Proposed Mixed Use Development - No.1 Dock, Barry (Ref: 2023/00051/HYB) Transport & Highways Response Note – August 2023

226956/N03 – V2

4th August 2023

Overview & Background

1. This note has been prepared by Vectos, part of SLR, on behalf of ABP Dev Co to set out additional transport and highway matters associated with a proposed mixed use development including a marina at the No.1 Dock Barry, Vale of Glamorgan, CF62 5BR. The planning application reference is 2023/00051/HYB.

2. A Technical Note issued by Asbri Transport, dated 4 May 2023 (T23.119.TA Audit 1 D1), followed the structure and running order of the Transport Assessment (TA), providing comments and recommendations.

3. In response to the Technical Note, Vectos provided a Response Note (Ref. 226956/N02 V1) and an updated TA (Ref. 226956 – Transport Assessment V4) and Travel Plan (TP) (Ref. 226956 - Travel Plan - V3).

4. Asbri Transport have since reviewed this Vectos response and produced a further Technical Note dated 5 June 2023 (T23.119.TA Audit 2 D1). This review notes where matters are agreed and have been addressed satisfactorily, and makes further recommendations.

5. This Response Note (226956/N03 - V1) provides a further consideration to the latest recommendations within T23.119.TA Audit 2 D1. Three key aspects are addressed:

   — Car parking provision;

   — Saturday peak assessment;

   — Base traffic flows and traffic signal data.

6. These aspects of the technical work are addressed within this note under the corresponding heading.

Car Parking Provision

7. The audit (T23.119.TA Audit 2 D1) refers to a ‘large under provision’ of car parking. It requests that three or four-bed dwellings are provided with two off street parking spaces within their curtilage.

8. The proposed provision of parking on site is:

   — Residential: 65 spaces

   — Residential Visitor: 13 spaces

   — Marina: 130 spaces.

9. It should be acknowledged that there is a sensitivity between car parking and proposed parkland which forms an important part of the scheme; the site is a peninsula and parking must be considered alongside a range of other elements. Effective use of space is key for a site of this size and constraint, and every effort is being made to create an environment which is not car dominated and makes provision for active travel users.

10. Provision of two spaces per unit per town house would equate to an additional 45 parking spaces beyond the level of parking already provided. This can, in theory, be provided on site but could have implications on the amount of parkland proposed within the site. Given that the application is being made in outline for the built elements of the development and any planning permission will relate to the proposed indicative masterplan, it is therefore suggested that the matter of parking is addressed via an appropriately worded planning condition that allows the exact parking numbers and details to be agreed at either reserved matters or discharge of condition stage following further discussions between VoG and ABP.

11. As stated in the TA, the residential parking ratio of 1:1 reflects the accessibility of the location and the broad range of facilities provided within a short walking distance, reducing the need for reliance on the car and hence lower car ownership. Comparison to the 2021 Census car availability data shows that the majority of households in central Barry either have no car or one car in their household.

12. The 2021 Census data demonstrates low car ownership, and this is a trend expected to be reflected by residents of the proposed development. Car ownership is also influenced in part by the number of car parking spaces available. As such, the level of provision as currently set out will encourage less cars at the development, particularly a second vehicle within one household.

Saturday Assessment

13. The audit (T23.119.TA Audit 2 D1) reaffirms that the Saturday peak hour should be assessed. As such, vehicle turning counts have been undertaken at the following junctions between the hours of 11:00-16:00 on Saturday 17 June 2023:

   — Ffordd y Mileniwm / Neptune Road / Hood Road signalised crossroads;

   — Ffordd y Mileniwm / Gladstone Bridge roundabout.

14. These are the same junctions considered in the weekday assessment. The full traffic surveys are included within **Appendix A**.

15. A weekend vehicle distribution has been suggested within the audit, though it is not considered applicable for this assessment given the limited variation expected. Given the large catchment area for the Marina, it is expected that the majority of trips will access Barry via the Strategic Road Network (SRN), with an element routing locally. Vehicle movements to the Marina have therefore also been considered using the same distribution as employment trips for robustness. Distribution for the marina use, the primary trip generator during weekends, will not change from weekdays.

16. No set residential vehicle distribution has been recommended for the weekend assessment. Regardless, it is considered robust to retain the methodology as used for the weekday assessment as this distributes residential vehicle movements reliably through the network.

17. A variable which should be noted when considering the surveyed junctions is that temperatures on this date reached 25°C. The weather was mostly sunny with occasional cloud cover. This type of weather will typically see a higher number of vehicle movements to and from Barry Island, especially on Saturdays. It accepted that Fordd Y Mileniwm and the local highway network around Barry Waterfront experiences seasonal variations in traffic flows due to Whitmore Bay, Jackson's Bay and Nells Point being a major leisure attraction for both the Vale of Glamorgan and the neighbouring authorities.

18. The Saturday peak hour for both junction models is based on the combined highest flow of baseline vehicles and development vehicles. For Ffordd y Mileniwm / Neptune Road / Hood Road signalised crossroads this is 13:00 - 14:00, and for Ffordd y Mileniwm / Gladstone Bridge roundabout this is 12:00 - 13:00.

19. The assessment scenarios are as follows:

    — 2023 Base (traffic surveys);

    — 2023 Base + Development;

    — 2036 Future Year;

    — 2036 Future Year + Development.

20. The 2036 Future Year has been selected based on the end of the Local Plan period, and has been forecast using TEMPro. TEMPro, the Trip End Model Presentation Program, is designed to allow detailed analysis of pre-processed trip-end, journey mileage, car ownership and population/workforce planning data from the National Trip End Model (NTEM). It is an industry standard tool for estimating traffic growth, though its application should be treated with caution given uncertainty associated with forecasting traffic levels into the future.

21. The TEMPro factor is set out in **Table 1**, and is then applied to the 2023 base vehicle flows to provide an estimate of vehicle flows in 2036.

Table 1 – TEMPro Factor (Saturday)

2023 > 2036			
Saturday	Level	Area	Local Growth Factor
	W02000251	The Vale of Glamorgan 015	1.106309054

22. The LinSig results are included at **Appendix B**. The ARCADY results are included at **Appendix C**.

Junction 1 – Ffordd Y Mileniwm / Hood Road / Neptune Road – LinSig

23. A LinSig model has been built for the junction to test the different development scenarios. The LinSig outputs for the AM and PM weekday scenarios were included in the TA.

24. As per the TA, the existing signal configuration was requested from VoG and used to inform the LinSig model. However, the VoG have informed Vectos, part of SLR that an improved signal configuration will be introduced which includes a change to the signal stage sequence. The existing signal specification has been used to inform any missing information such as intergreens. The only available signal specification provided by VoG is that of the existing scheme. However, VoG have provided a drawing of the improved signal configuration, and the existing signal specification has been used to inform the improved scheme.

25. The improved scheme appears to have been created to remove all priority give way movements. This also allows the junction to operate the pedestrian phases alongside the vehicular phases and create a walk-with-traffic sequence and remove the need for an all-red phase for traffic. Overall, this reduces vehicle capacity at the junction compared to the existing configuration, but at the benefit of safety by removing the priority give way movements.

26. The LinSig modelling results are summarised in **Table 1**. The assessed peak hour of 13:00-14:00 has been selected as this time has the highest vehicle flows when considering the baseline plus the development for this specific junction.

Table 1 – Junction 1 Assessment - LinSig

Arm	Saturday 13:00-14:00			
	DoS (%)	MMQ (PCU)	Delay (S/PCU)	PRC (%)
2023 Observed				
Hood Road	86.7	9	79	0.0
Ffordd Y Mileniwm (E)	68.4	12	24	
Neptune Road	10.3	1	46	
Ffordd Y Mileniwm (W)	90.0	20	49	
2036 Future Year				
Hood Road	96.1	13	117	-10.6
Ffordd Y Mileniwm (E)	75.7	15	26	
Neptune Road	11.7	1	46	
Ffordd Y Mileniwm (W)	99.6	31	92	
2036 + Dev				
Hood Road	96.8	14	121	-10.6
Ffordd Y Mileniwm (E)	78.1	16	27	
Neptune Road	21.5	2	48	
Ffordd Y Mileniwm (W)	99.6	31	92	

27. **Table 1** demonstrates that the junction is approaching capacity in the future year for the Saturday peak hour, but that the development will have a minimal impact on the overall performance of the junction.

28. The development is forecast to increase queueing by a maximum of one Passenger Car Unit (PCU) during the Saturday peak on Ffordd Y Mileniwm (E) and increase delay by a maximum of four seconds on Hood Road. This is only a minor impact and therefore no mitigation has been considered necessary.

29. The junction is located in a busy pedestrian environment, with pedestrians accessing all four sides of the junction regularly to access facilities such as Goodsheds, Ysgol Gymraeg Sant Baruc school, Asda supermarket, the proposed Marina and the Premier Inn. Providing crossing time for pedestrians is therefore important, and creating an environment accessible for active travel users will in turn remove vehicle trips from the highway network. This is also in keeping with various national and local planning policy such as Planning Policy Wales Edition 11, Future Wales – The National Plan 2040, Active Travel (Wales) Act 2013 and the Vale of Glamorgan Local Development Plan 2011-2026, in placing active travel movements at the top of the travel hierarchy rather than protecting the convenience of the car driver.

30. It should also be noted that the assessment has been undertaken using a Saturday with good weather in summer, and that the vehicle flows observed are not typical of that for the majority of the year where flows will be lower.

Junction 2 – Ffordd y Mileniwm / Gladstone Bridge Roundabout - ARCADY

31. The assessment of Junction 2 for the existing operation and future year scenarios is provided in **Table 2**. The assessed peak hour of 12:00-13:00 has been selected as this time has the highest vehicle flows when considering the baseline plus the development. The 2023 base model has been checked against observed average queue data and is considered representative of the observed data. The observed queueing demonstrated an average of 1-3 vehicles during the Saturday peak hour.

Table 2 – Junction 2 Assessment – ARCADY

Saturday 12:00-13:00			
Arm	**Queue (Veh)**	**Delay (s)**	**RFC**
2023			
1 - Gladstone Bridge	3	8.22	0.72
2 - Ffordd Y Mileniwm East	2	6.26	0.56
3 - Ffordd Y Mileniwm West	3	8.3	0.7
2036			
1 - Gladstone Bridge	4	11.93	0.8
2 - Ffordd Y Mileniwm East	2	7.97	0.64
3 - Ffordd Y Mileniwm West	4	12.24	0.79
2036 + Development			
1 - Gladstone Bridge	5	13.31	0.82
2 - Ffordd Y Mileniwm East	2	8.45	0.67
3 - Ffordd Y Mileniwm West	5	13.59	0.81

32. It can be seen from **Table 2** that the roundabout continues to operate well within its theoretical operating capacity during the assessed Saturday scenarios.

33. The maximum Ratio of Flow to Capacity (RFC) for any arm in the 2036 + Development scenario is 0.82. This is an increase in RFC of just 0.10 from the 2023 base year to the 2036 + Development scenario. An unsignalised junction typically approaches capacity at an RFC of 0.85, and therefore this roundabout is considered to be operating within capacity in the 2036 + Development scenario.

34. The increase in delay at any approach from 2023 to 2036 + Development is just over five seconds (Ffordd Y Mileniwm West). This is a negligible increase in vehicle queuing between the 2023 Baseline and the 2036 + Development Scenarios.

Base Traffic Flows

35. The base traffic flows as included within the original Transport Assessment flows are attached at **Appendix D**.

36. The base traffic flows for the Saturday assessment are attached at **Appendix A**.

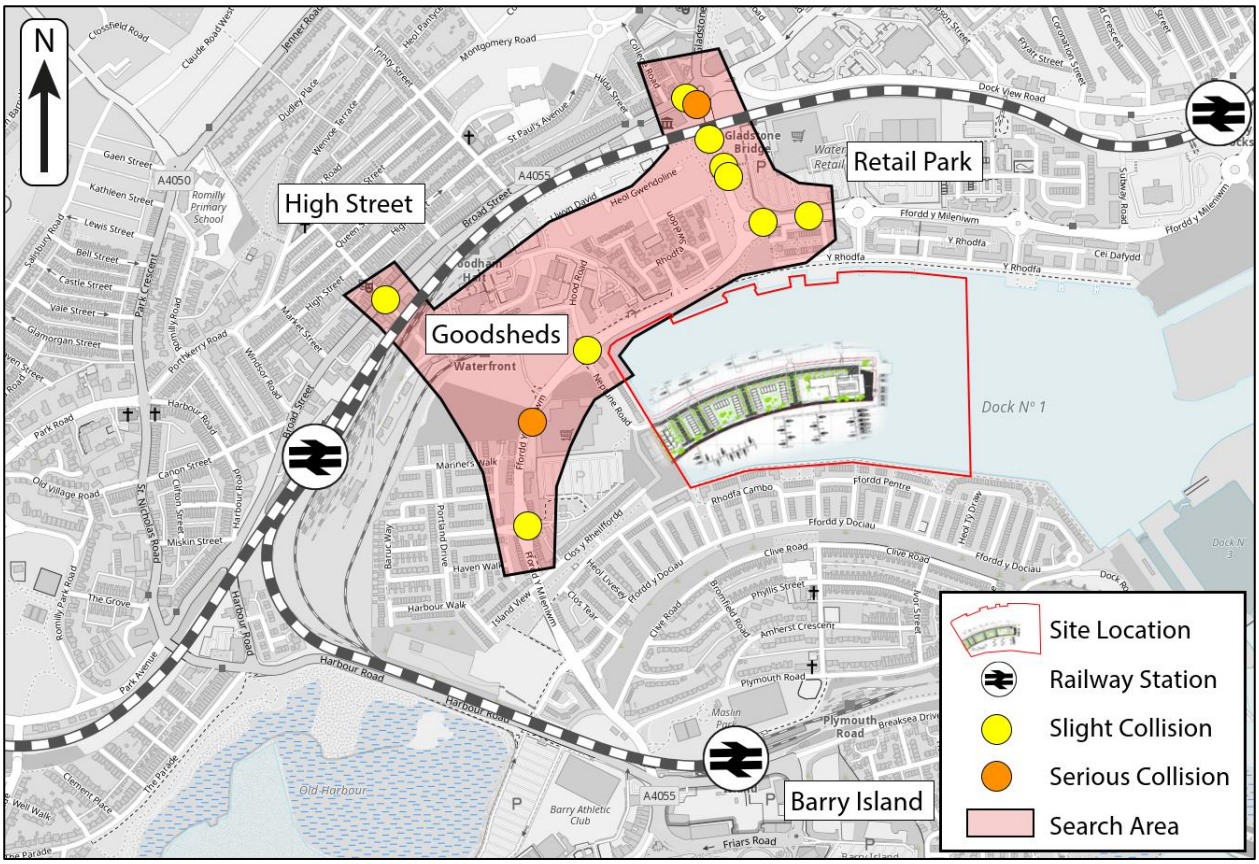
Additional Comments

Collision Data

37. The search area for the collisions has been recorded incorrectly within the TA. This is amended at **Figure 1**.

38. The 2019 'Serious' collision at the Broad Street / Gladstone Road roundabout was also referenced incorrectly as a 'slight' collision. This is also amended at **Figure 1**.

Figure 1 – Amended Collision Search Area



39. The 'serious' collision, amended from a 'slight' collision, was recorded as follows:

- **05/02/2019**
  <u>Gladstone Bridge / Broad Street Roundabout</u>
  This collision involved two vehicles, a car and a pedal cycle, and one casualty, the rider of

the pedal cycle. The car entered the roundabout intending to go straight ahead and collided with the rear wheel of the pedal cycle, causing the rider to fall to the ground and sustain a broken wrist. The contributary factors are given as a slippery road (due to weather), and failure to judge other person's path or speed.

40. There is no indication that the collisions in the area are a result of highway network defaults, and that instead collisions are caused by driver error.

Secondary Education Mode Share

41. The audit states that for the forecast mode share for car for secondary education, "the 30% quoted from the NTS should be used". However, the 20% figure which has been used is considered appropriate and reflective of the mode share likely to be achieved in this area of Barry. The two secondary schools are within 2.7km and 3.0 km of the site, and it is common for secondary school students to walk these types of distances. The mode share used equates to 1 in 5 pupils being dropped off by car which is considered realistic.

42. The site is well located to take advantage of the good pedestrian and public transport connections within Barry. Some residential areas and schools do not have the same standard of uninterrupted footways through urban areas when compared to this area of Barry.

43. Whilst the site is not within the catchment area for free school buses to the nearest Secondary School, the 97 Bus Service run by Cardiff Bus provides just a16 minute journey to the nearest Secondary School (8 minutes walking, 8 minutes on bus).

44. Additionally, if the 30% vehicle mode share for secondary education was used, this would result in an increase of one vehicle arriving and one departing in the AM peak and no additional vehicles in the PM peak. This level of increase would not in any case be perceptible to users of the local highway network.

Summary

45. This note has been prepared by Vectos, part of SLR, on behalf of ABP Dev Co to set out additional transport and highway matters associated with a proposed mixed use development including marina at the No.1 Dock Barry, Vale of Glamorgan, CF62 5BR. The planning application reference is 2023/00051/HYB.

46. This Note (226956/N03 - V1) provides a further response to the latest recommendations within T23.119.TA Audit 2 D1. Three key aspects are addressed:

- Car parking provision;
- Saturday peak assessment;
- Base traffic and traffic signal data.

Car Parking Provision

47. The audit (T23.119.TA Audit 2 D1) refers to a 'large under provision' of car parking. It requests two car parking spaces per unit for the larger units.

48. Analysis of the 2021 Census demonstrates that the majority of households in this central location within Barry either do not have a car or have one car only. As such, the proposed parking ratio aligns with wider car ownership patterns locally as well as reducing reliance on private car ownership.

49. Given that the application is being made in outline for the built elements of the development and any planning permission will relate to the proposed indicative masterplan, it is therefore suggested that the matter of parking is addressed via an appropriately worded planning condition that allows the exact parking numbers and details to be agreed at either reserved matters or discharge of condition stage following further discussions between VoG and ABP.

Saturday Peak Assessment

50. Two junctions have been modelled using a Saturday Peak Hour scenario.

- Ffordd y Mileniwm / Neptune Road / Hood Road signalised crossroads;
- Ffordd y Mileniwm / Gladstone Bridge roundabout.

51. The LinSig results for the Ffordd y Mileniwm / Neptune Road / Hood Road signalised crossroads indicate that it is approaching capacity in the future year for the Saturday peak hour, but that the development will have a minimal impact on the overall performance of the junction. As the impact is minor, no mitigation has been considered necessary.

52. The Ffordd y Mileniwm / Gladstone Bridge roundabout continues to operate well within its theoretical operating capacity during the assessed Saturday scenario.

Base traffic and traffic signal data

53. All base traffic flows are included within the Appendices.

Appendix A

2023 Weekend Baseline Surveys

Barry, Saturday 17th June 2023

Junction: 1
Approach: Gladstone Bridge

	Left to Ffordd Y Mileniwn (East)					Right to Ffordd Y Mileniwn (West)					U-Turn				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
11:00 - 11:15	145	4	4	153	162.2	67	0	0	67	67.0	0	0	0	0	0.0
11:15 - 11:30	151	5	5	161	172.5	64	0	0	64	64.0	1	0	0	1	1.0
11:30 - 11:45	149	3	3	155	161.9	60	1	0	61	62.3	0	0	0	0	0.0
11:45 - 12:00	159	3	3	165	171.9	62	0	0	62	62.0	0	0	0	0	0.0
Hourly Total	**604**	**15**	**15**	**634**	**668.5**	**253**	**1**	**0**	**254**	**255.3**	**1**	**0**	**0**	**1**	**1.0**
12:00 - 12:15	158	4	4	166	175.2	66	0	0	66	66.0	0	0	0	0	0.0
12:15 - 12:30	157	5	5	167	178.5	70	0	0	70	70.0	1	0	0	1	1.0
12:30 - 12:45	156	3	3	162	168.9	50	0	0	50	50.0	0	0	0	0	0.0
12:45 - 13:00	154	3	3	160	166.9	67	0	0	67	67.0	1	0	0	1	1.0
Hourly Total	**625**	**15**	**15**	**655**	**689.5**	**253**	**0**	**0**	**253**	**253.0**	**2**	**0**	**0**	**2**	**2.0**
13:00 - 13:15	144	1	1	146	148.3	75	0	0	75	75.0	1	0	0	1	1.0
13:15 - 13:30	145	6	6	157	170.8	55	1	0	56	57.3	0	0	0	0	0.0
13:30 - 13:45	136	3	3	142	148.9	65	0	0	65	65.0	1	0	0	1	1.0
13:45 - 14:00	154	3	3	160	166.9	72	0	0	72	72.0	0	0	0	0	0.0
Hourly Total	**579**	**13**	**13**	**605**	**634.9**	**267**	**1**	**0**	**268**	**269.3**	**2**	**0**	**0**	**2**	**2.0**
14:00 - 14:15	111	4	4	119	128.2	57	0	0	57	57.0	0	0	0	0	0.0
14:15 - 14:30	141	5	5	151	162.5	73	0	0	73	73.0	0	0	0	0	0.0
14:30 - 14:45	123	4	4	131	140.2	53	0	0	53	53.0	0	0	0	0	0.0
14:45 - 15:00	124	2	2	128	132.6	60	0	0	60	60.0	0	0	0	0	0.0
Hourly Total	**499**	**15**	**15**	**529**	**563.5**	**243**	**0**	**0**	**243**	**243.0**	**0**	**0**	**0**	**0**	**0.0**
15:00 - 15:15	132	5	5	142	153.5	67	0	0	67	67.0	0	0	0	0	0.0
15:15 - 15:30	100	4	4	108	117.2	53	0	0	53	53.0	1	0	0	1	1.0
15:30 - 15:45	138	3	3	144	150.9	53	0	1	54	55.0	0	0	0	0	0.0
15:45 - 16:00	120	4	4	128	137.2	53	0	0	53	53.0	0	0	0	0	0.0
Hourly Total	**490**	**16**	**16**	**522**	**558.8**	**226**	**0**	**1**	**227**	**228.0**	**1**	**0**	**0**	**1**	**1.0**
TOTAL	**2797**	**74**	**74**	**2945**	**3115.2**	**1242**	**2**	**1**	**1245**	**1248.6**	**6**	**0**	**0**	**6**	**6.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Saturday 17th June 2023

Junction: 1
Approach: Ffordd Y Mileniwn East

	Ahead to Ffordd Y Mileniwn (West)					Right to Gladstone Bridge					U-Turn				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
11:00 - 11:15	102	2	0	104	106.6	95	0	4	99	103.0	1	0	0	1	1.0
11:15 - 11:30	130	0	1	131	132.0	119	1	4	124	129.3	0	0	0	0	0.0
11:30 - 11:45	110	0	1	111	112.0	114	0	3	117	120.0	0	0	0	0	0.0
11:45 - 12:00	91	0	1	92	93.0	117	2	3	122	127.6	0	0	0	0	0.0
Hourly Total	**433**	**2**	**3**	**438**	**443.6**	**445**	**3**	**14**	**462**	**479.9**	**1**	**0**	**0**	**1**	**1.0**
12:00 - 12:15	110	0	0	110	110.0	123	0	5	128	133.0	1	0	0	1	1.0
12:15 - 12:30	110	1	1	112	114.3	153	0	2	155	157.0	3	0	0	3	3.0
12:30 - 12:45	113	0	1	114	115.0	129	2	3	134	139.6	3	0	0	3	3.0
12:45 - 13:00	116	0	1	117	118.0	124	0	1	125	126.0	0	0	0	0	0.0
Hourly Total	**449**	**1**	**3**	**453**	**457.3**	**529**	**2**	**11**	**542**	**555.6**	**7**	**0**	**0**	**7**	**7.0**
13:00 - 13:15	122	1	1	124	126.3	120	0	4	124	128.0	1	0	0	1	1.0
13:15 - 13:30	106	0	1	107	108.0	127	1	5	133	139.3	1	0	1	2	3.0
13:30 - 13:45	123	0	1	124	125.0	121	0	4	125	129.0	1	0	0	1	1.0
13:45 - 14:00	106	0	1	107	108.0	123	0	2	125	127.0	1	0	0	1	1.0
Hourly Total	**457**	**1**	**4**	**462**	**467.3**	**491**	**1**	**15**	**507**	**523.3**	**4**	**0**	**1**	**5**	**6.0**
14:00 - 14:15	122	0	0	122	122.0	112	0	5	117	122.0	0	0	0	0	0.0
14:15 - 14:30	107	0	1	108	109.0	112	0	4	116	120.0	0	0	0	0	0.0
14:30 - 14:45	95	0	1	96	97.0	116	1	3	120	124.3	0	0	0	0	0.0
14:45 - 15:00	101	0	1	102	103.0	120	0	4	124	128.0	1	0	0	1	1.0
Hourly Total	**425**	**0**	**3**	**428**	**431.0**	**460**	**1**	**16**	**477**	**494.3**	**1**	**0**	**0**	**1**	**1.0**
15:00 - 15:15	104	0	0	104	104.0	111	0	3	114	117.0	1	0	0	1	1.0
15:15 - 15:30	98	0	1	99	100.0	92	0	4	96	100.0	1	0	0	1	1.0
15:30 - 15:45	110	0	1	111	112.0	92	0	4	96	100.0	0	0	0	0	0.0
15:45 - 16:00	102	1	0	103	104.3	111	0	3	114	117.0	0	0	0	0	0.0
Hourly Total	**414**	**1**	**2**	**417**	**420.3**	**406**	**0**	**14**	**420**	**434.0**	**2**	**0**	**0**	**2**	**2.0**
TOTAL	**2178**	**5**	**15**	**2198**	**2219.5**	**2331**	**7**	**70**	**2408**	**2487.1**	**15**	**0**	**1**	**16**	**17.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Saturday 17th June 2023

Junction: 1
Approach: Ffordd Y Mileniwn West

	Left to Gladstone Bridge					Ahead to Ffordd Y Mileniwn (East)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
11:00 - 11:15	69	1	0	70	71.3	101	0	0	101	101.0
11:15 - 11:30	71	0	0	71	71.0	95	1	1	97	99.3
11:30 - 11:45	74	0	0	74	74.0	84	1	0	85	86.3
11:45 - 12:00	72	0	1	73	74.0	104	0	3	107	110.0
Hourly Total	**286**	**1**	**1**	**288**	**290.3**	**384**	**2**	**4**	**390**	**396.6**
12:00 - 12:15	76	0	0	76	76.0	112	0	0	112	112.0
12:15 - 12:30	65	0	0	65	65.0	99	1	0	100	101.3
12:30 - 12:45	61	0	0	61	61.0	98	1	0	99	100.3
12:45 - 13:00	56	0	0	56	56.0	103	0	1	104	105.0
Hourly Total	**258**	**0**	**0**	**258**	**258.0**	**412**	**2**	**1**	**415**	**418.6**
13:00 - 13:15	65	0	0	65	65.0	106	0	1	107	108.0
13:15 - 13:30	60	0	0	60	60.0	95	0	1	96	97.0
13:30 - 13:45	71	0	0	71	71.0	91	0	0	91	91.0
13:45 - 14:00	70	1	0	71	72.3	108	0	2	110	112.0
Hourly Total	**266**	**1**	**0**	**267**	**268.3**	**400**	**0**	**4**	**404**	**408.0**
14:00 - 14:15	53	0	0	53	53.0	144	1	0	145	146.3
14:15 - 14:30	63	0	0	63	63.0	87	0	1	88	89.0
14:30 - 14:45	76	0	0	76	76.0	100	0	0	100	100.0
14:45 - 15:00	61	0	0	61	61.0	73	0	2	75	77.0
Hourly Total	**253**	**0**	**0**	**253**	**253.0**	**404**	**1**	**3**	**408**	**412.3**
15:00 - 15:15	56	0	0	56	56.0	98	0	0	98	98.0
15:15 - 15:30	61	0	0	61	61.0	125	0	1	126	127.0
15:30 - 15:45	47	0	0	47	47.0	111	0	0	111	111.0
15:45 - 16:00	57	0	0	57	57.0	102	1	2	105	108.3
Hourly Total	**221**	**0**	**0**	**221**	**221.0**	**436**	**1**	**3**	**440**	**444.3**
TOTAL	**1284**	**2**	**1**	**1287**	**1290.6**	**2036**	**6**	**15**	**2057**	**2079.8**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Saturday 17th June 2023

Junction: 2
Approach: Hood Road

	Left to Ffordd Y Mileniwn (East)					Ahead to Neptune Road					Right to Ffordd Y Mileniwn (West)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
11:00 - 11:15	31	1	0	32	33.3	1	0	0	1	1.0	31	0	0	31	31.0
11:15 - 11:30	28	0	1	29	30.0	0	0	0	0	0.0	29	0	0	29	29.0
11:30 - 11:45	33	0	0	33	33.0	6	0	0	6	6.0	35	0	0	35	35.0
11:45 - 12:00	28	0	1	29	30.0	9	0	0	9	9.0	31	0	0	31	31.0
Hourly Total	**120**	**1**	**2**	**123**	**126.3**	**16**	**0**	**0**	**16**	**16.0**	**126**	**0**	**0**	**126**	**126.0**
12:00 - 12:15	23	0	0	23	23.0	3	0	0	3	3.0	21	1	0	22	23.3
12:15 - 12:30	24	0	1	25	26.0	4	0	0	4	4.0	33	0	0	33	33.0
12:30 - 12:45	28	0	0	28	28.0	2	0	0	2	2.0	31	0	0	31	31.0
12:45 - 13:00	23	0	0	23	23.0	1	0	0	1	1.0	31	0	0	31	31.0
Hourly Total	**98**	**0**	**1**	**99**	**100.0**	**10**	**0**	**0**	**10**	**10.0**	**116**	**1**	**0**	**117**	**118.3**
13:00 - 13:15	29	0	1	30	31.0	2	0	0	2	2.0	39	0	0	39	39.0
13:15 - 13:30	28	0	1	29	30.0	2	0	0	2	2.0	25	0	0	25	25.0
13:30 - 13:45	24	0	0	24	24.0	4	0	0	4	4.0	27	0	0	27	27.0
13:45 - 14:00	27	1	1	29	31.3	2	0	0	2	2.0	30	0	0	30	30.0
Hourly Total	**108**	**1**	**3**	**112**	**116.3**	**10**	**0**	**0**	**10**	**10.0**	**121**	**0**	**0**	**121**	**121.0**
14:00 - 14:15	36	0	0	36	36.0	0	0	0	0	0.0	29	0	0	29	29.0
14:15 - 14:30	38	0	1	39	40.0	6	0	0	6	6.0	20	0	0	20	20.0
14:30 - 14:45	27	0	0	27	27.0	0	0	0	0	0.0	21	0	0	21	21.0
14:45 - 15:00	19	0	1	20	21.0	1	0	0	1	1.0	24	0	0	24	24.0
Hourly Total	**120**	**0**	**2**	**122**	**124.0**	**7**	**0**	**0**	**7**	**7.0**	**94**	**0**	**0**	**94**	**94.0**
15:00 - 15:15	30	0	0	30	30.0	5	0	0	5	5.0	24	0	0	24	24.0
15:15 - 15:30	27	0	1	28	29.0	1	0	0	1	1.0	28	0	0	28	28.0
15:30 - 15:45	22	0	0	22	22.0	2	0	0	2	2.0	25	0	0	25	25.0
15:45 - 16:00	17	0	1	18	19.0	5	0	0	5	5.0	23	0	0	23	23.0
Hourly Total	**96**	**0**	**2**	**98**	**100.0**	**13**	**0**	**0**	**13**	**13.0**	**100**	**0**	**0**	**100**	**100.0**
TOTAL	**542**	**2**	**10**	**554**	**566.6**	**56**	**0**	**0**	**56**	**56.0**	**557**	**1**	**0**	**558**	**559.3**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Saturday 17th June 2023

Junction: 2
Approach: Ffordd Y Mileniwn East

	Left to Neptune Road					Ahead to Ffordd Y Mileniwn (West)					Right to Hood Road					U-Turn				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
11:00 - 11:15	1	1	0	2	3.3	135	0	0	135	135.0	28	0	0	28	28.0	0	0	0	0	0.0
11:15 - 11:30	4	0	0	4	4.0	160	0	1	161	162.0	27	0	1	28	29.0	1	0	0	1	1.0
11:30 - 11:45	5	0	0	5	5.0	138	0	0	138	138.0	30	1	0	31	32.3	0	0	0	0	0.0
11:45 - 12:00	5	0	0	5	5.0	135	0	0	135	135.0	14	0	1	15	16.0	0	0	0	0	0.0
Hourly Total	**15**	**1**	**0**	**16**	**17.3**	**568**	**0**	**1**	**569**	**570.0**	**99**	**1**	**2**	**102**	**105.3**	**1**	**0**	**0**	**1**	**1.0**
12:00 - 12:15	2	1	0	3	4.3	134	0	0	134	134.0	33	0	0	33	33.0	0	0	0	0	0.0
12:15 - 12:30	2	0	0	2	2.0	140	0	0	140	140.0	29	0	1	30	31.0	0	0	0	0	0.0
12:30 - 12:45	4	0	0	4	4.0	132	0	1	133	134.0	22	0	0	22	22.0	0	0	0	0	0.0
12:45 - 13:00	1	0	0	1	1.0	153	0	0	153	153.0	21	0	1	22	23.0	0	0	0	0	0.0
Hourly Total	**9**	**1**	**0**	**10**	**11.3**	**559**	**0**	**1**	**560**	**561.0**	**105**	**0**	**2**	**107**	**109.0**	**0**	**0**	**0**	**0**	**0.0**
13:00 - 13:15	0	1	0	1	2.3	179	0	1	180	181.0	19	0	0	19	19.0	0	0	0	0	0.0
13:15 - 13:30	2	1	0	3	4.3	137	0	0	137	137.0	28	0	1	29	30.0	0	0	0	0	0.0
13:30 - 13:45	5	0	0	5	5.0	151	0	1	152	153.0	24	0	0	24	24.0	0	0	0	0	0.0
13:45 - 14:00	1	0	0	1	1.0	140	0	0	140	140.0	27	0	1	28	29.0	0	0	0	0	0.0
Hourly Total	**8**	**2**	**0**	**10**	**12.6**	**607**	**0**	**2**	**609**	**611.0**	**98**	**0**	**2**	**100**	**102.0**	**0**	**0**	**0**	**0**	**0.0**
14:00 - 14:15	4	0	0	4	4.0	147	0	0	147	147.0	20	0	0	20	20.0	0	0	0	0	0.0
14:15 - 14:30	4	0	0	4	4.0	127	0	0	127	127.0	27	0	1	28	29.0	0	0	0	0	0.0
14:30 - 14:45	2	0	0	2	2.0	130	0	1	131	132.0	16	0	0	16	16.0	0	0	0	0	0.0
14:45 - 15:00	7	0	0	7	7.0	130	0	0	130	130.0	22	0	1	23	24.0	0	0	0	0	0.0
Hourly Total	**17**	**0**	**0**	**17**	**17.0**	**534**	**0**	**1**	**535**	**536.0**	**85**	**0**	**2**	**87**	**89.0**	**0**	**0**	**0**	**0**	**0.0**
15:00 - 15:15	0	0	0	0	0.0	145	0	0	145	145.0	19	0	0	19	19.0	0	0	0	0	0.0
15:15 - 15:30	1	0	0	1	1.0	132	0	2	134	136.0	28	0	1	29	30.0	0	0	0	0	0.0
15:30 - 15:45	2	0	0	2	2.0	140	0	0	140	140.0	18	0	0	18	18.0	0	0	0	0	0.0
15:45 - 16:00	3	0	0	3	3.0	122	0	0	122	122.0	23	1	1	25	27.3	0	0	0	0	0.0
Hourly Total	**6**	**0**	**0**	**6**	**6.0**	**539**	**0**	**2**	**541**	**543.0**	**88**	**1**	**2**	**91**	**94.3**	**0**	**0**	**0**	**0**	**0.0**
TOTAL	**55**	**4**	**0**	**59**	**64.2**	**2807**	**0**	**7**	**2814**	**2821.0**	**475**	**2**	**10**	**487**	**499.6**	**1**	**0**	**0**	**1**	**1.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Saturday 17th June 2023

Junction: 2
Approach: Neptune Road

	Left to Ffordd Y Mileniwn (West)					Ahead to Hood Road					Right to Ffordd Y Mileniwn (East)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
11:00 - 11:15	2	0	0	2	2.0	1	0	0	1	1.0	4	0	0	4	4.0
11:15 - 11:30	2	0	0	2	2.0	2	0	0	2	2.0	2	0	0	2	2.0
11:30 - 11:45	0	0	0	0	0.0	2	0	0	2	2.0	3	1	0	4	5.3
11:45 - 12:00	3	0	0	3	3.0	4	0	0	4	4.0	3	0	0	3	3.0
Hourly Total	**7**	**0**	**0**	**7**	**7.0**	**9**	**0**	**0**	**9**	**9.0**	**12**	**1**	**0**	**13**	**14.3**
12:00 - 12:15	3	0	0	3	3.0	5	0	0	5	5.0	5	0	0	5	5.0
12:15 - 12:30	0	0	0	0	0.0	3	0	0	3	3.0	1	1	0	2	3.3
12:30 - 12:45	3	0	0	3	3.0	1	0	0	1	1.0	1	0	0	1	1.0
12:45 - 13:00	1	0	0	1	1.0	0	0	0	0	0.0	6	0	0	6	6.0
Hourly Total	**7**	**0**	**0**	**7**	**7.0**	**9**	**0**	**0**	**9**	**9.0**	**13**	**1**	**0**	**14**	**15.3**
13:00 - 13:15	0	0	0	0	0.0	2	0	0	2	2.0	2	0	0	2	2.0
13:15 - 13:30	2	0	0	2	2.0	0	0	0	0	0.0	3	0	0	3	3.0
13:30 - 13:45	0	0	0	0	0.0	1	0	0	1	1.0	2	0	0	2	2.0
13:45 - 14:00	2	0	0	2	2.0	2	0	0	2	2.0	3	1	0	4	5.3
Hourly Total	**4**	**0**	**0**	**4**	**4.0**	**5**	**0**	**0**	**5**	**5.0**	**10**	**1**	**0**	**11**	**12.3**
14:00 - 14:15	1	0	0	1	1.0	3	0	0	3	3.0	2	0	0	2	2.0
14:15 - 14:30	1	0	0	1	1.0	1	0	0	1	1.0	1	0	0	1	1.0
14:30 - 14:45	2	0	0	2	2.0	1	0	0	1	1.0	1	0	0	1	1.0
14:45 - 15:00	1	0	0	1	1.0	3	0	0	3	3.0	0	0	0	0	0.0
Hourly Total	**5**	**0**	**0**	**5**	**5.0**	**8**	**0**	**0**	**8**	**8.0**	**4**	**0**	**0**	**4**	**4.0**
15:00 - 15:15	3	0	0	3	3.0	1	0	0	1	1.0	2	0	0	2	2.0
15:15 - 15:30	1	0	0	1	1.0	1	0	0	1	1.0	1	0	0	1	1.0
15:30 - 15:45	0	0	0	0	0.0	2	0	0	2	2.0	2	1	0	3	4.3
15:45 - 16:00	2	0	0	2	2.0	3	0	0	3	3.0	4	0	0	4	4.0
Hourly Total	**6**	**0**	**0**	**6**	**6.0**	**7**	**0**	**0**	**7**	**7.0**	**9**	**1**	**0**	**10**	**11.3**
TOTAL	**29**	**0**	**0**	**29**	**29.0**	**38**	**0**	**0**	**38**	**38.0**	**48**	**4**	**0**	**52**	**57.2**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Saturday 17th June 2023

Junction: 2
Approach: Ffordd Y Mileniwn West

	Left to Hood Road					Ahead to Ffordd Y Mileniwn (East)					Right to Neptune Road				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
11:00 - 11:15	36	0	0	36	36.0	125	0	0	125	125.0	1	0	0	1	1.0
11:15 - 11:30	19	0	0	19	19.0	122	1	0	123	124.3	1	0	0	1	1.0
11:30 - 11:45	23	0	0	23	23.0	114	0	0	114	114.0	0	0	0	0	0.0
11:45 - 12:00	25	0	0	25	25.0	145	1	2	148	151.3	0	0	0	0	0.0
Hourly Total	**103**	**0**	**0**	**103**	**103.0**	**506**	**2**	**2**	**510**	**514.6**	**2**	**0**	**0**	**2**	**2.0**
12:00 - 12:15	22	0	0	22	22.0	147	0	0	147	147.0	3	0	0	3	3.0
12:15 - 12:30	27	0	0	27	27.0	138	0	0	138	138.0	0	0	0	0	0.0
12:30 - 12:45	25	0	0	25	25.0	133	0	0	133	133.0	0	0	0	0	0.0
12:45 - 13:00	18	0	0	18	18.0	124	0	1	125	126.0	0	0	0	0	0.0
Hourly Total	**92**	**0**	**0**	**92**	**92.0**	**542**	**0**	**1**	**543**	**544.0**	**3**	**0**	**0**	**3**	**3.0**
13:00 - 13:15	23	0	0	23	23.0	131	0	0	131	131.0	1	0	0	1	1.0
13:15 - 13:30	28	0	0	28	28.0	129	0	0	129	129.0	6	0	0	6	6.0
13:30 - 13:45	26	0	0	26	26.0	137	0	0	137	137.0	1	0	0	1	1.0
13:45 - 14:00	25	0	0	25	25.0	147	0	1	148	149.0	0	0	0	0	0.0
Hourly Total	**102**	**0**	**0**	**102**	**102.0**	**544**	**0**	**1**	**545**	**546.0**	**8**	**0**	**0**	**8**	**8.0**
14:00 - 14:15	21	0	0	21	21.0	134	0	0	134	134.0	0	0	0	0	0.0
14:15 - 14:30	23	0	0	23	23.0	110	0	0	110	110.0	2	0	0	2	2.0
14:30 - 14:45	26	0	0	26	26.0	152	0	0	152	152.0	0	0	0	0	0.0
14:45 - 15:00	14	0	0	14	14.0	112	0	1	113	114.0	4	0	0	4	4.0
Hourly Total	**84**	**0**	**0**	**84**	**84.0**	**508**	**0**	**1**	**509**	**510.0**	**6**	**0**	**0**	**6**	**6.0**
15:00 - 15:15	18	0	0	18	18.0	126	0	0	126	126.0	1	0	0	1	1.0
15:15 - 15:30	19	0	0	19	19.0	163	0	0	163	163.0	3	0	0	3	3.0
15:30 - 15:45	16	0	0	16	16.0	125	0	0	125	125.0	2	0	0	2	2.0
15:45 - 16:00	13	0	0	13	13.0	127	0	1	128	129.0	0	0	0	0	0.0
Hourly Total	**66**	**0**	**0**	**66**	**66.0**	**541**	**0**	**1**	**542**	**543.0**	**6**	**0**	**0**	**6**	**6.0**
TOTAL	**447**	**0**	**0**	**447**	**447.0**	**2641**	**2**	**6**	**2649**	**2657.6**	**25**	**0**	**0**	**25**	**25.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Appendix B

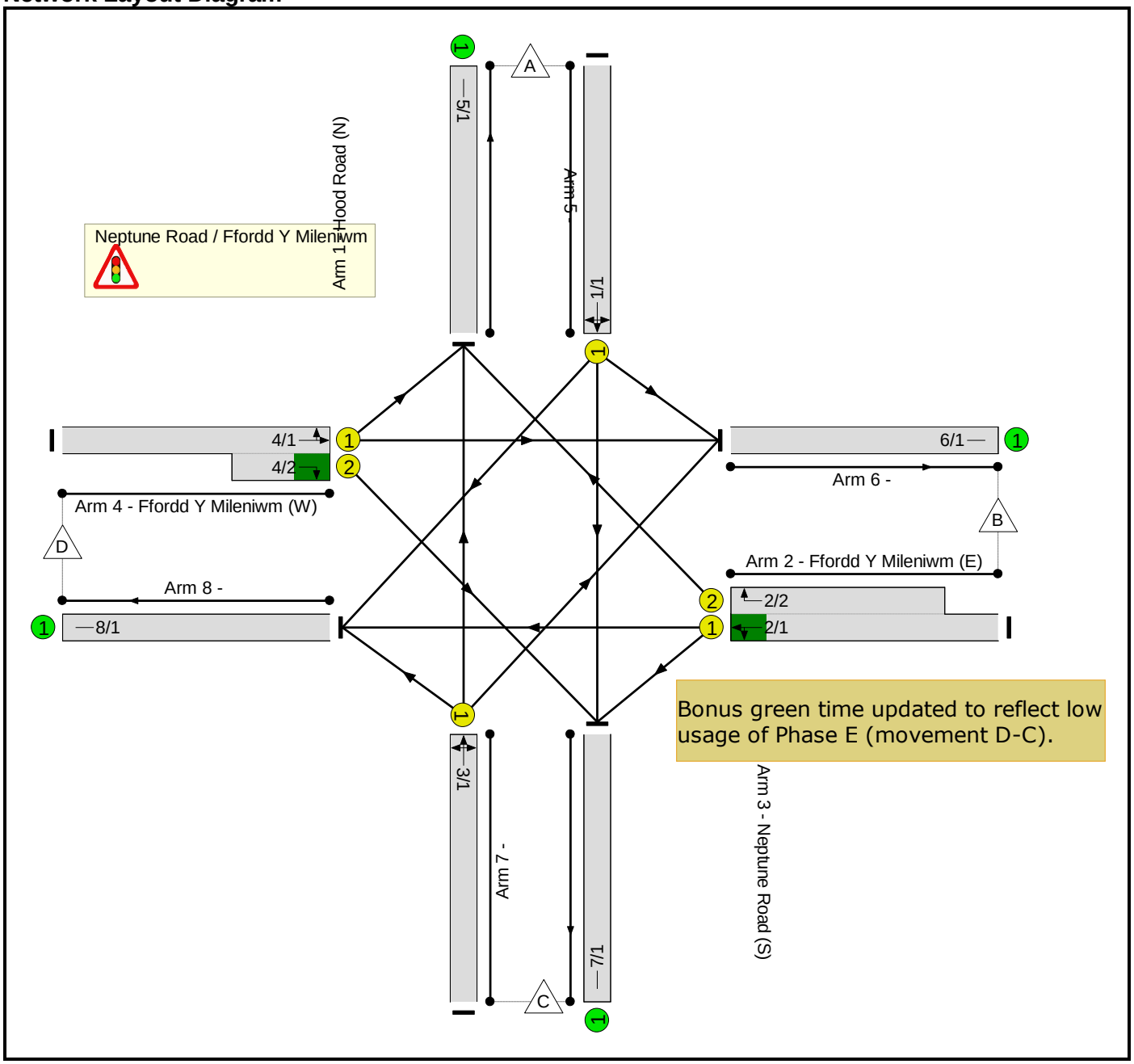
LinSig Outputs

Full Input Data And Results

User and Project Details

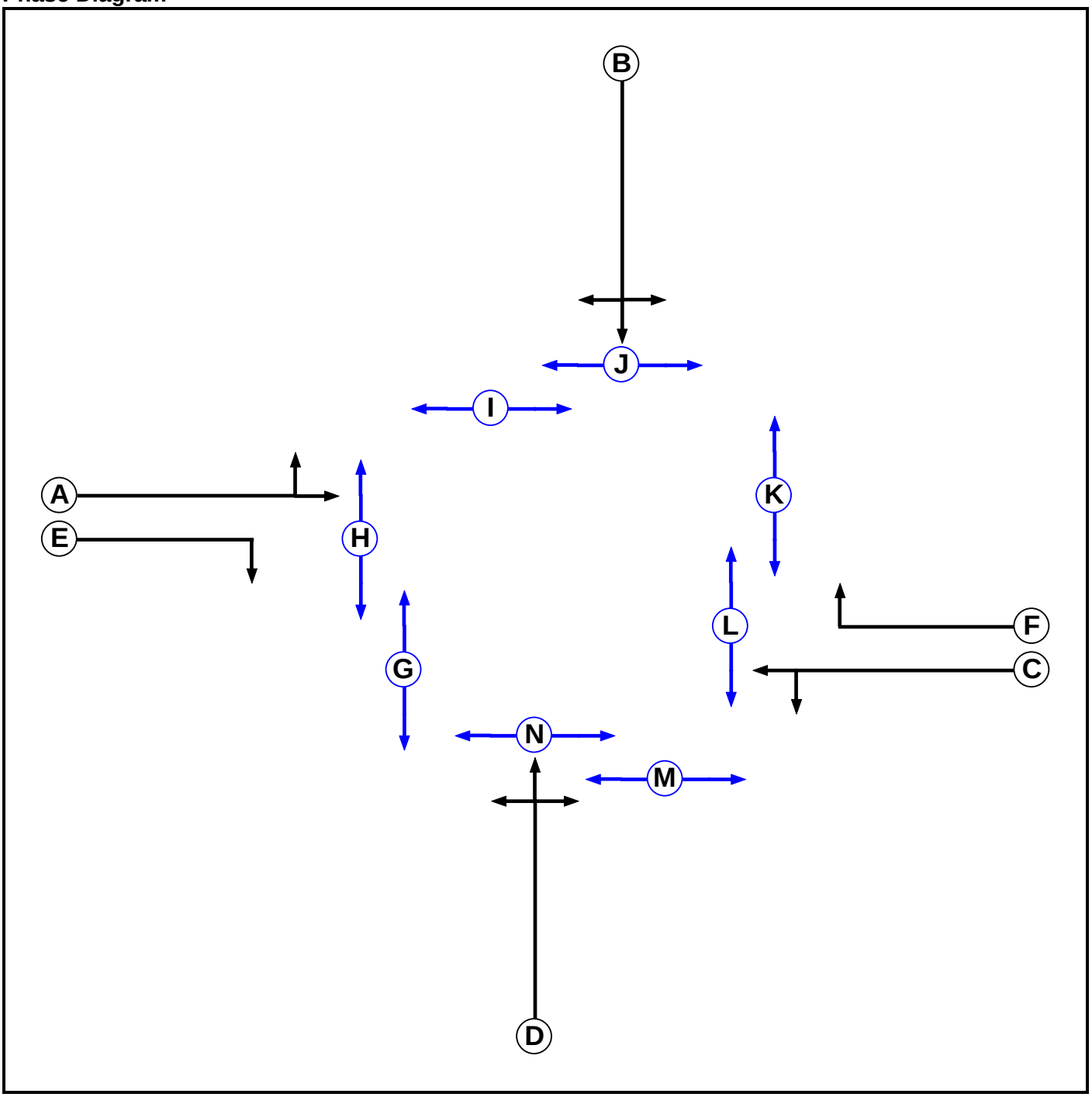
Project:	
Title:	
Location:	
Additional detail:	
File name:	226956-Neptune Road_Fford Y Mileniwm-V3.lsg3x
Author:	Ben Stone
Company:	Vectos, part of SLR
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Pedestrian		6	6
H	Pedestrian		6	6
I	Pedestrian		6	6
J	Pedestrian		6	6
K	Pedestrian		6	6
L	Pedestrian		6	6
M	Pedestrian		6	6
N	Pedestrian		6	6

Full Input Data And Results

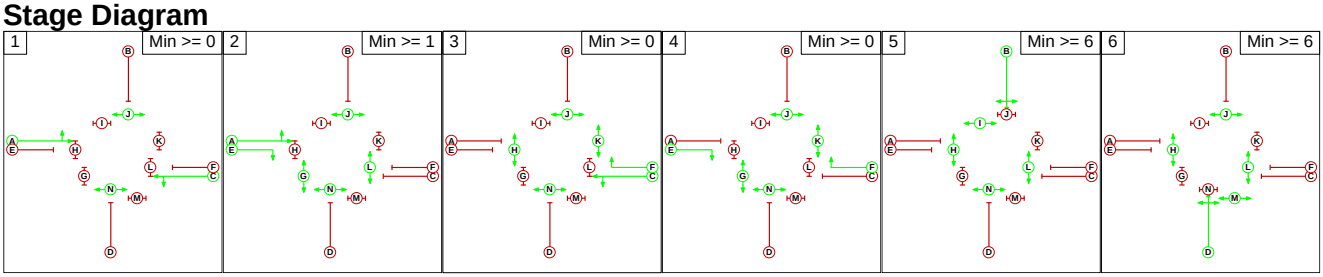
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N
A		7	-	5	-	5	-	5	9	-	11	-	-	-
B	5		7	5	7	7	11	-	-	5	8	-	8	-
C	-	5		6	5	-	10	-	-	-	-	5	11	-
D	6	5	6		6	8	8	-	11	-	12	-	-	5
E	-	7	5	5		-	-	5	-	-	-	-	11	-
F	5	5	-	6	-		-	-	9	-	-	5	-	-
G	-	4	4	4	-	-		-	-	-	-	-	-	-
H	3	-	-	-	3	-	-		-	-	-	-	-	-
I	5	-	-	5	-	5	-	-		-	-	-	-	-
J	-	3	-	-	-	-	-	-	-		-	-	-	-
K	6	6	-	6	-	-	-	-	-	-		-	-	-
L	-	-	8	-	-	8	-	-	-	-	-		-	-
M	-	3	3	-	3	-	-	-	-	-	-	-		-
N	-	-	-	3	-	-	-	-	-	-	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A C J N
2	A E G J L N
3	C F H J K N
4	E F G J K N
5	B H I L N
6	D H J L M

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Full Input Data And Results

Prohibited Stage Change

		To Stage					
		1	2	3	4	5	6
From Stage	1		10	11	11	9	11
	2	8		11	11	9	11
	3	6	10		10	9	11
	4	6	6	5		9	11
	5	8	11	8	11		8
	6	8	8	12	12	11	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Neptune Road / Ffordd Y Mileniwm
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Neptune Road / Ffordd Y Mileniwm												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Hood Road (N))	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 6 Left	18.50
											Arm 7 Ahead	Inf
											Arm 8 Right	35.00
2/1 (Ffordd Y Mileniwm (E))	U	C	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 7 Left	20.00
											Arm 8 Ahead	Inf
2/2 (Ffordd Y Mileniwm (E))	U	F	2	3	12.0	Geom	-	3.00	0.00	Y	Arm 5 Right	14.50
3/1 (Neptune Road (S))	U	D	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	30.00
											Arm 8 Left	17.00
4/1 (Ffordd Y Mileniwm (W))	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Left	50.00
											Arm 6 Ahead	Inf
4/2 (Ffordd Y Mileniwm (W))	U	E	2	3	5.5	Geom	-	3.00	0.00	Y	Arm 7 Right	10.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2023 Observed AM'	08:00	09:00	01:00	
2: '2023 Observed PM'	17:00	18:00	01:00	
3: '2023 Observed Sat'	12:00	13:00	01:00	
4: '2036 Future AM'	08:00	09:00	01:00	
5: '2036 Future PM'	17:00	18:00	01:00	
6: '2036 Future Sat'	12:00	13:00	01:00	
7: '2036 + Dev AM'	08:00	09:00	01:00	
8: '2036 + Dev PM'	17:00	18:00	01:00	
9: '2036 + Dev Sat'	12:00	13:00	01:00	

Scenario 1: '2023 Observed AM' (FG1: '2023 Observed AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	88	3	71	162
	B	131	0	3	322	456
	C	3	12	0	4	19
	D	66	460	1	0	527
	Tot.	200	560	7	397	1164

Traffic Lane Flows

Lane	Scenario 1: 2023 Observed AM
Junction: Neptune Road / Ffordd Y Mileniwm	
1/1	162
2/1 (with short)	456(In) 325(Out)
2/2 (short)	131
3/1	19
4/1 (with short)	527(In) 526(Out)
4/2 (short)	1
5/1	200
6/1	560
7/1	7
8/1	397

Full Input Data And Results

Lane Saturation Flows

Junction: Neptune Road / Ffordd Y Mileniwm								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hood Road (N))	3.25	0.00	Y	Arm 6 Left	18.50	54.3 %	1825	1825
				Arm 7 Ahead	Inf	1.9 %		
				Arm 8 Right	35.00	43.8 %		
2/1 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 7 Left	20.00	0.9 %	1914	1914
				Arm 8 Ahead	Inf	99.1 %		
2/2 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 5 Right	14.50	100.0 %	1735	1735
3/1 (Neptune Road (S))	3.10	0.00	Y	Arm 5 Ahead	Inf	15.8 %	1833	1833
				Arm 6 Right	30.00	63.2 %		
				Arm 8 Left	17.00	21.1 %		
4/1 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 5 Left	50.00	12.5 %	1908	1908
				Arm 6 Ahead	Inf	87.5 %		
4/2 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2023 Observed PM' (FG2: '2023 Observed PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	120	6	110	236
	B	151	0	15	634	800
	C	2	6	0	0	8
	D	110	493	4	0	607
	Tot.	263	619	25	744	1651

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2023 Observed PM
Junction: Neptune Road / Ffordd Y Mileniwm	
1/1	236
2/1 (with short)	800(In) 649(Out)
2/2 (short)	151
3/1	8
4/1 (with short)	607(In) 603(Out)
4/2 (short)	4
5/1	263
6/1	619
7/1	25
8/1	744

Lane Saturation Flows

Junction: Neptune Road / Ffordd Y Mileniwm								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hood Road (N))	3.25	0.00	Y	Arm 6 Left	18.50	50.8 %	1828	1828
				Arm 7 Ahead	Inf	2.5 %		
				Arm 8 Right	35.00	46.6 %		
2/1 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 7 Left	20.00	2.3 %	1912	1912
				Arm 8 Ahead	Inf	97.7 %		
2/2 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 5 Right	14.50	100.0 %	1735	1735
3/1 (Neptune Road (S))	3.10	0.00	Y	Arm 5 Ahead	Inf	25.0 %	1855	1855
				Arm 6 Right	30.00	75.0 %		
				Arm 8 Left	17.00	0.0 %		
4/1 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 5 Left	50.00	18.2 %	1905	1905
				Arm 6 Ahead	Inf	81.8 %		
4/2 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2023 Observed Sat' (FG3: '2023 Observed Sat', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	116	10	121	247
	B	102	0	13	611	726
	C	5	12	0	4	21
	D	102	546	8	0	656
	Tot.	209	674	31	736	1650

Traffic Lane Flows

Lane	Scenario 3: 2023 Observed Sat
Junction: Neptune Road / Ffordd Y Mileniwm	
1/1	247
2/1 (with short)	726(In) 624(Out)
2/2 (short)	102
3/1	21
4/1 (with short)	656(In) 648(Out)
4/2 (short)	8
5/1	209
6/1	674
7/1	31
8/1	736

Full Input Data And Results

Lane Saturation Flows

Junction: Neptune Road / Ffordd Y Mileniwm								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hood Road (N))	3.25	0.00	Y	Arm 6 Left	18.50	47.0 %	1832	1832
				Arm 7 Ahead	Inf	4.0 %		
				Arm 8 Right	35.00	49.0 %		
2/1 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 7 Left	20.00	2.1 %	1912	1912
				Arm 8 Ahead	Inf	97.9 %		
2/2 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 5 Right	14.50	100.0 %	1735	1735
3/1 (Neptune Road (S))	3.10	0.00	Y	Arm 5 Ahead	Inf	23.8 %	1841	1841
				Arm 6 Right	30.00	57.1 %		
				Arm 8 Left	17.00	19.0 %		
4/1 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 5 Left	50.00	15.7 %	1906	1906
				Arm 6 Ahead	Inf	84.3 %		
4/2 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2036 Future AM' (FG4: '2036 Future AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	97	3	79	179
	B	144	0	3	355	502
	C	3	13	0	4	20
	D	73	507	1	0	581
	Tot.	220	617	7	438	1282

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2036 Future AM
Junction: Neptune Road / Ffordd Y Mileniwm	
1/1	179
2/1 (with short)	502(In) 358(Out)
2/2 (short)	144
3/1	20
4/1 (with short)	581(In) 580(Out)
4/2 (short)	1
5/1	220
6/1	617
7/1	7
8/1	438

Lane Saturation Flows

Junction: Neptune Road / Ffordd Y Mileniwm								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hood Road (N))	3.25	0.00	Y	Arm 6 Left	18.50	54.2 %	1825	1825
				Arm 7 Ahead	Inf	1.7 %		
				Arm 8 Right	35.00	44.1 %		
2/1 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 7 Left	20.00	0.8 %	1914	1914
				Arm 8 Ahead	Inf	99.2 %		
2/2 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 5 Right	14.50	100.0 %	1735	1735
3/1 (Neptune Road (S))	3.10	0.00	Y	Arm 5 Ahead	Inf	15.0 %	1833	1833
				Arm 6 Right	30.00	65.0 %		
				Arm 8 Left	17.00	20.0 %		
4/1 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 5 Left	50.00	12.6 %	1908	1908
				Arm 6 Ahead	Inf	87.4 %		
4/2 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: '2036 Future PM' (FG5: '2036 Future PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	132	7	121	260
	B	166	0	16	697	879
	C	2	7	0	0	9
	D	121	542	4	0	667
	Tot.	289	681	27	818	1815

Traffic Lane Flows

Lane	Scenario 5: 2036 Future PM
Junction: Neptune Road / Ffordd Y Mileniwm	
1/1	260
2/1 (with short)	879(In) 713(Out)
2/2 (short)	166
3/1	9
4/1 (with short)	667(In) 663(Out)
4/2 (short)	4
5/1	289
6/1	681
7/1	27
8/1	818

Full Input Data And Results

Lane Saturation Flows

Junction: Neptune Road / Ffordd Y Mileniwm								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hood Road (N))	3.25	0.00	Y	Arm 6 Left	18.50	50.8 %	1828	1828
				Arm 7 Ahead	Inf	2.7 %		
				Arm 8 Right	35.00	46.5 %		
2/1 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 7 Left	20.00	2.2 %	1912	1912
				Arm 8 Ahead	Inf	97.8 %		
2/2 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 5 Right	14.50	100.0 %	1735	1735
3/1 (Neptune Road (S))	3.10	0.00	Y	Arm 5 Ahead	Inf	22.2 %	1853	1853
				Arm 6 Right	30.00	77.8 %		
				Arm 8 Left	17.00	0.0 %		
4/1 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 5 Left	50.00	18.3 %	1905	1905
				Arm 6 Ahead	Inf	81.7 %		
4/2 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2036 Future Sat' (FG6: '2036 Future Sat', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	129	11	134	274
	B	113	0	14	676	803
	C	6	14	0	4	24
	D	113	604	9	0	726
	Tot.	232	747	34	814	1827

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2036 Future Sat
Junction: Neptune Road / Ffordd Y Mileniwm	
1/1	274
2/1 (with short)	803(In) 690(Out)
2/2 (short)	113
3/1	24
4/1 (with short)	726(In) 717(Out)
4/2 (short)	9
5/1	232
6/1	747
7/1	34
8/1	814

Lane Saturation Flows

Junction: Neptune Road / Ffordd Y Mileniwm								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hood Road (N))	3.25	0.00	Y	Arm 6 Left	18.50	47.1 %	1832	1832
				Arm 7 Ahead	Inf	4.0 %		
				Arm 8 Right	35.00	48.9 %		
2/1 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 7 Left	20.00	2.0 %	1912	1912
				Arm 8 Ahead	Inf	98.0 %		
2/2 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 5 Right	14.50	100.0 %	1735	1735
3/1 (Neptune Road (S))	3.10	0.00	Y	Arm 5 Ahead	Inf	25.0 %	1844	1844
				Arm 6 Right	30.00	58.3 %		
				Arm 8 Left	17.00	16.7 %		
4/1 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 5 Left	50.00	15.8 %	1906	1906
				Arm 6 Ahead	Inf	84.2 %		
4/2 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 7: '2036 + Dev AM' (FG7: '2036 + Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	97	7	79	183
	B	144	0	58	355	557
	C	5	39	0	5	49
	D	73	507	1	0	581
	Tot.	222	643	66	439	1370

Traffic Lane Flows

Lane	Scenario 7: 2036 + Dev AM
Junction: Neptune Road / Ffordd Y Mileniwm	
1/1	183
2/1 (with short)	557(In) 413(Out)
2/2 (short)	144
3/1	49
4/1 (with short)	581(In) 580(Out)
4/2 (short)	1
5/1	222
6/1	643
7/1	66
8/1	439

Full Input Data And Results

Lane Saturation Flows

Junction: Neptune Road / Ffordd Y Mileniwm								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hood Road (N))	3.25	0.00	Y	Arm 6 Left	18.50	53.0 %	1828	1828
				Arm 7 Ahead	Inf	3.8 %		
				Arm 8 Right	35.00	43.2 %		
2/1 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 7 Left	20.00	14.0 %	1895	1895
				Arm 8 Ahead	Inf	86.0 %		
2/2 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 5 Right	14.50	100.0 %	1735	1735
3/1 (Neptune Road (S))	3.10	0.00	Y	Arm 5 Ahead	Inf	10.2 %	1835	1835
				Arm 6 Right	30.00	79.6 %		
				Arm 8 Left	17.00	10.2 %		
4/1 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 5 Left	50.00	12.6 %	1908	1908
				Arm 6 Ahead	Inf	87.4 %		
4/2 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2036 + Dev PM' (FG8: '2036 + Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	132	8	121	261
	B	166	0	49	697	912
	C	6	69	0	0	75
	D	121	542	5	0	668
	Tot.	293	743	62	818	1916

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 8: 2036 + Dev PM
Junction: Neptune Road / Ffordd Y Mileniwm	
1/1	261
2/1 (with short)	912(In) 746(Out)
2/2 (short)	166
3/1	75
4/1 (with short)	668(In) 663(Out)
4/2 (short)	5
5/1	293
6/1	743
7/1	62
8/1	818

Lane Saturation Flows

Junction: Neptune Road / Ffordd Y Mileniwm								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hood Road (N))	3.25	0.00	Y	Arm 6 Left	18.50	50.6 %	1829	1829
				Arm 7 Ahead	Inf	3.1 %		
				Arm 8 Right	35.00	46.4 %		
2/1 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 7 Left	20.00	6.6 %	1906	1906
				Arm 8 Ahead	Inf	93.4 %		
2/2 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 5 Right	14.50	100.0 %	1735	1735
3/1 (Neptune Road (S))	3.10	0.00	Y	Arm 5 Ahead	Inf	8.0 %	1840	1840
				Arm 6 Right	30.00	92.0 %		
				Arm 8 Left	17.00	0.0 %		
4/1 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 5 Left	50.00	18.3 %	1905	1905
				Arm 6 Ahead	Inf	81.7 %		
4/2 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 9: '2036 + Dev Sat' (FG9: '2036 + Dev Sat', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	129	13	134	276
	B	113	0	37	676	826
	C	7	32	0	5	44
	D	113	604	9	0	726
	Tot.	233	765	59	815	1872

Traffic Lane Flows

Lane	Scenario 9: 2036 + Dev Sat
Junction: Neptune Road / Ffordd Y Mileniwm	
1/1	276
2/1 (with short)	826(In) 713(Out)
2/2 (short)	113
3/1	44
4/1 (with short)	726(In) 717(Out)
4/2 (short)	9
5/1	233
6/1	765
7/1	59
8/1	815

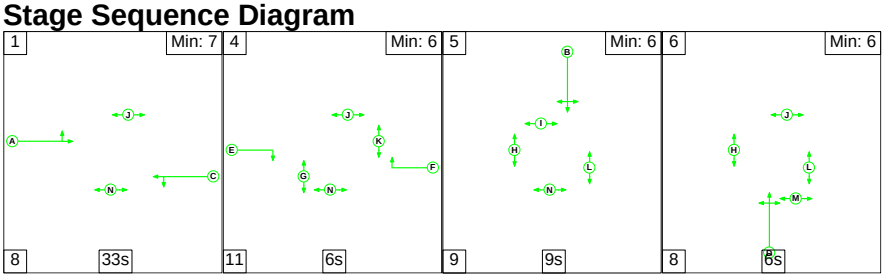
Full Input Data And Results

Lane Saturation Flows

Junction: Neptune Road / Ffordd Y Mileniwm								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hood Road (N))	3.25	0.00	Y	Arm 6 Left	18.50	46.7 %	1832	1832
				Arm 7 Ahead	Inf	4.7 %		
				Arm 8 Right	35.00	48.6 %		
2/1 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 7 Left	20.00	5.2 %	1908	1908
				Arm 8 Ahead	Inf	94.8 %		
2/2 (Ffordd Y Mileniwm (E))	3.00	0.00	Y	Arm 5 Right	14.50	100.0 %	1735	1735
3/1 (Neptune Road (S))	3.10	0.00	Y	Arm 5 Ahead	Inf	15.9 %	1840	1840
				Arm 6 Right	30.00	72.7 %		
				Arm 8 Left	17.00	11.4 %		
4/1 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 5 Left	50.00	15.8 %	1906	1906
				Arm 6 Ahead	Inf	84.2 %		
4/2 (Ffordd Y Mileniwm (W))	3.00	0.00	Y	Arm 7 Right	10.00	100.0 %	1665	1665
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2023 Observed AM' (FG1: '2023 Observed AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

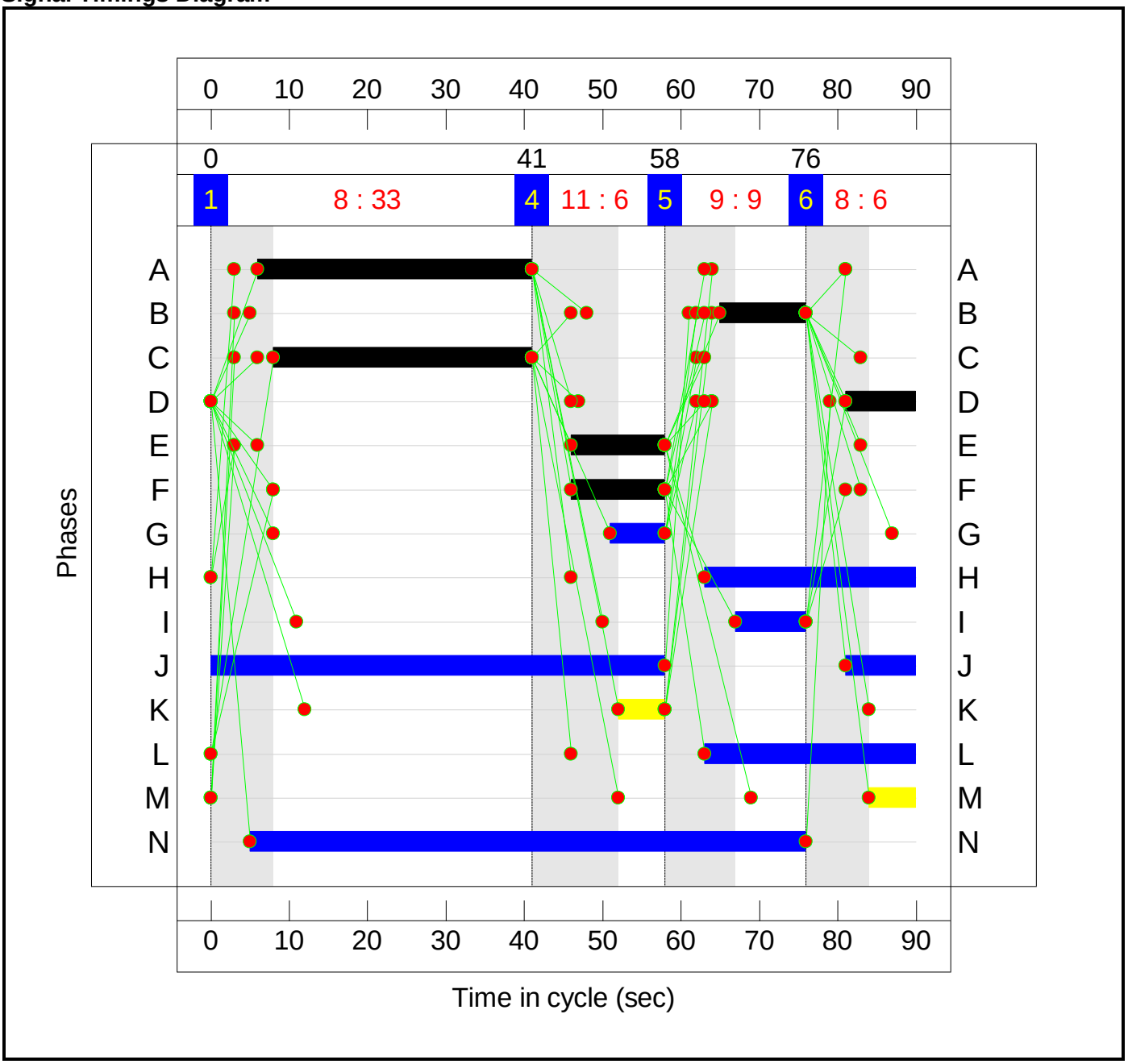


Stage Timings

Stage	1	4	5	6
Duration	33	6	9	6
Change Point	0	41	58	76

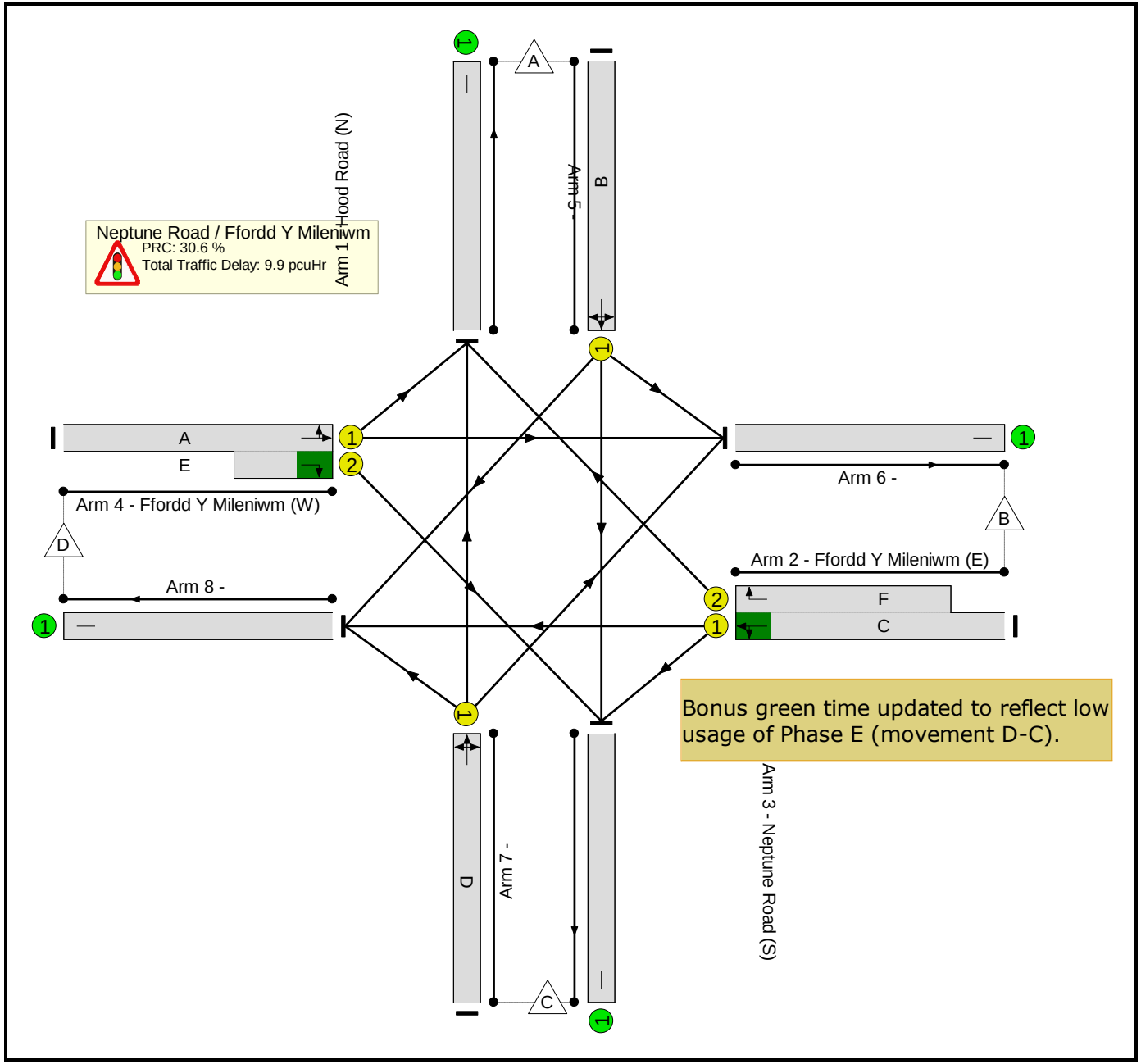
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

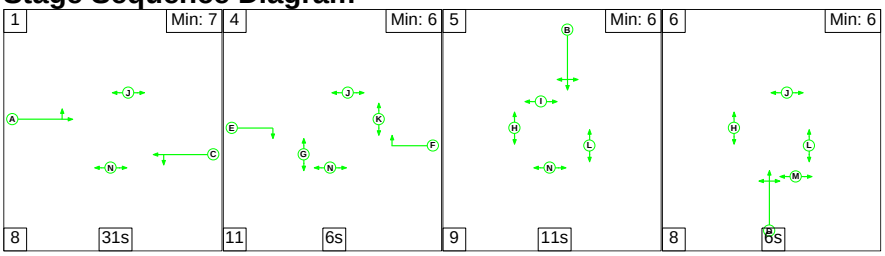
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Sat Flow (pcu/Hr)	Total Delay (pcuHr)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**9.9**	**68.9%**	**-**	**-**
Neptune Road / Ffordd Y Mileniwm	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**9.9**	**68.9%**	**-**	**-**
1/1	Hood Road (N) Left Ahead Right	U	N/A	N/A	B		1	11	-	1825	2.6	66.6%	58.7	4.8
2/1+2/2	Ffordd Y Mileniwm (E) Right Left Ahead	U	N/A	N/A	C F		1	33:12	-	1914:1735	2.7	38.0 : 52.3%	21.0	4.8
3/1	Neptune Road (S) Ahead Right Left	U	N/A	N/A	D		1	9	-	1833	0.2	9.3%	45.7	0.5
4/1+4/2	Ffordd Y Mileniwm (W) Left Ahead Right	U	N/A	N/A	A E		1	35:12	-	1908:1665	4.4	68.9 : 68.9%	29.9	11.9
5/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
6/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
7/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
8/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0

C1 PRC for Signalled Lanes (%): 30.6 Total Delay for Signalled Lanes (pcuHr): 9.93 Cycle Time (s): 90
PRC Over All Lanes (%): 30.6 Total Delay Over All Lanes(pcuHr): 9.93

Full Input Data And Results

Scenario 2: '2023 Observed PM' (FG2: '2023 Observed PM', Plan 1: 'Network Control Plan 1')

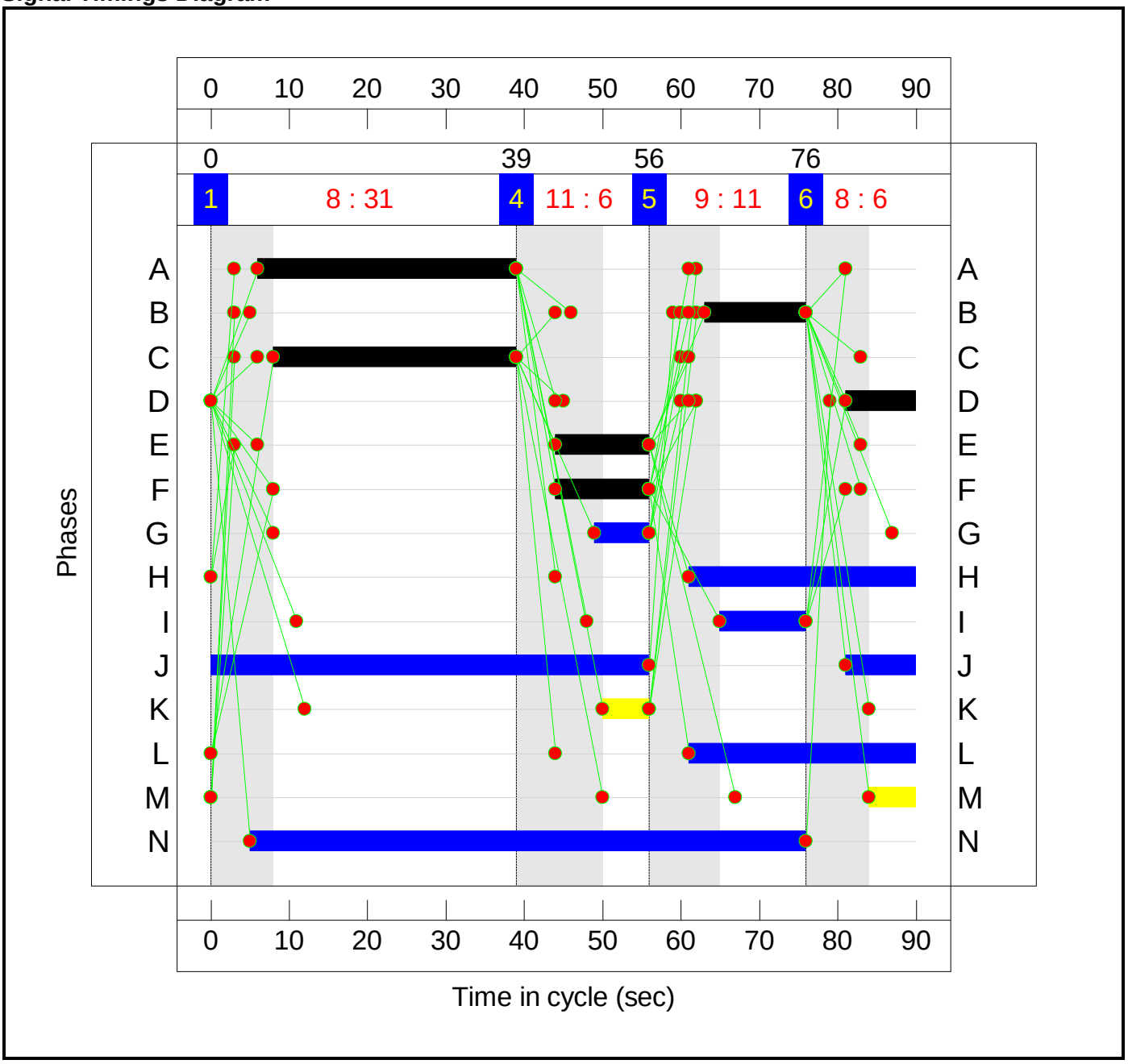
Stage Sequence Diagram



Stage Timings

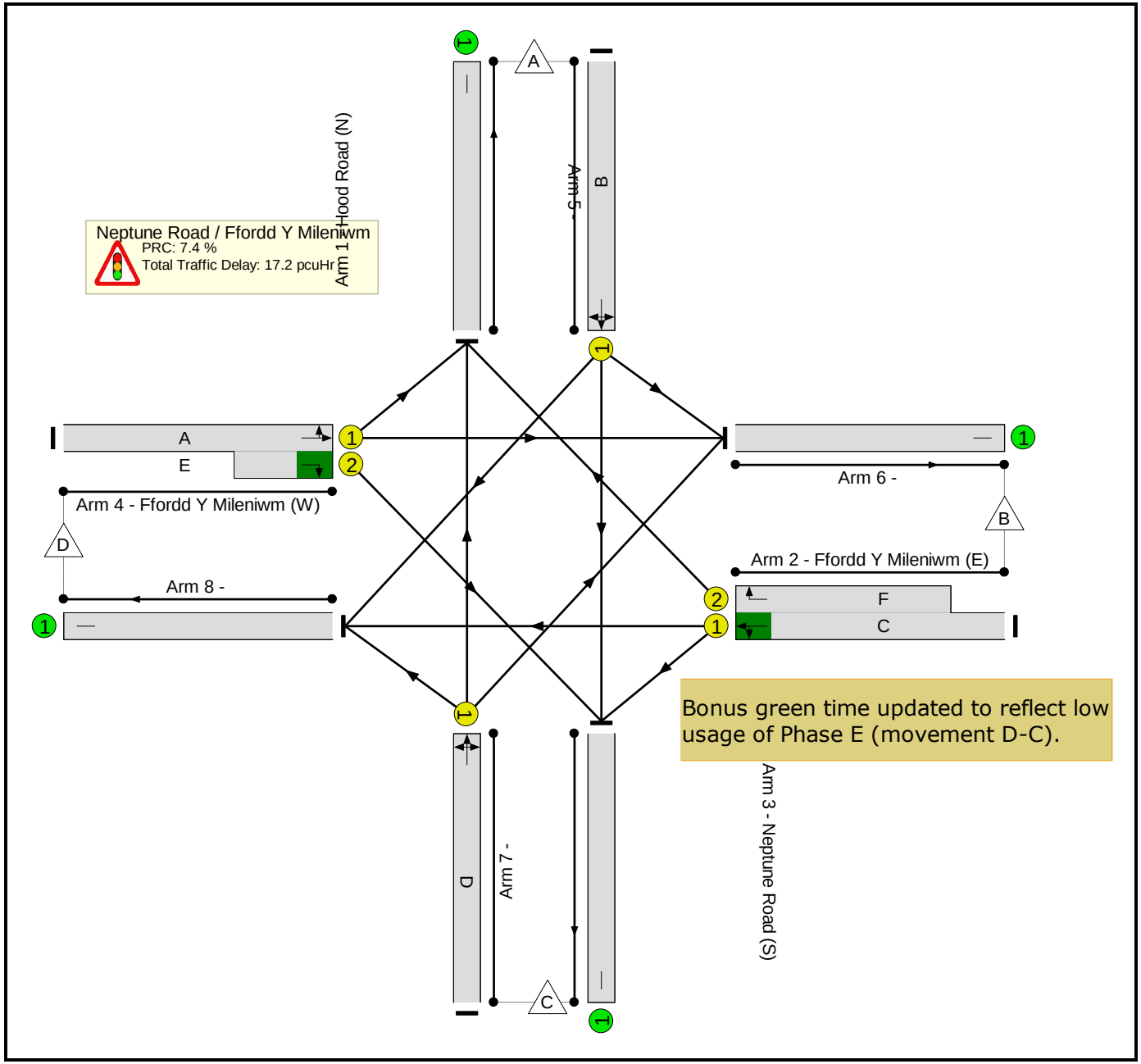
Stage	1	4	5	6
Duration	31	6	11	6
Change Point	0	39	56	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

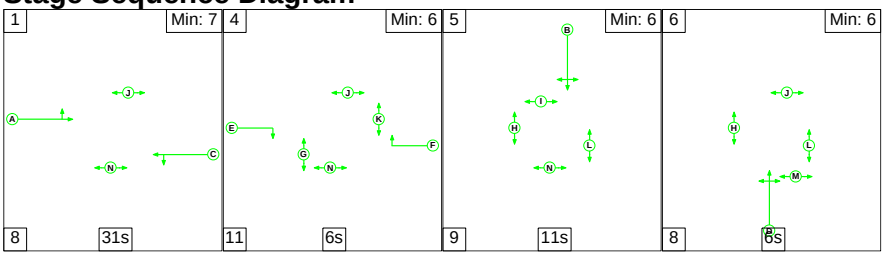
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Sat Flow (pcu/Hr)	Total Delay (pcuHr)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**17.2**	**83.8%**	**-**	**-**
Neptune Road / Ffordd Y Mileniwm	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**17.2**	**83.8%**	**-**	**-**
1/1	Hood Road (N) Left Ahead Right	U	N/A	N/A	B		1	13	-	1828	4.6	83.0%	70.9	7.9
2/1+2/2	Ffordd Y Mileniwm (E) Right Left Ahead	U	N/A	N/A	C F		1	31:12	-	1912:1735	5.7	73.3 : 73.3%	25.5	13.1
3/1	Neptune Road (S) Ahead Right Left	U	N/A	N/A	D		1	9	-	1855	0.1	3.9%	45.1	0.2
4/1+4/2	Ffordd Y Mileniwm (W) Left Ahead Right	U	N/A	N/A	A E		1	33:12	-	1905:1665	6.8	83.8 : 83.8%	40.3	16.0
5/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
6/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
7/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
8/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0

C1 PRC for Signalled Lanes (%): 7.4 Total Delay for Signalled Lanes (pcuHr): 17.22 Cycle Time (s): 90
PRC Over All Lanes (%): 7.4 Total Delay Over All Lanes(pcuHr): 17.22

Full Input Data And Results

Scenario 3: '2023 Observed Sat' (FG3: '2023 Observed Sat', Plan 1: 'Network Control Plan 1')

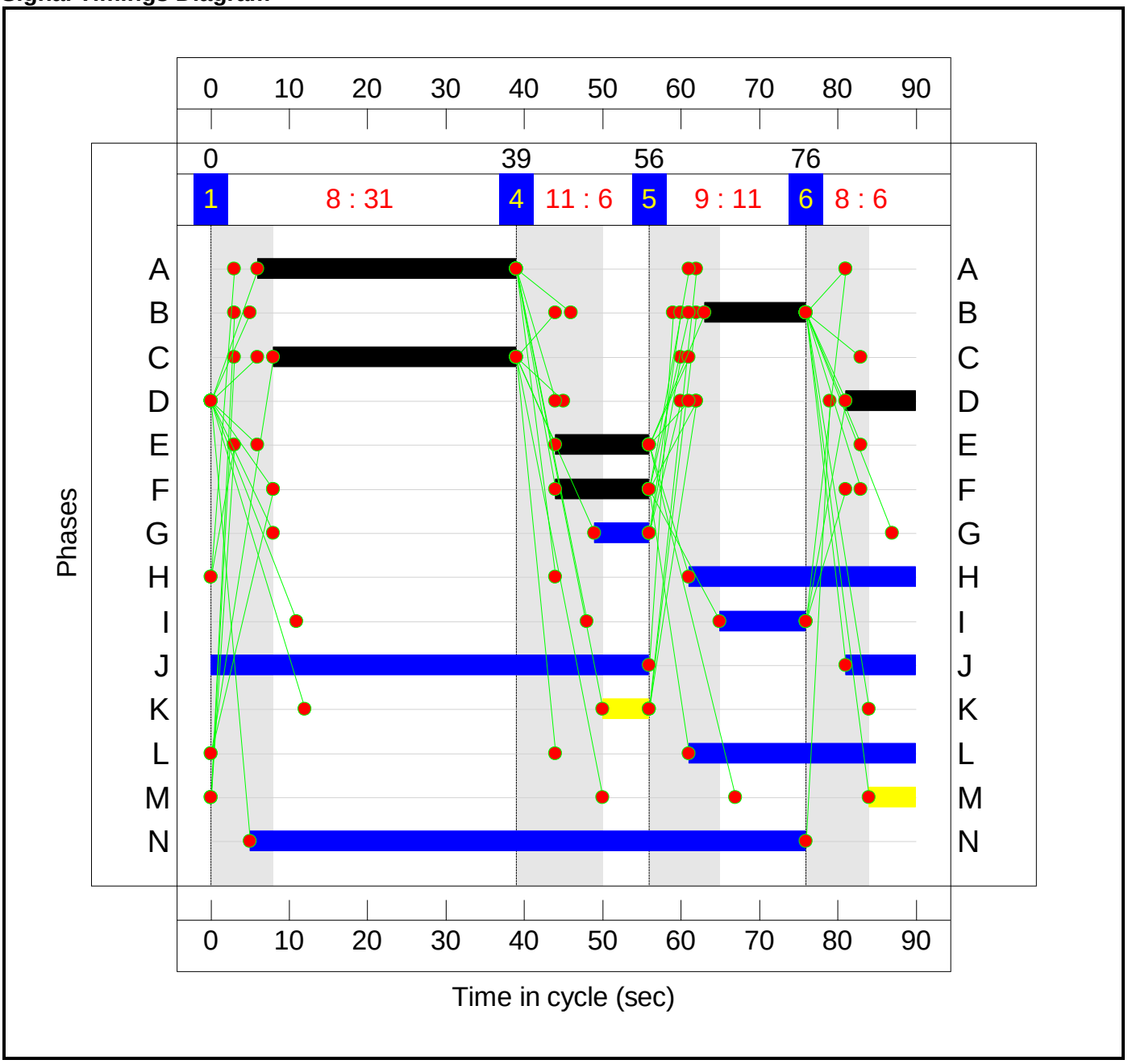
Stage Sequence Diagram



Stage Timings

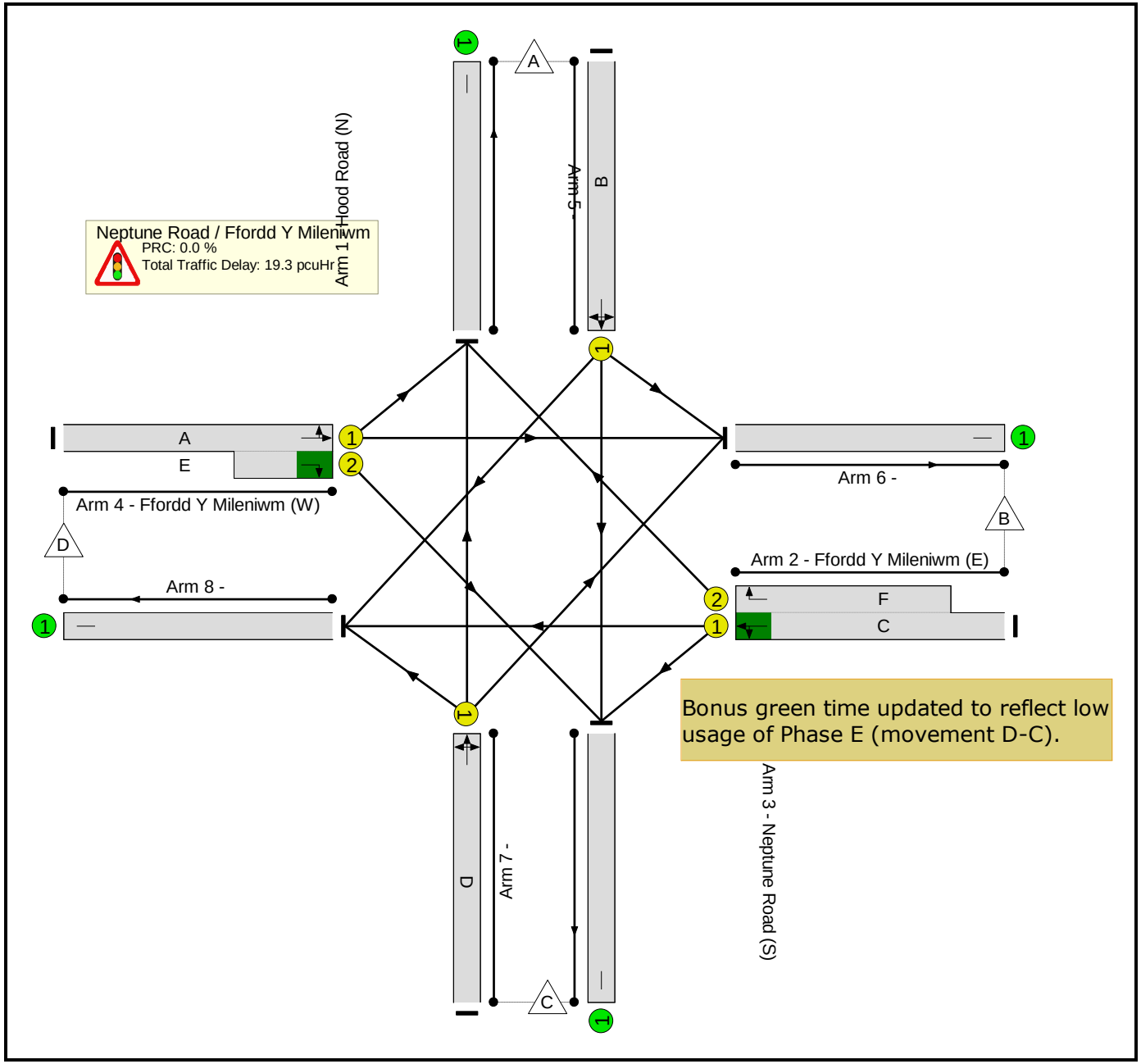
Stage	1	4	5	6
Duration	31	6	11	6
Change Point	0	39	56	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

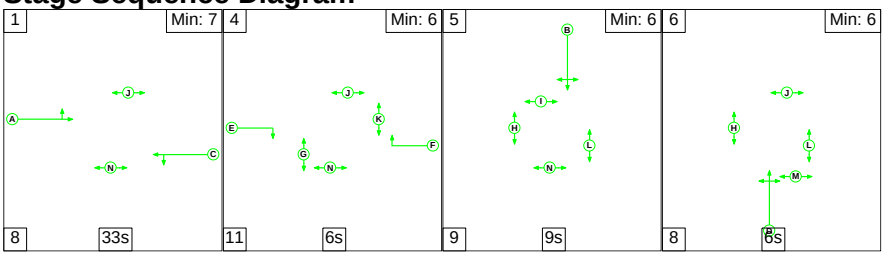
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Sat Flow (pcu/Hr)	Total Delay (pcuHr)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**19.3**	**90.0%**	**-**	**-**
Neptune Road / Ffordd Y Mileniwm	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**19.3**	**90.0%**	**-**	**-**
1/1	Hood Road (N) Left Ahead Right	U	N/A	N/A	B		1	13	-	1832	5.4	86.7%	78.3	8.8
2/1+2/2	Ffordd Y Mileniwm (E) Right Left Ahead	U	N/A	N/A	C F		1	31:12	-	1912:1735	4.7	68.4 : 68.4%	23.4	12.0
3/1	Neptune Road (S) Ahead Right Left	U	N/A	N/A	D		1	9	-	1841	0.3	10.3%	45.8	0.5
4/1+4/2	Ffordd Y Mileniwm (W) Left Ahead Right	U	N/A	N/A	A E		1	33:12	-	1906:1665	8.9	90.0 : 90.0%	48.8	19.2
5/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
6/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
7/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
8/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0

C1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 19.25 Cycle Time (s): 90
PRC Over All Lanes (%): 0.0 Total Delay Over All Lanes(pcuHr): 19.25

Full Input Data And Results

Scenario 4: '2036 Future AM' (FG4: '2036 Future AM', Plan 1: 'Network Control Plan 1')

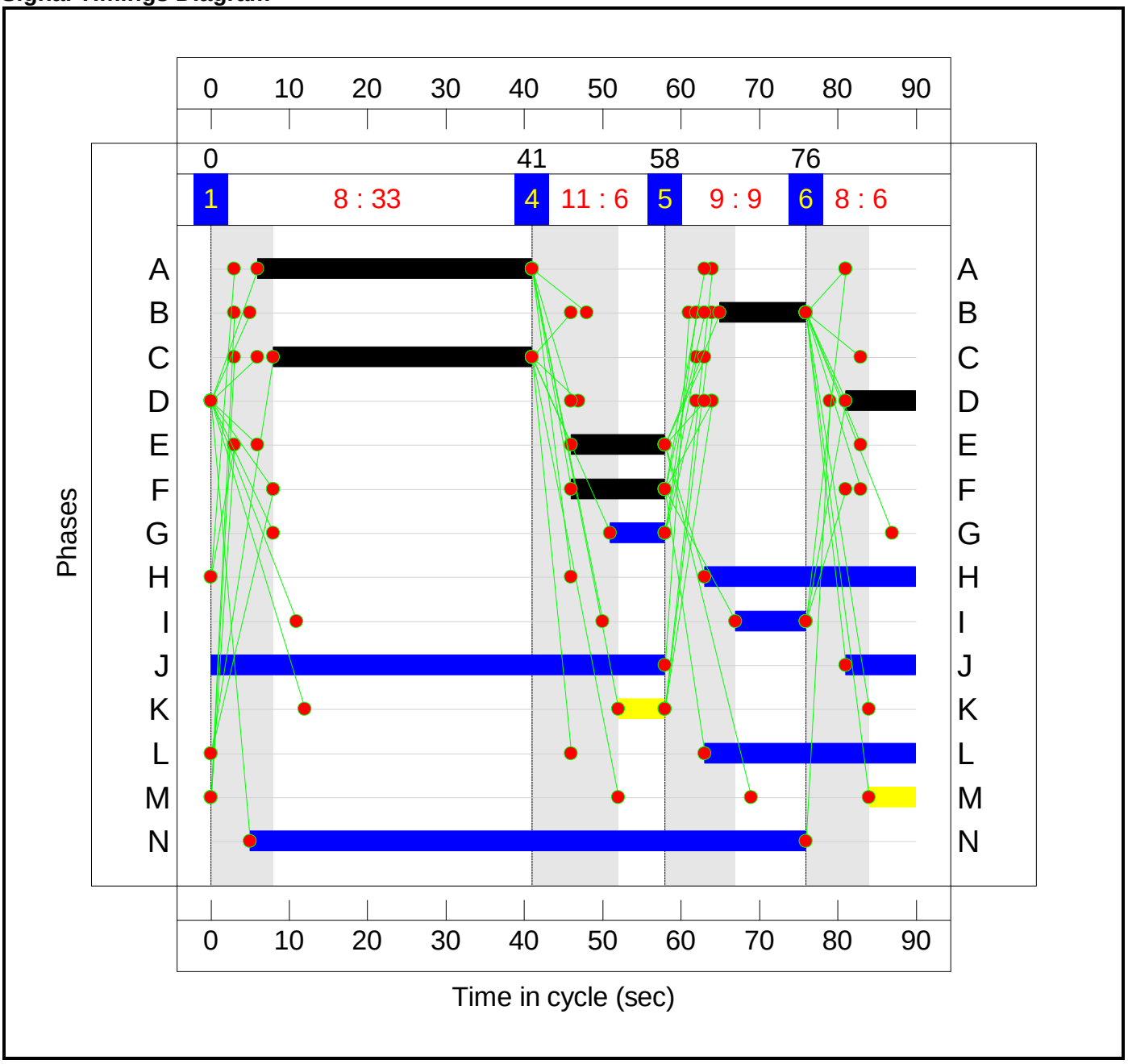
Stage Sequence Diagram



Stage Timings

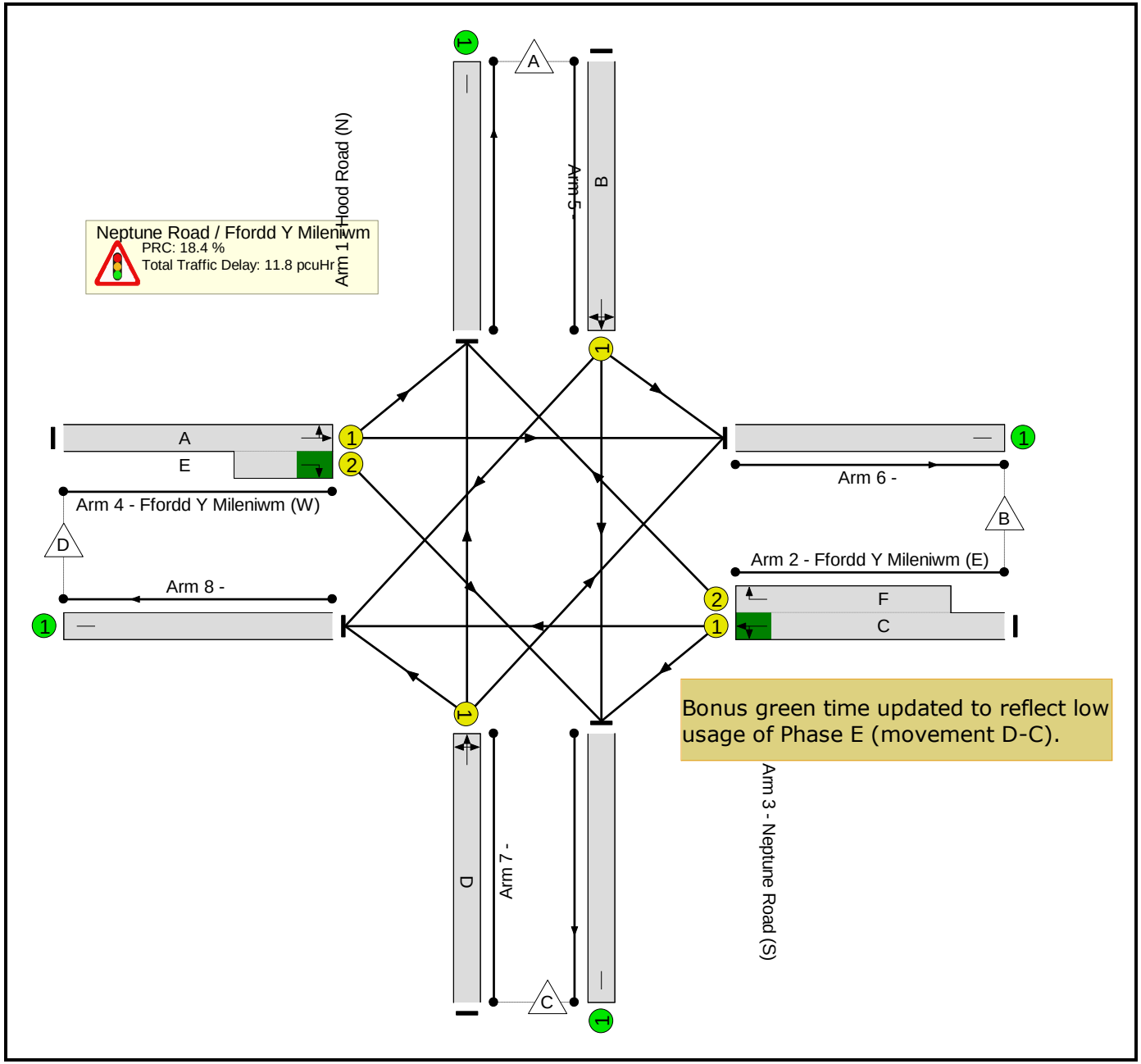
Stage	1	4	5	6
Duration	33	6	9	6
Change Point	0	41	58	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

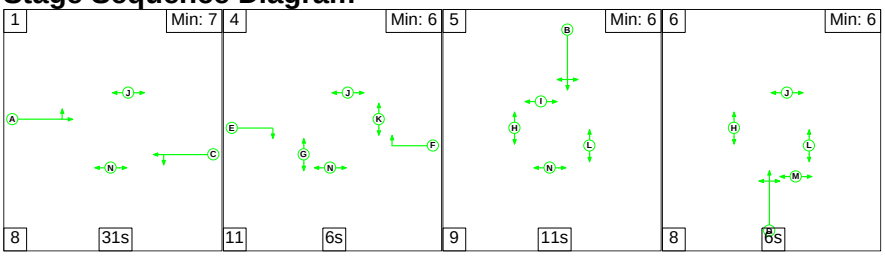
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Sat Flow (pcu/Hr)	Total Delay (pcuHr)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**11.8**	**76.0%**	**-**	**-**
Neptune Road / Ffordd Y Mileniwm	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**11.8**	**76.0%**	**-**	**-**
1/1	Hood Road (N) Left Ahead Right	U	N/A	N/A	B		1	11	-	1825	3.2	73.6%	64.4	5.6
2/1+2/2	Ffordd Y Mileniwm (E) Right Left Ahead	U	N/A	N/A	C F		1	33:12	-	1914:1735	3.0	41.7 : 57.5%	21.5	5.4
3/1	Neptune Road (S) Ahead Right Left	U	N/A	N/A	D		1	9	-	1833	0.3	9.8%	45.8	0.5
4/1+4/2	Ffordd Y Mileniwm (W) Left Ahead Right	U	N/A	N/A	A E		1	35:12	-	1908:1665	5.3	76.0 : 76.0%	33.0	14.0
5/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
6/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
7/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
8/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0

C1 PRC for Signalled Lanes (%): 18.4 Total Delay for Signalled Lanes (pcuHr): 11.77 Cycle Time (s): 90
PRC Over All Lanes (%): 18.4 Total Delay Over All Lanes(pcuHr): 11.77

Full Input Data And Results

Scenario 5: '2036 Future PM' (FG5: '2036 Future PM', Plan 1: 'Network Control Plan 1')

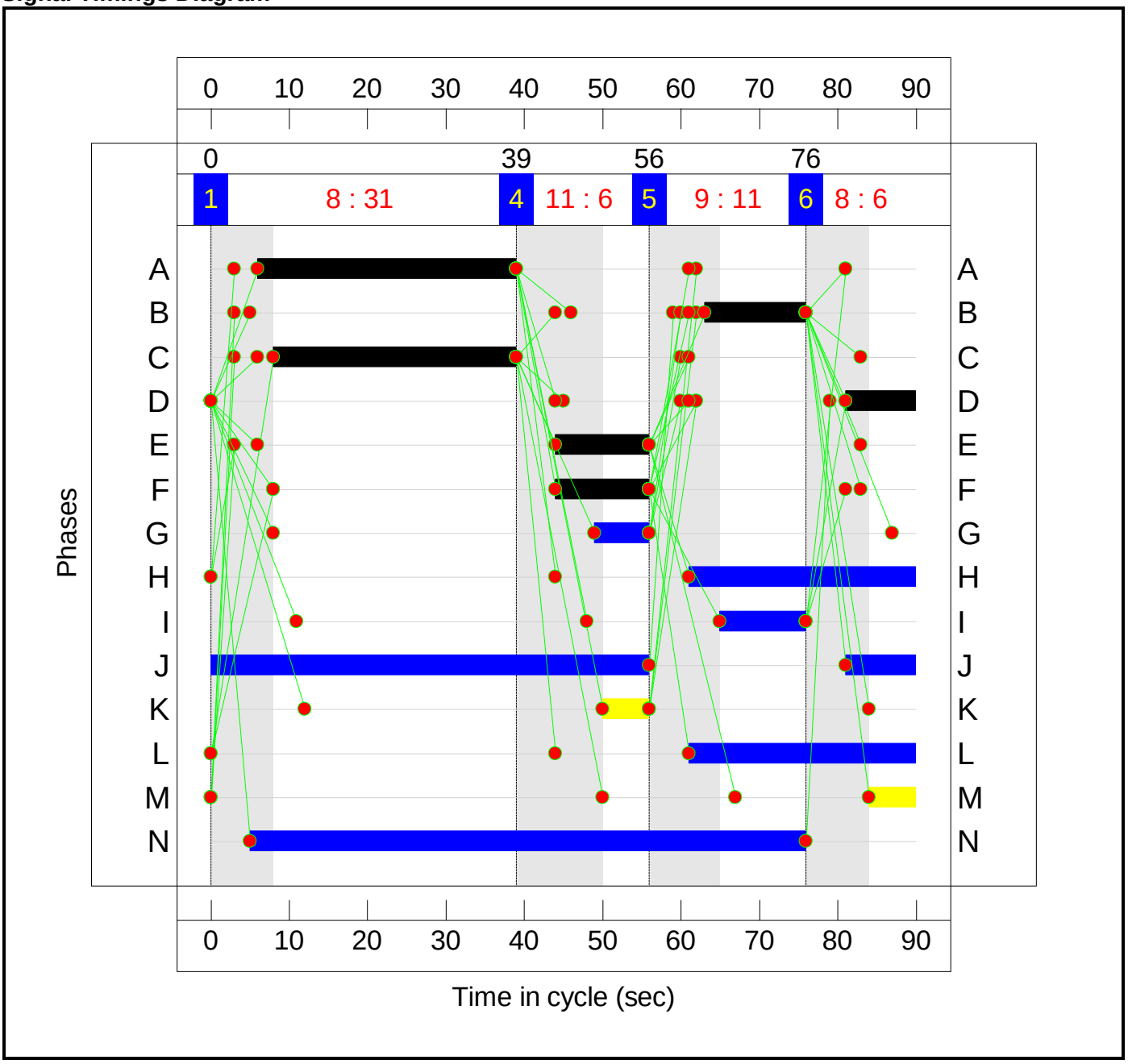
Stage Sequence Diagram



Stage Timings

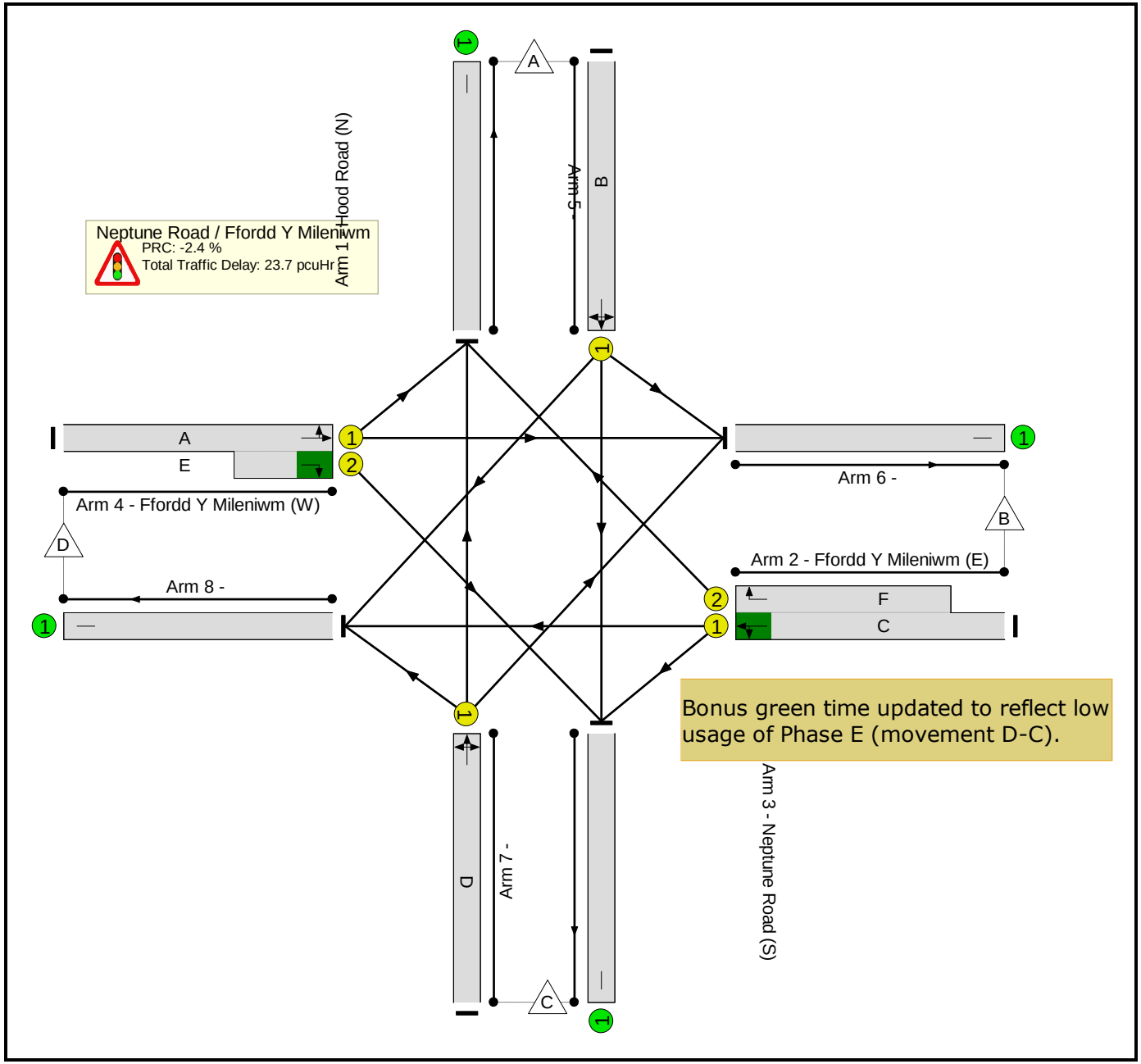
Stage	1	4	5	6
Duration	31	6	11	6
Change Point	0	39	56	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

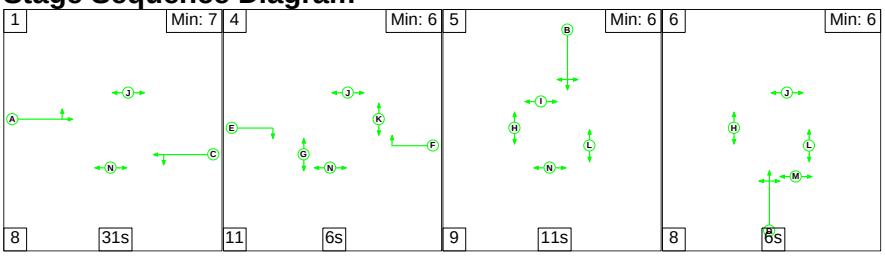
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Sat Flow (pcu/Hr)	Total Delay (pcuHr)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**23.7**	**92.1%**	**-**	**-**
Neptune Road / Ffordd Y Mileniwm	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**23.7**	**92.1%**	**-**	**-**
1/1	Hood Road (N) Left Ahead Right	U	N/A	N/A	B		1	13	-	1828	6.7	91.4%	93.0	10.4
2/1+2/2	Ffordd Y Mileniwm (E) Right Left Ahead	U	N/A	N/A	C F		1	31:12	-	1912:1735	7.0	80.5 : 80.5%	28.5	16.5
3/1	Neptune Road (S) Ahead Right Left	U	N/A	N/A	D		1	9	-	1853	0.1	4.4%	45.1	0.2
4/1+4/2	Ffordd Y Mileniwm (W) Left Ahead Right	U	N/A	N/A	A E		1	33:12	-	1905:1665	9.9	92.1 : 92.1%	53.7	20.6
5/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
6/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
7/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
8/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0

C1 PRC for Signalled Lanes (%): -2.4 Total Delay for Signalled Lanes (pcuHr): 23.75 Cycle Time (s): 90
PRC Over All Lanes (%): -2.4 Total Delay Over All Lanes(pcuHr): 23.75

Full Input Data And Results

Scenario 6: '2036 Future Sat' (FG6: '2036 Future Sat', Plan 1: 'Network Control Plan 1')

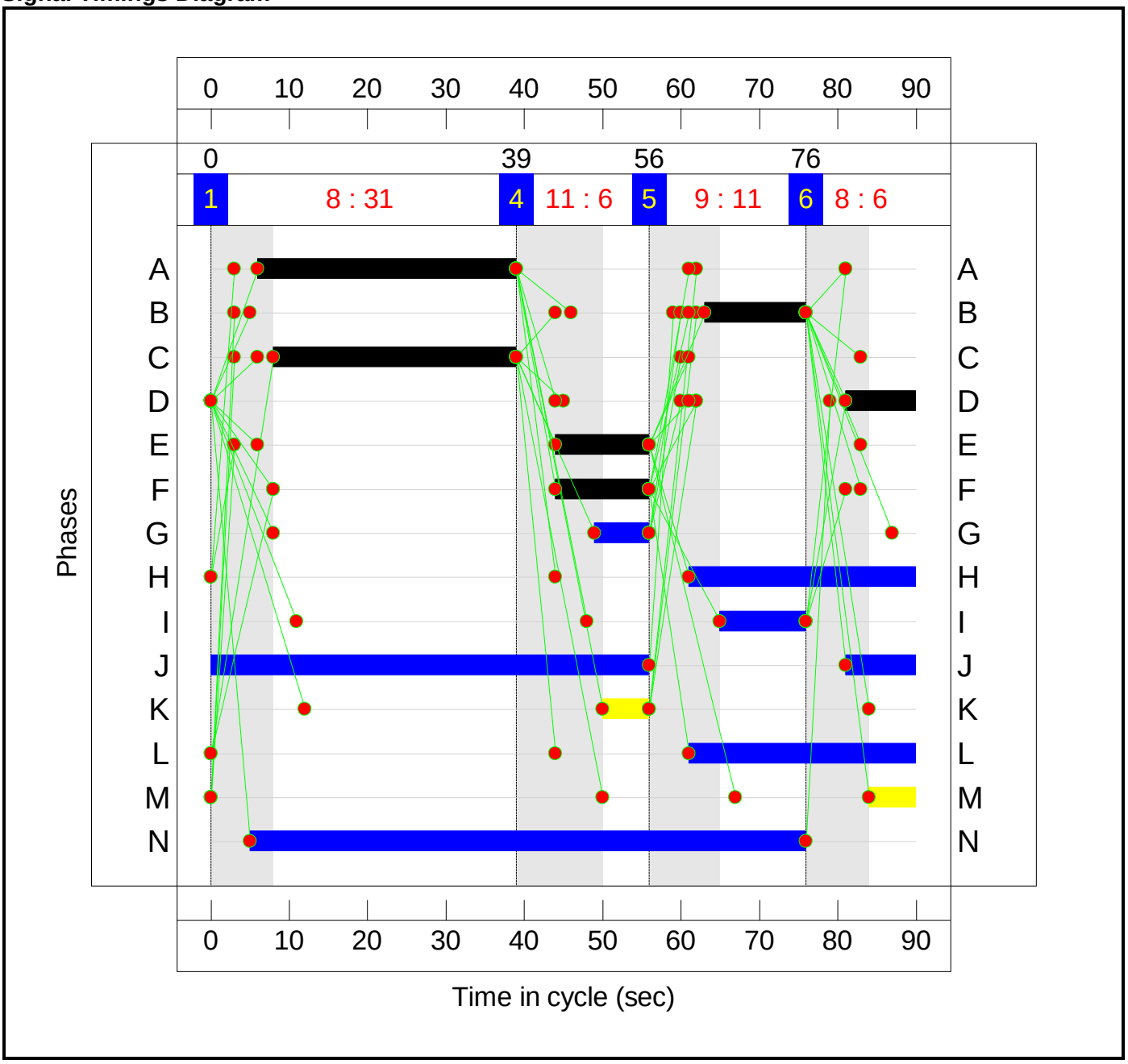
Stage Sequence Diagram



Stage Timings

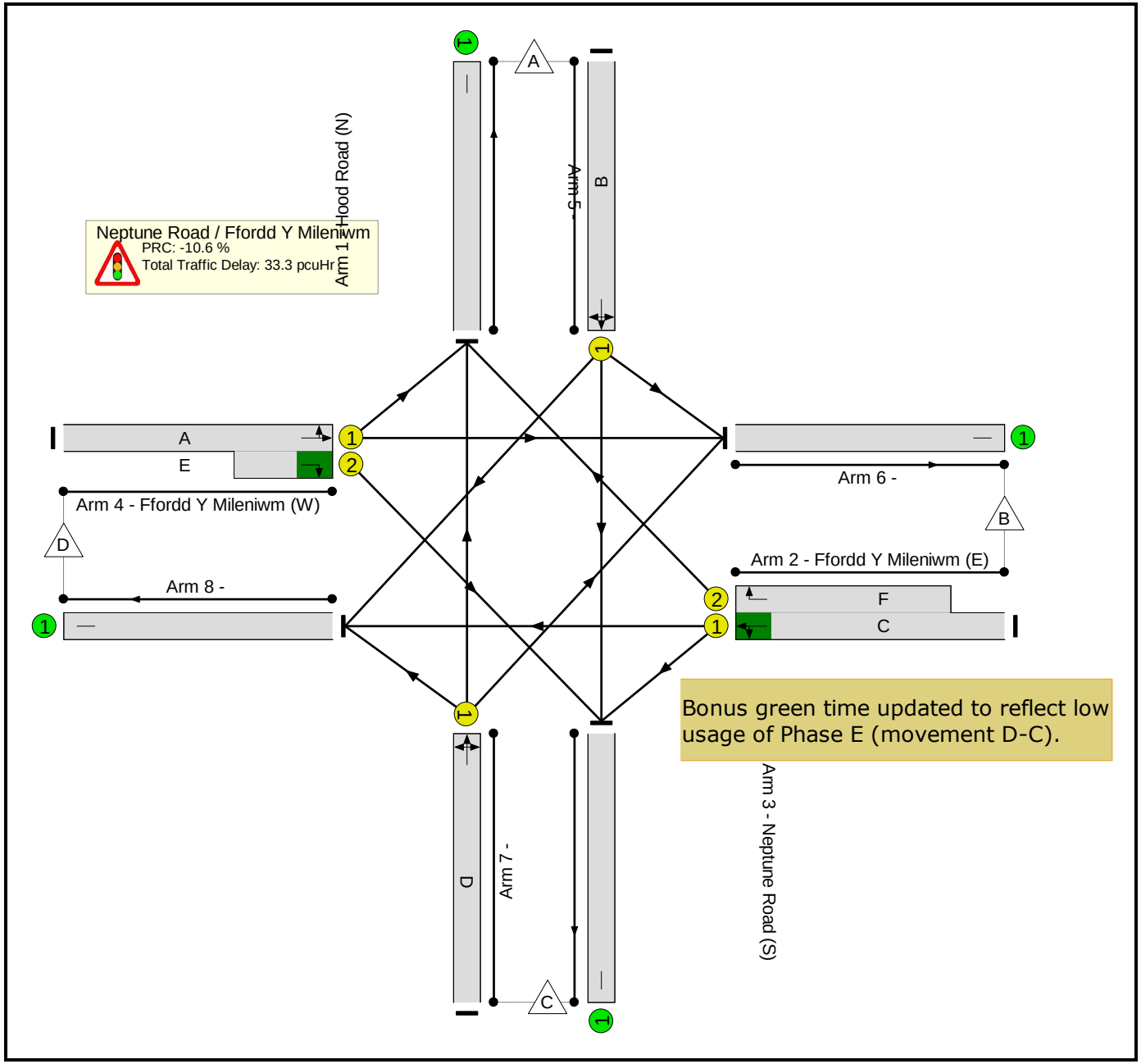
Stage	1	4	5	6
Duration	31	6	11	6
Change Point	0	39	56	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

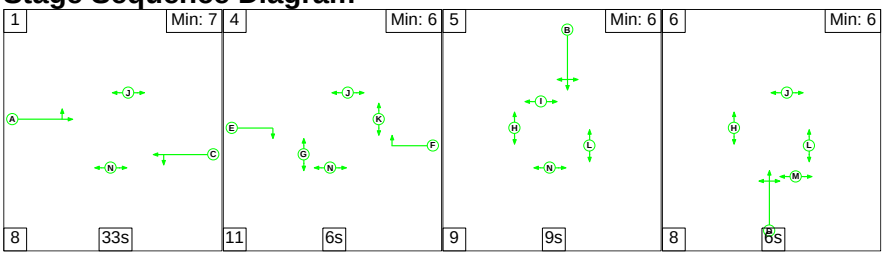
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Sat Flow (pcu/Hr)	Total Delay (pcuHr)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**33.3**	**99.6%**	**-**	**-**
Neptune Road / Ffordd Y Mileniwm	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**33.3**	**99.6%**	**-**	**-**
1/1	Hood Road (N) Left Ahead Right	U	N/A	N/A	B		1	13	-	1832	8.8	96.1%	116.2	12.7
2/1+2/2	Ffordd Y Mileniwm (E) Right Left Ahead	U	N/A	N/A	C F		1	31:12	-	1912:1735	5.7	75.7 : 75.7%	25.7	14.9
3/1	Neptune Road (S) Ahead Right Left	U	N/A	N/A	D		1	9	-	1844	0.3	11.7%	46.0	0.6
4/1+4/2	Ffordd Y Mileniwm (W) Left Ahead Right	U	N/A	N/A	A E		1	33:12	-	1906:1665	18.4	99.6 : 99.6%	91.2	30.4
5/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
6/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
7/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
8/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0

C1 PRC for Signalled Lanes (%): -10.6 Total Delay for Signalled Lanes (pcuHr): 33.28 Cycle Time (s): 90
PRC Over All Lanes (%): -10.6 Total Delay Over All Lanes(pcuHr): 33.28

Full Input Data And Results

Scenario 7: '2036 + Dev AM' (FG7: '2036 + Dev AM', Plan 1: 'Network Control Plan 1')

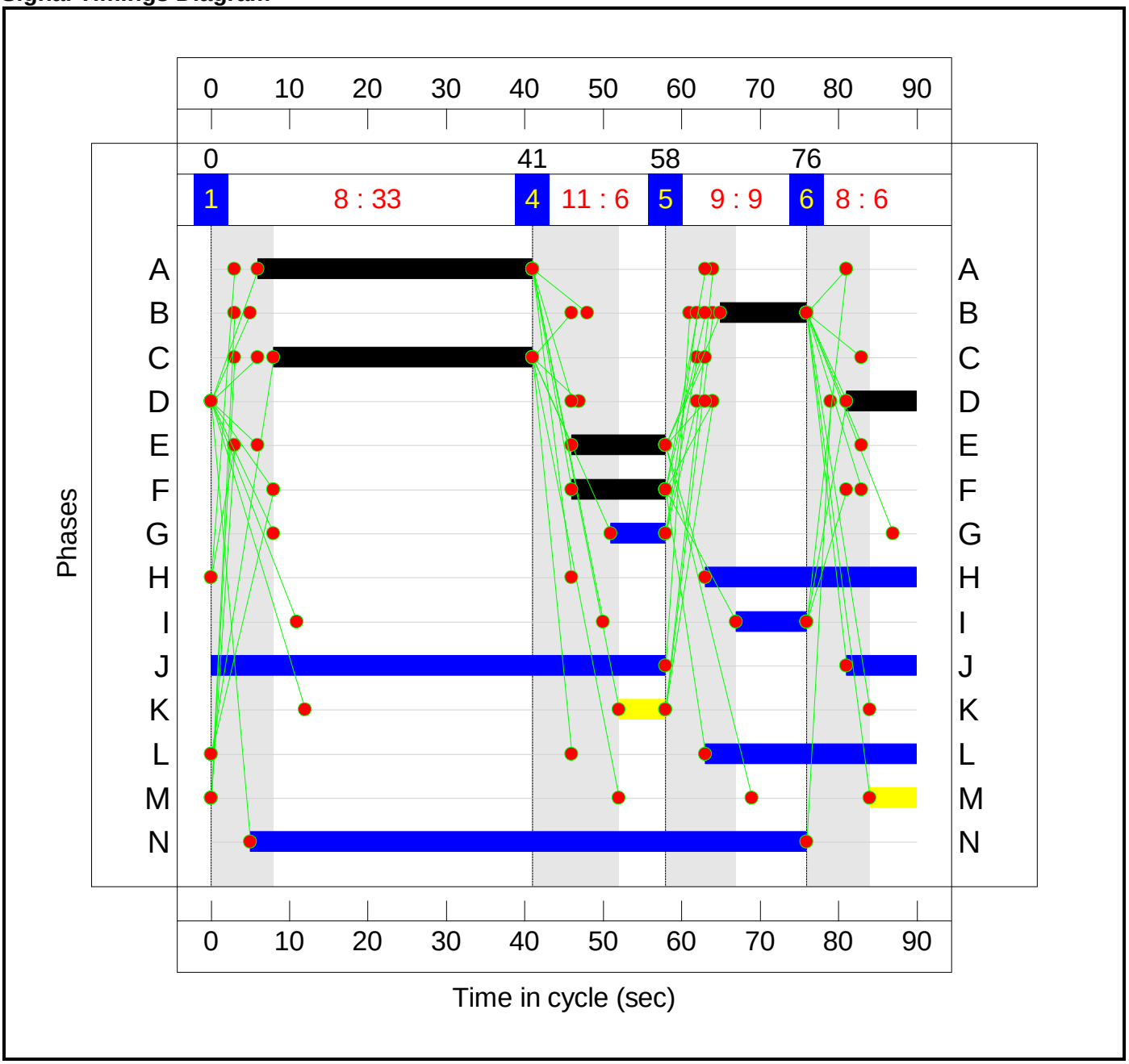
Stage Sequence Diagram



Stage Timings

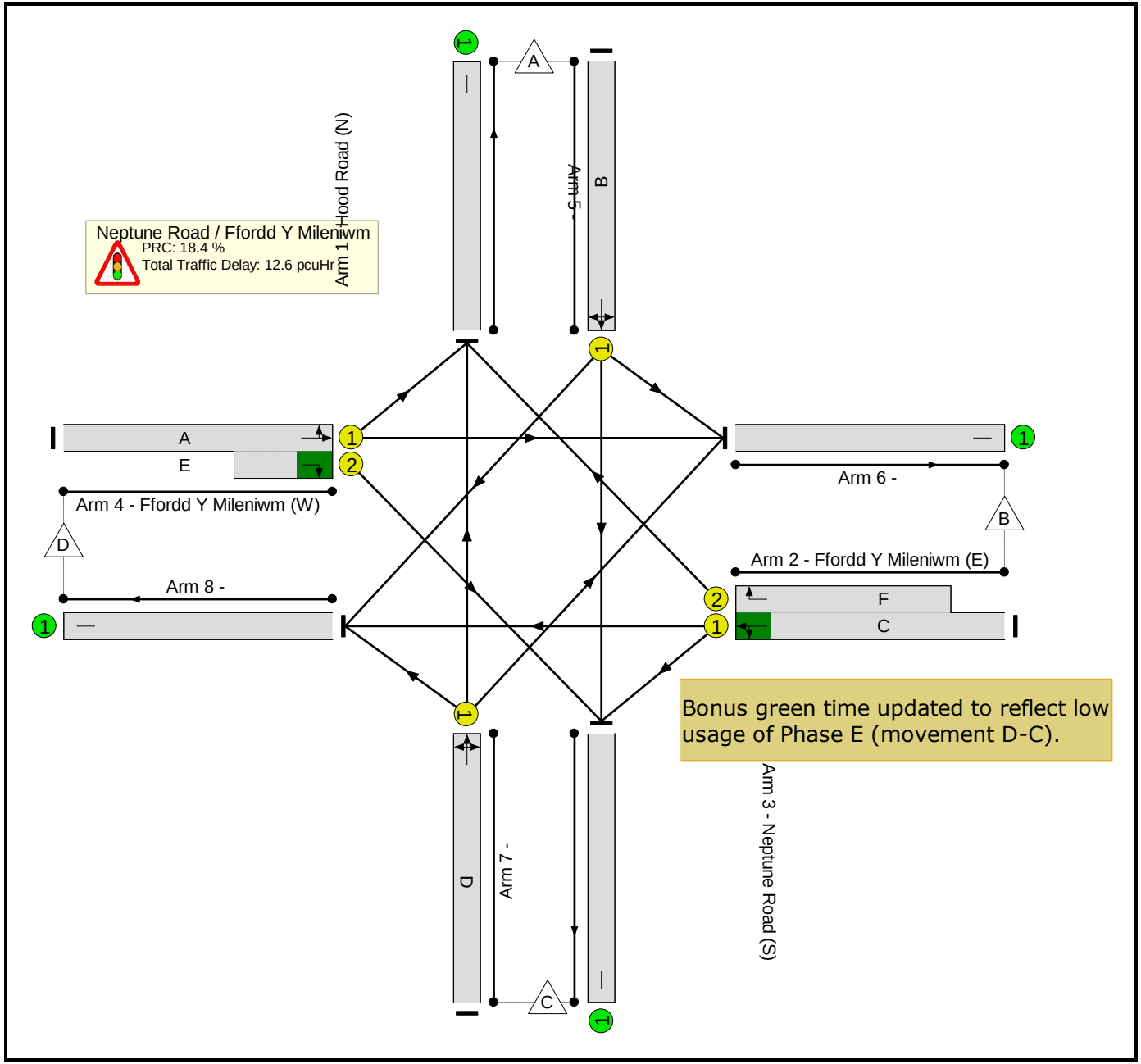
Stage	1	4	5	6
Duration	33	6	9	6
Change Point	0	41	58	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

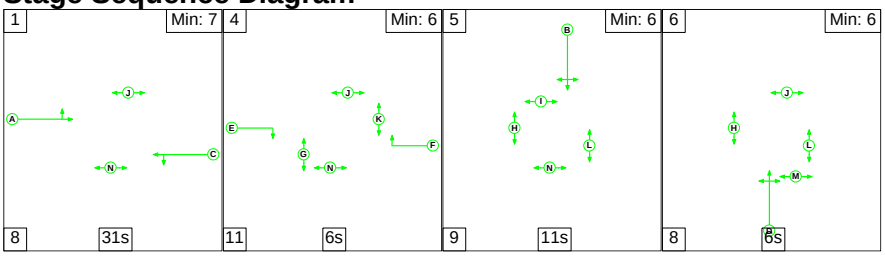
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Sat Flow (pcu/Hr)	Total Delay (pcuHr)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**12.6**	**76.0%**	**-**	**-**
Neptune Road / Ffordd Y Mileniwm	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**12.6**	**76.0%**	**-**	**-**
1/1	Hood Road (N) Left Ahead Right	U	N/A	N/A	B		1	11	-	1828	3.3	75.1%	65.9	5.8
2/1+2/2	Ffordd Y Mileniwm (E) Right Left Ahead	U	N/A	N/A	C F		1	33:12	-	1895:1735	3.3	47.1 : 57.5%	21.3	6.5
3/1	Neptune Road (S) Ahead Right Left	U	N/A	N/A	D		1	9	-	1835	0.7	24.0%	48.2	1.3
4/1+4/2	Ffordd Y Mileniwm (W) Left Ahead Right	U	N/A	N/A	A E		1	35:12	-	1908:1665	5.3	76.0 : 76.0%	33.0	14.0
5/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
6/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
7/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
8/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0

C1 PRC for Signalled Lanes (%): 18.4 Total Delay for Signalled Lanes (pcuHr): 12.62 Cycle Time (s): 90
PRC Over All Lanes (%): 18.4 Total Delay Over All Lanes(pcuHr): 12.62

Full Input Data And Results

Scenario 8: '2036 + Dev PM' (FG8: '2036 + Dev PM', Plan 1: 'Network Control Plan 1')

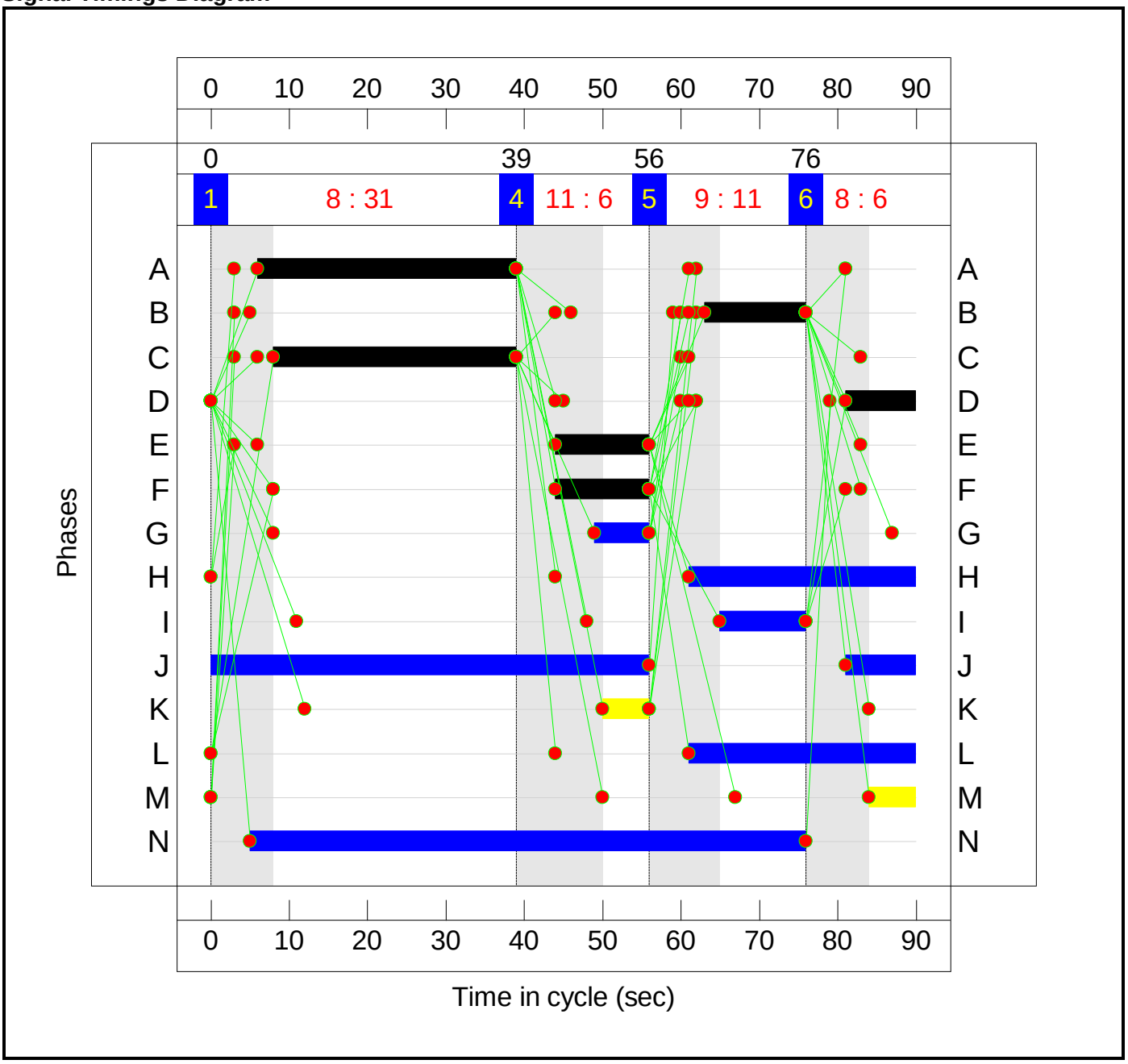
Stage Sequence Diagram



Stage Timings

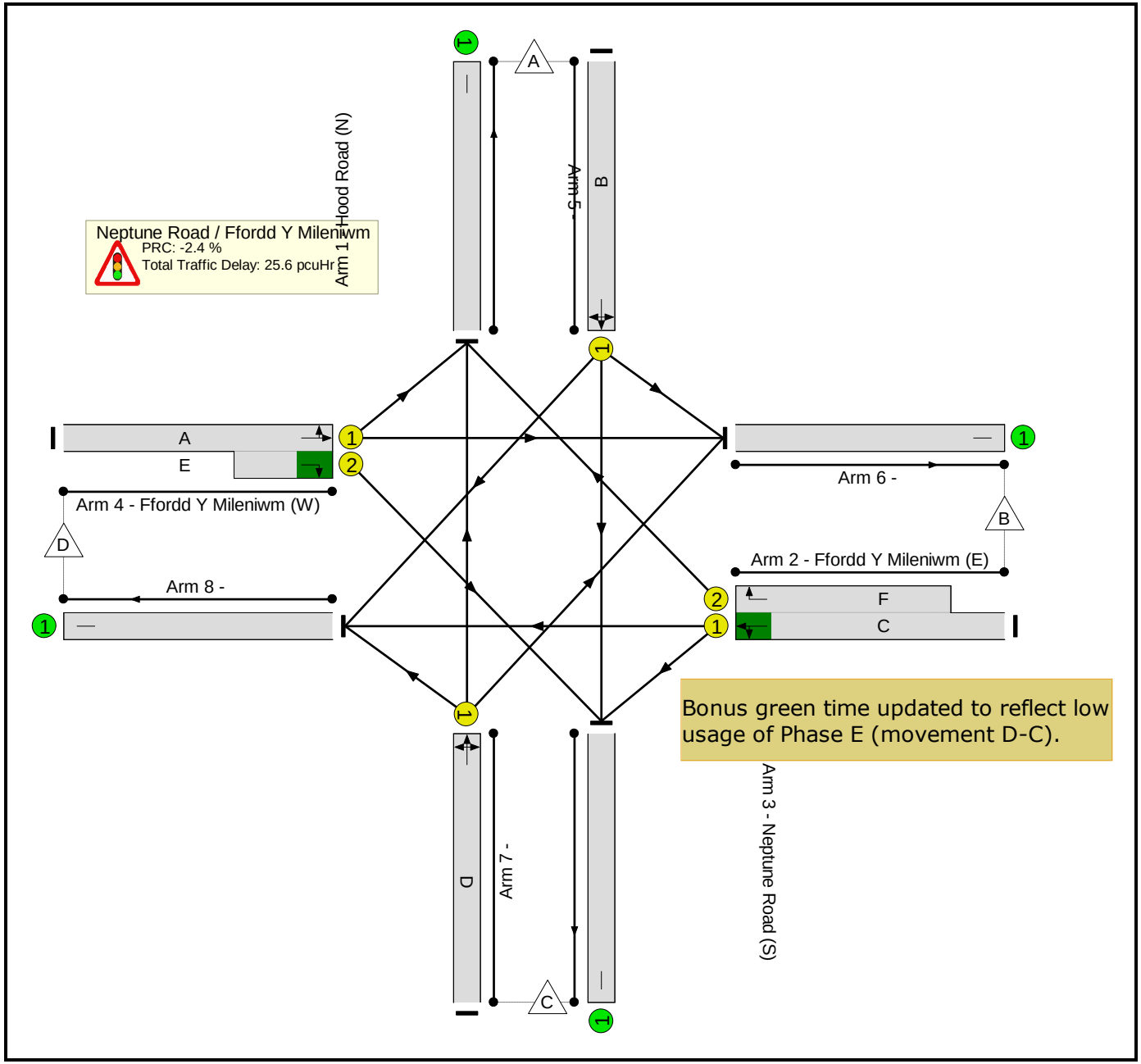
Stage	1	4	5	6
Duration	31	6	11	6
Change Point	0	39	56	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

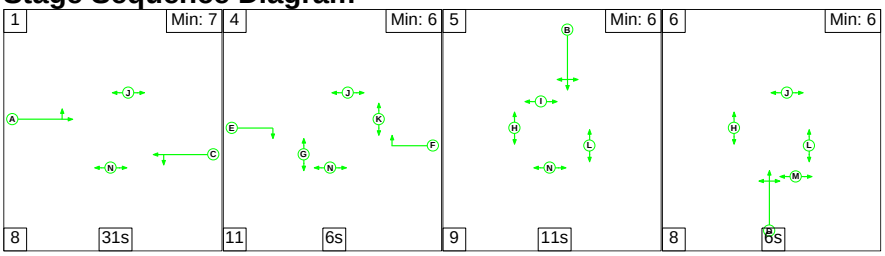
Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Sat Flow (pcu/Hr)	Total Delay (pcuHr)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**25.6**	**92.1%**	**-**	**-**
Neptune Road / Ffordd Y Mileniwm	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**25.6**	**92.1%**	**-**	**-**
1/1	Hood Road (N) Left Ahead Right	U	N/A	N/A	B		1	13	-	1829	6.8	91.7%	94.2	10.5
2/1+2/2	Ffordd Y Mileniwm (E) Right Left Ahead	U	N/A	N/A	C F		1	31:12	-	1906:1735	7.8	84.0 : 84.0%	30.6	18.6
3/1	Neptune Road (S) Ahead Right Left	U	N/A	N/A	D		1	9	-	1840	1.1	36.7%	50.9	2.0
4/1+4/2	Ffordd Y Mileniwm (W) Left Ahead Right	U	N/A	N/A	A E		1	33:12	-	1905:1665	10.0	92.1 : 92.1%	53.7	20.6
5/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
6/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
7/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
8/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0

C1 PRC for Signalled Lanes (%): -2.4 Total Delay for Signalled Lanes (pcuHr): 25.61 Cycle Time (s): 90
PRC Over All Lanes (%): -2.4 Total Delay Over All Lanes(pcuHr): 25.61

Full Input Data And Results

Scenario 9: '2036 + Dev Sat' (FG9: '2036 + Dev Sat', Plan 1: 'Network Control Plan 1')

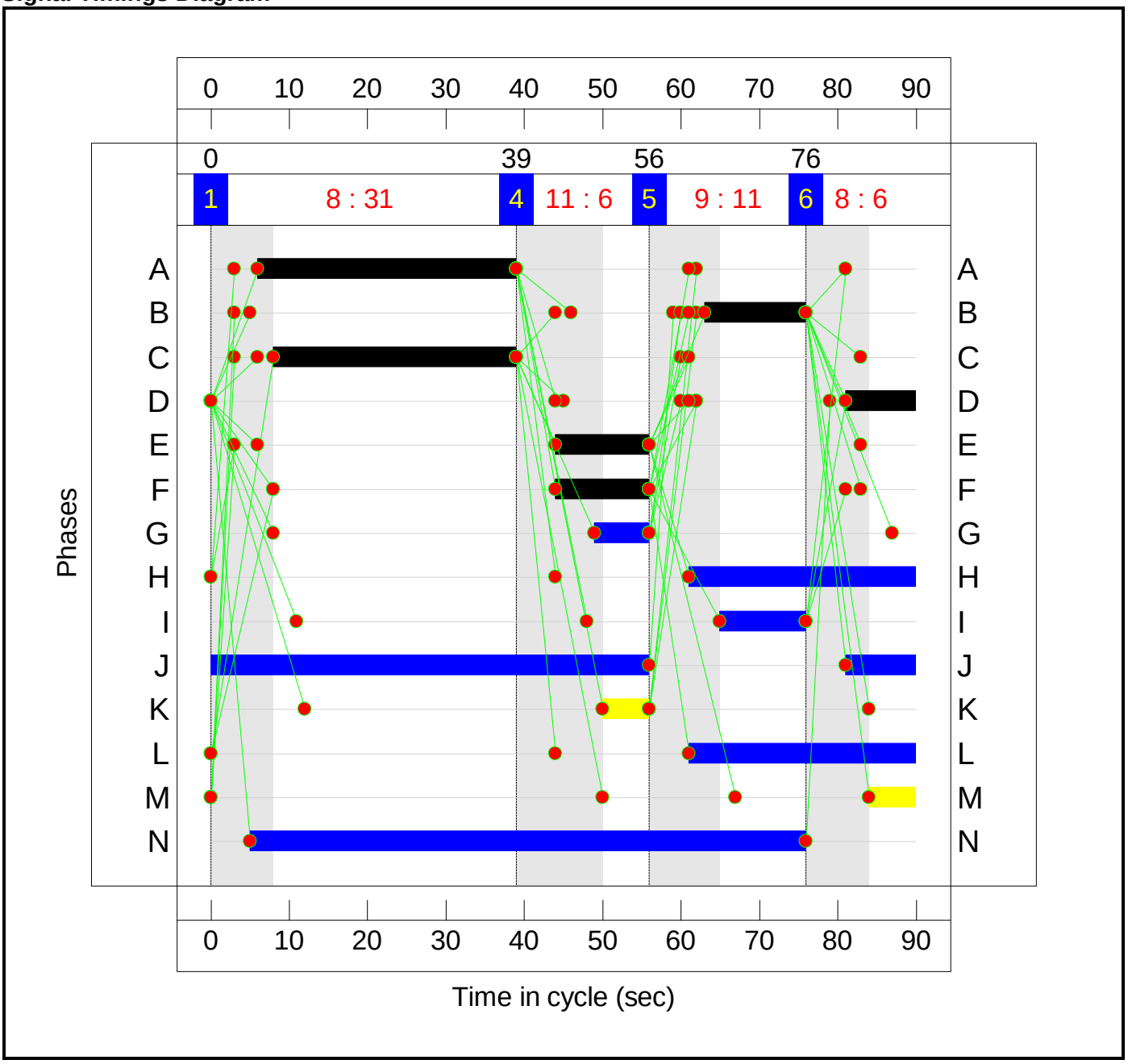
Stage Sequence Diagram



Stage Timings

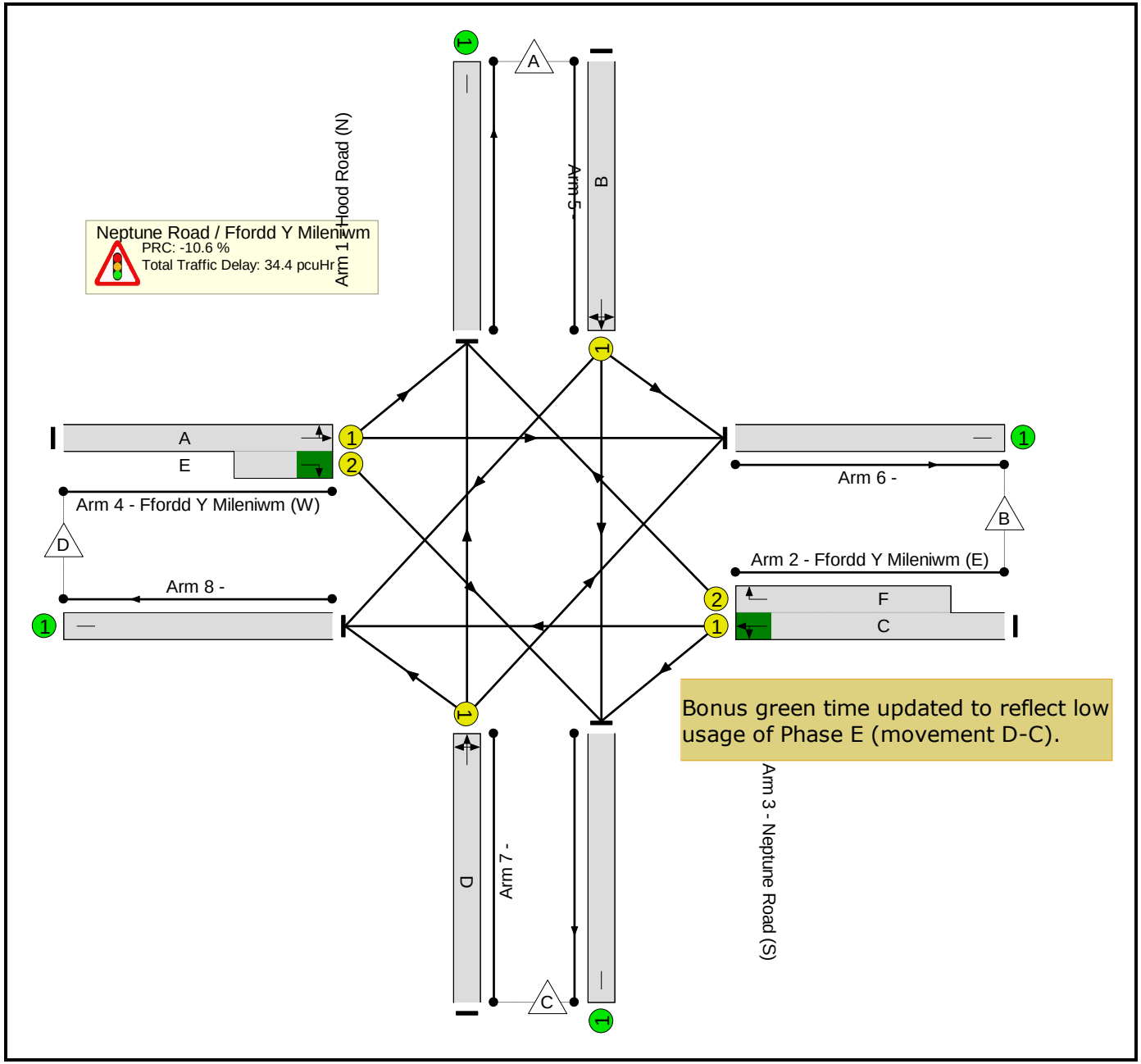
Stage	1	4	5	6
Duration	31	6	11	6
Change Point	0	39	56	76

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Sat Flow (pcu/Hr)	Total Delay (pcuHr)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**34.4**	**99.6%**	**-**	**-**
Neptune Road / Ffordd Y Mileniwm	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**34.4**	**99.6%**	**-**	**-**
1/1	Hood Road (N) Left Ahead Right	U	N/A	N/A	B		1	13	-	1832	9.3	96.8%	120.7	13.2
2/1+2/2	Ffordd Y Mileniwm (E) Right Left Ahead	U	N/A	N/A	C F		1	31:12	-	1908:1735	6.1	78.1 : 78.1%	26.7	16.0
3/1	Neptune Road (S) Ahead Right Left	U	N/A	N/A	D		1	9	-	1840	0.6	21.5%	47.6	1.1
4/1+4/2	Ffordd Y Mileniwm (W) Left Ahead Right	U	N/A	N/A	A E		1	33:12	-	1906:1665	18.4	99.6 : 99.6%	91.2	30.4
5/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
6/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
7/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0
8/1		U	N/A	N/A	-		-	-	-	Inf	0.0	0.0%	0.0	0.0

C1 PRC for Signalled Lanes (%): -10.6 Total Delay for Signalled Lanes (pcuHr): 34.35 Cycle Time (s): 90
PRC Over All Lanes (%): -10.6 Total Delay Over All Lanes(pcuHr): 34.35

Appendix C

ARCADY Outputs

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.1.7462

Filename: Gladstone Bridge . Ffordd Y Mileniwm rdbt.j9
Path: H:\Vectos\CardiffShare\Projects\W220000\226956 - ABP Barry the Mole\Technical\A - Transport Assessment\Modelling\Arcady
Report generation date: 10/05/2023 15:42:11

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2023									
1 - Gladstone Bridge	D1	1.5	6.16	0.61	A	D2	1.6	6.52	0.62	A
2 - Ffordd Y Mileniwm East		0.7	4.18	0.42	A		2.0	7.32	0.67	A
3 - Ffordd Y Mileniwm West		0.7	4.07	0.41	A		0.9	4.59	0.46	A
	2036									
1 - Gladstone Bridge	D3	2.1	7.68	0.68	A	D4	2.3	8.26	0.70	A
2 - Ffordd Y Mileniwm East		0.9	4.62	0.47	A		2.9	9.72	0.75	A
3 - Ffordd Y Mileniwm West		0.9	4.54	0.47	A		1.1	5.28	0.52	A
	2036 + Development									
1 - Gladstone Bridge	D5	2.4	8.48	0.71	A	D6	2.5	9.01	0.72	A
2 - Ffordd Y Mileniwm East		0.9	4.87	0.49	A		3.2	10.54	0.76	B
3 - Ffordd Y Mileniwm West		0.9	4.71	0.48	A		1.3	5.86	0.57	A

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	Gladstone Bridge Ffordd Y Mileniwm rbt
Location	Barry the Mole
Site number	
Date	04/04/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	W6956
Enumerator	SLR\James.Hiscocks
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023	AM	ONE HOUR	07:45	09:15	15
D2	2023	PM	ONE HOUR	16:45	18:15	15
D3	2036	AM	ONE HOUR	07:45	09:15	15
D4	2036	PM	ONE HOUR	16:45	18:15	15
D5	2036 + Development	AM	ONE HOUR	07:45	09:15	15
D6	2036 + Development	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2023, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Gladstone Bridge / Ffordd Y Mileniwm	Standard Roundabout		1, 2, 3	4.97	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Gladstone Bridge	
2	Ffordd Y Mileniwm East	
3	Ffordd Y Mileniwm West	

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
1 - Gladstone Bridge	3.84	6.98	10.2	30.1	37.1	15.0	
2 - Ffordd Y Mileniwm East	3.62	7.03	9.6	32.0	37.1	4.0	
3 - Ffordd Y Mileniwm West	3.69	6.29	18.0	50.8	37.1	11.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Gladstone Bridge	0.680	1755
2 - Ffordd Y Mileniwm East	0.692	1752
3 - Ffordd Y Mileniwm West	0.700	1815

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Gladstone Bridge		✓	813	100.000
2 - Ffordd Y Mileniwm East		✓	560	100.000
3 - Ffordd Y Mileniwm West		✓	569	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	6	571	236
	2 - Ffordd Y Mileniwm East	330	0	230
	3 - Ffordd Y Mileniwm West	257	311	1

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	0	3	1
	2 - Ffordd Y Mileniwm East	8	0	3
	3 - Ffordd Y Mileniwm West	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Gladstone Bridge	0.61	6.16	1.5	A
2 - Ffordd Y Mileniwm East	0.42	4.18	0.7	A
3 - Ffordd Y Mileniwm West	0.41	4.07	0.7	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	612	234	1554	0.394	609	0.6	3.802	A
2 - Ffordd Y Mileniwm East	422	182	1534	0.275	420	0.4	3.229	A
3 - Ffordd Y Mileniwm West	428	252	1599	0.268	427	0.4	3.068	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	731	280	1523	0.480	730	0.9	4.534	A
2 - Ffordd Y Mileniwm East	503	218	1510	0.333	503	0.5	3.573	A
3 - Ffordd Y Mileniwm West	512	302	1562	0.328	511	0.5	3.424	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	895	343	1480	0.605	893	1.5	6.111	A
2 - Ffordd Y Mileniwm East	617	267	1478	0.417	616	0.7	4.171	A
3 - Ffordd Y Mileniwm West	626	369	1511	0.415	626	0.7	4.060	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	895	344	1479	0.605	895	1.5	6.162	A
2 - Ffordd Y Mileniwm East	617	268	1477	0.417	617	0.7	4.182	A
3 - Ffordd Y Mileniwm West	626	370	1511	0.415	626	0.7	4.069	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	731	281	1522	0.480	733	0.9	4.578	A
2 - Ffordd Y Mileniwm East	503	219	1509	0.334	504	0.5	3.584	A
3 - Ffordd Y Mileniwm West	512	303	1561	0.328	512	0.5	3.437	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	612	235	1553	0.394	613	0.7	3.835	A
2 - Ffordd Y Mileniwm East	422	183	1533	0.275	422	0.4	3.244	A
3 - Ffordd Y Mileniwm West	428	253	1598	0.268	429	0.4	3.080	A

2023, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Gladstone Bridge / Ffordd Y Mileniwm	Standard Roundabout		1, 2, 3	6.33	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2023	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Gladstone Bridge		✓	830	100.000
2 - Ffordd Y Mileniwm East		✓	896	100.000
3 - Ffordd Y Mileniwm West		✓	614	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	2	508	320
	2 - Ffordd Y Mileniwm East	431	5	460
	3 - Ffordd Y Mileniwm West	272	342	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	0	3	0
	2 - Ffordd Y Mileniwm East	3	0	1
	3 - Ffordd Y Mileniwm West	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Gladstone Bridge	0.62	6.52	1.6	A
2 - Ffordd Y Mileniwm East	0.67	7.32	2.0	A
3 - Ffordd Y Mileniwm West	0.46	4.59	0.9	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	625	260	1548	0.404	622	0.7	3.877	A
2 - Ffordd Y Mileniwm East	675	241	1555	0.434	672	0.8	4.063	A
3 - Ffordd Y Mileniwm West	462	328	1570	0.294	461	0.4	3.242	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	746	312	1513	0.493	745	1.0	4.678	A
2 - Ffordd Y Mileniwm East	805	289	1522	0.529	804	1.1	5.001	A
3 - Ffordd Y Mileniwm West	552	393	1523	0.362	551	0.6	3.702	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	914	381	1466	0.623	911	1.6	6.453	A
2 - Ffordd Y Mileniwm East	987	354	1479	0.667	983	2.0	7.215	A
3 - Ffordd Y Mileniwm West	676	481	1461	0.463	675	0.9	4.575	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	914	382	1466	0.623	914	1.6	6.516	A
2 - Ffordd Y Mileniwm East	987	355	1478	0.668	986	2.0	7.322	A
3 - Ffordd Y Mileniwm West	676	482	1459	0.463	676	0.9	4.595	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	746	313	1513	0.493	749	1.0	4.729	A
2 - Ffordd Y Mileniwm East	805	290	1521	0.529	809	1.1	5.078	A
3 - Ffordd Y Mileniwm West	552	395	1522	0.363	553	0.6	3.720	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	625	262	1547	0.404	626	0.7	3.914	A
2 - Ffordd Y Mileniwm East	675	243	1554	0.434	676	0.8	4.110	A
3 - Ffordd Y Mileniwm West	462	330	1568	0.295	463	0.4	3.258	A

2036, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Gladstone Bridge / Ffordd Y Mileniwm	Standard Roundabout		1, 2, 3	5.87	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2036	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Gladstone Bridge		✓	896	100.000
2 - Ffordd Y Mileniwm East		✓	617	100.000
3 - Ffordd Y Mileniwm West		✓	627	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	7	629	260
	2 - Ffordd Y Mileniwm East	364	0	253
	3 - Ffordd Y Mileniwm West	283	343	1

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	0	3	1
	2 - Ffordd Y Mileniwm East	8	0	3
	3 - Ffordd Y Mileniwm West	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Gladstone Bridge	0.68	7.68	2.1	A
2 - Ffordd Y Mileniwm East	0.47	4.62	0.9	A
3 - Ffordd Y Mileniwm West	0.47	4.54	0.9	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	675	258	1538	0.439	671	0.8	4.141	A
2 - Ffordd Y Mileniwm East	465	201	1521	0.305	463	0.4	3.395	A
3 - Ffordd Y Mileniwm West	472	278	1579	0.299	470	0.4	3.243	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	805	309	1503	0.536	804	1.1	5.141	A
2 - Ffordd Y Mileniwm East	555	240	1495	0.371	554	0.6	3.824	A
3 - Ffordd Y Mileniwm West	564	333	1538	0.366	563	0.6	3.689	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	987	378	1456	0.678	983	2.1	7.557	A
2 - Ffordd Y Mileniwm East	679	294	1460	0.465	678	0.9	4.599	A
3 - Ffordd Y Mileniwm West	690	408	1483	0.466	689	0.9	4.529	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	987	379	1455	0.678	986	2.1	7.675	A
2 - Ffordd Y Mileniwm East	679	295	1459	0.466	679	0.9	4.616	A
3 - Ffordd Y Mileniwm West	690	408	1482	0.466	690	0.9	4.545	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	805	310	1502	0.536	809	1.2	5.222	A
2 - Ffordd Y Mileniwm East	555	242	1494	0.371	556	0.6	3.842	A
3 - Ffordd Y Mileniwm West	564	334	1538	0.367	565	0.6	3.707	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	675	259	1537	0.439	676	0.8	4.189	A
2 - Ffordd Y Mileniwm East	465	202	1520	0.306	465	0.4	3.412	A
3 - Ffordd Y Mileniwm West	472	280	1578	0.299	473	0.4	3.260	A

2036, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Gladstone Bridge / Ffordd Y Mileniwm	Standard Roundabout		1, 2, 3	8.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2036	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Gladstone Bridge		✓	913	100.000
2 - Ffordd Y Mileniwm East		✓	985	100.000
3 - Ffordd Y Mileniwm West		✓	675	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	2	559	352
	2 - Ffordd Y Mileniwm East	474	5	506
	3 - Ffordd Y Mileniwm West	299	376	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	0	3	0
	2 - Ffordd Y Mileniwm East	3	0	1
	3 - Ffordd Y Mileniwm West	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Gladstone Bridge	0.70	8.26	2.3	A
2 - Ffordd Y Mileniwm East	0.75	9.72	2.9	A
3 - Ffordd Y Mileniwm West	0.52	5.28	1.1	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	687	286	1531	0.449	684	0.8	4.235	A
2 - Ffordd Y Mileniwm East	742	265	1538	0.482	738	0.9	4.476	A
3 - Ffordd Y Mileniwm West	508	360	1547	0.329	506	0.5	3.454	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	821	342	1493	0.550	819	1.2	5.330	A
2 - Ffordd Y Mileniwm East	885	318	1503	0.589	884	1.4	5.793	A
3 - Ffordd Y Mileniwm West	607	431	1496	0.406	606	0.7	4.043	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	1005	419	1441	0.697	1001	2.2	8.101	A
2 - Ffordd Y Mileniwm East	1085	388	1455	0.745	1079	2.8	9.429	A
3 - Ffordd Y Mileniwm West	743	527	1427	0.521	742	1.1	5.238	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	1005	419	1441	0.698	1005	2.3	8.256	A
2 - Ffordd Y Mileniwm East	1085	390	1454	0.746	1084	2.9	9.719	A
3 - Ffordd Y Mileniwm West	743	529	1425	0.521	743	1.1	5.275	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	821	343	1492	0.550	825	1.2	5.428	A
2 - Ffordd Y Mileniwm East	885	320	1501	0.590	891	1.5	5.954	A
3 - Ffordd Y Mileniwm West	607	435	1493	0.406	608	0.7	4.077	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	687	287	1530	0.449	689	0.8	4.291	A
2 - Ffordd Y Mileniwm East	742	267	1537	0.482	744	0.9	4.550	A
3 - Ffordd Y Mileniwm West	508	363	1545	0.329	509	0.5	3.477	A

2036 + Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Gladstone Bridge / Ffordd Y Mileniwm	Standard Roundabout		1, 2, 3	6.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2036 + Development	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Gladstone Bridge		✓	929	100.000
2 - Ffordd Y Mileniwm East		✓	639	100.000
3 - Ffordd Y Mileniwm West		✓	652	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	7	629	293
	2 - Ffordd Y Mileniwm East	364	0	275
	3 - Ffordd Y Mileniwm West	296	355	1

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	0	3	1
	2 - Ffordd Y Mileniwm East	8	0	2
	3 - Ffordd Y Mileniwm West	0	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Gladstone Bridge	0.71	8.48	2.4	A
2 - Ffordd Y Mileniwm East	0.49	4.87	0.9	A
3 - Ffordd Y Mileniwm West	0.48	4.71	0.9	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	699	267	1532	0.456	696	0.8	4.288	A
2 - Ffordd Y Mileniwm East	481	226	1513	0.318	479	0.5	3.478	A
3 - Ffordd Y Mileniwm West	491	278	1579	0.311	489	0.4	3.296	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	835	320	1496	0.558	833	1.2	5.419	A
2 - Ffordd Y Mileniwm East	574	270	1483	0.387	574	0.6	3.957	A
3 - Ffordd Y Mileniwm West	586	333	1538	0.381	585	0.6	3.776	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	1023	391	1447	0.707	1018	2.3	8.311	A
2 - Ffordd Y Mileniwm East	704	330	1443	0.487	702	0.9	4.850	A
3 - Ffordd Y Mileniwm West	718	408	1483	0.484	717	0.9	4.689	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	1023	392	1447	0.707	1023	2.4	8.481	A
2 - Ffordd Y Mileniwm East	704	331	1442	0.488	704	0.9	4.871	A
3 - Ffordd Y Mileniwm West	718	408	1482	0.484	718	0.9	4.708	A

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	835	321	1496	0.558	840	1.3	5.522	A
2 - Ffordd Y Mileniwm East	574	272	1482	0.388	576	0.6	3.978	A
3 - Ffordd Y Mileniwm West	586	334	1538	0.381	587	0.6	3.795	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	699	268	1531	0.457	701	0.8	4.346	A
2 - Ffordd Y Mileniwm East	481	227	1511	0.318	482	0.5	3.500	A
3 - Ffordd Y Mileniwm West	491	280	1578	0.311	492	0.5	3.314	A

2036 + Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Gladstone Bridge / Ffordd Y Mileniwm	Standard Roundabout		1, 2, 3	8.72	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2036 + Development	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Gladstone Bridge		✓	930	100.000
2 - Ffordd Y Mileniwm East		✓	1000	100.000
3 - Ffordd Y Mileniwm West		✓	737	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	2	559	369
	2 - Ffordd Y Mileniwm East	474	5	521
	3 - Ffordd Y Mileniwm West	336	401	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Gladstone Bridge	2 - Ffordd Y Mileniwm East	3 - Ffordd Y Mileniwm West
From	1 - Gladstone Bridge	0	3	0
	2 - Ffordd Y Mileniwm East	3	0	1
	3 - Ffordd Y Mileniwm West	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1 - Gladstone Bridge	0.72	9.01	2.5	A
2 - Ffordd Y Mileniwm East	0.76	10.54	3.2	B
3 - Ffordd Y Mileniwm West	0.57	5.86	1.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	700	304	1519	0.461	697	0.8	4.362	A
2 - Ffordd Y Mileniwm East	753	278	1530	0.492	749	1.0	4.588	A
3 - Ffordd Y Mileniwm West	555	360	1547	0.359	553	0.6	3.613	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	836	364	1478	0.566	834	1.3	5.572	A
2 - Ffordd Y Mileniwm East	899	333	1493	0.602	897	1.5	6.019	A
3 - Ffordd Y Mileniwm West	663	431	1496	0.443	662	0.8	4.310	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	1024	446	1423	0.719	1019	2.5	8.802	A
2 - Ffordd Y Mileniwm East	1101	407	1443	0.763	1095	3.1	10.158	B
3 - Ffordd Y Mileniwm West	811	527	1428	0.568	809	1.3	5.804	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	1024	447	1423	0.720	1024	2.5	9.014	A
2 - Ffordd Y Mileniwm East	1101	408	1442	0.764	1101	3.2	10.538	B
3 - Ffordd Y Mileniwm West	811	529	1426	0.569	811	1.3	5.860	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	836	366	1477	0.566	841	1.3	5.698	A
2 - Ffordd Y Mileniwm East	899	335	1491	0.603	905	1.5	6.214	A
3 - Ffordd Y Mileniwm West	663	436	1493	0.444	665	0.8	4.357	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Gladstone Bridge	700	306	1518	0.461	702	0.9	4.423	A
2 - Ffordd Y Mileniwm East	753	280	1529	0.493	755	1.0	4.667	A
3 - Ffordd Y Mileniwm West	555	363	1545	0.359	556	0.6	3.645	A

Appendix D

2023 Weekday Baseline Surveys

Barry, Thursday 20th April 2023

Junction: 1
Approach: Hood Road

	Left to Ffordd Y Mileniwm (East)					Ahead to Neptune Road					Right to Ffordd Y Mileniwm (West)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	15	0	0	15	15.0	0	0	0	0	0.0	3	0	0	3	3.0
07:15 - 07:30	11	0	0	11	11.0	0	0	0	0	0.0	6	0	0	6	6.0
07:30 - 07:45	23	0	1	24	25.0	0	0	0	0	0.0	5	0	0	5	5.0
07:45 - 08:00	23	0	0	23	23.0	1	0	0	1	1.0	8	0	0	8	8.0
Hourly Total	**72**	**0**	**1**	**73**	**74.0**	**1**	**0**	**0**	**1**	**1.0**	**22**	**0**	**0**	**22**	**22.0**
08:00 - 08:15	21	1	1	23	25.3	0	0	0	0	0.0	22	1	0	23	24.3
08:15 - 08:30	10	0	0	10	10.0	3	0	0	3	3.0	12	0	0	12	12.0
08:30 - 08:45	22	0	1	23	24.0	0	0	0	0	0.0	13	0	0	13	13.0
08:45 - 09:00	27	0	1	28	29.0	0	0	0	0	0.0	22	0	0	22	22.0
Hourly Total	**80**	**1**	**3**	**84**	**88.3**	**3**	**0**	**0**	**3**	**3.0**	**69**	**1**	**0**	**70**	**71.3**
09:00 - 09:15	35	0	1	36	37.0	1	0	0	1	1.0	27	2	0	29	31.6
09:15 - 09:30	33	1	1	35	37.3	2	0	0	2	2.0	31	0	0	31	31.0
09:30 - 09:45	26	0	0	26	26.0	0	0	0	0	0.0	24	0	0	24	24.0
09:45 - 10:00	26	0	2	28	30.0	4	0	0	4	4.0	19	0	0	19	19.0
Hourly Total	**120**	**1**	**4**	**125**	**130.3**	**7**	**0**	**0**	**7**	**7.0**	**101**	**2**	**0**	**103**	**105.6**
TOTAL	**272**	**2**	**8**	**282**	**292.6**	**11**	**0**	**0**	**11**	**11.0**	**192**	**3**	**0**	**195**	**198.9**
16:00 - 16:15	30	0	1	31	32.0	1	0	0	1	1.0	31	0	0	31	31.0
16:15 - 16:30	39	0	0	39	39.0	2	0	0	2	2.0	28	0	0	28	28.0
16:30 - 16:45	36	0	0	36	36.0	1	0	0	1	1.0	26	0	0	26	26.0
16:45 - 17:00	25	1	1	27	29.3	4	0	0	4	4.0	35	0	0	35	35.0
Hourly Total	**130**	**1**	**2**	**133**	**136.3**	**8**	**0**	**0**	**8**	**8.0**	**120**	**0**	**0**	**120**	**120.0**
17:00 - 17:15	37	0	0	37	37.0	1	0	0	1	1.0	35	0	0	35	35.0
17:15 - 17:30	31	0	1	32	33.0	4	0	0	4	4.0	28	0	0	28	28.0
17:30 - 17:45	24	0	0	24	24.0	0	0	0	0	0.0	27	0	0	27	27.0
17:45 - 18:00	26	0	0	26	26.0	1	0	0	1	1.0	20	0	0	20	20.0
Hourly Total	**118**	**0**	**1**	**119**	**120.0**	**6**	**0**	**0**	**6**	**6.0**	**110**	**0**	**0**	**110**	**110.0**
18:00 - 18:15	34	0	0	34	34.0	0	0	0	0	0.0	26	0	0	26	26.0
18:15 - 18:30	20	0	0	20	20.0	3	0	0	3	3.0	25	0	0	25	25.0
18:30 - 18:45	14	0	0	14	14.0	2	0	0	2	2.0	22	0	0	22	22.0
18:45 - 19:00	17	0	0	17	17.0	2	0	0	2	2.0	22	0	0	22	22.0
Hourly Total	**85**	**0**	**0**	**85**	**85.0**	**7**	**0**	**0**	**7**	**7.0**	**95**	**0**	**0**	**95**	**95.0**
TOTAL	**333**	**1**	**3**	**337**	**341.3**	**21**	**0**	**0**	**21**	**21.0**	**325**	**0**	**0**	**325**	**325.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Thursday 20th April 2023

Junction: 1
Approach: Ffordd Y Mileniwm East

	Left to Neptune Road					Ahead to Ffordd Y Mileniwm (West)					Right to Hood Road				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	1	0	0	1	1.0	45	0	0	45	45.0	8	0	0	8	8.0
07:15 - 07:30	0	1	0	1	2.3	47	0	1	48	49.0	4	0	0	4	4.0
07:30 - 07:45	0	0	0	0	0.0	48	1	1	50	52.3	12	0	0	12	12.0
07:45 - 08:00	0	1	0	1	2.3	55	0	1	56	57.0	22	0	1	23	24.0
Hourly Total	**1**	**2**	**0**	**3**	**5.6**	**195**	**1**	**3**	**199**	**203.3**	**46**	**0**	**1**	**47**	**48.0**
08:00 - 08:15	2	0	0	2	2.0	76	1	0	77	78.3	12	1	0	13	14.3
08:15 - 08:30	0	0	0	0	0.0	71	0	0	71	71.0	26	1	1	28	30.3
08:30 - 08:45	0	0	0	0	0.0	79	0	0	79	79.0	32	0	1	33	34.0
08:45 - 09:00	1	0	0	1	1.0	89	2	0	91	93.6	48	1	1	50	52.3
Hourly Total	**3**	**0**	**0**	**3**	**3.0**	**315**	**3**	**0**	**318**	**321.9**	**118**	**3**	**3**	**124**	**130.9**
09:00 - 09:15	2	0	0	2	2.0	104	0	1	105	106.0	31	0	0	31	31.0
09:15 - 09:30	2	0	0	2	2.0	92	1	1	94	96.3	34	1	0	35	36.3
09:30 - 09:45	0	1	0	1	2.3	98	2	0	100	102.6	39	0	1	40	41.0
09:45 - 10:00	1	0	0	1	1.0	80	0	0	80	80.0	32	0	0	32	32.0
Hourly Total	**5**	**1**	**0**	**6**	**7.3**	**374**	**3**	**2**	**379**	**384.9**	**136**	**1**	**1**	**138**	**140.3**
TOTAL	**9**	**3**	**0**	**12**	**15.9**	**884**	**7**	**5**	**896**	**910.1**	**300**	**4**	**5**	**309**	**319.2**
16:00 - 16:15	0	0	0	0	0.0	130	0	1	131	132.0	31	0	0	31	31.0
16:15 - 16:30	1	0	0	1	1.0	168	0	0	168	168.0	38	1	1	40	42.3
16:30 - 16:45	4	0	0	4	4.0	155	0	0	155	155.0	42	0	0	42	42.0
16:45 - 17:00	0	0	0	0	0.0	135	0	0	135	135.0	54	0	1	55	56.0
Hourly Total	**5**	**0**	**0**	**5**	**5.0**	**588**	**0**	**1**	**589**	**590.0**	**165**	**1**	**2**	**168**	**171.3**
17:00 - 17:15	3	0	0	3	3.0	158	0	1	159	160.0	45	0	0	45	45.0
17:15 - 17:30	4	0	0	4	4.0	159	0	0	159	159.0	36	0	1	37	38.0
17:30 - 17:45	5	0	0	5	5.0	145	0	0	145	145.0	33	0	0	33	33.0
17:45 - 18:00	3	0	0	3	3.0	170	0	0	170	170.0	33	0	1	34	35.0
Hourly Total	**15**	**0**	**0**	**15**	**15.0**	**632**	**0**	**1**	**633**	**634.0**	**147**	**0**	**2**	**149**	**151.0**
18:00 - 18:15	4	0	0	4	4.0	151	0	1	152	153.0	28	0	0	28	28.0
18:15 - 18:30	5	0	0	5	5.0	136	0	0	136	136.0	21	0	0	21	21.0
18:30 - 18:45	2	0	0	2	2.0	129	0	0	129	129.0	21	0	1	22	23.0
18:45 - 19:00	4	0	0	4	4.0	109	0	1	110	111.0	33	0	0	33	33.0
Hourly Total	**15**	**0**	**0**	**15**	**15.0**	**525**	**0**	**2**	**527**	**529.0**	**103**	**0**	**1**	**104**	**105.0**
TOTAL	**35**	**0**	**0**	**35**	**35.0**	**1745**	**0**	**4**	**1749**	**1753.0**	**415**	**1**	**5**	**421**	**427.3**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Thursday 20th April 2023

Junction: 1
Approach: Neptune Road

	Left to Ffordd Y Mileniwm (West)					Ahead to Hood Road					Right to Ffordd Y Mileniwm (East)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	0	0	0	0	0.0	1	0	0	1	1.0	4	0	0	4	4.0
07:15 - 07:30	1	0	0	1	1.0	1	0	0	1	1.0	1	0	0	1	1.0
07:30 - 07:45	0	0	0	0	0.0	0	0	0	0	0.0	0	1	0	1	2.3
07:45 - 08:00	1	0	0	1	1.0	1	1	0	2	3.3	2	0	0	2	2.0
Hourly Total	**2**	**0**	**0**	**2**	**2.0**	**3**	**1**	**0**	**4**	**5.3**	**7**	**1**	**0**	**8**	**9.3**
08:00 - 08:15	3	0	0	3	3.0	1	0	0	1	1.0	2	0	0	2	2.0
08:15 - 08:30	1	0	0	1	1.0	0	0	0	0	0.0	4	0	0	4	4.0
08:30 - 08:45	0	0	0	0	0.0	2	0	0	2	2.0	3	0	0	3	3.0
08:45 - 09:00	0	0	0	0	0.0	0	0	0	0	0.0	3	0	0	3	3.0
Hourly Total	**4**	**0**	**0**	**4**	**4.0**	**3**	**0**	**0**	**3**	**3.0**	**12**	**0**	**0**	**12**	**12.0**
09:00 - 09:15	0	0	0	0	0.0	1	0	0	1	1.0	2	0	0	2	2.0
09:15 - 09:30	0	0	0	0	0.0	1	0	0	1	1.0	1	0	0	1	1.0
09:30 - 09:45	0	0	0	0	0.0	1	0	0	1	1.0	2	0	0	2	2.0
09:45 - 10:00	1	0	0	1	1.0	0	0	0	0	0.0	1	0	0	1	1.0
Hourly Total	**1**	**0**	**0**	**1**	**1.0**	**3**	**0**	**0**	**3**	**3.0**	**6**	**0**	**0**	**6**	**6.0**
TOTAL	**7**	**0**	**0**	**7**	**7.0**	**9**	**1**	**0**	**10**	**11.3**	**25**	**1**	**0**	**26**	**27.3**
16:00 - 16:15	1	0	0	1	1.0	1	0	0	1	1.0	3	0	0	3	3.0
16:15 - 16:30	1	0	0	1	1.0	1	0	0	1	1.0	2	0	0	2	2.0
16:30 - 16:45	0	0	0	0	0.0	1	0	0	1	1.0	2	0	0	2	2.0
16:45 - 17:00	0	0	0	0	0.0	0	0	0	0	0.0	3	0	0	3	3.0
Hourly Total	**2**	**0**	**0**	**2**	**2.0**	**3**	**0**	**0**	**3**	**3.0**	**10**	**0**	**0**	**10**	**10.0**
17:00 - 17:15	0	0	0	0	0.0	0	0	0	0	0.0	4	0	0	4	4.0
17:15 - 17:30	0	0	0	0	0.0	0	0	0	0	0.0	1	0	0	1	1.0
17:30 - 17:45	0	0	0	0	0.0	1	0	0	1	1.0	0	0	0	0	0.0
17:45 - 18:00	0	0	0	0	0.0	1	0	0	1	1.0	1	0	0	1	1.0
Hourly Total	**0**	**0**	**0**	**0**	**0.0**	**2**	**0**	**0**	**2**	**2.0**	**6**	**0**	**0**	**6**	**6.0**
18:00 - 18:15	3	0	0	3	3.0	0	0	0	0	0.0	5	0	0	5	5.0
18:15 - 18:30	1	0	0	1	1.0	1	0	0	1	1.0	3	0	0	3	3.0
18:30 - 18:45	0	0	0	0	0.0	1	0	0	1	1.0	4	0	0	4	4.0
18:45 - 19:00	1	0	0	1	1.0	0	0	0	0	0.0	1	0	0	1	1.0
Hourly Total	**5**	**0**	**0**	**5**	**5.0**	**2**	**0**	**0**	**2**	**2.0**	**13**	**0**	**0**	**13**	**13.0**
TOTAL	**7**	**0**	**0**	**7**	**7.0**	**7**	**0**	**0**	**7**	**7.0**	**29**	**0**	**0**	**29**	**29.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Thursday 20th April 2023

Junction: 1
Approach: Ffordd Y Mileniwm West

	Left to Hood Road					Ahead to Ffordd Y Mileniwm (East)					Right to Neptune Road				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	5	0	0	5	5.0	60	0	0	60	60.0	0	0	0	0	0.0
07:15 - 07:30	8	0	0	8	8.0	101	0	0	101	101.0	0	0	0	0	0.0
07:30 - 07:45	4	0	0	4	4.0	110	0	0	110	110.0	0	0	0	0	0.0
07:45 - 08:00	12	0	0	12	12.0	131	0	0	131	131.0	0	0	0	0	0.0
Hourly Total	**29**	**0**	**0**	**29**	**29.0**	**402**	**0**	**0**	**402**	**402.0**	**0**	**0**	**0**	**0**	**0.0**
08:00 - 08:15	14	0	0	14	14.0	125	2	1	128	131.6	0	0	0	0	0.0
08:15 - 08:30	14	0	0	14	14.0	108	2	0	110	112.6	0	0	0	0	0.0
08:30 - 08:45	17	0	0	17	17.0	102	0	2	104	106.0	1	0	0	1	1.0
08:45 - 09:00	21	0	0	21	21.0	110	0	0	110	110.0	0	0	0	0	0.0
Hourly Total	**66**	**0**	**0**	**66**	**66.0**	**445**	**4**	**3**	**452**	**460.2**	**1**	**0**	**0**	**1**	**1.0**
09:00 - 09:15	15	0	0	15	15.0	117	3	0	120	123.9	1	0	0	1	1.0
09:15 - 09:30	19	0	0	19	19.0	79	0	1	80	81.0	0	0	0	0	0.0
09:30 - 09:45	26	0	0	26	26.0	89	2	0	91	93.6	0	0	0	0	0.0
09:45 - 10:00	23	0	0	23	23.0	92	0	0	92	92.0	0	0	0	0	0.0
Hourly Total	**83**	**0**	**0**	**83**	**83.0**	**377**	**5**	**1**	**383**	**390.5**	**1**	**0**	**0**	**1**	**1.0**
TOTAL	**178**	**0**	**0**	**178**	**178.0**	**1224**	**9**	**4**	**1237**	**1252.7**	**2**	**0**	**0**	**2**	**2.0**
16:00 - 16:15	29	0	0	29	29.0	134	0	0	134	134.0	1	0	0	1	1.0
16:15 - 16:30	22	0	0	22	22.0	122	1	0	123	124.3	0	0	0	0	0.0
16:30 - 16:45	19	0	0	19	19.0	95	0	0	95	95.0	0	0	0	0	0.0
16:45 - 17:00	23	0	0	23	23.0	132	1	0	133	134.3	0	0	0	0	0.0
Hourly Total	**93**	**0**	**0**	**93**	**93.0**	**483**	**2**	**0**	**485**	**487.6**	**1**	**0**	**0**	**1**	**1.0**
17:00 - 17:15	28	0	0	28	28.0	107	0	0	107	107.0	0	0	0	0	0.0
17:15 - 17:30	23	0	0	23	23.0	124	0	1	125	126.0	2	0	0	2	2.0
17:30 - 17:45	32	0	0	32	32.0	102	0	1	103	104.0	1	0	0	1	1.0
17:45 - 18:00	27	0	0	27	27.0	156	0	0	156	156.0	1	0	0	1	1.0
Hourly Total	**110**	**0**	**0**	**110**	**110.0**	**489**	**0**	**2**	**491**	**493.0**	**4**	**0**	**0**	**4**	**4.0**
18:00 - 18:15	23	0	0	23	23.0	97	0	0	97	97.0	0	0	0	0	0.0
18:15 - 18:30	15	0	0	15	15.0	127	0	1	128	129.0	0	0	0	0	0.0
18:30 - 18:45	22	0	0	22	22.0	113	0	0	113	113.0	1	0	0	1	1.0
18:45 - 19:00	21	0	0	21	21.0	115	0	1	116	117.0	1	0	0	1	1.0
Hourly Total	**81**	**0**	**0**	**81**	**81.0**	**452**	**0**	**2**	**454**	**456.0**	**2**	**0**	**0**	**2**	**2.0**
TOTAL	**284**	**0**	**0**	**284**	**284.0**	**1424**	**2**	**4**	**1430**	**1436.6**	**7**	**0**	**0**	**7**	**7.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Thursday 20th April 2023

Junction: 2
Approach: Gladstone Bridge

	Left to Ffordd Y Mileniwm (East)					Right to Ffordd Y Mileniwm (West)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	78	0	2	80	82.0	30	0	0	30	30.0
07:15 - 07:30	90	0	1	91	92.0	17	1	0	18	19.3
07:30 - 07:45	102	0	3	105	108.0	20	0	0	20	20.0
07:45 - 08:00	118	1	3	122	126.3	35	0	1	36	37.0
Hourly Total	**388**	**1**	**9**	**398**	**408.3**	**102**	**1**	**1**	**104**	**106.3**
08:00 - 08:15	152	2	5	159	166.6	45	2	0	47	49.6
08:15 - 08:30	139	1	3	143	147.3	47	0	0	47	47.0
08:30 - 08:45	128	0	2	130	132.0	56	0	1	57	58.0
08:45 - 09:00	133	1	5	139	145.3	85	0	0	85	85.0
Hourly Total	**552**	**4**	**15**	**571**	**591.2**	**233**	**2**	**1**	**236**	**239.6**
09:00 - 09:15	150	3	5	158	166.9	76	0	1	77	78.0
09:15 - 09:30	126	1	6	133	140.3	77	1	0	78	79.3
09:30 - 09:45	126	3	4	133	140.9	75	0	0	75	75.0
09:45 - 10:00	125	0	3	128	131.0	53	0	0	53	53.0
Hourly Total	**527**	**7**	**18**	**552**	**579.1**	**281**	**1**	**1**	**283**	**285.3**
TOTAL	**1467**	**12**	**42**	**1521**	**1578.6**	**616**	**4**	**3**	**623**	**631.2**
16:00 - 16:15	94	1	3	98	102.3	68	0	0	68	68.0
16:15 - 16:30	113	1	7	121	129.3	73	0	0	73	73.0
16:30 - 16:45	114	0	2	116	118.0	83	0	0	83	83.0
16:45 - 17:00	93	0	3	96	99.0	79	0	0	79	79.0
Hourly Total	**414**	**2**	**15**	**431**	**448.6**	**303**	**0**	**0**	**303**	**303.0**
17:00 - 17:15	140	2	5	147	154.6	85	0	0	85	85.0
17:15 - 17:30	146	0	3	149	152.0	85	0	0	85	85.0
17:30 - 17:45	107	0	2	109	111.0	78	0	0	78	78.0
17:45 - 18:00	99	0	4	103	107.0	72	0	0	72	72.0
Hourly Total	**492**	**2**	**14**	**508**	**524.6**	**320**	**0**	**0**	**320**	**320.0**
18:00 - 18:15	111	0	4	115	119.0	86	0	0	86	86.0
18:15 - 18:30	114	0	1	115	116.0	76	0	0	76	76.0
18:30 - 18:45	107	0	5	112	117.0	61	0	0	61	61.0
18:45 - 19:00	72	0	4	76	80.0	66	0	0	66	66.0
Hourly Total	**404**	**0**	**14**	**418**	**432.0**	**289**	**0**	**0**	**289**	**289.0**
TOTAL	**1310**	**4**	**43**	**1357**	**1405.2**	**912**	**0**	**0**	**912**	**912.0**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Thursday 20th April 2023

Junction: 2
Approach: Ffordd Y Mileniwm East

	Ahead to Ffordd Y Mileniwm (West)					Right to Gladstone Bridge				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	24	0	0	24	24.0	21	0	2	23	25.0
07:15 - 07:30	28	0	1	29	30.0	37	2	3	42	47.6
07:30 - 07:45	43	1	1	45	47.3	41	1	4	46	51.3
07:45 - 08:00	45	1	1	47	49.3	52	4	3	59	67.2
Hourly Total	**140**	**2**	**3**	**145**	**150.6**	**151**	**7**	**12**	**170**	**191.1**
08:00 - 08:15	48	2	0	50	52.6	60	3	3	66	72.9
08:15 - 08:30	59	0	1	60	61.0	81	3	5	89	97.9
08:30 - 08:45	55	0	0	55	55.0	79	2	3	84	89.6
08:45 - 09:00	62	2	1	65	68.6	85	2	4	91	97.6
Hourly Total	**224**	**4**	**2**	**230**	**237.2**	**305**	**10**	**15**	**330**	**358.0**
09:00 - 09:15	71	0	0	71	71.0	83	3	3	89	95.9
09:15 - 09:30	59	1	1	61	63.3	80	2	4	86	92.6
09:30 - 09:45	54	3	1	58	62.9	74	3	2	79	84.9
09:45 - 10:00	56	0	0	56	56.0	75	1	2	78	81.3
Hourly Total	**240**	**4**	**2**	**246**	**253.2**	**312**	**9**	**11**	**332**	**354.7**
TOTAL	**604**	**10**	**7**	**621**	**641.0**	**768**	**26**	**38**	**832**	**903.8**
16:00 - 16:15	105	0	1	106	107.0	89	0	3	92	95.0
16:15 - 16:30	125	1	1	127	129.3	95	1	3	99	103.3
16:30 - 16:45	119	0	0	119	119.0	83	0	3	86	89.0
16:45 - 17:00	111	0	1	112	113.0	107	0	3	110	113.0
Hourly Total	**460**	**1**	**3**	**464**	**468.3**	**374**	**1**	**12**	**387**	**400.3**
17:00 - 17:15	115	0	1	116	117.0	98	0	3	101	104.0
17:15 - 17:30	104	0	1	105	106.0	105	0	4	109	113.0
17:30 - 17:45	107	0	0	107	107.0	100	0	3	103	106.0
17:45 - 18:00	131	0	1	132	133.0	116	0	2	118	120.0
Hourly Total	**457**	**0**	**3**	**460**	**463.0**	**419**	**0**	**12**	**431**	**443.0**
18:00 - 18:15	95	0	1	96	97.0	107	0	2	109	111.0
18:15 - 18:30	87	0	0	87	87.0	99	0	1	100	101.0
18:30 - 18:45	83	0	1	84	85.0	95	0	2	97	99.0
18:45 - 19:00	75	0	1	76	77.0	94	0	2	96	98.0
Hourly Total	**340**	**0**	**3**	**343**	**346.0**	**395**	**0**	**7**	**402**	**409.0**
TOTAL	**1257**	**1**	**9**	**1267**	**1277.3**	**1188**	**1**	**31**	**1220**	**1252.3**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0

Barry, Thursday 20th April 2023

Junction: 2
Approach: Ffordd Y Mileniwm West

	Left to Gladstone Bridge					Ahead to Ffordd Y Mileniwm (East)				
TIME	LIGHT	HEAVY	BUS	TOTAL	PCUs	LIGHT	HEAVY	BUS	TOTAL	PCUs
07:00 - 07:15	27	0	0	27	27.0	51	0	0	51	51.0
07:15 - 07:30	30	0	1	31	32.0	76	0	0	76	76.0
07:30 - 07:45	48	0	0	48	48.0	90	1	0	91	92.3
07:45 - 08:00	68	0	0	68	68.0	81	0	0	81	81.0
Hourly Total	**173**	**0**	**1**	**174**	**175.0**	**298**	**1**	**0**	**299**	**300.3**
08:00 - 08:15	60	0	0	60	60.0	81	3	1	85	89.9
08:15 - 08:30	59	1	0	60	61.3	72	1	1	74	76.3
08:30 - 08:45	67	0	0	67	67.0	68	0	3	71	74.0
08:45 - 09:00	70	0	0	70	70.0	80	0	1	81	82.0
Hourly Total	**256**	**1**	**0**	**257**	**258.3**	**301**	**4**	**6**	**311**	**322.2**
09:00 - 09:15	52	2	0	54	56.6	93	2	0	95	97.6
09:15 - 09:30	47	0	0	47	47.0	70	1	3	74	78.3
09:30 - 09:45	47	0	0	47	47.0	65	2	0	67	69.6
09:45 - 10:00	59	0	0	59	59.0	61	1	2	64	67.3
Hourly Total	**205**	**2**	**0**	**207**	**209.6**	**289**	**6**	**5**	**300**	**312.8**
TOTAL	**634**	**3**	**1**	**638**	**642.9**	**888**	**11**	**11**	**910**	**935.3**
16:00 - 16:15	60	1	0	61	62.3	94	0	0	94	94.0
16:15 - 16:30	68	2	0	70	72.6	98	0	0	98	98.0
16:30 - 16:45	58	0	0	58	58.0	81	0	0	81	81.0
16:45 - 17:00	67	0	0	67	67.0	91	1	1	93	95.3
Hourly Total	**253**	**3**	**0**	**256**	**259.9**	**364**	**1**	**1**	**366**	**368.3**
17:00 - 17:15	61	0	0	61	61.0	77	0	0	77	77.0
17:15 - 17:30	68	0	0	68	68.0	93	0	2	95	97.0
17:30 - 17:45	62	0	0	62	62.0	68	0	1	69	70.0
17:45 - 18:00	81	0	0	81	81.0	101	0	0	101	101.0
Hourly Total	**272**	**0**	**0**	**272**	**272.0**	**339**	**0**	**3**	**342**	**345.0**
18:00 - 18:15	65	0	0	65	65.0	71	0	0	71	71.0
18:15 - 18:30	55	0	1	56	57.0	92	0	0	92	92.0
18:30 - 18:45	71	0	0	71	71.0	67	0	0	67	67.0
18:45 - 19:00	57	0	1	58	59.0	77	0	1	78	79.0
Hourly Total	**248**	**0**	**2**	**250**	**252.0**	**307**	**0**	**1**	**308**	**309.0**
TOTAL	**773**	**3**	**2**	**778**	**783.9**	**1010**	**1**	**5**	**1016**	**1022.3**

PCU Factors:	
LIGHT	1.0
HEAVY	2.3
BUS	2.0