (PCU/hr) | ue (PCU) | ue (PCU) |         | level of service |
|---------------------------|----------|-------------|-----------|--------------|---------------|----------|-------------|----------|-------|----------|----------------|----------|----------|---------|------------------|
| A - A4226/Waycock Road    | 596      | 596         | 149       | 0            | 314           | 1231     |             | 727      | 0.820 | 721      | 278            | 125.7    | 94.4     | 551.043 | F                |
| B - A4226/Port Road W     | 742      | 742         | 186       | 0            | 0             | 1021     |             | 1017     | 0.730 | 767      | 931            | 9.2      | 2.9      | 15.862  | C                |
| C - B4226/Pontypridd Road | 653      | 653         | 163       | 0            | 0             | 866      |             | 1136     | 0.575 | 660      | 922            | 3.3      | 1.4      | 7.709   | A                |
| D - A4226/Port Road       | 1206     | 892         | 223       | 314          | 0             | 403      | 0.00        | 1251     | 0.713 | 1106     | 1124           | 56.2     | 2.7      | 58.046  | F                |