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Leckwith Quays, Cardiff

Transport Assessment

Phil Worthing (instructed by Gareth Davies Project Services Ltd)

Project number: 60608933

March 2020

Quality information

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Revision History

Revision	Revision date	Details	Authorized	Name	Position
V1	24.03.2020	PAC Submission	MD	Matthew Davies	Principal Consultant

Distribution List

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1. Introduction

1.1 Introduction

1.1.1 This Transport Assessment (TA) has been prepared by AECOM on behalf of Phil Worthing (instructed by Gareth Davies Project Services Ltd) in respect of a proposed planning application for the redevelopment of an existing brownfield site for residential uses (circa 250 dwellings) at Leckwith Quays, Cardiff.

1.1.2 An indicative site layout is included at **Appendix A**.

1.2 Site Location and Existing Usage

1.2.1 The location of the site in the context of its local environs is shown on **Figure 1.1**.

1.2.2 The site is located in Leckwith, approximately 2.5km to the southwest of Cardiff City Centre. It is bounded to the northeast by the Ely River and is otherwise surrounded by woodland. A grade-separated section of the B4267 Leckwith Road intersects the site in a north-south alignment. Capital Retail Park and the Hadfield Road Industrial Estate lie approximately 700m and 1.1km to the northeast/east of the site respectively.

1.2.3 The site is situated at the border of the Vale of Glamorgan (VoG) and the City and County of Cardiff (CCC). The part of the site to be developed for residential purposes is within the administrative area of VoG, which is both the Local Planning Authority (LPA) and Local Highway Authority (LHA). Part of the access arrangements and proposed new bridge fall within the administrative area of CCC. The site therefore straddles an administrative boundary and two applications will be necessary to secure planning permission for the development of the site as proposed.

1.2.4 The existing site is currently used for a range of long running commercial/light industrial uses. It is accessed via a junction with the B4267 Leckwith Road, just north of the Ely River. This access also serves the Ely Trail, which is a primarily off-road walking/cycling route. There is a listed bridge over the Ely River that connects the site and the access. The B4267 Leckwith Road connects to the A4232 at Leckwith Interchange, approximately 100m to the northeast of the site access.

1.3 Scoping Exercise

1.3.1 AECOM has liaised with both the VoG and CCC to agree an appropriate study area extent and methodology for the TA. A formal TA Scoping Note was included as part of a request for a formal screening opinion for an Environmental Statement (ES), submitted in October 2019. Comments from the VoG and CCC were received on 5th December 2019 and 31st January 2020 respectively, and have been referenced in the preparation of this TA. A copy of the Scoping Note and responses from both VoG and CCC are included at **Appendix B**.

1.4 Report Structure

1.4.1 The TA examines the existing transport and highway issues relating to the proposed development. It considers the expected travel demand and also investigates methods of limiting car based travel to produce a sustainable development in line with national and local planning guidance.

1.4.2 The TA is structured as follows:

- **Section 2 – Existing Situation and Site Accessibility:** Examines the local transport conditions in the vicinity of the site and the accessibility of the site to non-car modes of travel;
- **Section 3 – Development Proposals:** Provides a detailed description of the development proposals, including the proposed means of access and parking provision;
- **Section 4 – Planning Policy Review:** Considers the development in the context of relevant national and local planning and transport policies;

- **Section 5 – Trip Generation and Distribution:** Sets out the methodology for calculating the trip generation of the proposed development for all modes of travel, and for distributing vehicle trips onto the local highway network;
- **Section 6 – Assessment Scenarios:** Sets out the scenarios for assessment including how traffic flows for these scenarios have been derived;
- **Section 7 – Traffic Impact Assessment:** Examines the impact of the development proposals on the highway network during the weekday AM and PM peak hours;
- **Section 8 – Transport Implementation Strategy:** Details the key measures to mitigate the impact of the proposed development; and
- **Section 9 – Conclusions:** Summarises the key findings and conclusions of the TA.

2. Existing Situation and Site Accessibility

2.1 Introduction

2.1.1 This section of the TA provides a description of the site location and its existing usage, the local highway network, current safety and traffic conditions, and a review of accessibility to non-car modes of travel.

2.2 Site Location and Existing Usage

2.2.1 The location of the site in the context of its local environs is shown on **Figure 1.1**.

2.2.2 The site is located in Leckwith, approximately 2.5km to the southwest of the City Centre. It is bounded to the northeast by the Ely River and is otherwise surrounded by woodland. A grade-separated section of the B4267 Leckwith Road intersects the site in a north-south alignment. Capital Retail Park and the Hadfield Road Industrial Estate lie approximately 700m and 1.1km to the northeast/east of the site respectively.

2.2.3 The site is situated at the border of the VoG and the CCC. The part of the site to be developed for residential purposes is within the administrative area of VoG. Part of the access arrangements and proposed new bridge fall within the administrative area of CCC.

2.2.4 The existing site is operational and is currently used for a range of long running commercial/light industrial uses. It is accessed via a junction with the B4267 Leckwith Road, just north of the Ely River. This access also serves the Ely Trail, which is a predominantly off-road walking/cycling route. There is a bridge over the Ely River that connects the site and the access. The B4267 Leckwith Road connects to the A4232 at Leckwith Interchange, approximately 100m to the northeast of the site access.

2.3 Local Highway Network

2.3.1 The selected study area in terms of the highway network, as agreed with the VoG and CCC, is shown on **Figure 2.1**. The northern extent of the highway network at the signal-controlled crossroads junction between B4267 Leckwith Road, Sloper Road and Broad Street. The study area extends south along the B4267 Leckwith Road, beyond Leckwith Interchange and south of the site. The study area is bounded to the south by the A4055 Cardiff Road/Barry Road, which runs in a southwest-northeast alignment prior to its junction with the A4160 Penarth Road/Cogan Hill. The remainder of this sub-section identifies the key junctions within the study area and connecting highways, commencing from the northern extent of the study area.

B4267 Leckwith Road/Sloper Road/Broad Street Junction

2.3.2 This is a four-arm signal-controlled crossroads junction which forms the northern extent of the study area. The major arm is the B4267 Leckwith Road, with Sloper Road and Broad Street forming the minor arms to the east and west respectively. There are Advanced Stop Lines (ASL) on all arms of the junction and signalised pedestrian crossings on Sloper Road, Broad Street and B4267 Leckwith Road northbound. Yellow boxes marking ‘Keep Clear’ areas are present on both sides of the B4627 carriageway as well as right-turn storage lanes in both the northbound and southbound direction.

B4267 Leckwith Road, between Ninian Park Station and Lawrenny Avenue

2.3.3 In this section of the study area the B4267 Leckwith Road comprises two lanes in the northeast-bound direction and one lane in the southwest-bound. On the approach to Lawrenny Avenue, it develops a ghost island right-turn lane in the southwest-bound direction, whilst the northeast-bound carriageway reduces to one lane and contains a yellow box marking traffic exclusion area to allow right-turn movements to Lawrenny Avenue to occur without obstruction. This section of the B4267 Leckwith Road has regular street lighting, is subject to a 30mph speed limit and has a variable carriageway width between 9m and 12m.

B4267 Leckwith Road/Ffordd Fred Keenor Junction

2.3.4 This is a three-arm signal-controlled junction which provides the primary access into Cardiff City Football Club (CCFC) Stadium and Leckwith Park & Ride (P&R). The B4267 Leckwith Road is the major arm and consists of three lanes in the southwest-bound direction and four lanes in the northeast-bound direction, with two of these being dedicated to right-turn movements. A yellow box is present on the B4267 Leckwith Road southwest-bound to keep the junction clear and allow for movements into Ffordd Fred Keenor without obstruction. Signalised pedestrian crossings are present on both the B4267 Leckwith Road southwest-bound approach and northeast-bound exit arms, as well as Ffordd Fred Keenor.

2.3.5 Fford Fred Keenor continues southeast from the junction for approximately 80m where it forms a four-arm roundabout junction. The other arms provide access to the P&R and other parking areas, and CCFC (both entrance and exit of the stadium).

B4267 Leckwith Road/Brian Clarke Way/Cardiff International Sports Campus (CISC) Junction

2.3.6 This is a four-arm signal-controlled crossroads junction, comprising the B4267 Leckwith Road as the major arms, with the two minor arms formed by Brian Clarke Way (serving Capital Retail Park) and CISC. The B4267 Leckwith Road has four lanes in both directions. In the northeast-bound direction, the two offside lanes are dedicated to right-turn movements. In the southwest-bound direction, there is a single right-turn filter lane for movements into CISC. There are yellow boxes present on both sides of the main carriageway to allow for turning movements into the minor arms without obstruction. Signalised pedestrian crossings are present across all arms except the B4267 Leckwith Road southwest-bound.

Leckwith Interchange

2.3.7 The B4267 Leckwith Road continues southwest as a dual-carriageway before it reaches Leckwith Interchange, a large five-arm signal-controlled gyratory comprising the B4267 Leckwith Road, A4232 northbound and southbound on/off-slips, and Hadfield Road. There are up to four lanes on the gyratory, with yellow boxes prohibiting traffic entering to queue at each approach arm entry. The junction is well-lit and provides toucan crossings at the following locations:

- A4232 northbound and southbound off-slips;
- B4267 Leckwith Road (northeast-bound and southwest-bound entries);
- Hadfield Road (entry); and
- Internal Stop Lines (ISLs) on the circulatory, between the entries/exits of all arms.

2.3.8 A single pedestrian/cyclist link, running in a northeast-southwest alignment intersects the central island, and there is an orbital pedestrian/cyclist link to facilitate all movements between arms/crossing locations.

2.3.9 The B4267 Leckwith Road southeast-bound approach consists of three lanes. Hadfield Road is a single carriageway road that widens to two lanes on its approach to the junction. Both the B4267 Leckwith Road and A4232 northbound consist of two lanes on their respective approaches. The A4232 southbound off-slip approach consists of four lanes with the two nearside lanes allocated to left-turn movements onto the B4267 Leckwith Road southeast-bound.

B4267 Leckwith Road, between Leckwith Interchange and University Hospital Llandough (UHL)

2.3.10 This link primarily serves residential areas west of the A4232. South of Leckwith Interchange, the B4267 Leckwith Road is single carriageway in both directions, has regular street lighting and is subject to a 40mph speed limit. It generally has a carriageway width of 6.5m, widening as necessary to allow for ghost island right-turn lanes. Adjacent and to the north of UHL, the B4267 Leckwith Road has regular street lighting to facilitate walking trips to/from residential areas which border the site, and has a speed limit of 30mph. The average width of the carriageway serving UHL and residential areas is approximately 7m.

2.3.11 This section of the B4267 Leckwith Road includes priority junctions with the existing site access and Pen-y-Turnpike Road, located approximately 100m and 1.3km southwest of Leckwith Interchange, respectively.

B4267 Penlan Road/UHL Junction

2.3.12 This is a three-arm signal-controlled junction which provides access to UHL. ASLs are provided on both approaches of the B4267 Penlan Road and there are signalised pedestrian crossings on the UHL access and B4267 Penlan Road northbound arms. The B4267 Penlan Road is subject to a speed limit of 20mph within the vicinity of the junction.

Merrie Harrier

2.3.13 This is a network of junctions that form the south-western extent of the study area. The network comprises the following:

- Three-arm priority T-junction (B4267 Penlan Road/Secondary Access to UHL);
- Three-arm priority T-junction (B4267 Penlan Road/Corbett Road);
- Four-arm signal-controlled junction (B4267 Penlan Road/A4055 Barry Road/Andrew Road/A4055 Cardiff Road);
- Three-arm signal-controlled junction (A4055 Cardiff Road/B4267 Redlands Road); and
- Bus gate for northeast-bound movements on the A4055 Cardiff Road, located southwest of the junction.

2.3.14 ASLs are present on all approach arms of the network, other than Andrew Road which is only accessible by buses. There is a signalised pedestrian crossing on the A4055 Barry Road approach arm. The B4267 Penlan Road, A4055 Barry Road, B4267 Redlands Road and A4055 Cardiff Road all have two lanes on their respective approaches. At the time of writing, the Secondary Access to UHL is closed off.

A4055 Barry Road, between B4267 and A4160

2.3.15 This section of the A4055 Barry Road is subject to a 40mph speed limit, is predominantly dual carriageway and is street lit. The width of the carriageway ranges between 10m and 15m.

Barons Court

2.3.16 This is a four-arm signal-controlled junction which forms the south-eastern extent of the study area. It comprises the A4160 Penarth Road (northern arm), A4055 (eastern arm), A4160 Cogan Hill (southern arm) and the A4055 Barry Road (western arm). ASLs and signalised pedestrian crossings are present on all approach arms of the junction. The A4160 Cogan Hill and both arms of the A4055 have three lanes at the stop line, with an additional left-turn filter lane. The A4160 Penarth Road has two lanes on approach, with an additional filter lane for the left-turn.

2.4 Highway Operational Conditions

2.4.1 The TA has utilised a combination of traffic data sources to identify the existing traffic generation of the site and the existing highway operational conditions. These have included Junction Turning Count (JTC) and queue length surveys undertaken by an independent survey company, and JTC data supplied by CCC.

2.4.2 The junctions for which data has been obtained are listed below; the junction numbering corresponds with that shown on **Figure 2.1**.

- B4267 Leckwith Road/Sloper Road/Broad Street junction (Junction 1).
- B4267 Leckwith Road/Lawrenny Avenue junction (Junction 2).
- B4267 Leckwith Road/Ffordd Fred Keenor junction (Junction 3).
- Ffordd Fred Keenor/Access to CCFC and P&R junction (Junction 4).
- B4267 Leckwith Road/Brian Clarke Way/CISC junction (Junction 5).
- Leckwith Interchange (Junction 6).
- B4267 Leckwith Road/Access to Industrial Uses and Ely Trail junction (Junction 7).

- B4267 Leckwith Road/Pen-y-Turnpike Road junction (Junction 8).
- B4267 Leckwith Road/UHL junction (Junction 9).
- Merrie Harrier (Junction 10).
- Barons Court (Junction 11).

2.4.3 The extent of the traffic study area was informed by, and agreed with, each LHA prior to commission of traffic studies and preparation of the TA.

2.4.4 The traffic surveys undertaken by the independent survey company comprised Junctions 1 and 3 to 11. These were undertaken on Tuesday 11th June 2019 and Thursday 20th June 2019, covering the weekday peak periods (07:00-10:00 and 16:00-19:00). These dates are a neutral day and month, as confirmed by national guidelines. The data supplied by CCC relates to Junction 2, specifically for movements to/from Lawrenny Avenue; this was derived from a survey undertaken by CCC on Friday 18th October 2018.

2.4.5 AECOM has performed checks to ensure that the data is complete and with no obvious errors. The junction traffic data has been used to develop a network study area, which has been used to assess and forecast the traffic impact of the proposals and to inform the junction capacity assessments.

2.4.6 Based on total traffic flows across the surveyed network, the analysis has identified that the weekday AM and PM peak hours are 07:30-08:30 and 16:30-17:30, respectively. These periods have been used for assessment purposes.

2.4.7 The traffic flows for the AM and PM peak hours are shown on **Figures 2.2** and **2.3** respectively, with the traffic flows on key links in the study area network summarised in **Table 2.1**. The raw traffic data is available on request.

Table 2.1: Summary Traffic Flow Information

Highway Link	AM Peak Hour			PM Peak Hour		
	Total Vehicles	HGVs	HGV%	Total Vehicles	HGVs	HGV%
B4267, northeast of Sloper Road/Broad Street	1,887	80	4%	2,000	25	1%
Sloper Road	943	54	6%	1,069	14	1%
Broad Street	1,005	22	2%	1,056	12	1%
Lawrenny Avenue	644	-	-	160	-	-
P&R/Other Parking Areas	33	12	36%	208	1	0%
CCFC Stadium Exit	7	1	14%	35	0	0%
Ffordd Fred Keenor	99	18	18%	288	15	5%
B4267, southwest of Ffordd Fred Keenor	1,921	59	3%	2,137	27	1%
Brian Clarke Way	706	23	3%	1,396	1	0%
CISC	12	0	0%	200	10	5%
B4267, northeast of Leckwith Interchange	2,091	67	3%	2,346	29	1%
Hadfield Road	1,353	118	9%	1,331	41	3%
A4232 southbound on-slip	516	22	4%	309	10	3%
A4232 northbound off-slip	209	15	7%	634	4	1%
A4232 northbound on-slip	681	39	6%	1,249	30	2%
A4232 southbound off-slip	1,358	49	4%	842	17	2%
B4267, southwest of Leckwith Interchange	1,579	17	1%	1,611	19	1%

Highway Link	AM Peak Hour			PM Peak Hour		
	Total Vehicles	HGVs	HGV%	Total Vehicles	HGVs	HGV%
Existing Access to Existing Site Land Uses	33	8	24%	41	2	5%
Pen-y-Turnpike Road	938	0	0%	1,014	6	1%
B4267, southeast of Pen-y-Turnpike Road	835	13	2%	758	10	1%
UHL	803	17	2%	722	16	2%
B4267, north of Merrie Harrier	1,023	32	3%	831	19	2%
Corbett Road	6	0	0%	3	0	0%
A4055 Cardiff Road	1,124	63	6%	1,408	22	2%
B4267 Redlands Road	1,422	30	2%	1,339	19	1%
Andrew Road	4	1	25%	2	1	50%
A4055 Barry Road, between Merrie Harrier and Barons Court	1,683	69	4%	1,981	24	1%
A4160 Penarth Road	1,048	44	4%	1,248	31	2%
A4160 Cogan Hill	2,320	50	2%	2,305	26	1%
A4055, northeast of Barons Court	2,891	77	3%	3,014	37	1%

Note: No data on HGVs included in CCC data for movements to/from Lawrenny Avenue.

2.4.8 The B4267 Leckwith Road corridor, between its junction with Sloper Road/Broad Street and Leckwith Interchange, typically carries 1,900-2,000 and 2,000-2,400 vehicles during the AM and PM peak hours, respectively. HGVs generally account for 3-4% of total traffic along this corridor during the AM peak hour, and 1% of total traffic during the PM peak hour.

2.4.9 To the southwest of Leckwith Interchange, traffic flows on the B4267 Leckwith Road (and passing the site) reduce to around 1,600 vehicles during the peak hours, with HGVs accounting for 1-2% of total traffic. Southeast of its junction with Pen-y-Turnpike Road, traffic flows reduce to around 800 vehicles during the peak hours, with HGVs accounting for 1-2% of total traffic.

2.4.10 The A4055 Cardiff Road carries around 1,100 and 1,400 vehicles during the AM and PM peak hours, respectively, with HGVs accounting for 6% and 2% of total traffic during the AM and PM peak hours, respectively. The A4055 Barry Road carries around 1,700 and 2,000 vehicles during the AM and PM peak hours respectively, with HGVs accounting for 4% and 1% of total traffic during the AM and PM peak hours, respectively.

2.4.11 The existing site land uses generate a total of 33 and 41 vehicle movements during the network derived AM and PM peak hours. From further analysis of the traffic data, it is identified that the peaks in traffic generation for the AM and PM occur between 09:00-10:00 and 16:15-17:15, respectively, during which the site generates 49 and 43 vehicle movements, respectively.

2.5 Road Safety

2.5.1 A review of Personal Injury Collision (PIC) data has been undertaken to determine whether there are any locations on the local highway network which could be considered to exhibit a poor collision record. The data was obtained from the Welsh Government (WG) for the five-year period from 1st January 2014 to 31st December 2018 (the most recent for which data was available). A plan showing the location and severity of the PICs recorded is provided on **Figure 2.4**. The data supplied was in a raw format, containing full details of the recorded PICs. For data protection reasons, this data cannot be reproduced in this report.

2.5.2 For ease of assessment, 'minor roads' in the study area have not been considered. The roads and junctions included in the analysis represent key movement corridors in proximity to the site that are likely to be used for journeys to and from the development. The study area for analysis was identified within the Scoping Note (included at **Appendix B**) and includes the junctions and connecting highway links identified at **Section 2.3**.

2.5.3 A total of 51 PICs were reported in the five-year period, of which 42 were categorised as 'slight'. Of the remaining PICs, eight were categorised as 'serious' and one was categorised as 'fatal'. The following sub-sections provide a summary of the location, type and causation factors of these PICs. Given the size of the study area, discrete 'sites' have been identified which summarise the existing highway safety conditions at particular links and junctions.

Site 1 – B4267 Leckwith Road/Sloper Road/Broad Street Junction (Junction 1)

2.5.4 Over the five-year period, a total of eight PICs were recorded at this junction. A summary of these PICs is provided in **Table 2.2**.

Table 2.2: PIC Summary – Site 1

User Type	Fatal	Serious	Slight	Total
Total PICs	0	2	6	**8**
Total Casualties	0	2	7	**9**
Cyclist	0	0	1	**1**
Pedestrian	0	2	1	**3**

2.5.5 In total, there were two 'serious' PICs recorded at this junction, both involving pedestrian casualties. Both occurred on Sloper Road, with the first involving an elderly pedestrian (under the influence of alcohol) being struck whilst crossing the junction away from a designated crossing point. The other 'serious' PIC occurred when a car collided with a pedestrian crossing the road between stationary traffic.

2.5.6 One 'slight' PIC involved a cyclist casualty, which occurred when a queueing vehicle changed lanes, forcing another vehicle to make an emergency stop and causing a trailing cyclist to collide with the rear of the vehicle. There was also a 'slight' PIC involving a pedestrian casualty, which occurred when a pedestrian stepped into the carriageway into the path of an oncoming vehicle. The remaining 'slight' PICs involved vehicles only and largely consisted of rear-end shunts and failures to stop, typical at this type of junction arrangement.

Site 2 –B4267 Leckwith Road/Lawrenny Avenue Junction (Junction 2)

2.5.7 Over the five-year period, a total of four PICs were recorded at this junction. A summary of these PICs is provided in **Table 2.3**.

Table 2.3: PIC Summary – Site 2

User Type	Fatal	Serious	Slight	Total
Total PICs	0	0	4	**4**
Total Casualties	0	0	5	**5**
Cyclist	0	0	0	**0**
Pedestrian	0	0	1	**1**

2.5.8 A total of four PICs were recorded at this junction, all being classified as 'slight'. One of these PICs involved a pedestrian casualty, which occurred when a child ran away from its parents and into the carriageway, colliding with a vehicle emerging from Lawrenny Avenue onto the main road. The remaining 'slight' PICs involved vehicles only and consisted of two rear-end shunts and a motorcycle which lost its grip on the road surface.

Site 3 –B4267 Leckwith Road/Ffordd Fred Keenor Junction (Junction 3)

2.5.9 One 'serious' collision took place at this junction, involving a cyclist casualty. The PIC occurred on the B4267 Leckwith Road when a car collided with a cyclist, causing the rider to dismount.

Site 4 – B4267 Leckwith Road/Brian Clarke Way/CISC Junction (Junction 5)

2.5.10 Over the five-year period, a total of four PICs were recorded at this junction. A summary of these PICs is provided in **Table 2.4**.

Table 2.4: PIC Summary – Site 4

User Type	Fatal	Serious	Slight	Total
Total PICs	0	0	4	**4**
Total Casualties	0	0	5	**5**
Cyclist	0	0	0	**0**
Pedestrian	0	0	0	**0**

2.5.11 A total of four PICs were recorded at this junction, with all being classified as 'slight'. There were no PICs involving pedestrian or cyclist casualties. None of the 'slight' PICs were indicative of a safety issue relating to junction design.

Site 5 – Leckwith Interchange (Junction 6)

2.5.12 Over the five-year period, a total of 14 PICs were recorded at this junction. A summary of these PICs is provided in **Table 2.5**.

Table 2.5: PIC Summary – Site 5

User Type	Fatal	Serious	Slight	Total
Total PICs	1	3	10	**14**
Total Casualties	1	5	13	**18**
Cyclist	0	0	1	**1**
Pedestrian	0	0	0	**0**

2.5.13 One 'fatal' PIC was recorded at this junction, which occurred on the A4232 northbound and involved two motorcyclists who were travelling at speed. One of the riders lost control on a bend, colliding with the barriers, causing the rider to dismount.

2.5.14 There were three 'serious' collisions recorded at this junction. The first collision took place between two cars who were changing lanes to avoid a broken down vehicle. The second PIC occurred when a car using the A4232 southbound off-slip attempted to re-enter the main carriageway, but lost control and collided with a signpost. The final 'serious' PIC occurred when a motorcyclist using the A4232 southbound on-slip to leave the junction, negotiated a bend and lost control, resulting in a collision with a barrier.

2.5.15 There was one 'slight' PIC involving a cyclist casualty, which occurred where a cyclist crossing over the circulatory carriageway (at the toucan crossing between the entry and exit of the A4232 (South)) collided with a vehicle that had a green signal. The remaining collisions were all between vehicles, mainly consisting of rear-end shunts and drivers failing to stop.

Site 6 – B4267 Leckwith Road, between Leckwith Interchange and Pen-y-Turnpike Road

2.5.16 Over the five-year period, a total of two PICs were recorded on this link, with one being classified as 'serious'. The 'serious' PIC occurred on the B4267 Leckwith Road when a vehicle entered the opposite side of the carriageway whilst negotiating a bend, resulting in a collision with another vehicle. The 'slight' PIC occurred when a tractor driver, who claimed to have been unsighted by the sun, drove over the give-way line (at the junction with The Green) and collided with the side of a bus.

Site 7 – B4267 Leckwith Road/Pen-y-Turnpike Road Junction (Junction 8)

2.5.17 Over the five-year period, a total of four PICs were recorded at this junction. A summary of these PICs is provided in **Table 2.6**.

Table 2.6: PIC Summary – Site 7

User Type	Fatal	Serious	Slight	Total
Total PICs	0	0	4	**4**
Total Casualties	0	0	4	**4**
Cyclist	0	0	0	**0**
Pedestrian	0	0	0	**0**

2.5.18 All four PICs were classified as 'slight'. There were no PICs involving pedestrian or cyclist casualties. All of the PICs involved collisions between two vehicles, most commonly due to a failure to stop. None of the 'slight' PICs were indicative of a safety issue relating to junction design.

Site 8 – B4267 Leckwith Road, between Pen-y-Turnpike Road and UHL

2.5.19 Over the five-year period, a total of four PICs were recorded on this link. A summary of these PICs is provided in **Table 2.7**.

Table 2.7: PIC Summary – Site 8

User Type	Fatal	Serious	Slight	Total
Total PICs	0	0	4	**4**
Total Casualties	0	0	4	**4**
Cyclist	0	0	0	**0**
Pedestrian	0	0	0	**0**

2.5.20 All four PICs were classified as 'slight'. One 'slight' PIC involved a pedestrian casualty and occurred when a passing vehicle clipped a pedestrian. The remaining 'slight' PICs involved collisions between vehicles, with rear-end shunts being the most frequent.

Site 9 – B4267 Penlan Road/UHL Junction (Junction 9)

2.5.21 Over the five-year period, a total of four PICs were recorded at this junction. A summary of these PICs is provided in **Table 2.8**.

Table 2.8: PIC Summary – Site 9

User Type	Fatal	Serious	Slight	Total
Total PICs	0	1	3	**4**
Total Casualties	0	1	3	**4**
Cyclist	0	0	0	**0**
Pedestrian	0	0	0	**0**

2.5.22 All four PICs were classified as 'serious'. The 'serious' PIC occurred on the B4267 Penlan Road when a pedestrian intentionally jumped in front of a moving bus. One of the 'slight' PICs involved a cyclist casualty, which occurred when a cyclist travelling downhill on the B4267 Penlan Road was unable to negotiate the right-hand bend and lost control. The remaining 'slight' PICs consisted of a rear-end shunt and a motorcycle malfunction.

Site 10 – Merrie Harrier (Junction 10)

2.5.23 Over the five-year period, a total of two PICs were recorded at this junction, with both being classified as 'slight'. One of the PICs occurred when a vehicle drove through the junction and collided with another vehicle, whilst the other PIC involved a car that clipped a nearside kerb, causing it to swerve to the offside and overturn.

Site 11 – A4055 Barry Road, between B4267 and A4160

2.5.24 During the studied five-year period, a total of two PICs were recorded on this link, with both being classified as 'slight', and neither involving a pedestrian or cyclist casualty. The first PIC occurred when a driver travelling at excessive speed clipped the central reservation kerb and lost control of the vehicle; the driver was using a mobile phone at the time. The other PIC occurred as a result of a late turn, causing the vehicle behind to brake and collide with a lamppost.

Site 12 – Barons Court (Junction 11)

2.5.25 In the five-year period considered, two PICs were recorded at this junction, with both being classified as 'slight'. Neither PIC involved a pedestrian or cyclist casualty, with one PIC being a rear-end shunt between three vehicles, and the second occurring as a result of a medical episode suffered by the driver causing them to lose control of the vehicle and swerve off the carriageway.

Summary of PIC Analysis

2.5.26 The PIC analysis has demonstrated that there is no clear linking factor or apparent correlation between the majority of recorded PICs within the study area. The majority of sites that contain higher PIC frequencies are either larger areas of study or contain a busy junction or junctions.

2.5.27 In instances where there have been similar cases of highway collisions, a review of the collision details suggests there is no evidence that highway design is the primary causation factor. Overall, it can be concluded there are no inherent existing safety issues in the area around the site that would be exacerbated by the proposed development.

2.6 Walking and Cycling

2.6.1 **Section 2.3** identifies a number of junctions within the local highway network that have suitable provision for pedestrians and cyclists to enable walking and cycling trips to/from the site.

2.6.2 The B4267 Leckwith Road is the main walking/cycling link to/from the site. Between Leckwith Interchange and Ninian Park railway station, there are shared footways/cycleways present on both sides of the carriageway and the route is well-lit. There are also a number of uncontrolled pedestrian crossing facilities, which include refuge islands. Additionally, there are safety bollards present in the northeast-bound direction of the B4267 Leckwith Road, for approximately 50m east of Lawrenny Avenue.

2.6.3 Immediately northeast of the site, Leckwith Interchange contains a comprehensive network of toucan crossings and links to enable a safe range of movements by foot/cycle. Southwest of Leckwith Interchange, the B4267 largely contains footways on both sides of the carriageway, however in some sections, this is only present in the southbound direction.

2.6.4 The nearest National Cycle Route (NCR) is NCR 8 which runs in a north-south alignment through the City Centre. As mentioned above, the B4267 Leckwith Road provides for cycling with shared cycleways in both directions.

2.6.5 The Ely Trail is a predominantly off-road walking/cycling route that stretches approximately 11km between Cardiff Bay and St Fagans (located northwest of Leckwith). The route can be accessed from the B4627 Leckwith Road, immediately adjacent to the site and provides a largely traffic-free journey, giving potential users of the site a safe and convenient option for local travel. Movements between the northern and southern sections of the Ely Trail, across the B4267 Leckwith Road, are currently facilitated via an uncontrolled refuge crossing between the site and Leckwith Interchange.

2.6.6 Walking and cycling facilities on the local network are shown on **Figure 2.5**.

2.7 Local Facilities

2.7.1 The environment surrounding the site is largely comprised of leisure amenities and industrial employment. The Institution for Highways and Transportation's (IHT's) *Guidelines for Providing for Journeys on Foot*, published in 2000, identifies that 2km is the preferred maximum distance that people will walk for commuting purposes and journeys to school. Cycling is identified as having the potential to replace car trips for journeys up to 5km, which equates to approximately a 20-minute journey by bicycle. Based on this guidance, there are a number of local facilities in the vicinity of the site which can be considered accessible for pedestrians and cyclists. These are shown in **Figure 2.6**.

2.7.2 A range of facilities are within walking and cycling distance from the site, as shown in **Table 2.9**.

Table 2.9: Local Facilities within Walking/Cycling Distance

Type	Facility	Distance (m)	Walking Time (minutes)	Cycling Time (minutes)
Education	Ysgol Gymraeg Pwll Coch	1,300	17	5
	Fitzalan High School	1,700	22	6
	Ninian Park Primary School	1,700	22	7
Employment	Capital Retail Park	700	9	3
	Hadfield Road Industrial Estate	1,100	15	4
	Royal Mail Cardiff Delivery Office	1,800	23	7
Health	Lansdowne Surgery	1,700	21	6
	Saltmead Medical Centre	2,500	32	10
Leisure	CISC	800	10	3
	DW Sports Gym	750	10	4
	CCFC	1,100	15	4
	Canton Rugby Football Club	1,200	15	4
Retail	Asda Supermarket (with Petrol Station)	550	7	2
	Capital Retail Park	700	9	3
	Lidl	900	11	4

Note: Distances measured from the centre of the residential land use along existing/proposed routes.

2.7.3 The B4267 Leckwith Road can be used to access the majority of facilities in the surrounding area, with a number of these being within acceptable walking/cycling distance. The site lies adjacent to a large amount of industrial employment space, which can be accessed directly via Leckwith Interchange and Hadfield Road. Overall, this will encourage greater uptake of journeys to essential facilities and services on-foot, as identified at paragraph 2.29 of *Guidelines for Providing for Journeys on Foot*. There are minimal attractors to the south of the site, meaning pedestrian/cyclist desires lines to/from the site will be primarily to/from the northeast.

2.8 Public Transport

2.8.1 Existing public transport services operating in the vicinity of the proposed development have been identified with reference to current timetable and routeing information.

Bus

2.8.2 The IHT's *Guidance for Providing for Public Transport in Developments*, published in 1999, suggests 400m as the 'acceptable' walking distance to a bus stop. However, it states that this does not need to be slavishly adhered to, rather it is more important to provide services that are easy to understand and attractive to use. The nearest stops to the site are the 'Hadfield Road' bus stops located on the B4267 Leckwith Road. These are approximately 400m to the northeast of the location of the proposed site access, although some parts of the site are up to 550m from these bus stops.

2.8.3 **Figure 2.7** shows the locations of nearby bus stops, with the primary services to/from these stops summarised below in **Table 2.10**.

Table 2.10: Bus Service Information

Service	Route	Days	First Service	Last Service	Approximate Frequency
95	Barry Island - Heath Hospital (via City Centre)	Mon-Fri	06:45	21:33	30 minutes
		Sat	06:41	21:18	30 minutes
		Sun	09:45	18:40	Hourly
	Heath Hospital – Barry Island (via City Centre)	Mon-Fri	06:43	19:49	30 minutes
		Sat	06:48	19:49	30 minutes
		Sun	10:10	17:10	Hourly
95A	Penarth – Cardiff (via Leckwith)	Mon-Fri	08:08	18:17	30 minutes
		Sat	10:14	17:44	30 minutes
	Cardiff – Penarth (via Leckwith)	Mon-Fri	08:10	18:01	30 minutes
		Sar	09:59	17:29	30 minutes

Notes:

1. *Timetable information obtained from Cardiff Bus (September 2019).*
2. *Times for first/last service are the arrival/departure times at/from the 'Hadfield Road' bus stop.*
3. *All services are operated by Cardiff Bus. The 95A serves the Leckwith P&R.*

2.8.4 Local services provide a good level of public transport accessibility to/from the site. Services between the site and the City Centre are frequent and run throughout the day. Average journey times to the City Centre are between 10-15 minutes. Cardiff Bus offer mobile ticket availability via their app, as well as on-board contactless payments and the option of reduced 'Short hop' fares for quick, local journeys.

Rail

2.8.5 The nearest railway station is Ninian Park, which lies approximately 1.1km northeast of the site, roughly a 14-minute walk or 4-minute cycle using the B4267 Leckwith Road. Grangetown railway station provides an alternative option, located approximately 2.1km to the southeast of the site, which equates to roughly a 28-minute walk or 7-minute cycle via Hadfield Road and Penarth Road.

2.8.6 Facilities provided at Ninian Park and services to/from this station are summarised in **Tables 2.11** and **2.12** respectively.

Table 2.11: Summary of Facilities at Ninian Park Railway Station

Facility	Details
Car Parking	No
Disabled Car Parking	No
Taxi Rank	No
Cycle Storage	4 spaces
Staffing and Ticket Office Times	No
Self Service Ticket Machines	Yes
Step Free Access Coverage	Yes

Source: National Rail (December 2019).

Table 2.12: Summary of Rail Services to/from Ninian Park Railway Station

Direction	Days	First Service	Last Service	Approximate Frequency
To Cardiff Central	Mon-Fri	07:15	22:47	30 minutes
	Sat	07:15	22:15	30 minutes
From Cardiff Central	Mon-Fri	05:35	22:55	30 minutes
	Sat	07:06	22:55	30 minutes

Source: National Rail (September 2019). All services listed above are direct. Rail service frequencies subject to change.

2.8.7 Cardiff Central is the nearest strategic station for national railway services and is regularly accessible by services to/from Ninian Park. **Table 2.13** provides a summary of services to/from this station.

Table 2.13: Summary of Rail Services to/from Cardiff Central Railway Station

Direction	Days	First Service	Last Service	Approximate Frequency
To London Paddington	Mon-Fri	05:15	21:26	30 minutes
	Sat	04:55	20:26	Hourly
	Sun	08:05	20:52	Hourly
From London Paddington	Mon-Fri	05:07	23:30	30 minutes
	Sat	07:45	22:00	Hourly
	Sun	08:34	21:33	Hourly
To Manchester Piccadilly (via Birmingham New Street)	Mon-Fri	04:35	20:17	30 minutes
	Sat	04:35	20:10	30 minutes
	Sun	08:30	19:45	20-60 minutes
From Manchester Piccadilly (via Birmingham New Street)	Mon-Fri	05:11	21:36	30-60 minutes
	Sat	05:11	20:30	30-60 minutes
	Sun	08:27	20:30	30-60 minutes
To Swansea	Mon-Fri	05:35	00:54	10-30 minutes
	Sat	05:33	23:08	10-30 minutes
	Sun	09:56	23:58	15-60 minutes
From Swansea	Mon-Fri	03:54	22:32	10-30 minutes
	Sat	03:59	22:20	10-30 minutes
	Sun	07:53	23:31	15-60 minutes
To Bristol Temple Meads	Mon-Fri	05:15	23:27	30 minutes
	Sat	04:55	22:47	30 minutes
	Sun	08:10	23:07	30 minutes
From Bristol Temple Meads	Mon-Fri	05:20	22:54	30 minutes
	Sat	06:45	22:55	30 minutes
	Sun	08:48	22:49	30-60 minutes

Source: National Rail (September 2019). Rail service frequencies subject to change.

2.8.8 In summary, services from Ninian Park to nearby Cardiff Central are regular, with a frequency of two trains per hour and an average journey time of approximately five minutes. Services begin early in the morning and finish late at night, ensuring a good provision to suit a wide range of commuting times. Passengers at Cardiff Central have access to frequent cross-regional services, with trains to London, Manchester, Swansea and Bristol running at least twice every hour on weekdays. Overall, this displays a very good provision of rail services to/from the site and surrounding area.

2.9 Summary

2.9.1 The site is located in Leckwith, approximately 2.5km to the southwest of the City Centre. It is bounded to the northeast by the Ely River and is otherwise surrounded by woodland. A grade-separated section of the B4267 Leckwith Road intersects the site in a north-south alignment. Capital Retail Park and the Hadfield Road Industrial Estate lie approximately 700m and 1.1km to the northeast/east of the site respectively.

2.9.2 The site is situated at the border of the VoG and the CCC. The part of the site to be developed for residential purposes is within the administrative area of VoG. Part of the access arrangements and proposed new bridge fall within the administrative area of CCC.

2.9.3 The existing site is operational and is currently used for a range of long running commercial/light industrial uses. It is accessed via a junction with the B4267 Leckwith Road, just north of the Ely River. This access also serves the Ely Trail, which is a predominantly off-road walking/cycling route. There is a bridge over the Ely River that connects the site and the access. The B4267 Leckwith Road connects to the A4232 at Leckwith Interchange, approximately 100m to the northeast of the site access.

2.9.4 A number of traffic surveys have been undertaken at junctions within the study area network, the extent of which was discussed and agreed with both Highway Authorities prior to commission. These have been used to identify the existing traffic generation of the site and highway operational conditions, and to inform the assessment of traffic impact of the proposed development. The surveys have identified two-way traffic flows on a number of key links in the study area during the weekday AM and PM peak hour as follows:

- B4267 Leckwith Road, between Sloper Road/Broad Street and Leckwith Interchange: 1,900-2,000 vehicles during the AM peak hour and 2,000-2,400 vehicles during the PM peak hour.
- B4267 Leckwith Road, passing the existing site: 1,600 vehicles per peak hour.
- B4267 Leckwith Road, southeast of Pen-y-Turnpike Road: 800 vehicles per peak hour.
- A4055 Cardiff Road: 1,100 vehicles during the AM peak hour and 1,400 vehicles during the PM peak hour.
- A4055 Barry Road: 1,700 vehicles during the AM peak hour and 2,000 vehicles during the PM peak hour.

2.9.5 The analysis of PIC data has demonstrated that there is no clear linking factor or apparent correlation between the majority of recorded PICs within the study area. The majority of sites that contain higher PIC frequencies are either larger areas of study or contain a busy junction or junctions. In instances where there have been similar cases of highway collisions, a review of the collision details suggests there is no evidence that highway design is the primary causation factor. Overall, it can be concluded there are no inherent existing safety issues in the area around the site that would be exacerbated by the proposed development.

2.9.6 The site benefits from existing provision for pedestrians and cyclists in the locality, including shared footways/cycleways on both sides of the B4267 Leckwith Road, a comprehensive network of crossing facilities, and neighbouring off-road routes. Employment areas and a range of local facilities are located within walking and cycling distance of the site.

2.9.7 Regular bus services are accessible from bus stops located on the B4267 Leckwith Road; whilst parts of the site are slightly beyond the IHT's suggested 'acceptable' walking distance, this is not considered to be a significant barrier given the frequency of services and provision of pedestrian links between the site and the bus stops. Ninian Park railway station is located around 1.1km from the site and provides regular services to Cardiff Central, which in turn provides access to regular services to wider destinations such as London, Manchester, Swansea and Bristol.

3. Development Proposals

3.1 Introduction

3.1.1 This section of the report provides a description of the development proposals, including the site access strategy.

3.2 Overview of Proposals

3.2.1 The indicative site layout is included at **Appendix A**. The proposal is for the redevelopment of an existing brownfield site for residential uses (circa 250 dwellings), and a new bridge that spans over the River Ely and the site itself, along the alignment of the existing B4267 Leckwith Road.

3.2.2 The layout shows that the site comprises two development parcels on the west side of the river, either side of the B4267 Leckwith Road. The north-western parcel of the developed proportion of the proposed site is intended to contain up to around 80 dwellings, and the south-eastern parcel up to 170 dwellings.

3.2.3 The internal site layout and housing mix will be the subject of a reserved matters application. **Table 3.1** summarises the indicative housing mix in the Design and Access Statement (DAS) (included in the planning submission) on the two development parcels. This is indicative at this current time and all assessments carried out within this TA are robust.

Table 3.1: Indicative Housing Mix in Design and Access Statement

Development Parcel	Dwelling Type	No. of Dwellings
Northwest	2-bed apartment	68
	3-bed house	19
	Sub-Total	**87**
Southeast	2-bed apartment	45
	2-bed duplex	28
	3-bed duplex	32
	3-bed house	29
	4-bed house	7
	Sub-Total	**141**
	Total	**228**

3.3 Access Strategy

3.3.1 The proposed access strategy is shown at **Appendix C**.

3.3.2 The proposals include the realignment of the B4267 Leckwith Road and construction of a replacement bridge over the Ely River. This is required to not only provide access to the site, but also to maintain a key highway link between VoG and CCC. The existing bridge is reaching the end of its service life and, without a replacement, a link to Leckwith Interchange cannot be maintained.

3.3.3 Non-provision of a replacement bridge and closure of this link to Leckwith Interchange would inevitably result in a significant reassignment of traffic across the network. Whilst this could have a benefit to Leckwith Interchange, it would likely have significant detrimental performance implications for other junctions in the VoG and CCC, such as Merrie Harrier, Barons Court and Culverhouse Cross. A replacement bridge, which can be secured as part of the proposed development, is therefore crucial to maintaining this key highway link and network performance.

3.3.4 The access strategy involves the provision of a new signal-controlled crossroads junction, to be located on the realigned B4267 Leckwith Road. This will provide access for vehicles, pedestrians, and cyclists associated with both development parcels. The proposed access arrangements have been prepared in conjunction with the replacement bridge by the highway designer (WSP) following consultation with the VoG, and a comprehensive options assessment (discussed at **Section 7.7**).

3.3.5 Both approach arms of the B4267 Leckwith Road will provide a one lane approach, which includes flaring to two lanes at the stop line. The nearside lanes will provide for ahead and left-turn movements, and the offside lanes will provide right-turn storage to facilitate movements to the site access arms. The site access arms will have one lane for all movements at the stop line. All arms will provide ASLs for cyclists.

3.3.6 The replacement bridge over the Ely River will be required in the short term to ensure that a connection to Leckwith Interchange is maintained. A 3.5m shared footway/cycleway is proposed to be provided on the northern side of the carriageway, between the proposed site access junction and the Ely Trail, and will continue northeast to tie-in with provision at Leckwith Interchange. A 2m footway will be provided on the southern side, between the proposed site access junction and the Ely Trail. Northeast of this, the footway will widen to 3.5m to provide a shared footway/cycleway to tie-in with the existing provision at Leckwith Interchange. These design features maximise opportunities for pedestrian/cyclist provision/connections within the constraints of the realignment and bridge construction, and will ensure that existing links between Leckwith Interchange and the Ely Trail are maintained and new provision is an improvement for all modes of travel including buses, cyclists and pedestrians.

3.3.7 A toucan crossing facility will be provided where the Ely Trail meets the B4267 Leckwith Road, therefore allowing for controlled crossing movements between the northern and southern sections of the Ely Trail. This will represent a significant betterment for cyclists and pedestrians over the existing provision, which comprises an uncontrolled, refuge crossing.

3.3.8 The existing listed bridge, which currently provides vehicular access to the site, is proposed to become a pedestrian/cycle link, connecting the south-eastern development parcel with the Ely Trail. This will provide convenient, off-carriageway connections to the Ely Trail and Leckwith Interchange, and will also provide the opportunity for southbound through-movements to be undertaken off-carriageway.

3.3.9 South of the proposed site access junction, the realigned section of the B4267 Leckwith Road is proposed to provide a 3.5m shared footway/cycleway on the eastern side of the carriageway; this will extend south from the site access arm (serving the south-eastern development parcel) for a distance of approximately 300m, where it will tie-in with the existing footway. A 2m footway will be provided on the western side of the carriageway; this will extend south from the site access arm (serving the north-western development parcel) for a distance of approximately 250m, where it will tie-in with the existing footway.

3.3.10 The proposals for a shared footway/cycleway south of the proposed site access junction, combined with those listed above, provides the opportunity for through movements by southbound cyclists to be undertaken off-carriageway (via the pedestrian/cycle link using the listed bridge). However, it is recognised that some southbound cyclists may wish to take the direct on-carriageway route through the junction. The design includes provision for this through the following:

- Dropped kerb where the shared footway/cycleway between the Leckwith Interchange and Ely Trail becomes a footway (on the south side of the replacement bridge), allowing southbound cyclists to drop onto the carriageway; and
- Dropped kerb south of the proposed site access junction, allowing southbound cyclists routeing on-carriageway through the junction to join the new section of shared footway/cycleway.

3.3.11 The access strategy provides the following in terms of pedestrian/cyclist crossing provision at the proposed site access junction:

- Uncontrolled refuge crossings on both arms of the B4267 Leckwith Road, therefore allowing crossing movements to be undertaken in two stages. The width of the refuge on the north-eastern arm is sufficient to accommodate pedestrians, but not cyclists, which will be accommodated by a wider refuge on the south-western arm; and

- Uncontrolled crossings on both site access arms, set back within the development. This will be appropriately spaced from the junction and will incorporate a raised table to indicate pedestrian/cyclist priority as well as a traffic calming feature on entry into the development.

3.3.12 The rationale for this level of provision is as follows:

- To the south of the junction, locations within walking distance of the site are limited to occasional dwellings rather than major generators/attractors. Crossing demand on the site access arms and across the B4267 (Southwest) arm is therefore likely to be limited. Residents routeing south will likely follow the footway on the corresponding side of the site access (removing the need to cross), rather than crossing to the opposite side of the carriageway; and
- Pedestrian/cyclist movements between the two development parcels are likely to be small/occasional. Whilst there will be cyclist demand between the north-western development parcel and the Ely Trail, the connection via the proposed shared footway/cycleway on the north side of the replacement bridge is viewed as far more direct and is therefore likely to be the preferred route.

3.3.13 It is considered that the above provision, in combination with the features identified in paragraphs 3.3.1 to 3.3.10, ensures an access strategy that sufficiently accommodates key pedestrian/cyclist desire lines without compromising performance of the Leckwith Interchange (discussed in detail at **Section 7.7**).

3.4 Internal Site Layout

3.4.1 The internal site layout will be the subject of a reserved matters application. This will be designed in a manner which facilitates walking and cycling and provides for disabled users. Swept Path Analysis (SPA) will be undertaken to demonstrate that the layout can accommodate the envisaged vehicle types that will visit and serve the site.

3.4.2 The DAS included with the planning submission sets out a clear hierarchy of streets to create a legible road and path network. From the proposed site access junction, the primary residential roads (measuring 5.5m wide in the vicinity of the junction) distribute traffic and pedestrians into the development, and also accommodate several different dwelling and parking types, before branching off to secondary residential roads to access further dwellings. The two site parcels are essentially cul-de-sacs and the layout will ensure that appropriate slow speed vehicle circulation is inherent in the design. Separated pedestrian and cycle routes run along a riverside walkway, as well as alongside the main vehicular routes. Shared surfaces are proposed to encourage low vehicle speeds and to infer priority to pedestrians and cyclists.

3.5 Parking Provision

3.5.1 Proposed car, motorcycle and bicycle parking will be set out at the time of the reserved matters applications. **Table 3.2** summarises the current adopted car parking standards for both the VoG and CCC (as discussed at **Section 4)** applied to the indicative housing mix at **Table 3.1**. Standards are expressed as a 'maximum'.

Table 3.2: Maximum Parking Provision based on Adopted Standards

Authority	Parking Type	Parking Standard	Applied to Indicative Housing Mix
VoG	Standard	One space per bedroom (up to a maximum of three spaces per dwelling)	543 spaces
	Visitor	One space per five dwellings	46 spaces
		Total	**589 spaces**
CCC	Standard	One space per bedroom (up to a maximum of two spaces per dwelling)	456 spaces
	Visitor	No specific requirement	-
		Total	**456 spaces**

3.5.2 **Table 3.2** suggests a maximum car parking provision of 456 spaces (CCC standards) to 589 spaces VoG standards).

3.5.3 The indicative layout provides for 300 car parking spaces, of which 249 are allocated and 51 are unallocated/for visitors. The DAS states that every dwelling within the proposed development will have at least one allocated parking space, accommodated in a combination of private driveways, integrated garages, on-street parking, and undercroft parking courts. Larger dwellings will have two allocated parking spaces. The level of provision shown is therefore within the 'maximum' provision allowed by standards. Whilst the indicative provision equates to only 50-65% of the 'maximum', this will serve to discourage excessive car ownership. Furthermore. It should be noted that due to the location of the site on the edge of a highly sustainable location, in its scoping response, the CCC stated that *"would support the use of reduced car parking standards to deter the potential for car-borne traffic being used to access Cardiff."*

3.6 Construction Traffic

3.6.1 Construction activities will not only include the building of residential development, but will also involve civil engineering works to provide new roads, including access roads and associated infrastructure.

3.6.2 Construction of the proposed development will give rise to deliveries of materials and products that would be transported by heavy goods vehicles. In addition, each construction phase will require on-site operation of construction equipment and plant.

3.6.3 There is likely to be a requirement for traffic management measures during the construction of the new bridge and the demolition of the current bridge. There may also be a requirement for temporary road closures to facilitate the new connection. This will be progressed with the Highway Authorities and alternative construction traffic routes will be identified and agreed during this temporary situation.

3.6.4 Construction impacts will be managed through a Construction Management Plan (CMP) or similar document, the measures of which would be intended to protect the environment, amenity and safety of local residents, businesses, the general public and the surroundings in the vicinity of the proposed development. As part of the management plan, a construction vehicle routeing regime for access to the construction site will be identified and agreed with the local and strategic highway authorities to ensure that drivers of construction related vehicles do not use inappropriate routes which are unsuitable by virtue of their width, alignment or character. The regime will aim to ensure that construction vehicles avoid residential areas and use the strategic highway network wherever possible.

3.6.5 Potential impacts of construction traffic include noise, vehicle exhaust emissions, dust, and mud and debris on roads, as well as possible road safety issues. Mitigation of these impacts will be achieved through strict adherence to the proposed construction routes and permitted hours of working, as well as by controls under health and safety legislation and good construction site practices.

3.7 Summary

3.7.1 This chapter has provided a description of the development proposals, including the site access strategy.

3.7.2 The proposal is for the redevelopment of an existing brownfield site for residential uses (circa 250 dwellings), spread across two development parcels, either side of the B4267 Leckwith Road, and a new bridge along largely the alignment of the existing B4267 Leckwith Road. The north-western parcel of the developed proportion of the proposed site is intended to contain up to around 80 dwellings, and the south-eastern parcel up to 170 dwellings. The current masterplan layout is indicative, and the level of development set out in this TA is considered robust.

3.7.3 The proposals include the realignment of the B4267 Leckwith Road and construction of a replacement bridge over the Ely River. This is required to not only provide access to the site, but also to maintain a key highway link between VoG and CCC. The existing bridge is reaching the end of its service life and, without a replacement, a link to Leckwith Interchange cannot be maintained. Non-provision of a replacement bridge and closure of this link to Leckwith Interchange would inevitably result in a significant reassignment of traffic across the network. Whilst this could have a benefit to Leckwith Interchange, it would likely have significant detrimental performance implications for other junctions in the VoG and CCC. A replacement bridge, which can be secured as part of the proposed development, is therefore crucial to maintaining this key highway link and network performance.

3.7.4 The access strategy involves the provision of a new signal-controlled crossroads junction, to be located on the realigned B4267 Leckwith Road. This will provide access for vehicles, pedestrians, and cyclists associated with both development parcels. The proposed access arrangements have been prepared in conjunction with the replacement bridge by the highway designer (WSP) following consultation with the VoG and a comprehensive options assessment. Two options of the design have been prepared and tested; the design which is proposed (Option 2) provides a design that does not adversely affect the operation of Leckwith Interchange, whilst ensuring that there is an appropriate level of provision for pedestrian/cyclist movements.

3.7.5 The internal site layout will be the subject of a reserved matters application. The DAS included with the planning submission sets out a clear hierarchy of streets to create a legible road and path network. The development has been designed as a walkable neighbourhood; the network of footways on-site and network of footways/cycleways created as part of the access arrangements will create a range of travel options both on-road and as traffic free routes. Footways and cycleways alongside the carriageway will be provided at high quality with clear spaces for non-motorised travel. The layout and design of the site has focused on the strength of its sustainable location, the proposals include re-purposing the existing listed bridge for a walking and cycling route. In addition to this the proposals fully exploit the site's position adjacent the Ely Trail and includes enhancements which make pedestrian and cyclists crossings safer and more convenient.

3.7.6 Parking will also be set out at the reserved matters stage; the potential level of car parking identified by the DAS falls within the 'maximum' standards specified by the DAS.

3.7.7 Construction impacts will be managed through a CMP or similar document, the measures of which would be intended to protect the environment, amenity and safety of local residents, businesses, the general public and the surroundings in the vicinity of the proposed development. A construction vehicle routeing regime for access to the construction site will be identified and agreed with the local and strategic highway authorities to ensure that drivers of construction related vehicles do not use inappropriate routes which are unsuitable by virtue of their width, alignment or character. The regime will aim to ensure that construction vehicles avoid residential areas and use the strategic highway network wherever possible.

4. Planning Policy Review

4.1 Introduction

4.1.1 This section of the report provides a summary of the planning and, in particular, transport planning policy relevant to the development proposals.

4.2 National Policy

Planning Policy Wales

4.2.1 Edition 10 of *Planning Policy Wales* (PPW) was published in December 2018 and sets out the land use planning policies of the WG. It is supported by a number of Technical Advice Notes (TANs), which provide detailed planning advice on subjects contained within PPW. *TAN 18: Transport* is considered of particular relevance to the proposed development and is included in this policy review. An overarching theme within PPW is the commitment of the WG to sustainability.

4.2.2 Planning policy in Wales is plan-led, with up to date Local Development Plans (LDPs) forming a fundamental part of the system. PPW states that planning applications *"must be determined in accordance with the adopted plan unless material considerations indicate otherwise"*. This section provides a review of both the VoG and CCC LDPs to demonstrate that the proposed development accords with policy.

4.2.3 PPW outlines the vision for development of a more effective and efficient transport system, the promotion of more sustainable and healthy forms of travel, as well as minimising the need to travel. PPW indicates that this will be achieved through integration:

- *"within and between different types of transport;*
- *between transport measures and land use planning;*
- *between transport measures and policies to protect and improve the environment; and*
- *between transport measures and policies for education, health, social inclusion and wealth creation."*

4.2.4 The WG outlines a support for a transport hierarchy in relation to the accessibility of new development that prioritises walking and cycling in the first instance, followed by public transport, and finally private motor vehicles.

4.2.5 Paragraph 4.1.10 states:

"Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services."

4.2.6 Paragraph 4.1.50 states that car parking provision has a major influence on both mode choice and development patterns, and that *"minimum parking standards are no longer appropriate"*.

4.2.7 Paragraphs 4.1.56 to 4.1.57 identify the requirements for development proposals to be accompanied by a TA. It directs professionals to the TAN 18 for guidance on the preparation and content of TAs.

Technical Advice Note 18: Transport

4.2.8 TAN 18 was published in March 2007. It describes how to integrate land use and transport planning, and explains how transport impacts should be assessed and mitigated. It supports, and should be read in conjunction with, PPW.

4.2.9 The integration of land use and transport planning forms part of an overall sustainable development approach by the WG towards strategy and policy objectives. This is predominantly through maximising the accessibility of developments by sustainable modes of transport. This also includes reducing the need to travel and encouraging multi-purpose trips. Accessibility is defined in TAN 18 as *"the relative ability to take up services, markets or facilities"*.

4.2.10 Paragraph 4.6 states that parking standards for new development should be determined on an evidence basis which includes accessibility to other modes of transport.

4.2.11 Section 5 requires all new development to be designed in a way that is inclusive for all. The design of the development also plays an important role in providing genuine alternatives to car travel.

4.2.12 Section 6 highlights the ability for walking and cycling to replace shorter car journeys, as well as the ways in which developments can encourage this. This includes the creation and protection of safe and legible pedestrian and cycle routes along key desire lines, and provision of cycle parking and facilities.

4.2.13 Section 7 considers the role that public transport can play in offering an alternative to car travel, giving emphasis to the provision of new services and facilities, as well as facilitating interchange, as methods of encouraging uptake.

4.2.14 Paragraph 9.2 states that *"developers should be required by local authorities to submit transport assessments to accompany planning applications for developments that are likely to result in significant trip generation"*. This TA will demonstrate that the development proposals are suitable in terms of travel demand and impact.

4.2.15 TAN 18 requires TAs to include a Transport Implementation Strategy (TIS). This should seek to:

- *"identify what policy objectives and requirements are set by the development plan in terms of access to the development and movements in and around the site;*
- *identify what access arrangements are required for a successful development (meeting the needs of the developer, end user, addressing impacts on neighbours and existing movements surrounding the site); and*
- *specify the package of physical, management and promotional measures needed to accommodate the requirements identified above, such as physical infrastructure, the design and location of buildings, parking management, financial incentives and dedicated travel plan co-ordinators."*

4.2.16 The TIS is set out at **Section 8**.

4.2.17 As a broad guide, TAN 18 considers a 5% increase in traffic using any link of a junction as material.

Wales Transport Strategy

4.2.18 The *Wales Transport Strategy* (WTS) was published in April 2008. This seeks to ensure that transport features strongly in the WG's policy spectrum:

- *"Getting the most out of our existing transport system;*
- *Making greater use of more sustainable modes of travel; and*
- *Reducing demands on the transport system."*

National Transport Finance Plan

4.2.19 The *National Transport Finance Plan* (NTFP) provides the timescales for financing and delivery of schemes in Wales. The NTFP is not a policy document and nor does it prioritise schemes to be taken forward. It was published in 2015 and an update was since published in 2018. A review of these documents has been undertaken, in accordance with the scoping report.

4.2.20 This has identified that scheme reference R27h includes a "*Range of improvements including major infrastructure improvements to reduce congestion and increase capacity at junctions*" on the M4 between Junctions 32 and 49 from 2019/2020 onwards. Scheme reference R6 relates to the M4 Junction 33, specifically the construction of a 'south dedicated slip road' (completed) and a 'north dedicated slip road' (to be constructed in 2020/2021).

Active Travel (Wales) Act 2013

4.2.21 The *Active Travel (Wales) Act* became law in Wales in November 2013. The Act makes it a legal requirement for local authorities in Wales to map and plan for suitable routes for active travel, and to build and improve their infrastructure for walking and cycling every year. It also requires both the WG and local authorities to promote walking and cycling as a mode of transport.

4.2.22 The Act is accompanied by a statutory design guidance document, published in December 2014, which provides advice on the planning, design, construction and maintenance of active travel networks and infrastructure, and is to be used at all stages of the process. Reference has been made to this guidance in the planning and design of the proposed development.

Wellbeing of Future Generations (Wales) Act 2015

4.2.23 The *Wellbeing of Future Generations (Wales) Act 2015* has resulted in the WG outlining seven goals in a 'wellbeing statement' (published in 2017) that contribute to sustainable development and details the aims to improve economic, social, environmental and cultural wellbeing of Wales for future generations. The Act places a duty on Local Authorities to set wellbeing objectives and contribute to achieving the seven well-being goals, which are:

- A prosperous Wales;
- A resilient Wales;
- A healthier Wales;
- A more equal Wales;
- A Wales of cohesive communities;
- A Wales of vibrant culture and thriving Welsh language; and
- A globally responsible Wales.

4.2.24 The seven goals form the basis for twelve objectives, also detailed in the wellbeing statement. Several of these are directly relevant to this proposed scheme:

- Drive sustainable growth and combat climate change;
- Promote good health and well-being for everyone;
- Build healthier communities and better environments; and
- Deliver modern and connected infrastructure.

4.3 Local Policy – Vale of Glamorgan

Vale of Glamorgan Local Development Plan 2011-2026

4.3.1 The *Vale of Glamorgan Local Development Plan 2011-2026* (VoG LDP) was adopted in June 2017 and covers the period 2011-2026. The vision for the VoG is a place:

"That is safe, clean and attractive, where individuals and communities have sustainable opportunities to improve their health, learning and skills, prosperity and wellbeing; and

Where there is a strong sense of community in which local groups and individuals have the capacity and incentive to make an effective contribution to the future sustainability of the area."

4.3.2 In support of the social, economic and sustainable themes intrinsic to the LDP and Community Strategy Vision, ten key strategic objectives have been developed that set the context of the LDP Strategy. The strategic objectives most appropriate to this scheme are:

- Objective 3: To reduce the need for VoG residents to travel to meet their daily needs and enabling them greater access to sustainable forms of transport.
- Objective 7: To provide the opportunity for people in the VoG meet their housing needs.

4.3.3 The LDP further develops 'Strategic Policies' to underpin the LDP Strategy and further develops policies specifically relating to 'Managing Growth' and 'Managing Development' in the VoG.

4.3.4 Strategic Policy SP7 (Transportation) states:

"Sustainable transport improvements that serve the economic, social and environmental needs of the Vale of Glamorgan and promote the objectives of the South East Wales Regional Transport Plan and the Local Transport Plan will be favoured"; and

"Priority will be given to schemes that improve highway safety and accessibility, public transport, walking and cycling. All new developments that have a direct impact on the strategic transportation infrastructure will be required to deliver appropriate improvements to the network".

4.3.5 Policy SP7 identifies bus priority measures along the A4055 Barry Road (from Merrie Harrier to Cardiff) and the B4267 Leckwith Road (from Llandough to Cardiff) as among the strategic transportation infrastructure. Bus priority measures along this corridor are currently limited to a bus gate on the A4055 Cardiff Road, southwest of the Merrie Harrier junction. At the time of writing, no details of proposals for further priority measures are publicly-available.

4.3.6 Policy MG16 (Transport Proposals) has been designed to safeguard a number of transport schemes, including those referenced under Policy SP7. In addition, it states that highway improvement works in the form of corridor or junction improvement schemes will be required to mitigate the impact of development in the highway network. Specifically, it references the B4267 Leckwith Road/Pen-y-Turnpike Road and Merrie Harrier junctions as exceeding capacity at the end of the LDP and requiring mitigation by development. At the time of writing, no details of improvements envisaged by the VoG are publicly-available.

4.3.7 Policy MD1 (Location of New Development) sets out the requirements for new development on allocated sites. In regard to transport, it states that sites should have access to or promote the use of sustainable modes of transport.

4.3.8 Policy MD2 (Design of New Development) states that development proposals should:

- *Provide a safe and accessible environment for all users, giving priority to pedestrians, cyclists and public transport users;* and
- *Have no unacceptable impact on highway safety nor cause or exacerbate existing traffic congestion to an unacceptable degree.*

4.3.9 In respect of this, the LDP states:

"All new development should be highly accessible. Walking and cycling have an important role to play in the management of movement across the area, particularly reducing the number of short trips taken by car. Developers will be required to ensure that new developments encourage walking and cycling by giving careful consideration to location, design, access arrangements, travel 'desire lines' through a development, and integration with existing and potential off-site links. Providing safe and convenient walking and cycling environments will help tackle health problems associated with physical inactivity and social exclusion factors arising from car dependency, poor access to services and public transport facilities."

Vale of Glamorgan Parking Standards Supplementary Planning Guidance

4.3.10 The VoG parking standards are set out in SPG to the LDP; the SPG was adopted in March 2019.

4.3.11 The SPG sets out the VoG's parking standards and explains the planning policy for parking requirements for new developments or changes of use. The parking standards seek to promote and ensure transparent and consistent approaches to the provision of parking. In addition to this, it helps to inform developers and designers what is expected of them in terms of sustainability considerations and travel planning.

4.3.12 The standards are defined according to a zoning system, although there is no variability in standards for new residential developments by zone. For houses/apartments, the standards specify one space per bedroom (up to a maximum provision of three spaces per dwelling) for residents and one space per five dwellings for visitors. In regard to cycle parking, the standards specify one stand per five bedrooms (for apartments).

4.3.13 The application of the parking standards to the indicative housing mix in the DAS is included at **Section 3.5**.

Vale of Glamorgan Local Transport Plan 2015-2030

4.3.14 The *Vale of Glamorgan Local Transport Plan 2015-2030* (VoG LTP) was produced following a shift from regional to local transport plan-making. The VoG was formerly one of the ten constituent local authorities of the South East Wales Transport Alliance (SEWTA), the regional transport body which produced the Regional Transport Plan (RTP), covering the period from 2010 to 2015. The regional transport consortia were dissolved in March 2014 which also marked the end of the SEWTA RTP five-year transport delivery programme. This was accompanied by WG guidance that required all local authorities in Wales to produce a LTP, which effectively replaces the RTP.

4.3.15 The LTP seeks to identify the sustainable transport measures required to ensure the VoG adheres to current requirements and good practices to allow for a sustainable transport environment for the period 2015 to 2020 as well as looking forward to 2030. It therefore seeks ways to secure better conditions for pedestrians, cyclists and public transport users and to encourage a change in travel choices away from the single occupancy car.

4.3.16 As most journeys by car, particularly for shopping and school travel, are relatively short, better conditions for pedestrians and cyclists can lead to a reduction in car use. A reduction in car use can promote good health and well-being, reduce the negative impacts on the environment that car travel can bring, offer better access to services and facilities, which in turn can offer improved economic opportunities and reduce the potential for traffic accidents. Sustainable transport infrastructure and services are therefore an important feature of modern day life.

4.4 Local Policy – City and County of Cardiff

Cardiff Local Development Plan 2006-2026

4.4.1 The *Cardiff Local Development Plan 2006-2026* (CCC LDP) was adopted in January 2016. The LDP is used by CCC to guide and manage development, providing a basis by which planning applications are determined.

4.4.2 Policy KP8 emphasises the impact of the location and form of developments on travel choices and demand. It states:

"Development in Cardiff will be integrated with transport infrastructure and services in order to:

i. Achieve the target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport;

ii. Reduce travel demand and dependence on the car;

iii. Enable and maximise use of sustainable and active modes of transport;

iv. Integrate travel modes;

v. Provide for people with particular access and mobility requirements;

vi. Improve safety for all travellers;

vii. Maintain and improve the efficiency and reliability of the transport network;

viii. Support the movement of freight by rail or water; and

ix. Manage freight movements by road and minimise their impacts".

4.4.3 Policy KP8 also demonstrates that achieving the 50:50 split between travel by car and sustainable travel is *"necessary for the transport network to accommodate movements associated with the growth envisaged within this plan in a way which avoids unmanageable levels of congestion on the highway network"*. This has been demonstrated through local knowledge of the transportation network and research of travel behaviour, patterns and trends in combination with modelling work carried out by CCC.

4.4.4 Policy T1 relates to walking and cycling. The purpose of this policy is to exploit the potential for encouraging modal shift towards active travel by favouring developments which include design features and facilities that make it easy for people to walk and cycle for everyday journeys instead of travelling by car. Encouraging 'active travel' will help to minimise car use and support the CCC in fulfilling its legal duty under the *Active Travel (Wales) Act 2013* to develop, improve and maintain local walking and cycling networks.

4.4.5 Policy T2 relates to strategic rapid transit and bus corridors. It refers to bus corridor enhancements along the 'western bus corridor' which incorporates the A4055 Cardiff Road.

4.4.6 Policy T5 relates to managing transport impacts. The purpose of this policy is to ensure that all new developments for which planning permission is required will:

- Properly address the demand for travel and its impacts;
- Contribute to reducing reliance on the private car, in line with national planning policies and the strategic transport objectives and policies of the LDP;
- Make satisfactory provision for access, parking and circulation, particularly by pedestrians, cyclists, public transport users and disabled people with mobility impairments and particular access needs; and
- Avoid unacceptable harm to safe and efficient use and operation of the road, public transport and other movement networks and routes.

4.4.7 Policy T6 states that *"development will not be permitted which would cause unacceptable harm to the safe and efficient operation of the highway, public transport and other movement networks"*. This TA demonstrates that the proposed development will not have a significant impact on the operation of the highway network.

Managing Transportation Impacts (Incorporating Parking Standards) Supplementary Planning Guidance

4.4.8 This SPG was adopted in July 2018. It sets out CCC's approach to assessing and managing the transport impacts of developments and supplements the transport and other related policies in Cardiff's LDP.

4.4.9 The SPG refers to the *Manual for Streets* (MfS) user hierarchy in relation to access and circulation arrangements. This hierarchy advises that a development considers pedestrians first, followed by cyclists, public transport users, specialist service vehicles and finally other motor traffic. This is consistent with other local and national policy.

4.4.10 The SPG includes guidance notes and checklists for TAs; these have been referenced in the preparation of this TA. An Outline Travel Plan (TP) has been prepared with reference to the SPG.

4.4.11 Parking standards are identified in the document according to land use and location, with location split into 'Central' and 'Non-Central' areas. Whilst the site does not fall within CCC, it would likely be considered as a 'Non-Central' area, the standards for which are set out in Table P.9 of the SPG. Car parking standards are expressed as a 'maximum' and allow one space for one bedroom dwellings and two spaces for dwellings of two or more bedrooms Disabled parking should be provided in the car parking allocation.

4.4.12 The application of the car parking standards to the indicative housing mix in the DAS is included at **Section 3.5**.

4.4.13 Cycle parking standards are expressed as a 'minimum' and require one space per bedroom. The SPG states that residential cycle parking should be secure and sheltered. The shelter may be in the form of accommodation within buildings, in cycle sheds or other sheltered structures and can include cycle lockers or cages located in close proximity to the main building access. For houses, where cycle parking is not specifically accommodated within individual dwellings (e.g. where garages are not available), appropriate alternative secure and sheltered provision should be made. Where communal cycle parking is provided, it is often better to have several small groups of stands rather than one large facility. Cycle provision should be designed into a scheme from the outset to ensure adequate provision is made available from first occupation. Reference should be made to the *Cardiff Residential Design Guide* and other relevant guidance. Innovative approaches to cycle storage and facilities, such as two tier storage systems and lockers for cycle helmets, are encouraged.

Cardiff Residential Design Guidance Supplementary Planning Guidance

4.4.14 This SPG was adopted in January 2017. It outlines the issues that a design for new residential development in Cardiff should address as it seeks planning permission. In respect of transport, it includes specific guidance in regard to site layouts including street layouts, parking, highway design and provision for walking, cycling and public transport. These have been referenced in the design of the development.

Cardiff Local Transport Plan 2015–2020

4.4.15 The *Cardiff Local Transport Plan 2015-2020* (CCC LTP) identifies the key transport issues relevant to Cardiff, the high level interventions needed to address these and the specific priorities for the local authority to deliver in the plan period up to 2020, as well as looking forward to 2030. The LTP reflects the requirements of the *Active Travel (Wales) Act 2013* which places emphasis on improvements to pedestrian and cycle provision. As in this case of the VoG, CCC was formerly one of the ten constituent local authorities of the SEWTA, and prepared its LTP following the end of the SEWTA RTP five-year transport delivery programme.

4.4.16 A number of high level interventions are outlined in the LTP that target improvements to the strategic public transport network, the active travel network, and the highway network (in relation to supporting sustainable travel).

4.5 Summary

4.5.1 This section has discussed the planning policies at a national and local level considered relevant to the proposed development. National policy has an overarching emphasis on sustainability, and in relation to transport this includes the promotion of more sustainable and healthy forms of travel, as well as minimising the need to travel generally.

4.5.2 PPW states that planning applications *"must be determined in accordance with the adopted plan unless material considerations indicate otherwise"*.

4.5.3 It is considered that the proposed development will not conflict with local policy; it would instead conform to the transport planning policies in the VoG and CCC LDPs. Furthermore, it has been demonstrated that the site is accessible via a range of sustainable modes including walking, cycling and public transport. In summary, the proposals comply with national and local transport planning policies.

5. Trip Generation and Distribution

5.1 Introduction

5.1.1 This section of the TA sets out the methodology for calculating the trip generation of the proposed development for all modes of travel. It also sets out the method that was used for distributing vehicle trips onto the local highway network.

5.2 Weekday Trip Generation and Distribution

Introduction

5.2.1 There are generally two approaches to forecasting trip generation on all modes of travel. Under Method 1, vehicle trip rates are derived and then applied to a mode share derived for the local area, from which the trip generation on all modes can be calculated. Under Method 2, person trip rates (i.e. total trips) are derived, to which a mode share for the local area is applied.

5.2.2 For traffic impact assessment purposes, it is important to ensure that appropriate vehicle trip rates are applied; the forecasts on non-car modes are helpful in terms of identifying total travel demand and indicative TP targets, but generally do not influence traffic impact assessments. On this basis, Method 1 is considered the soundest method for the following reasons:

- The sites contained within the trip rate databases include surveyed vehicle movements as standard. However, surveyed sites do not always include data on the use of other modes of travel, offering less multi-modal survey sites. Method 1 therefore maximises the size of the dataset for consideration, whereas Method 2 can limit the availability of sites of appropriate criteria, i.e. in terms of scale, geography, car ownership, etc.
- Under Method 2, the vehicle trip rates are driven in part by the mode share for the local area. Mode shares are typically derived from either one of/a combination of local Census data or aggregated data from the National Travel Survey (NTS). In the case of the former, this only provides mode share data for commuting/business trips, which typically yields a higher car driver mode share and does not account for other trip purposes (e.g. education, leisure, shopping, etc) that typically have a lower car driver mode share than commuting/business trips. Whilst the NTS data does not have this issue, it is aggregated and therefore does not take account of local characteristics. In contrast, Method 1 uses vehicle trip rates derived directly from databases based on appropriate criteria, and also removes the potential for the 'skewing' effect discussed.

5.2.3 The subsequent sub-sections therefore set out vehicle and person trip generation on the basis of Method 1.

Vehicle Trip Generation

5.2.4 The vehicle trip generation of the proposed development has been forecast using trip rates derived from an interrogation of TRICS, the industry standard database. Sites meeting the following criteria have been selected, based on the TRICS guidance:

- 'Residential – Houses Privately Owned' dataset;
- Located in England and Wales (excluding Greater London), and on the 'Edge of Town';
- 50 to 500 dwellings;
- Car ownership levels of 1.1 to 1.5 cars/vans per dwelling; and
- No TP.

5.2.5 The car ownership band has been selected based on analysis of the 2011 Census data, specifically the 'QS416EW - Car or van availability' dataset. The analysis has been undertaken for the 'Cardiff 040' and 'The Vale of Glamorgan 006' Middle Super Output Areas (MSOAs); these MSOAs comprise the site/existing residential development neighbouring the site and are therefore considered to provide a good indication of levels of car ownership for the proposed development. The analysis is included at **Appendix D**. Whilst the average car ownership across the MSOAs has been identified as 1.2 cars/vans per dwelling, the highest level has been used for selection of parameters in TRICS to ensure derivation of robust trip rates. Sites with no TP have been selected to ensure that the impact of the proposed development is first considered without the effects of such mitigation proposals. The TRICS outputs are included at **Appendix E**.

5.2.6 The vehicle trip rates are summarised in **Table 5.1** and have been used to forecast the vehicle trip generation of the proposed development (250 dwellings), as shown in **Table 5.2**. The VoG and CCC did not comment on these trip rates in the responses to the TA Scoping Note; it is therefore considered that the rates are accepted for assessment purposes. Trip rates and generation for the 12-hour period (07:00-19:00) are also provided for purposes of comparison with football match days (see **Section 5.3**).

Table 5.1: Weekday Vehicle Trip Rates (per dwelling)

Time Period	Arrivals	Departures	Total
AM Peak Hour	0.155	0.375	0.530
PM Peak Hour	0.365	0.145	0.510
12-Hour	2.387	2.325	4.712

Table 5.2: Weekday Vehicle Trip Generation (250 dwellings)

Time Period	Arrivals	Departures	Total
AM Peak Hour	39	94	133
PM Peak Hour	91	36	128
12-Hour	597	581	1,178

Note: Summation errors due to rounding.

5.2.7 **Table 5.2** shows that the proposed development will generate around 130 vehicle trips during the AM and PM peak hours.

5.2.8 Analysis of the survey data has identified that the existing site land uses generate circa 30 two-way vehicle trips during the AM and PM peak hours. A proportion of these existing trips will be removed as part of the development of the site, but some existing commercial uses will remain. To ensure a robust approach, no discounting (to take account of the net increase in traffic generation) has been applied to the forecasts.

Person Trip Generation

5.2.9 Person trip generation has been calculated for information purposes and to inform indicative mode share targets for future preparation of a TP.

5.2.10 The mode share has been calculated using the 2011 Census 'Method of travel to work' dataset for the 'Cardiff 040' and 'The Vale of Glamorgan 006' MSOAs; these MSOAs comprise the site/existing residential development neighbouring the site and are therefore considered to provide a good indication of the mode share of the proposed residential development. However, this only covers trips for employment purposes. Trips for other purposes are likely to be more local and therefore have a higher share of sustainable modes such as walking. Further analysis was therefore undertaken of the NTS, which identified a significantly lower proportion of people 'driving a car or van'. This is potentially due to the inclusion of larger conurbations within the dataset where levels of walking, cycling and public transport are higher. An average of the two datasets has been calculated, as shown in **Table 5.3**, resulting in a mode share of 51% for 'driving a car or van'.

Table 5.3: Weekday Mode Share

Mode	Mode Share		
	2011 Census	NTS	Average
Public transport	14%	8%	11%
Taxi	0%	1%	1%
Motorcycle, scooter or moped	1%	0%	0%
Driving a car or van	62%	40%	51%
Passenger in a car or van	5%	21%	13%
Bicycle	4%	2%	3%
On foot	13%	27%	20%
Other	0%	1%	1%
Total	**100%**	**100%**	**100%**

Notes:

1. *Summation errors due to rounding.*
2. *2011 Census mode shares based on average of the 'Cardiff 040' and 'The Vale of Glamorgan 006' MSOAs.*
3. *NTS mode shares based on Table NTS0303 of the NTS, 2018.*

5.2.11 The average mode share in **Table 5.3** and the vehicle trip generation in **Table 5.2** have then been used to derive the trip generation on all modes, as shown in **Table 5.4**.

Table 5.4: Weekday Multi-Modal Trip Generation

Mode	Total Trips	
	AM Peak Hour	PM Peak Hour
Public transport	28	27
Taxi	2	2
Motorcycle, scooter or moped	1	1
Driving a car or van	133	128
Passenger in a car or van	34	33
Bicycle	8	7
On foot	51	49
Other	2	2
Total	**259**	**249**

Note: Summation errors due to rounding.

5.2.12 **Table 5.4** shows that the proposed development will generate around 260 and 250 person trips in the AM and PM peak hours respectively.

Traffic Distribution and Assignment

5.2.13 The distribution of development traffic has been based on analysis of the 2011 Census data, specifically the 'WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)' dataset. The analysis has been undertaken for the 'Cardiff 040' and 'The Vale of Glamorgan 006' MSOAs; these MSOAs comprise the site/existing residential development neighbouring the site and are therefore considered to provide the best available indication of the destinations of trips from the proposed development.

5.2.14 Traffic has been distributed taking account of the origin/destination and route choice (determined from journey times from online journey planner tools for the weekday peak hours). The analysis and derived distribution are included at **Appendix F**.

5.2.15 The assignment of traffic generated by the proposed development onto the local highway network during the AM and PM peak hours is shown in **Figures 5.1** and **5.2** respectively; this is for use in the 'Do-Nothing' assessment scenarios, discussed at **Section 6**. Traffic flows for the proposed development in the 'Do-Something' assessment scenarios (discussed at **Section 6**) are shown for the AM and PM peak hours in **Figures 5.3** and **5.4** respectively; these also demonstrate a reduction in traffic generation of the proposed development as a result of implementation of a TP.

5.3 Football Match Days

5.3.1 The VoG's response to the ES screening opinion stated that assessment should take account of traffic associated with football matches at CCFC. Football matches at CCFC primarily occur on weekends (typically on Saturday), outside of the weekday AM and PM peak hours, i.e. outside the periods typically used for assessment of residential land uses.

5.3.2 The peak traffic generation of residential land uses on weekends is significantly lower than the peak traffic generation on weekdays. To demonstrate this, trips rates for a Saturday have been derived from TRICS for a number of key periods, including the peak hour of generation, the hours pre and post-match (assuming a standard 15:00 match start) and the 12-hour period. The trip rates are shown in **Table 5.5**; these have been applied to the proposed development, as shown in **Table 5.6**. The TRICS outputs are included at **Appendix E**.

Table 5.5: Saturday Vehicle Trip Rates (per dwelling)

Time Period	Arrivals	Departures	Total
Peak Generation (12:00-13:00)	0.108	0.216	0.324
Football Match Days – Pre-Match (14:00-15:00)	0.118	0.118	0.236
Football Match Days – Post-Match (17:00-18:00)	0.147	0.137	0.284
12-Hour (07:00-19:00)	1.314	1.432	2.746

Table 5.6: Saturday Vehicle Trip Generation (250 dwellings)

Time Period	Arrivals	Departures	Total
Peak Generation (12:00-13:00)	27	54	81
Football Match Days – Pre-Match (14:00-15:00)	30	30	59
Football Match Days – Post-Match (17:00-18:00)	37	34	71
12-Hour (07:00-19:00)	329	358	687

Note: Summation errors due to rounding.

5.3.3 **Table 5.6** shows that, at its peak hour of generation on a Saturday, the proposed development is forecast to generate around 80 vehicle trips. During periods typically associated with football match days, the proposed development is forecast to generate around 60 and 70 vehicle trips during the hour immediately pre and post-match respectively. Over the 12-hour period, the proposed development is forecast to generate around 700 vehicle trips.

5.3.4 On comparison with **Table 5.2**, it can be seen that the vehicle trip generation of the proposed development during Saturday peak periods is forecast to be well below that of the weekday peak periods, ranging from around 50-75 fewer vehicle trips. Over the 12-hour period, the proposed development is forecast to generate 500 fewer vehicle trips on a Saturday than a weekday.

5.3.5 This TA considers the impact of the proposed development on the study area network during its peak hours of traffic generation, as is the industry normal practice, enabling Local Authorities to consider the worst-case traffic scenario. In this way, by default, the non-peak traffic impacts are considered acceptable. On football match days, the performance of the network and any capacity issues during associated hours is generally attributable to traffic to/from CCFC, which will have been considered acceptable to the VoG and CCC in its decision to grant planning consent to the CCFC stadium. The stadium application would have been rigorously tested to ensure that such a such a large scale development was located, as required by local and national policy, in a highly sustainable location. There is an existing wide range of high quality sustainable travel opportunities, with the stadium benefitting from a nearby train station, bus routes, and walking and cycling routes.

5.3.6 The traffic associated with the proposed development would account for a very small proportion of traffic on the network during these periods and would not result in a material change to conditions that are generally attributable to traffic to/from CCFC. This is considering a case where residents would continue to drive during match day conditions. Notwithstanding this immaterial level of traffic, the likely reality is that local residents will be aware of match days and plan their day-to-day needs accordingly. The local conditions on match days are such that residents may choose not to travel by car or select an alternative travel choice. This is in keeping with national and local policy to force a travel choice away from private car use, where driver convenience is no longer protected. The site is located adjacent to a sustainable travel network which will provide both match attendees and future residents with high quality alternatives to driving.

5.3.7 It is on this basis that no further assessment of the impact of the proposed development on football match days is considered to be required.

5.4 Summary

5.4.1 The vehicle trip generation of the proposed development has been forecast using trip rates derived from an interrogation of TRICS, the industry standard database; this is considered the soundest and nationally accepted method for deriving trip rates for traffic impact assessment purposes.

5.4.2 It is forecast that the proposed development will generate around 130 vehicle trips during the weekday AM and PM peak hours. Over the weekday 12-hour period (07:00-19:00), it is forecast that the proposed development will generate circa 1,200 vehicle trips.

5.4.3 Analysis of the survey data has identified that the existing site land uses generate circa 30 two-way vehicle trips during the AM and PM peak hours. A proportion of these existing trips will be removed as part of the development of the site, but some existing commercial uses will remain. To ensure a robust approach, no discounting (to take account of the net increase in traffic generation) has been applied to the forecasts.

5.4.4 The vehicle trip generation forecasts, in combination with mode share data derived from the Census/NTS, have been used to forecast the person trip generation of the proposed development, of around 260 and 250 person trips in the AM and PM peak hours respectively.

5.4.5 Development traffic has been distributed based on analysis of the 2011 Census data for the local area. Traffic has been distributed taking account of the origin/destination and route choice (determined from journey times from online journey planner tools for the weekday peak hours).

5.4.6 The vehicle trip generation of the proposed development on football match days has been examined. This is significantly lower than the peak generation on weekdays, the latter of which is used to inform the assessment of impact of the proposed development on the study area network, as is the industry normal practice. In this way, by default, the non-peak traffic impacts are considered acceptable. On football match days, the performance of the network and any capacity issues during associated hours is generally attributable to traffic to/from CCFC, which will have been considered acceptable to the VoG and CCC in its decision to grant planning consent to the CCFC stadium. The traffic associated with the proposed development would account for a very small proportion of traffic on the network during these periods and would not result in a material change to conditions that are generally attributable to traffic to/from CCFC.

6. Assessment Scenarios

6.1 Introduction

6.1.1 This section sets out the scenarios that have been developed for assessment of the impact of the proposed development on the study area network, in addition to the base year assessment.

6.1.2 The planning application is proposed to be submitted in 2020. The impact of the proposed development on the highway network has been assessed using two future years as follows:

- 2025: This is likely to be the point by which the proposed development will be complete, based on consent in 2020, commencement of construction in 2021 and a reasonable build-rate of 50-75 dwellings per year. Assessment of this year is considered appropriate in terms of determining the impact of the development proposals and any need for intervention/mitigation.
- 2030: This has been specifically requested by the VoG in its scoping correspondence. Assessment of this year has been included for information purposes only. It is not considered an appropriate measure of development impact and requirements for mitigation, given it is four years after the end of the LDP (2026) for the VoG and CCC, and therefore beyond reasonable forecasts for housing and employment growth. This future scenario is usually deemed appropriate for a strategic site or large scale development; applying this to a small scale development some five years after completion only serves to assess traffic growth on the network and not development impact.

6.1.3 The impact of the development proposals has been assessed for the future years both without (Do-Minimum) and with the development proposals (Do-Nothing). A further scenario has been tested that considers the impact of the development proposals with intervention/mitigation (Do-Something). The 'Do-Something' scenarios initially include a reduction in traffic generation of the proposed development as a result of the implementation of a TP; a TP will be secured by planning condition. A reduction of 10% is considered reasonable; it is consistent with content of the Smarter Choices' report *Changing the way we travel* (2004) and well within CCC's aspirations to achieve a mode split of 50:50 by 2026 between trips by car and sustainable travel (walking, cycling and public transport). TPs are policy requirement and their effect on changing travel behaviour at the onset of a new home life is recognised nationally. Therefore, the reduction in traffic as a result of commitment to a TP is considered reasonable and appropriate. Where further intervention/mitigation in addition to the TP is required (e.g. to mitigate development impact at individual junctions) this has been identified and discussed as appropriate.

6.1.4 All future year scenarios include traffic growth, based on growth factors derived from TEMPro (Version 7.2), and traffic from neighbouring 'committed development'. The assessment scenarios are summarised in **Table 6.1**. The development of these scenarios is set out in **Sections 6.2** to **6.10.**

Table 6.1: Assessment Scenarios

No.	Name	Description
1	2019 Base	Existing traffic flows on the study area network.
2	2025 Do-Minimum	Includes traffic growth and traffic from committed development (and associated infrastructure).
3	2025 Do-Nothing	Scenario 2 + proposed development (without intervention/mitigation).
4	2025 Do-Something	Scenario 3 + intervention/mitigation (10% reduction in traffic generation of proposed development).
5	2030 Do-Minimum	Includes traffic growth and traffic from committed development (and associated infrastructure).
6	2030 Do-Nothing	Scenario 5 + proposed development (without intervention/mitigation).
7	2030 Do-Something	Scenario 6 + intervention/mitigation (10% reduction in traffic generation of proposed development).

6.2 TEMPro Growth

6.2.1 To develop the future year assessment scenarios has required the application of traffic growth factors obtained from TEMPro (Version 7.2); this is an industry standard approach. The TEMPro program is based on the National Trip End Model (NTEM) and takes into account changes in car ownership and local planning forecasts regarding housing and employment.

6.2.2 The study area comprises parts of the highway network within the 'Cardiff 040', 'The Vale of Glamorgan 004' and 'The Vale of Glamorgan 006' MSOAs. The majority of the surveyed locations fall within an 'Urban' area and are generally either a 'Minor' or 'Principal' road type under the TEMPro classification. The growth factors for these MSOAs selection parameters are summarised in **Table 6.2**.

Table 6.2: TEMPro Growth Factors – Analysis of MSOAs and Road Types

Growth Period	Time Period	MSOA	Growth Factors by Road Type		
			Urban Principal	Urban Minor	Average
2019-2025	Weekday AM Peak (07:00-10:00)	Cardiff 040	1.083	1.085	1.084
		The Vale of Glamorgan 004	1.063	1.065	1.064
		The Vale of Glamorgan 006	1.058	1.060	1.059
		Average	**1.068**	**1.070**	**1.069**
	Weekday PM Peak (16:00-19:00)	Cardiff 040	1.079	1.080	1.079
		The Vale of Glamorgan 004	1.063	1.065	1.064
		The Vale of Glamorgan 006	1.059	1.061	1.060
		Average	**1.067**	**1.069**	**1.068**
2019-2030	Weekday AM Peak (07:00-10:00)	Cardiff 040	1.141	1.147	1.144
		The Vale of Glamorgan 004	1.100	1.106	1.103
		The Vale of Glamorgan 006	1.092	1.098	1.095
		Average	**1.111**	**1.117**	**1.114**
	Weekday PM Peak (16:00-19:00)	Cardiff 040	1.133	1.139	1.136
		The Vale of Glamorgan 004	1.101	1.107	1.104
		The Vale of Glamorgan 006	1.094	1.100	1.097
		Average	**1.109**	**1.115**	**1.112**

6.2.3 **Table 6.2** shows that the highest level of growth is forecast for the 'Cardiff 040' MSOA; this MSOA includes all surveyed junctions along the B4267 Leckwith Road between the Leckwith Interchange and the B4267 Leckwith Road/Sloper Road/Broad Street junction (five surveyed junctions along the corridor plus one junction off the corridor). 'The Vale of Glamorgan 004' MSOA, which is forecast to experience the second largest growth of the MSOAs comprising the study area, includes three surveyed junctions (the B4267 Leckwith Road/UHL, Merrie Harrier and Barons Court junctions). The 'Vale of Glamorgan 006' MSOA, which is forecast to experience the lowest growth of the MSOAs comprising the study area, includes two surveyed junctions (the B4267 Leckwith Road/Access to Industrial Uses and Ely Trail and B4267 Leckwith Road/Pen-y-Turnpike Road junctions).

6.2.4 In view of the highest number of junctions being located within the 'Cardiff 040' MSOA, it is considered appropriate for the assessment to utilise growth forecasts for this area. These forecasts are also the highest of the MSOAs comprising the study area and will ensure a highly robust assessment of traffic growth across the study area network as a whole. An average of the factors for the 'Minor' and 'Principal' road types has been taken, which is considered reasonable given the mix of road types in the study area. **Table 6.3** summarises the traffic growth forecasts for use in the assessment.

Table 6.3: TEMPro Growth Factors – For Assessment Use

Growth Period	Time Period	
	Weekday AM Peak (07:00-10:00)	Weekday PM Peak (16:00-19:00)
2019-2025	1.084	1.079
2019-2030	1.144	1.136

Note: Growth factors are an average of the 'Principal' and 'Minor' road type in the 'Urban' area type in the 'Cardiff 040' MSOA.

6.3 Committed Development

6.3.1 The future year scenarios include a number of 'committed' developments; these include sites that are allocated in the LDPs for both the VoG and CCC, and sites that have been granted planning permission. Sites within the study area/a short distance of the study area boundary have been considered. **Appendix I** provides a map and list of committed development sites that have been considered and summarises the approach taken in terms of inclusion in assessment. Where possible, traffic flows for the committed developments have been applied directly to the study area network based on the TA/TS included in the respective planning submissions. Where insufficient information is available, it is considered that traffic associated with these sites is accounted for in TEMPro forecasts for housing growth, given their status as consented or allocated development.

6.3.2 **Appendix G** includes traffic flow diagrams for the individual committed developments that have been applied directly to the study area network. The combined traffic flows for these developments during the AM and PM peak hours are shown in **Figures 6.1** and **6.2** respectively.

6.4 Derivation of Traffic Flows

Scenario 1 – 2019 Base

6.4.1 A base year of 2019 has been selected to represent current operational conditions, based on the year of the traffic data collection. The '2019 Base' traffic flows for the AM and PM peak hours are shown in **Figures 2.2** and **2.3** respectively.

Scenario 2 – 2025 Do-Minimum

6.4.2 The assessment year of 2025 represents when the proposed development is likely to be complete. The 2019-2025 growth factors in **Table 6.3** have been applied to the '2019 Base' traffic flows in **Figures 2.4** and **2.5**. The committed development traffic flows in **Figures 6.1** and **6.2** have then been added. The resulting '2025 Do-Minimum' traffic flows for the AM and PM peak hours are shown in **Figures 6.3** and **6.4** respectively.

Scenario 3 – 2025 Do-Nothing

6.4.3 The proposed development traffic flows (without intervention/mitigation) in **Figures 5.1** and **5.2** have been added to the '2025 Do-Minimum' traffic flows in **Figures 6.3** and **6.4** respectively. The resulting '2025 Do-Nothing' traffic flows for the AM and PM peak hours are shown in **Figures 6.5** and **6.6** respectively.

Scenario 4 – 2025 Do-Something

6.4.4 The proposed development traffic flows (with intervention/mitigation) in **Figures 5.3** and **5.4** have been added to the '2025 Do-Minimum' traffic flows in **Figures 6.3** and **6.4** respectively. The resulting '2025 Do-Nothing' traffic flows for the AM and PM peak hours are shown in **Figures 6.7** and **6.8** respectively.

Scenario 5 – 2030 Do-Minimum

6.4.5 The 2019-2030 growth factors in **Table 6.3** have been applied to the '2019 Base' traffic flows in **Figures 2.4** and **2.5**. The committed development traffic flows in **Figures 6.1** and **6.2** have then been added. The resulting '2030 Do-Minimum' traffic flows for the AM and PM peak hours are shown in **Figures 6.9** and **6.10** respectively.

Scenario 6 – 2030 Do-Nothing

6.4.6 The proposed development traffic flows (without intervention/mitigation) in **Figures 5.1** and **5.2** have been added to the '2030 Do-Minimum' traffic flows in **Figures 6.9** and **6.10** respectively. The resulting '2030 Do-Nothing' traffic flows for the AM and PM peak hours are shown in **Figures 6.11** and **6.12** respectively.

Scenario 7 – 2030 Do-Something

6.4.7 The proposed development traffic flows (with intervention/mitigation) in **Figures 5.3** and **5.4** have been added to the '2030 Do-Minimum' traffic flows in **Figures 6.9** and **6.10** respectively. The resulting '2025 Do-Nothing' traffic flows for the AM and PM peak hours are shown in **Figures 6.13** and **6.14** respectively.

6.5 Summary

6.5.1 This section of the TA has aimed to set out the derivation of scenarios for assessment of the impact of the proposed development on the study area network.

6.5.2 Assessment year traffic flows have been determined through the factoring up of 2019 traffic surveys to the assessment years of 2025 and 2030, and manually adding local committed development to create traffic flows for future year 'Do-Minimum' scenarios. Proposed development traffic has then been applied to derive 'Do-Nothing' scenarios, which show development impact without intervention/mitigation. A further scenario has been tested that considers the impact of the development proposals with intervention/mitigation (Do-Something). The 'Do-Something' scenarios initially includes a reduction in traffic generation of the proposed development as a result of the implementation of a TP.

6.5.3 The assessment year of 2025 is likely to be the point by which the proposed development will be complete. Assessment of this year is considered appropriate in terms of determining the impact of the development proposals and any need for intervention/mitigation. An assessment year of 2030 has been included for information purposes only, but is not considered an appropriate measure of development impact or for establishing the requirements for mitigation, given it is four years after the end of the LDP (2026) for the VoG and CCC, five years after development completion and therefore beyond reasonable forecasts for housing and employment growth.

7. Traffic Impact Assessment

7.1 Introduction

7.1.1 The TA has considered the impact of the proposed development on the operation of the highway network through an examination of the changes in traffic flows and capacity assessment of a number of junctions during the weekday AM and PM peak hours, based on discussions with the VoG and CCC.

7.2 Changes in Traffic Flows

7.2.1 Changes in traffic flows have been examined to identify appropriate junctions for capacity assessment. The junctions examined are as per those listed at paragraph 2.4.2, with the exception of the B4267 Leckwith Road/Access to Industrial Uses and Ely Trail junction (Junction 7), which will be removed as part of the proposed site access arrangements.

7.2.2 **Table 7.1** summarises the percentage changes in traffic flows at the junctions between the 'Do-Minimum' and 'Do-Nothing' scenarios during the AM and PM peak hours respectively. These are shown for the change in total traffic entering the junctions and maximum change on any one arm (as per the general approach set out in TAN 18); a full breakdown is included at **Appendix H**. The percentage changes are presented for the 2025 assessment year, which is considered the appropriate point at which to determine development impact given this is when the development is envisaged to be complete. This also provides a 'worst-case' in terms of percentage impact given the changes in traffic flows will be assessed without intervention/mitigation and against a lower baseline (when compared with 2030).

Table 7.1: Percentage Change in Traffic from '2025 Do-Minimum' to '2025 Do-Something' Scenarios

Junction		AM Peak Hour		PM Peak Hour	
No.	Description	Maximum Change on Any One Arm	Total Traffic Entering Junction	Maximum Change on Any One Arm	Total Traffic Entering Junction
1	B4267 Leckwith Road / Sloper Road / Broad Street	+3%	+1%	+2%	+1%
2	B4267 Leckwith Road / Lawrenny Avenue	+3%	+2%	+2%	+2%
3	B4267 Leckwith Road / Ffordd Fred Keenor	+2%	+2%	+2%	+2%
4	Ffordd Fred Keenor / Access to CCFC and P&R	+0%	+0%	+0%	+0%
5	B4267 Leckwith Road / Brian Clarke Way/CISC	+2%	+2%	+2%	+1%
6	Leckwith Interchange	+7%	+3%	+5%	+1%
8	B4267 Leckwith Road / Pen-y-Turnpike Road	+3%	+1%	+5%	+1%
9	B4267 Penlan Road / UHL	+1%	+1%	+2%	+1%
10	Merrie Harrier	+1%	+0%	+1%	+0%
11	Barons Court	+1%	+0%	+0%	+0%

7.2.3 **Table 7.1** shows that the proposed development is forecast to result in increases of no more than 3% in terms total traffic entering each junction. In terms of the maximum change on any one arm, the increases are generally of no more than 3%, with the exception of Leckwith Interchange, which is forecast to experience a maximum increase of 7% and 5% on during the AM and PM peak hours respectively (on the B4267 Leckwith Road (Southwest) arm), and the B4267 Leckwith Road/Pen-y-Turnpike Road junction, which is forecast to experience a maximum increase of 5% during the PM peak hour (on the Pen-y-Turnpike Road arm). The maximum increase on any one arm at Merrie Harrier is forecast to be no more than 1%, which is imperceptible against daily traffic at that location.

7.3 Capacity Assessment

7.3.1 The scoping note stated that capacity assessment would be considered for junctions that experience increases in traffic of 5% or more on any one arm (as per the general approach set out in TAN 18). On this basis, it is considered appropriate to undertake assessment for the Leckwith Interchange and B4267 Leckwith Road/Pen-y-Turnpike Road junction.

7.3.2 In addition, the VoG has requested in its scoping response that assessment be undertaken at Merrie Harrier. Whilst the proposed development is forecast to generate only 7 vehicle movements at this junction during the AM and PM peak hours, it is noted that VoG's policies consider there to be capacity issues at Merrie Harrier and therefore capacity assessment has been undertaken as confirmation of level of impact from the proposed development.

7.3.3 The B4267 Leckwith Road/Pen-y-Turnpike Road junction has been modelled using the Transport Research Laboratories (TRL) software program 'Junctions 9'. The model has been prepared based on Ordnance Survey (OS) plans and satellite mapping. The operational performance of the junctions is summarised for all approach arms/movements in terms of their ratio of flow/capacity (RFC) and queue length in Passenger Car Units (PCUs). Priority junctions are typically considered to operate satisfactorily in terms of capacity when the RFC is below 0.85 (practical capacity). An RFC value of 1.00 represents a theoretical absolute capacity.

7.3.4 The Leckwith Interchange and Merrie Harrier have been modelled using the JCT Consultancy software program 'LinSig'. The models have been prepared based on drawings and specifications supplied by the VoG and CCC, with appropriate cycle times and operation applied based on a review of the specifications and traffic survey footage. The models for the testing of site access designs have been prepared based on scheme drawings (see **Appendix I** for initial design and **Appendix C** for proposed design) and the specifications developed with reference to best practice guidance. Further discussion of model preparation for these junctions is discussed in the corresponding sub-sections.

7.3.5 The operational performance of the signal-controlled junctions is summarised at all stop lines (i.e. those entering the junction and the circulatory) in terms of Degree of Saturation (DoS), expressed as a percentage, and queue length in PCUs; where more than one lane is available, the maximum values have been reported. Lanes are considered to operate at practical capacity when their DoS is at 90%. Models of signal-controlled junctions also provide a Practical Reserve Capacity (PRC) value for the junction as a whole, with a positive percentage meaning that the junction is operating within practical capacity (i.e. DoS of under 90% on all arms), and a negative percentage meaning that the junction is operating above practical capacity (i.e. DoS of over 90% on one or more lanes/arms). Absolute capacity is defined as a DoS of 100%. The models have been optimised for PRC.

7.3.6 The results presented in this analysis are considered a 'worst-case', as they do not take account of the potential for a reduction in background traffic, associated with CCC's aspirations to achieve a mode split of 50:50 between trips by car and sustainable travel (walking, cycling and public transport) by 2026

7.4 Junction 6 – Leckwith Interchange

Introduction

7.4.1 Leckwith Interchange comprises two signal controllers as follows:

- Controller 1: This controls the entries from Hadfield Road and the A4232 northbound off-slip and associated ISLs on the circulatory of the junction. This operates with separate stage streams, one controlling movements from Hadfield Road and one controlling movements from the A4232 northbound off-slip. Both stage streams comprise two stages.

- Controller 2: This controls the entries from the B4267 Leckwith Road (north-eastern and south-western arms) and the A4232 southbound off-slip and associated ISLs on the circulatory of the junction. This operates with three stage streams, one controlling movements from the B4267 Leckwith Road (Northeast), one controlling movements from the B4267 Leckwith Road (Southwest), and one controlling movements from the A4232 southbound off-slip. All stage streams comprise two stages.

7.4.2 Based on a review of the specification supplied by CCC and the survey footage supplied for the weekday AM and PM peak hours, it is identified that the streams within each controller operate on a fixed cycle time of 60 seconds during these periods, but with variations in green time allocations between peak periods. The base models have been calibrated and validated using these timings, derived from the specification. Whilst timings are fixed, it is reasonable to assume that CCC, as the LHA, would periodically review the performance of the junctions and update the fixed timing plans to better accommodate changes in traffic flows. Future year scenarios have therefore been optimised in the models to ensure a like-for-like comparison.

7.4.3 The model output report for the capacity assessment is reproduced at **Appendix J**. The following subsections set out the results of the capacity assessment.

2019 Base

7.4.4 **Table 7.2** sets out the results of the capacity assessment for Leckwith Interchange for the '2019 Base' scenario during the AM and PM peak hours. The arm numbering/naming convention reported in the table reflects that shown in the model structure.

Table 7.2: Leckwith Interchange Capacity Assessment Results – 2019 Base Year

Arm		AM Peak Hour		PM Peak Hour	
		DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
2	B4267 (NE)	50.4	6	82.5	10
16	ISL (SE)	41.4	10	69.6	12
5	Hadfield Road	40.3	3	98.6	23
17	ISL (SW)	45.4	5	66.7	9
8	A4232 NB Off-Slip	41.5	4	80.1	8
18	ISL (W)	27.8	8	60.5	7
11	B4267 (SW)	94.3	18	74.9	7
19	ISL (N)	46.7	5	41.7	2
14	A4232 SB Off-Slip	67.8	8	58.8	5
15	ISL (E)	54.9	6	25.1	2
PRC (%)		**-4.8**		**-9.5**	

Notes: N = North. E = East. NE = Northeast. SE = Southeast. SW = Southwest. NB = Northbound. SB = Southbound.

7.4.5 **Table 7.2** shows that the junction currently operates within practical capacity on all arms during the AM and PM peak hours, with the exception of Arm 11 during the AM peak hour, and Arm 5 during the PM peak hour. Both arms operate within absolute capacity.

7.4.6 To confirm the results presented in **Table 7.2**, a comparison has been undertaken of the level of queueing reported by the model and that observed during the traffic surveys, as shown in **Table 7.3**. The observed queue that is reported is an average of the maximum queues recorded during 5-minute intervals in the AM and PM peak hours. Queue lengths on the circulatory were not recorded in the survey and therefore the comparison is provided for the approach arms only.

Table 7.3: Leckwith Interchange – Comparison of Observed and Model Queues

Arm		Queue (PCUs)			
		AM Peak Hour		PM Peak Hour	
		Observed	Model	Observed	Model
2	B4267 (NE)	10	6	11	10
5	Hadfield Road	5	3	17	23
8	A4232 NB Off-Slip	4	4	7	8
11	B4267 (SW)	12	18	10	7
14	A4232 SB Off-Slip	12	8	7	5

Notes: N = North. E = East. NE = Northeast. SE = Southeast. SW = Southwest. NB = Northbound. SB = Southbound.

7.4.7 **Table 7.3** shows that, during the AM peak hour, the model slightly underestimates queueing on the B4267 Leckwith Road (Northeast), Hadfield Road and the A4232 southbound off-slip (by up to 4 PCUs), but slightly overestimates queueing on the B4267 Leckwith Road (Southwest) (by 4 PCUs). During the PM peak hour, the model slightly underestimates queueing on the B4267 Leckwith Road (both approaches) and A4232 southbound off-slip (by up to 3 PCUs), but slightly overestimates queueing on Hadfield Road (by 6 PCUs) and the A4232 northbound off-slip (by 1 PCUs). These differences between observed and model queues are of a reasonable level and therefore the model is considered robust and appropriate for the future year assessment scenarios.

2025 Assessment Scenarios

7.4.8 **Table 7.4** sets out the results of the capacity assessment for Leckwith Interchange in the 2025 assessment scenarios during the AM and PM peak hours. The arm numbering/naming convention reported in the table reflects that shown in the model structure.

Table 7.4: Leckwith Interchange Capacity Assessment Results – 2025 Assessment Scenarios

Scenario	Arm		AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
Do-Minimum	2	B4267 (NE)	58.3	7	59.9	8
	16	ISL (SE)	46.5	9	61.7	10
	5	Hadfield Road	43.9	4	73.5	9
	17	ISL (SW)	45.6	5	74.0	8
	8	A4232 NB Off-Slip	41.1	4	76.0	9
	18	ISL (W)	69.1	7	74.3	7
	11	B4267 (SW)	70.0	7	73.7	8
	19	ISL (N)	53.4	7	50.0	4
	14	A4232 SB Off-Slip	69.6	8	57.2	6
	15	ISL (E)	59.6	9	46.7	2
	PRC (%)		**28.6**		**18.5**	

Scenario	Arm		AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
Do-Nothing	2	B4267 (NE)	57.9	6	63.6	9
	16	ISL (SE)	45.7	10	65.4	13
	5	Hadfield Road	43.7	4	72.5	8
	17	ISL (SW)	49.7	6	76.0	7
	8	A4232 NB Off-Slip	44.6	4	77.4	9
	18	ISL (W)	69.6	7	67.6	7
	11	B4267 (SW)	73.0	7	77.4	7
	19	ISL (N)	53.8	8	55.5	5
	14	A4232 SB Off-Slip	72.8	8	58.8	6
	15	ISL (E)	57.6	9	46.3	2
	PRC (%)		**23.3**		**16.3**	
Do-Something	2	B4267 (NE)	58.3	7	60.6	8
	16	ISL (SE)	47.1	9	64.8	13
	5	Hadfield Road	44.3	4	73.6	9
	17	ISL (SW)	47.2	3	75.6	9
	8	A4232 NB Off-Slip	41.1	4	77.9	9
	18	ISL (W)	73.3	7	74.7	7
	11	B4267 (SW)	72.6	7	76.3	8
	19	ISL (N)	54.7	7	63.3	4
	14	A4232 SB Off-Slip	70.7	8	49.4	5
	15	ISL (E)	61.0	10	50.8	3
	PRC (%)		**22.8**		**15.6**	

Notes: N = North. E = East. NE = Northeast. SE = Southeast. SW = Southwest. NB = Northbound. SB = Southbound.

7.4.9 The result show that, in the 'Do-Minimum' scenario, an improvement in junction performance is forecast, with positive PRC values in the AM (28.6%) and PM (18.5%) peak hours compared to negative PRC values in the '2019 Base' scenario. This is primarily due to the effects of anticipated fixed signal time validation by CCC as local traffic conditions change over the intervening years. As set out above, all future year scenarios have used optimised signal timings to reflect likely amendments to signal timings and to ensure a 'like-for-like' comparison of development traffic impacts. All arms are forecast to operate well within practical capacity.

7.4.10 The introduction of development traffic in the 'Do-Nothing' scenario is not forecast to have a significant impact, with the operation forecast to be much the same as the 'Do-Minimum' scenario. There are localised improvements and worsening in DoS and queue length values across the junction, due to the effect of signal time optimisation; changes in DoS and queueing are generally of no more than 5% and 1 PCU respectively. Overall, junction performance does deteriorate, as PRC values are shown to decrease from 28.6% to 23.3% in the AM peak hour, and from 18.5% to 16.4% in the PM peak hour; however, all arms still operate within practical capacity

7.4.11 In the 'Do-Something' scenario, the junction is forecast to operate similarly to the 'Do-Nothing' scenario. Whilst there is a reduction in traffic flows (from intervention/mitigation), there is a slight deterioration in overall junction performance due to the effect of signal time optimisation, with PRC values decreasing to 22.8% in the AM peak hour and 15.6% in the PM peak hour. However, when compared with the 'Do-Minimum' scenario, the changes in DoS and queueing are generally of no more than 5% and 1 PCU respectively.

7.4.12 On the basis of this analysis, the effect of the proposed development on the junction in 2025 is not considered to be significant.

2030 Assessment Scenarios

7.4.13 **Table 7.5** sets out the results of the capacity assessment for Leckwith Interchange in the 2030 assessment scenarios during the AM and PM peak hours. The arm numbering/naming convention reported in the table reflects that shown in the model structure.

Table 7.5: Leckwith Interchange Capacity Assessment Results – 2030 Assessment Scenarios

Scenario	Arm		AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
Do-Minimum	2	B4267 (NE)	62.4	7	58.5	8
	16	ISL (SE)	47.8	11	66.1	13
	5	Hadfield Road	45.3	4	74.2	9
	17	ISL (SW)	47.9	6	76.6	9
	8	A4232 NB Off-Slip	42.1	4	77.4	9
	18	ISL (W)	71.7	7	76.1	7
	11	B4267 (SW)	72.8	7	78.1	8
	19	ISL (N)	57.8	7	55.8	4
	14	A4232 SB Off-Slip	71.3	8	55.6	6
	15	ISL (E)	60.3	10	52.4	3
		PRC (%)	**23.6**		**15.2**	
Do-Nothing	2	B4267 (NE)	65.4	8	62.9	9
	16	ISL (SE)	51.8	9	66.1	14
	5	Hadfield Road	58.0	6	77.2	9
	17	ISL (SW)	54.3	9	78.6	9
	8	A4232 NB Off-Slip	46.4	4	78.2	9
	18	ISL (W)	75.3	7	69.2	7
	11	B4267 (SW)	78.4	9	78.5	8
	19	ISL (N)	52.4	7	60.7	5
	14	A4232 SB Off-Slip	74.9	9	58.0	6
	15	ISL (E)	61.9	6	51.0	3
		PRC (%)	**14.8**		**14.5**	
Do-Something	2	B4267 (NE)	61.8	7	59.9	8
	16	ISL (SE)	47.0	9	65.2	13
	5	Hadfield Road	46.2	4	78.0	10
	17	ISL (SW)	51.3	5	78.0	10
	8	A4232 NB Off-Slip	46.4	4	79.3	9
	18	ISL (W)	74.2	7	79.0	7
	11	B4267 (SW)	75.7	8	77.5	8
	19	ISL (N)	58.4	8	54.8	4
	14	A4232 SB Off-Slip	72.9	8	59.0	6
	15	ISL (E)	59.7	9	56.6	3
		PRC (%)	**18.9**		**13.5**	

Notes: N = North. E = East. NE = Northeast. SE = Southeast. SW = Southwest. NB = Northbound. SB = Southbound.

7.4.14 The result show that, in the 'Do-Minimum' scenario, the junction is forecast to operate within practical capacity, with PRC values of 23.6% and 15.2% during the AM and PM peak hours respectively.

7.4.15 The introduction of development traffic in the 'Do-Nothing' scenario is not forecast to have a significant impact, with the operation forecast to be much the same as the 'Do-Minimum' scenario. There are localised improvements and worsening in performance across the junction, due to the effect of signal time optimisation. Whilst DoS values increase by up to 13% on some arms, this equates to an increase in queue length values of only 2 PCUs. Overall, junction performance does deteriorate, as PRC values are shown to decrease from 23.6% to 14.8% in the AM peak hour, and from 15.2% to 14.5% in the PM peak hour; however, all arms still operate within practical capacity

7.4.16 In the 'Do-Something' scenario, the junction is forecast to operate similarly to the 'Do-Nothing' scenario. With the reduction in traffic flows (from intervention/mitigation), there is a slight improvement in overall junction performance in the AM peak hour, but a slight deterioration in the PM peak hour due to the effects of signal time optimisation, with PRC values increasing to 18.9% in the AM peak hour and decreasing to 13.5% in the PM peak hour. However, when compared with the 'Do-Minimum' scenario, the changes in DoS and queueing are generally of no more than 5% and 1 PCU respectively.

7.4.17 On the basis of this analysis, the effect of the proposed development on the junction in 2030 is not considered to be significant.

7.5 Junction 8 – B4267 Leckwith Road/Pen-y-Turnpike Road

7.5.1 The model output reports for the capacity assessment are reproduced at **Appendix K**. The following subsections set out the results of the capacity assessment.

2019 Base

7.5.2 **Table 7.6** sets out the results of the capacity assessment for the B4267 Leckwith Road/Pen-y-Turnpike Road junction for the '2019 Base' scenario during the AM and PM peak hours.

Table 7.6: B4267 Leckwith Road/Pen-y-Turnpike Road Junction Capacity Assessment Results – 2019 Base Year

Movement	AM Peak Hour		PM Peak Hour	
	Queue (PCUs)	RFC	Queue (PCUs)	RFC
B-AC	213	1.49	2	0.52
C-AB	1	0.18	96	1.19

Notes: Arm A = B4267 (Southeast). Arm B = Pen-y-Turnpike Road. Arm C = B4267 (Northwest).

7.5.3 The results in **Table 7.6** suggest that the junction currently operates well in excess of absolute capacity on Pen-y-Turnpike Road and the B4267 Leckwith Road (Northwest) during the AM and PM peak hours respectively. To confirm the results presented in **Table 7.6**, a comparison has been undertaken of the level of queueing reported by the model and that observed during the traffic surveys, as shown in **Table 7.7**. The observed queue that is reported is an average of the maximum queues recorded during 5-minute intervals in the AM and PM peak hours.

Table 7.7: B4267 Leckwith Road/Pen-y-Turnpike Road Junction – Comparison of Observed and Model Queues

Arm	Queue (PCUs)			
	AM Peak Hour		PM Peak Hour	
	Observed	Model	Observed	Model
Pen-y-Turnpike Road	15	213	1	1
B4267 (Northwest)	3	1	15	96

7.5.4 **Table 7.7** shows that the model significantly overestimates queueing on Pen-y-Turnpike Road during the AM peak hour (by 198 PCUs) and the B4267 Leckwith Road (Northwest) during the PM peak hour (by 81 PCUs). This is not an acceptable level of variance between observed and model queues in a 'base' model, and that, without calibration, the model is not suitable for use in future year assessment scenarios and identification of development impact.

7.5.5 Adjustments have therefore been made to the model to ensure that performance in the '2019 Base' scenario is representative of observed operation. This has involved an iterative process in which intercept adjustments have been applied to movements to reflect observed queueing. **Table 7.8** sets out the results of the capacity assessment for the B4267 Leckwith Road/Pen-y-Turnpike Road junction for the '2019 Base' scenario during the AM and PM peak hours, with the calibrated model.

Table 7.8: B4267 Leckwith Road/Pen-y-Turnpike Road Junction Capacity Assessment Results – 2019 Base Year (Calibrated Model)

Movement	AM Peak Hour		PM Peak Hour	
	Queue (PCUs)	RFC	Queue (PCUs)	RFC
B-AC	15	0.97	1	0.27
C-B	1	0.15	15	0.97

Notes: Arm A = B4267 (Southeast). Arm B = Pen-y-Turnpike Road. Arm C = B4267 (Northwest).

7.5.6 **Table 7.8** shows that, following calibration, the model reports that the junction exceeds practical capacity on Pen-y-Turnpike Road and the B4267 Leckwith Road (Northwest) during the AM and PM peak hours respectively. The differences between observed and model queues are of a reasonable level and therefore the calibrated model is considered robust and appropriate for the future year assessment scenarios. As observed in the traffic surveys, the storage for right-turn movements from the B4267 Leckwith Road (Northwest) is approaching capacity during the AM peak hour.

2025 Assessment Scenarios

7.5.7 **Table 7.9** sets out the results of the capacity assessment for the B4267 Leckwith Road/Pen-y-Turnpike Road junction in the 2025 assessment scenarios during the AM and PM peak hours.

Table 7.9: B4267 Leckwith Road/Pen-y-Turnpike Road Junction Capacity Assessment Results – 2025 Assessment Scenarios

Scenario	Movement	AM Peak Hour		PM Peak Hour	
		Queue (PCUs)	RFC	Queue (PCUs)	RFC
Do-Minimum	B-AC	38	1.05	1	0.32
	C-B	1	0.16	37	1.06
Do-Nothing	B-AC	41	1.06	1	0.34
	C-B	1	0.18	39	1.07
Do-Something	B-AC	41	1.06	1	0.34
	C-B	1	0.17	39	1.07

Notes: Arm A = B4267 (Southeast). Arm B = Pen-y-Turnpike Road. Arm C = B4267 (Northwest).

7.5.8 The results show that, in the 'Do-Minimum' scenario, performance is forecast to deteriorate, with absolute capacity exceeded on Pen-y-Turnpike Road and the B4267 Leckwith Road (Northwest) during the AM and PM peak hours respectively. In the case of the latter, this relates to the right-turn movement to Pen-y-Turnpike Road, with the forecast queue length during the AM peak hour (38 PCUs) exceeding the available storage (17 PCUs); this is a capacity issue that exists prior to the introduction of development traffic.

7.5.9 The introduction of development traffic in the 'Do-Nothing' scenario is not forecast to have a significant impact, with the operation forecast to be much the same as the 'Do-Minimum' scenario. There are increases in RFC of up to 0.02, resulting in increases in queueing of no more than 3 PCUs. Performance in the 'Do-Something' scenario is unchanged to the 'Do-Nothing' scenario, with the exception of a marginal decrease in RFC (of 0.01) on the B4267 Leckwith Road (Northwest) during the AM peak hour, but this does not result in a change in queueing.

7.5.10 On the basis of this analysis, the effect of the proposed development on the junction in 2025 is not considered to be significant. It is recognised that there are capacity issues at the junction in 2025, but these exist prior to the introduction of development traffic. The introduction of development traffic (an additional 26 and 25 movements during the AM and PM peak hours respectively) does not result in a material change in operational performance.

2030 Assessment Scenarios

7.5.11 **Table 7.10** sets out the results of the capacity assessment for the B4267 Leckwith Road/Pen-y-Turnpike Road junction in the 2030 assessment scenarios during the AM and PM peak hours.

Table 7.10: B4267 Leckwith Road/Pen-y-Turnpike Road Junction Capacity Assessment Results – 2030 Assessment Scenarios

Scenario	Movement	AM Peak Hour		PM Peak Hour	
		Queue (PCUs)	RFC	Queue (PCUs)	RFC
Do-Minimum	B-AC	59	1.11	1	0.38
	C-B	1	0.17	56	1.11
Do-Nothing	B-AC	62	1.11	1	0.41
	C-B	1	0.18	59	1.12
Do-Something	B-AC	62	1.11	1	0.40
	C-B	1	0.18	58	1.12

Notes: Arm A = B4267 (Southeast). Arm B = Pen-y-Turnpike Road. Arm C = B4267 (Northwest).

7.5.12 The results show that, in the 'Do-Minimum' scenario, performance is forecast to deteriorate significantly from 2025 to 2030, with significant increases in RFC on Pen-y-Turnpike Road and the B4267 Leckwith Road (Northwest) during the AM and PM peak hours respectively.

7.5.13 As per the 2025 assessment, the introduction of development traffic in the 'Do-Nothing' scenario is not forecast to have a significant impact, with the operation forecast to be much the same as the 'Do-Minimum' scenario. There are increases in RFC of up to 0.03, resulting in increases in queueing of no more than 3 PCUs. Performance in the 'Do-Something' scenario is unchanged to the 'Do-Nothing' scenario, with the exception of a marginal decrease in queueing (of 1 PCU) on the B4267 Leckwith Road (Northwest) during the PM peak hour.

7.5.14 On the basis of this analysis, the effect of the proposed development on the junction in 2030 is not considered to be significant. It is recognised that there are capacity issues at the junction in 2030, but these exist prior to the introduction of development traffic. The introduction of development traffic (an additional 26 and 25 movements during the AM and PM peak hours respectively) does not result in a material change in operational performance.

7.6 Junction 10 – Merrie Harrier

Introduction

7.6.1 Merrie Harrier comprises two signal controllers as follows:

- Controller 1: This controls the entries from the B4267 Penlan Road, A4055 Barry Road, Andrew Road, B4267 Redlands Road, A4055 Cardiff Road and associated ISLs. This operates with a single stage stream containing seven stages. This includes a pedestrian crossing on the A4055 Barry Road.

- Controller 2: This controls the bus gate and associated pedestrian crossings on the A4055 Cardiff Road, southwest of the main junction. This operates with two stage streams, one controlling the bus gate and the pedestrian crossing on the northeast-bound carriageway, and one controlling the pedestrian crossing on the southwest-bound carriageway.

7.6.2 The model has been constructed to allow for connections between lanes based on weaving and non-weaving movements, as appropriate, identified from the survey footage.

7.6.3 The model incorporates both controllers in one network, along with the B4267 Penlan Road/Corbett Road priority junction; the inclusion of this is considered appropriate given the minimal spacing from and potential interaction with the main signal-controlled junction.

7.6.4 Based on a review of the specification supplied by VoG it is evident that the junction operates under MOVA control, meaning cycle times are not fixed, rather they will vary automatically according to changes in demand. Analysis of the survey footage supplied for the weekday AM and PM peak hours has been undertaken to identify an appropriate cycle time for modelling purposes. This analysis is set out in **Appendix L**.

7.6.5 In regard to Controller 1, it was identified that the stage associated with Andrew Road was called only once, occurring during the AM peak hour; it is therefore considered reasonable to omit this from the model operation given the limited demand. All other stages traffic stages are called every cycle, with the pedestrian crossing stage generally called every third cycle during the AM peak hour, and every other cycle during the PM peak hour. Typically, this controller operates at a cycle time of circa 110 seconds during the AM peak hour and 120 seconds during the PM peak hour. For modelling purposes, the controller has been modelled as a triple cycle of total 330 seconds during the AM peak hour, with the pedestrian crossing called every third cycle. During the PM peak hour, the controller has been modelled as a double cycle of total 240 seconds, with the pedestrian crossing called every other cycle.

7.6.6 The typical cycle time at Controller 2 cannot be determined from the survey footage, but, given the nature and number of stages called (a mixture of pedestrian crossing and traffic, with no more than three stages), and the levels of bus demand (equating to 18 and 8 PCUs during the AM and PM peak hours respectively) and potential crossing demand, it is considered entirely reasonable to assume a cycle time of circa 120 seconds. These assumptions have been applied for use in the base model and have also been used for the future year assessments. All scenarios have been optimised to ensure a like-for-like comparison.

7.6.7 The model output report for the capacity assessment is reproduced at **Appendix M**. The following subsections set out the results of the capacity assessment.

2019 Base

7.6.8 **Table 7.10** sets out the results of the capacity assessment for Merrie Harrier for the '2019 Base' scenario during the AM and PM peak hours. The arm numbering/naming convention reported in the table reflects that shown in the model structure.

Table 7.10: Merrie Harrier Capacity Assessment Results – 2019 Base Year

Arm		AM Peak Hour		PM Peak Hour	
		DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
2	B4267 (N)	18.2	1	29.1	1
3	B4267 (SB Internal)	92.9	14	92.1	21
5	A4055 (E)	69.2	12	92.8	22
7	Andrew Road	0.0	0	0.0	0
8	A4055 (WB Internal)	61.5	17	73.7	30
10	B4267 (S)	93.7	20	92.8	21
12	A4055 (SW) Crossing	26.7	2	18.8	1
14	A4055 (SW) – Bus Gate	44.2	8	44.6	8
15	A4055 (SW)	93.7	27	92.9	28
16	A4055 (EB Internal)	65.6	18	69.6	18
17	A4055 Slip Road	40.5	8	15.7	1
18	B4267 (NB Internal)	34.4	1	14.3	1
20	Corbett Road	0.8	0	0.1	0
PRC (%)		**-4.1**		**-3.3**	

Notes: N = North. E = East. S = South. SW = Southwest. NB = Northbound. EB = Eastbound. SB = Southbound. WB = Westbound.

7.6.9 **Table 7.10** shows that the junction currently exceeds practical capacity during the AM and PM peak hours; during the AM peak hour, this relates to Arms 3, 10 and 15, and, during the PM peak hour, this relates to Arms 3, 5, 10 and 15.

7.6.10 To confirm the results presented in **Table 7.10**, a comparison has been undertaken of the level of queueing reported by the model and that observed during the traffic surveys, as shown in **Table 7.11**. The observed queue that is reported is an average of the maximum queues recorded during 5-minute intervals in the AM and PM peak hours.

Table 7.11: Merrie Harrier – Comparison of Observed and Model Queues

Arm	Queue (PCUs)			
	AM Peak Hour		PM Peak Hour	
	Observed	Model	Observed	Model
B4267 Penlan Road	11	15	24	22
A4055 Barry Road	14	12	25	22
Andrew Road	0	0	0	0
B4267 Redlands Road	85	20	13	21
A4055 Cardiff Road	105	35	21	36
Corbett Road	0	0	0	0

Note: With reference to Table 7.10, the model queue on B4267 Penlan Road is based on the total of Arms 1 and 2, and the model queue on A4055 Cardiff Road is based on the total of Arms 8 and 9.

7.6.11 **Table 7.11** shows that the reported queues in the model for the B4267 Penlan Road, A4055 Barry Road, Andrew Road and Corbett Road are generally of a similar level to those observed during the traffic surveys. However, the model significantly underestimates queueing on the B4267 Redlands Road (by 65 PCUs) and the A4055 Cardiff Road (by 70 PCUs) during the AM peak hour. In contrast, the model overestimates queueing on these arms during the PM peak hour (by 8 PCUs on the B4267 Redlands Road and by 15 PCUs on the A4055 Cardiff Road).

7.6.12 It is recognised that the base model does not fully validate against queueing conditions observed in the traffic surveys. Numerous iterations of the model have been prepared in an attempt to provide a base model that is generally representative of conditions on all approach arms. However, the endeavour to replicate existing performance fully has not been achievable and leads to artificial changes to the model that result in an inconsistent approach for the modelling of this junction network and, in some cases, prohibit available movements from lanes that are in fact available and observed in the survey footage.

7.6.13 The model, as presented, has therefore been taken forward for assessment of future year scenarios. Whilst this is not ideal, it is considered a useful reference tool for identifying changes in performance and should also be viewed in the context of forecasts that the proposed development will only generate an additional 7 movements at the junction during the AM and PM peak hours.

2025 Assessment Scenarios

7.6.14 **Table 7.12** sets out the results of the capacity assessment for Merrie Harrier in the 2025 assessment scenarios during the AM and PM peak hours. The arm numbering/naming convention reported in the table reflects that shown in the model structure.

Table 7.12: Merrie Harrier Capacity Assessment Results – 2025 Assessment Scenarios

Scenario	Arm		AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
Do-Minimum	2	B4267 (N)	19.6	1	31.3	1
	3	B4267 (SB Internal)	103.9	24	113.5	55
	5	A4055 (E)	104.2	19	109.6	36
	7	Andrew Road	0.0	0	0.0	0
	8	A4055 (WB Internal)	64.1	19	65.1	24
	10	B4267 (S)	103.8	60	113.0	55
	12	A4055 (SW) Crossing	28.8	3	42.0	4
	14	A4055 (SW) – Bus Gate	47.7	9	48.2	9
	15	A4055 (SW)	104.2	56	85.3	28
	16	A4055 (EB Internal)	67.4	22	68.4	19
	17	A4055 Slip Road	41.9	8	16.3	1
	18	B4267 (NB Internal)	35.6	1	14.5	1
	20	Corbett Road	0.9	0	0.1	0
		PRC (%)	**-15.8**		**-26.1**	

Scenario		Arm	AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
Do-Nothing	2	B4267 (N)	19.9	1	31.4	1
	3	B4267 (SB Internal)	103.7	26	114.0	58
	5	A4055 (E)	104.6	22	110.5	37
	7	Andrew Road	0.0	0	0.0	0
	8	A4055 (WB Internal)	68.5	13	66.4	24
	10	B4267 (S)	105.0	66	113.0	56
	12	A4055 (SW) Crossing	28.7	3	41.8	4
	14	A4055 (SW) – Bus Gate	47.7	9	48.2	9
	15	A4055 (SW)	104.2	56	85.3	28
	16	A4055 (EB Internal)	67.3	22	68.4	20
	17	A4055 Slip Road	41.7	9	16.3	1
	18	B4267 (NB Internal)	35.4	1	14.6	1
	20	Corbett Road	0.9	0	0.1	0
		PRC (%)	**-16.6**		**-26.6**	
Do-Something	2	B4267 (N)	19.9	1	31.4	1
	3	B4267 (SB Internal)	103.7	26	114.0	58
	5	A4055 (E)	104.6	22	110.5	37
	7	Andrew Road	0.0	0	0.0	0
	8	A4055 (WB Internal)	69.6	13	66.4	24
	10	B4267 (S)	105.0	66	113.0	56
	12	A4055 (SW) Crossing	28.7	3	41.8	4
	14	A4055 (SW) – Bus Gate	47.7	9	48.2	9
	15	A4055 (SW)	104.2	56	85.3	28
	16	A4055 (EB Internal)	67.3	22	68.4	20
	17	A4055 Slip Road	41.7	9	16.3	1
	18	B4267 (NB Internal)	35.4	1	14.6	1
	20	Corbett Road	0.9	0	0.1	0
		PRC (%)	**-16.6**		**-26.6**	

Notes: N = North. E = East. S = South. SW = Southwest. NB = Northbound. EB = Eastbound. SB = Southbound. WB = Westbound.

7.6.15 The result show that, in the 'Do-Minimum' scenario, the junction is forecast to exceed absolute capacity during the AM (on Arms 3, 5, 10 and 15) and PM (on Arms 3, 5 and 10) peak hours.

7.6.16 The introduction of development traffic in the 'Do-Nothing' scenario is not forecast to have a significant impact, with the operation forecast to be much the same as the 'Do-Minimum' scenario. There are localised improvements and worsening in DoS and queue length values across the junction, due to the effect of signal time optimisation; changes in DoS and queueing are generally of no more than 1% and 1 PCU respectively. Overall, junction performance does deteriorate, as PRC values are shown to decrease from -15.8% to -16.6% in the AM peak hour, and from -26.1% to -26.6% in the PM peak hour. In the 'Do-Something' scenario, the junction is forecast to operate similarly to the 'Do-Nothing' scenario, with the same PRC values for the AM and PM peak hours.

7.6.17 On the basis of this analysis, the effect of the proposed development on the junction in 2025 is not considered to be significant.

2030 Assessment Scenarios

7.6.18 **Table 7.13** sets out the results of the capacity assessment for Merrie Harrier in the 2030 assessment scenarios during the AM and PM peak hours. The arm numbering/naming convention reported in the table reflects that shown in the model structure.

Table 7.13: Merrie Harrier Capacity Assessment Results – 2030 Assessment Scenarios

Scenario	Arm		AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
Do-Minimum	2	B4267 (N)	20.5	1	32.6	1
	3	B4267 (SB Internal)	108.2	33	120.1	69
	5	A4055 (E)	108.3	28	119.6	46
	7	Andrew Road	0.0	0	0.0	0
	8	A4055 (WB Internal)	64.4	21	69.7	26
	10	B4267 (S)	107.5	80	117.7	70
	12	A4055 (SW) Crossing	29.7	3	42.4	4
	14	A4055 (SW) – Bus Gate	49.8	10	50.3	10
	15	A4055 (SW)	108.6	79	88.0	29
	16	A4055 (EB Internal)	67.6	22	69.7	19
	17	A4055 Slip Road	42.0	8	16.0	1
	18	B4267 (NB Internal)	35.7	1	14.2	1
	20	Corbett Road	0.9	0	0.1	0
		PRC (%)	**-20.7**		**-33.5**	
Do-Nothing	2	B4267 (N)	20.7	1	32.7	1
	3	B4267 (SB Internal)	107.9	32	120.6	73
	5	A4055 (E)	108.2	27	120.1	47
	7	Andrew Road	0.0	0	0.0	0
	8	A4055 (WB Internal)	68.7	21	72.2	27
	10	B4267 (S)	108.8	87	117.7	77
	12	A4055 (SW) Crossing	29.7	3	42.4	4
	14	A4055 (SW) – Bus Gate	49.8	10	50.3	10
	15	A4055 (SW)	108.6	75	88.0	27
	16	A4055 (EB Internal)	67.5	22	69.7	23
	17	A4055 Slip Road	41.8	9	16.2	1
	18	B4267 (NB Internal)	35.5	1	14.4	1
	20	Corbett Road	0.9	0	0.1	0
		PRC (%)	**-20.9**		**-34.0**	

Scenario		Arm	AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
Do-Something	2	B4267 (N)	20.7	1	32.7	1
	3	B4267 (SB Internal)	107.6	31	120.6	73
	5	A4055 (E)	108.2	27	120.1	47
	7	Andrew Road	0.0	0	0.0	0
	8	A4055 (WB Internal)	69.2	21	72.2	27
	10	B4267 (S)	108.8	87	117.7	77
	12	A4055 (SW) Crossing	29.7	3	42.4	4
	14	A4055 (SW) – Bus Gate	49.8	10	50.3	10
	15	A4055 (SW)	108.6	75	88.0	27
	16	A4055 (EB Internal)	67.5	22	69.7	23
	17	A4055 Slip Road	41.8	9	16.2	1
	18	B4267 (NB Internal)	35.5	1	14.4	1
	20	Corbett Road	0.9	0	0.1	0
		PRC (%)	**-20.9**		**-34.0**	

Notes: N = North. E = East. S = South. SW = Southwest. NB = Northbound. EB = Eastbound. SB = Southbound. WB = Westbound.

7.6.19 The result show that, in the 'Do-Minimum' scenario, the junction is forecast to exceed absolute capacity during the AM (on Arms 3, 5, 10 and 15) and PM (on Arms 3, 5 and 10) peak hours.

7.6.20 The introduction of development traffic in the 'Do-Nothing' scenario is not forecast to have a significant impact, with the operation forecast to be much the same as the 'Do-Minimum' scenario. There are localised improvements and worsening in DoS and queue length values across the junction, due to the effect of signal time optimisation; changes in DoS and queueing are generally of no more than 1% and 1 PCU respectively. Overall, junction performance does deteriorate, as PRC values are shown to decrease from -20.7% to -20.9% in the AM peak hour, and from -33.5% to -34.0% in the PM peak hour. In the 'Do-Something' scenario, the junction is forecast to operate similarly to the 'Do-Nothing' scenario, with the same PRC values for the AM and PM peak hours.

7.6.21 On the basis of this analysis, the effect of the proposed development on the junction in 2030 is not considered to be significant.

7.7 Site Access Options Assessment

7.7.1 The proposed site access junction design (labelled as Option 2, presented at **Appendix C**) has been developed following a comprehensive assessment of two design options. The design options differed only in terms of the type and extent of crossing facilities to be provided at the proposed site access junction.

Initial Design

7.7.2 As a starting point, an initial design (labelled as Option 1, included at **Appendix I** for information) was developed that proposed formal controlled crossing facilities on all arms, including a toucan crossing on the B4267 Leckwith Road (Northeast), and puffin crossing facilities on all other arms. This followed pre-application discussions between the highway designer (WSP) and the VoG (which stated a preference for this at that time), and the guidance at Chapter 6 of the *Traffic Signs Manual*; this suggests that, as a starting point, designs should incorporate controlled crossings, but with consideration to potential levels of demand and implications for capacity.

7.7.3 A series of capacity assessments of the initial access design have been undertaken. These have forecast that the initial design will exceed capacity in future year assessment scenarios. The assessment outputs indicate that the provision of controlled crossings as part of the signal operation will result in queueing on the B4267 Leckwith Road (Northeast) extending back onto the circulatory of Leckwith Interchange, which is likely to be of significant concern to both the CCC and the VoG given the strategic importance of the junction. On this basis, the initial design was not considered to be appropriate arrangement and an alternative solution was sought. For completeness, the following paragraphs and tables detail the capacity assessment and its findings.

7.7.4 The model output report for the capacity assessment of the initial design is reproduced at **Appendix N**. The model operation for the design includes four stages as follows:

- Stage 1: Phases associated with the B4267 Leckwith Road (Northeast and Southwest). In this stage, right-turn movements from the B4267 Leckwith Road to the site accesses are required to give-way to opposing movements, turning in gaps. This is considered reasonable for the level of demand for right-turn movements (maximum of 12 and 31 PCUs for the south-eastern and north-western site accesses respectively) and the level of opposing movements.
- Stage 2: Phase associated with the Site Access (Southeast), allowing movements to be undertaken unopposed.
- Stage 3: Phase associated with the Site Access (Northwest), allowing movements to be undertaken unopposed.
- Stage 4: An 'all-red stage', where all crossings at the junction are allocated green time in one stage.

7.7.5 Two forms of operation have been tested. The first examines a 'worst-case' operation where all stages are called every cycle, at a cycle time of 120 seconds. The second examines a double cycle of total 240 seconds in which Stage 4 is called every other cycle; this is considered to be the 'likely' operation based on envisaged levels of pedestrian/cyclist crossing demand at the junction.

7.7.6 **Tables 7.14** and **7.15** set out the results of the capacity assessment for the initial design based on crossings being called every cycle and every other cycle respectively. These are presented for the AM and PM peak hours in the 2025 and 2030 assessment scenarios ('Do-Nothing' and 'Do-Something'). The arm numbering/naming convention reported in the table reflects that shown in the model structure.

Table 7.14: Site Access (Initial Design) Junction Capacity Assessment Results (Crossings Every Cycle)

Scenario	Arm		AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
2025 Do-Nothing	2	B4267 (NE)	66.8	18	116.0	136
	4	Site Access (SE)	55.3	3	21.9	1
	6	B4267 (SW)	96.5	43	55.6	14
	8	Site Access (NW)	42.0	2	31.7	2
	PRC (%)		**-7.2**		**-28.9**	
2025 Do-Something	2	B4267 (NE)	66.3	18	115.2	131
	4	Site Access (SE)	50.0	3	19.3	1
	6	B4267 (SW)	96.5	43	55.6	14
	8	Site Access (NW)	40.2	2	31.7	2
	PRC (%)		**-7.2**		**-28.0**	
2030 Do-Nothing	2	B4267 (NE)	69.2	19	120.5	162
	4	Site Access (SE)	55.3	3	21.9	1
	6	B4267 (SW)	100.6	56	57.9	15
	8	Site Access (NW)	43.7	2	32.5	2
	PRC (%)		**-11.8**		**-33.9**	

Scenario	Arm		AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
2030 Do-Something	2	B4267 (NE)	68.9	19	119.8	158
	4	Site Access (SE)	50.0	3	19.3	1
	6	B4267 (SW)	100.5	55	57.8	15
	8	Site Access (NW)	40.2	2	31.7	2
	PRC (%)		**-11.7**		**-33.1**	

Notes: NE = Northeast. SE = Southeast. SW = Southwest. NW = Northwest.

Table 7.15: Site Access (Initial Design) Junction Capacity Assessment Results (Crossings Every Other Cycle)

Scenario	Arm		AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
2025 Do-Nothing	2	B4267 (NE)	56.2	18	97.9	63
	4	Site Access (SE)	55.3	3	21.9	2
	6	B4267 (SW)	81.1	36	46.8	14
	8	Site Access (NW)	42.0	2	31.7	2
	PRC (%)		**11.0**		**-8.7**	
2025 Do-Something	2	B4267 (NE)	55.9	18	97.2	60
	4	Site Access (SE)	50.0	3	19.3	1
	6	B4267 (SW)	81.1	36	46.8	14
	8	Site Access (NW)	40.2	2	31.7	2
	PRC (%)		**11.0**		**-8.0**	
2030 Do-Nothing	2	B4267 (NE)	58.4	19	101.7	84
	4	Site Access (SE)	55.3	3	21.9	2
	6	B4267 (SW)	84.6	40	48.8	15
	8	Site Access (NW)	43.7	2	32.5	2
	PRC (%)		**6.4**		**-13.0**	
2030 Do-Something	2	B4267 (NE)	58.2	19	101.1	79
	4	Site Access (SE)	50.0	3	19.3	1
	6	B4267 (SW)	84.5	40	48.6	15
	8	Site Access (NW)	40.2	2	31.7	2
	PRC (%)		**6.5**		**-12.3**	

Notes: NE = Northeast. SE = Southeast. SW = Southwest. NW = Northwest.

7.7.7 **Table 7.14** shows that, with crossings called every cycle, the initial design is forecast to exceed absolute capacity in all assessment scenarios/time periods, with the exception of the AM peak hour in the 2025 assessment scenarios, in which practical capacity is exceeded. The capacity issues relate to the B4267 Leckwith Road (Southwest) and B4267 Leckwith Road (Northeast) during the AM and PM peak hours, associated with tidal flow of demand to/from Leckwith Interchange. During the PM peak hour, queueing on the B4267 (Northeast) is forecast to extend back onto the circulatory of Leckwith Interchange and beyond in all assessment scenarios, and will therefore have significant implications for the operation of a key junction.

7.7.8 **Table 7.15** shows that, with crossings called every other cycle, there is an improvement in performance, with the initial design forecast to operate within practical capacity during the AM peak hour in all assessment scenarios. Whilst the operation results in a reduction in queueing on the B4267 Leckwith Road (Northeast) during the PM peak hour, it is still forecast to extend back onto the circulatory of Leckwith Interchange and beyond in all assessment scenarios.

7.7.9 The issue of queueing on the B4267 Leckwith Road (Northeast) extending back onto Leckwith Interchange is likely to be of significant concern to both the CCC and the VoG. On this basis, the initial design was not considered to be an appropriate arrangement. This necessitated an evolution of the design to achieve an arrangement that does not adversely affect the operation of Leckwith Interchange, whilst ensuring that there is an appropriate level of provision for pedestrian/cyclist movements.

Proposed Design

7.7.10 The proposed design (labelled as Option 2, presented at **Appendix C)** has been developed to overcome the capacity deficiencies of the initial design. It seeks to achieve a balance, providing a design that does not adversely affect the operation of Leckwith Interchange, whilst ensuring that there is an appropriate and acceptable level of provision for pedestrian/cyclist movements.

7.7.11 It has been identified that, in order to deliver a design that minimises queueing on the B4267 (Northeast) to a level that does not materially affect the operation of Leckwith Interchange, design changes which provide either an increase in the capacity of the arm or an increase in the green time allocated to it are required. In the case of the former, this would likely involve a requirement for a design with an increase in the number of ahead lanes with provision of additional downstream exit lanes, which cannot be achieved given site constraints, bridge design and overall scheme viability.

7.7.12 The opportunities in terms of increasing green time allocation to the B4267 (Northeast) have therefore been tested as a staged approach, commencing with a review of the arrangements for traffic-related stages. In the first instance, the potential to reduce the frequency at which the stages associated with the site access arms are called during the PM peak hour was reviewed. However, whilst demand from these arms is low (up to 25 and 37 PCUs from the south-eastern and north-western arms of site accesses respectively), it is likely that, when averaged across the hour, this would result in a demand from at least one of the site accesses in most cycles. Therefore, reducing the frequency at which the site access arms are called could result in significant delay.

7.7.13 The initial design allocated each site access its own individual stage to allow movements to be undertaken unopposed. During the AM peak hour, it is forecast that 64 and 50 PCUs will exit from the south-eastern and north-western site accesses respectively. During the PM peak hour, it is forecast that 25 and 38 PCUs will exit from the south-eastern and north-western site accesses respectively. Given the levels of demand, it seems reasonable to expect that these arms can operate in one stage, with give-way parameters coded into the model for opposing movements. Whilst this delivers a significant improvement in performance, the issue of queueing back onto the circulatory of Leckwith Interchange remains.

7.7.14 The design also included controlled crossings on all arms of the junction, in line with pre-applications discussions between the highway designer (WSP) and VoG, and the preferred approach in guidance. However, the provision of uncontrolled crossings has been identified as an appropriate level of provision with consideration to key desire lines, levels of pedestrian/cyclist crossing demand, and provision as part of the wider pedestrian and cyclist access design (discussed at **Section 3.3**); this is the approach that has been adopted in the proposed design (Option 2).

7.7.15 The model output report for the capacity assessment of the proposed design is reproduced at **Appendix O**. The model operation for the design includes two stages operating at a cycle time of 90 seconds as follows:

- Stage 1: Phases associated with the B4267 Leckwith Road (Northeast and Southwest). In this stage, right-turn movements from the B4267 Leckwith Road to the site accesses are required to give-way to opposing movements, turning in gaps, as per the operation in the initial design.
- Stage 2: Phases associated with the site access arms. In this stage, right-turn movements from the site accesses are required to give-way to opposing movements, turning in gaps, which, as discussed above, is considered reasonable in view of the level of demand from these arms.

7.7.16 In regard to the toucan crossing between the site access and Leckwith Interchange, it is considered that its operation can be coordinated with either one or both of the following junctions/controllers:

- Site access junction: Toucan crossing runs (if called) at the same time as the site accesses to ensure there is no blocking back to the site access junction.
- Leckwith Interchange: Toucan crossing runs (if called) when the A4232 northbound off-slip is running to reduce risk of blocking back onto the Leckwith Interchange. Movements from the off-slip to the B4267 Leckwith Road are reasonably low, at 5-6 PCUs every 60 seconds during the PM peak hour, which, when stopped at the toucan crossing, would not extend back onto the circulatory.

7.7.17 **Table 7.16** sets out the results of the capacity assessment for the proposed design during the AM and PM peak hours in the 2025 and 2030 assessment scenarios ('Do-Nothing' and 'Do-Something'). The arm numbering/naming convention reported in the table reflects that shown in the model structure.

Table 7.16: Site Access (Proposed Design) Junction Capacity Assessment Results

Scenario	Arm		AM Peak Hour		PM Peak Hour	
			DoS (%)	Queue (PCUs)	DoS (%)	Queue (PCUs)
2025 Do-Nothing	2	B4267 (NE)	45.1	6	78.5	19
	4	Site Access (SE)	47.4	2	16.5	1
	6	B4267 (SW)	64.5	11	37.2	4
	8	Site Access (NW)	31.5	2	23.8	1
	PRC (%)		**39.5**		**14.6**	
2025 Do-Something	2	B4267 (NE)	44.9	6	77.9	18
	4	Site Access (SE)	42.9	2	14.5	1
	6	B4267 (SW)	64.5	11	37.2	4
	8	Site Access (NW)	30.2	2	23.8	1
	PRC (%)		**39.5**		**15.5**	
2030 Do-Nothing	2	B4267 (NE)	46.8	7	81.6	21
	4	Site Access (SE)	47.4	2	16.5	1
	6	B4267 (SW)	67.3	12	38.8	5
	8	Site Access (NW)	32.7	2	24.4	1
	PRC (%)		**33.7**		**10.3**	
2030 Do-Something	2	B4267 (NE)	46.7	6	81.1	20
	4	Site Access (SE)	42.9	2	14.5	1
	6	B4267 (SW)	67.2	12	38.7	5
	8	Site Access (NW)	30.2	2	23.8	1
	PRC (%)		**33.9**		**11.0**	

Notes: NE = Northeast. SE = Southeast. SW = Southwest. NW = Northwest.

7.7.18 The results show that the proposed design is forecast to operate within practical capacity in all assessment scenarios/time periods. A maximum queue of 21 PCUs is forecast on the B4267 Leckwith Road (Northeast), equating to a distance of 121m. The distance between the stop line on the B4267 Leckwith Road (Northeast) and the exit of Leckwith Interchange is 122m (this measurement does not take account of two lane queueing capacity at the junction and the merge on the exit from Leckwith Interchange), meaning queues are not forecast to extend back onto the circulatory.

7.7.19 The proposed design is therefore considered to deliver an access strategy that sufficiently accommodates key pedestrian/cyclist desire lines without compromising performance of the Leckwith Interchange. It is on this basis that the proposed design (Option 2) has been taken forward.

7.8 Summary

7.8.1 The traffic impact assessment has considered 'Do-Minimum', 'Do-Nothing' and 'Do-Something' assessment scenarios for 2025 and, at the request of the VoG, 2030.

7.8.2 An assessment has been undertaken of the impact of the proposed development at a number of junctions during the weekday AM and PM peak hours. The assessment has first examined the changes in traffic flows at surveyed junctions in the study area. The proposed development is forecast to result in increases of no more than 3% in terms total traffic entering each junction. In terms of the maximum change on any one arm, the increases are generally of no more than 3%, with the exception of Leckwith Interchange, which is forecast to experience a maximum increase of 7% and 5% on during the AM and PM peak hours respectively (on the B4267 Leckwith Road (Southwest) arm), and the B4267 Leckwith Road/Pen-y-Turnpike Road junction, which is forecast to experience a maximum increase of 5% during the PM peak hour (on the Pen-y-Turnpike Road arm). The maximum increase on any one arm at Merrie Harrier is forecast to be no more than 1%, which is imperceptible against daily traffic at that location.

7.8.3 The scoping note stated that capacity assessment would be considered for junctions that experience increases in traffic of 5% or more on any one arm (as per the general approach set out in TAN 18). On this basis, an assessment has been undertaken for the Leckwith Interchange and B4267 Leckwith Road/Pen-y-Turnpike Road junction. An assessment has also been undertaken for Merrie Harrier in accordance with the request in the VoG's scoping response, but recognising that the proposed development is forecast to generate only 7 vehicle movements at this junction during the AM and PM peak hours

7.8.4 The deterioration in performance at Leckwith Interchange as a result of the proposed development is not considered to represent a material change in operating conditions. The junction is forecast to operate within practical capacity in all future year assessment scenarios.

7.8.5 The B4267 Leckwith Road/Pen-y-Turnpike Road junction has existing capacity issues, specifically in regard to exit movements from Pen-y-Turnpike Road during the AM peak hour and the right-turn movement to Pen-y-Turnpike Road during the PM peak hour; these are forecast to worsen in the future, without the proposed development. However, the proposed development is not forecast to result in a material change in operational performance.

7.8.6 In regard to Merrie Harrier, despite all reasonable efforts, it has not been possible to build a model that is representative of existing operational conditions on all arms during both the AM and PM peak hours. Whilst this is not an ideal position, the model as presented is considered a useful reference tool for identifying changes in performance and should also be viewed in the context of forecasts that the proposed development will only generate an additional 7 movements at the junction during the AM and PM peak hours. This has forecast that the proposed development will not result in a material change in operating conditions.

7.8.7 Two access option designs for the proposed site access junction have been designed and tested. Following in-depth reviews, it has been identified that the initial design (with controlled crossings on all arms of the junction) will result in queueing extending back onto the circulatory carriageway of Leckwith Interchange in all assessment scenarios during the PM peak hour. This has necessitated an evolution to the proposed design (with uncontrolled crossings on all arms of the junction). This achieves an arrangement that does not adversely affect the operation of Leckwith Interchange, whilst ensuring that there is an appropriate level of provision for pedestrian/cyclist movements; it is on this basis that the proposed design has been taken forward.

7.8.8 The results presented in this analysis are considered a 'worst-case', as they do not take account of the potential for a reduction in background traffic, associated with CCC's aspirations to achieve a mode split of 50:50 between trips by car and sustainable travel (walking, cycling and public transport) by 2026

8. Transport Implementation Strategy

8.1 Introduction

8.1.1 TAN 18 requires any TA document to provide the information necessary to assess the suitability of an application in travel demand and traffic impact terms. It recommends that a TIS should be included within the TA. The TIS is intended to set objectives and targets in managing travel demand, whilst detailing the infrastructure and measures necessary to achieve them. The TIS should also set up a framework for monitoring the targets including modal travel choice.

8.1.2 A TIS shares many of the same goals as a TP; therefore, the modal information, targets and measures set out in this section have also informed the Outline TP. The implementation of the TP and associated monitoring and reporting of performance will be undertaken by a Travel Plan Co-ordinator (TPC).

8.2 Mode Share and Targets

8.2.1 Mode share targets are used to evaluate the success of the TIS and to identify areas on which further measures should be focused in order to help to drive travel behaviour change. To enable the setting of valid and realistic targets, a valid baseline first needs to be established.

8.2.2 **Section 5** of the TA sets out the forecast weekday mode share of the proposed development, summarised in **Table 8.1**.

Table 8.1: Forecast Mode Share

Mode	Mode Share
Public transport	11%
Taxi	1%
Motorcycle, scooter or moped	0%
Driving a car or van	51%
Passenger in a car or van	13%
Bicycle	3%
On foot	20%
Other	1%
Total	**100%**

8.2.3 The target will be to reduce the 'car' mode share by 10% (from 51% to 41%) over five years, consistent with Smarter Choices' report *Changing the way we travel* (2004). Following the baseline travel survey this target can be confirmed or adjusted as appropriate, following discussion between the VoG/CCC and the TPC.

8.3 Monitoring and Evaluation

8.3.1 The point at which baseline travel surveys are required will be subject to agreement with the VoG/CCC. This should generally be at a time when the build-out of the development is at a point that is considered reasonably representative of the final scheme. A minimum response rate to the travel surveys will be required to be set and agreed to ensure that the data is representative.

8.3.2 The format of the baseline and monitoring surveys will need to be agreed with the VoG/CCC. In general, these will seek to establish the actual travel patterns, the reasons for travel choice and potential measures to encourage consideration of alternatives. It is envisaged that the surveys will be primarily online-based, but paper copies will also be made available to those residents should they prefer. An incentive could be offered to residents in order to achieve a reasonable response rate, to be agreed with the VoG/CCC.

8.3.3 The results of the baseline travel surveys will be analysed and the factors influencing travel behaviour will be investigated. It will then be necessary for the TPC to review and update the respective TP to include additional details and the need for any other measures not already included that require further investigation. Specific objectives and targets will need to be identified, separated into short/medium/long term targets, and will need to be SMART (Specific, Measurable, Achievable, Realistic, and Timed). Specific actions and measures to encourage sustainable modes of travel will be identified. For the on-going management of the TP to be successful and to deliver the desired outcomes, it is important that the parties involved in the delivery of the TP, which means the TPC, and the VoG/CCC, work effectively in partnership to achieve the desired results.

8.3.4 Monitoring of the TP will be required for a five year period from the date of the baseline travel surveys. They will be undertaken at one, three and five years after the date (or close to the date) of the baseline travel surveys. The TPC will aim to coordinate the baseline travel surveys and subsequent monitoring surveys to ensure consistency between the collection of data for the TP. Surveys will avoid sustained periods of inclement weather or when there is significant disruption to the local road or public transport network.

8.3.5 A monitoring report will be prepared by the TPC for each monitoring survey. These will identify the results of the surveys and success of the measures implemented in achieving the targets. The reports will be submitted to the VoG/CCC for comment. If the targets are not met, then it will be necessary to review what remedial measures need to be implemented to mitigate the impact of any under achievement.

8.4 Measures and Interventions

8.4.1 In order to achieve the reduction in single occupancy car use and encourage a modal shift to more sustainable forms of travel, a number of measures will be implemented. These will include a combination of physical infrastructure in the design of the development and also TP measures.

Physical Infrastructure

8.4.2 It is proposed that people of all abilities shall be able to easily enter into and move through the landscape and each space within it via level or ramped entry points where necessary. Existing footpaths may be re-aligned to suit new desire lines and entry points.

8.4.3 First and foremost, the development has been designed as a walkable neighbourhood; the network of footways on-site and network of footways/cycleways created as part of the access arrangements will create a range of travel options both on-road and as traffic free routes. Footways and cycleways alongside the carriageway will be provided at high quality with clear spaces for non-motorised travel.

8.4.4 The layout and design of the site has focused on the strength of its sustainable location, the proposals include re-purposing the existing listed bridge for a walking and cycling route. In addition to this the proposals fully exploit the site's position adjacent the Ely Trail and includes enhancements which make pedestrian and cyclists crossings safer and more convenient.

8.4.5 Parking provision will be set out at the reserved matters stage. A potential level of car parking provision has been identified and is within the VoG/CCC 'maximum' standards.

Travel Plan Measures

8.4.6 An Outline TP has been prepared and a TPC will be appointed who will be responsible in ensuring the success of the TP and its targets and objectives. The TP will contain a range of measures additional to those that will be provided as part of the development to enhance the attractiveness of sustainable travel and to encourage the use of the walking, cycling and public transport infrastructure. Such additional measures could include:

- Travel Information Pack (TIP) to new residents, including information on alternatives modes to Single Occupancy Vehicle (SOV) use. It will also explain the accessibility to surrounding areas;
- A Community Notice Board (CNB) providing travel and community information to residents, provided at a prominent location(s) within the development;
- Potential incentives for use of non-car modes, e.g. public transport taster tickets and discounts on cycle purchases;

- Promotion of car sharing, encouraging residents to sign up to local car share schemes, such as Car Share to Cardiff. This could include a TPC operated private car share group for residents with the 'Share to Cardiff' website; and
- Promotion of national and local sustainable transport initiatives such as 'National Walking Month' and 'Bike Week'.

8.5 Summary

8.5.1 The TIS has considered the likely modal travel split of the development based upon data and statistics for the local area. This has been used to establish baseline modal proportions.

8.5.2 Targets have been set for the reduction of private car use and a commitment to a TP and monitoring programme has been made.

8.5.3 The TIS has set out the measures that will be implemented as part of the development proposals to help to achieve the targets and objectives set. The TP measures will add another layer of interventions which will continue to promote and encourage the range of facilities available and improve awareness or provision wherever possible.

9. Conclusions

9.1.1 This TA has been prepared by AECOM on behalf of Phil Worthing (instructed by Gareth Davies Project Services Ltd) in respect of a proposed planning application for the redevelopment of an existing brownfield site for residential uses (circa 250 dwellings) at Leckwith Quays, Cardiff. The site comprises two residential development parcels, either side of the B4267 Leckwith Road, and a new bridge along largely the alignment of the existing B4267 Leckwith Road. The north-western parcel of the developed proportion of the proposed site is intended to contain up to 80 dwellings, and the south-eastern parcel up to 170 dwellings.

9.1.2 A detailed review of the existing highway network and baseline situation has been carried out. The site benefits from existing provision for pedestrians and cyclists in the locality, including shared footways/cycleways on both sides of the B4267 Leckwith Road, a comprehensive network of crossing facilities, and neighbouring off-road routes. Employment areas and a range of local facilities are located within easy walking and cycling distance of the site. Regular bus services are accessible from bus stops located on the B4267 Leckwith Road; whilst parts of the site are potentially slightly beyond the IHT's suggested 'acceptable' walking distance, this is not considered to be a significant barrier given the frequency of services and provision of pedestrian links between the site and the bus stops. Ninian Park railway station is located around 1.1km from the site and provides regular services to Cardiff Central, which in turn provides access to regular services to wider destinations such as London, Manchester, Swansea and Bristol. The highway safety analysis of the PIC data has not identified any existing highway safety issues that could be exacerbated by the proposed development.

9.1.3 The proposals include the realignment of the B4267 Leckwith Road and construction of a replacement bridge over the Ely River. This is required to not only provide access to the site, but also to maintain a key highway link between VoG and CCC. The existing bridge is reaching the end of its service life and, without a replacement, a link to Leckwith Interchange cannot be maintained. Non-provision of a replacement bridge and closure of this link to Leckwith Interchange would inevitably result in a significant reassignment of traffic across the network. Whilst this could have a benefit to Leckwith Interchange, it would likely have significant performance implications for other junctions in the VoG and CCC, such as Merrie Harrier, Barons Court and Culverhouse Cross. A replacement bridge, which can be secured as part of the proposed development, is therefore crucial to maintaining this key highway link and network performance.

9.1.4 The access strategy involves the provision of a new signal-controlled crossroads junction, to be located on the realigned B4267 Leckwith Road. This will provide access for vehicles, pedestrians, and cyclists associated with both development parcels. The proposed access arrangements have been prepared in conjunction with the replacement bridge by the highway designer (WSP) following consultation with the VoG. Two options of the design have been prepared and tested; the design which is proposed (Option 2) provides a design that does not adversely affect the operation of Leckwith Interchange, whilst ensuring that there is an appropriate level of provision for pedestrian/cyclist movements.

9.1.5 The internal site layout will be the subject of a reserved matters application. The DAS included with the planning submission sets out a clear hierarchy of streets to create a legible road and path network. The development has been designed as a walkable neighbourhood; the network of footways on-site and network of footways/cycleways created as part of the access arrangements will create a range of travel options both on-road and as traffic free routes. Footways and cycleways alongside the carriageway will be provided at high quality with clear spaces for non-motorised travel. The layout and design of the site has focused on the strength of its sustainable location, the proposals include re-purposing the existing listed bridge for a walking and cycling route. In addition to this the proposals fully exploit the site's position adjacent the Ely Trail and includes enhancements which make pedestrian and cyclists crossings safer and more convenient.

9.1.6 Parking will also be set out at the reserved matters stage; the potential level of car parking identified by the DAS falls within the 'maximum' standards specified by the DAS.

9.1.7 The development proposals align with existing and emerging transport planning policy at both a national and local level. The proposals will facilitate sustainable travel through a number of measures including the implementation of a TP, an outline version of which is included in the planning submission and will be developed as the scheme detail is developed; this forms part of the commitment of the TIS.

9.1.8 It is forecast that the proposed development will generate around 130 vehicle trips during the weekday AM and PM peak hours. The impact of this additional traffic has been assessed in future years of 2025 and 2030. The assessment year of 2025 is likely to be the point by which the proposed development will be complete. Assessment of this year is considered appropriate in terms of determining the impact of the development proposals and any need for intervention/mitigation. An assessment year of 2030 has been included for information purposes only, but is not considered an appropriate measure of development impact or for establishing the requirements for mitigation, given it is four years after the end of the LDP (2026) for the VoG and CCC, five years after development completion and therefore beyond reasonable forecasts for housing and employment growth. 'Do-Minimum' scenarios have been derived by applying traffic growth and manually adding local committed development. Proposed development traffic has then been applied to derive 'Do-Nothing' scenarios, which show development impact without intervention/mitigation. A further scenario has been tested that considers the impact of the development proposals with intervention/mitigation (Do-Something). The 'Do-Something' scenarios initially includes a reduction in traffic generation of the proposed development as a result of the implementation of a TP.

9.1.9 An assessment has been undertaken of the impact of the proposed development at a number of junctions during the weekday AM and PM peak hours. The assessment has first examined the changes in traffic flows at surveyed junctions in the study area. The proposed development is forecast to result in increases of no more than 3% in terms total traffic entering each junction. In terms of the maximum change on any one arm, the increases are generally of no more than 3%, with the exception of Leckwith Interchange and the B4267 Leckwith Road/Pen-y-Turnpike Road junction. This has informed the requirement for capacity assessment of these junctions. Capacity assessment has also been undertaken for Merrie Harrier, in accordance with the request in the VoG's scoping response, although the increase in traffic flows at this junction are forecast to be no more than 1%, which is imperceptible against daily traffic at that location. The capacity assessment forecasts that the proposed development will not result in a material change in operating conditions. The results presented in this analysis are considered a 'worst-case', as they do not take account of the potential for a reduction in background traffic, associated with CCC's aspirations to achieve a mode split of 50:50 between trips by car and sustainable travel (walking, cycling and public transport) by 2026.

9.1.10 Further to the findings of this TA, and following further detailed and extensive assessments, it can be concluded that there are no transport reasons why the proposed development should not be granted planning permission.

Figures

Filename: F:\PROJECTS\DEVELOPMENT PLANNING\CARDIFF OFFICE WORK\LECKWITH QUAY, CARDIFF\CAD\LECKWITH QUAY REPORT FIGURES.DWG Last saved by: BENJAMIN.BURTON1 Last Plotted: 2/24/2020 11:13 AM
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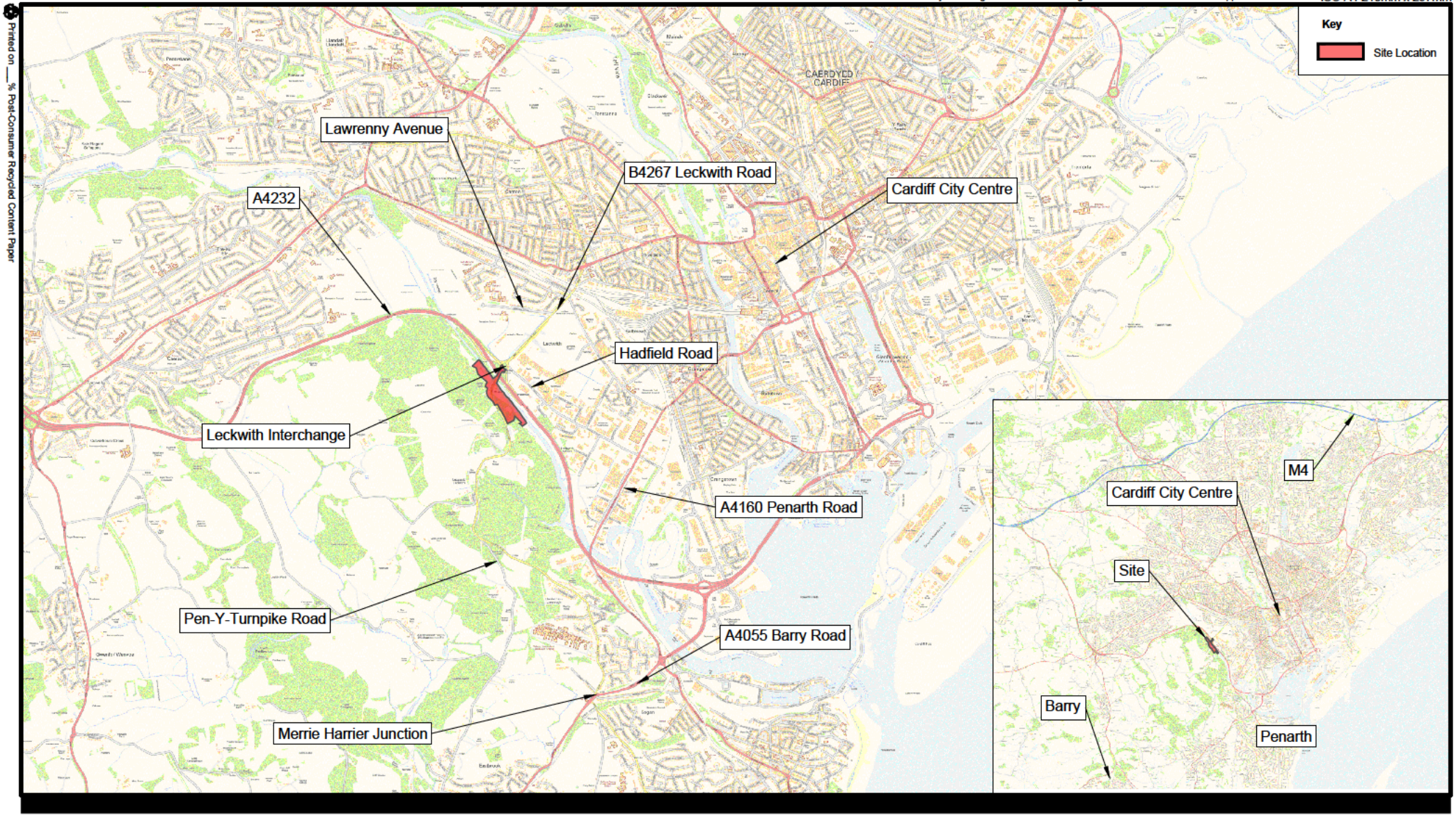

Leckwith Quays, Cardiff

Transport Assessment

Figure 1.1: Location Plan and Local Highway Network

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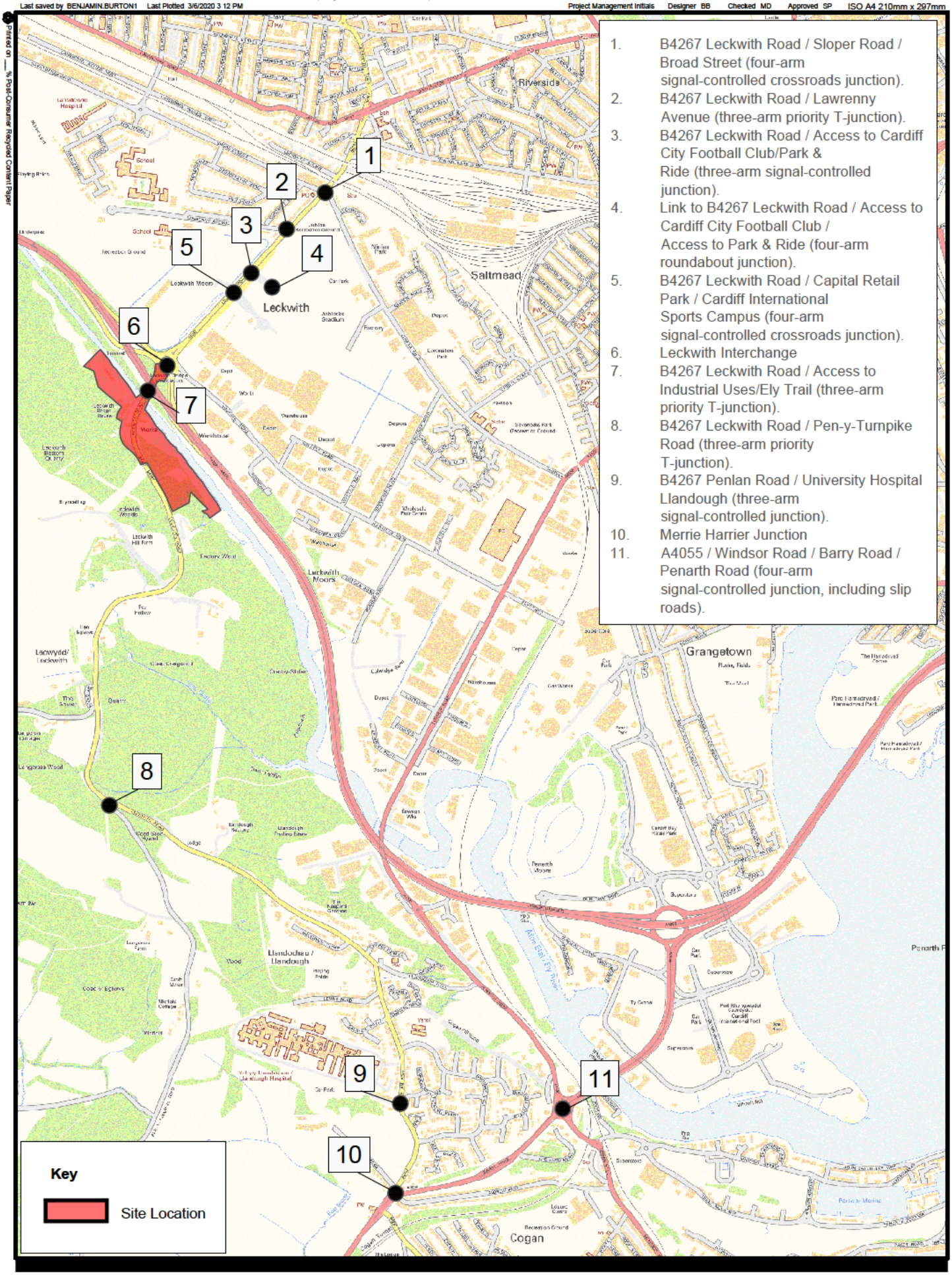

Leckwith Quays, Cardiff

Transport Assessment

Figure 2.1: Traffic Survey Location Plan

AECOM

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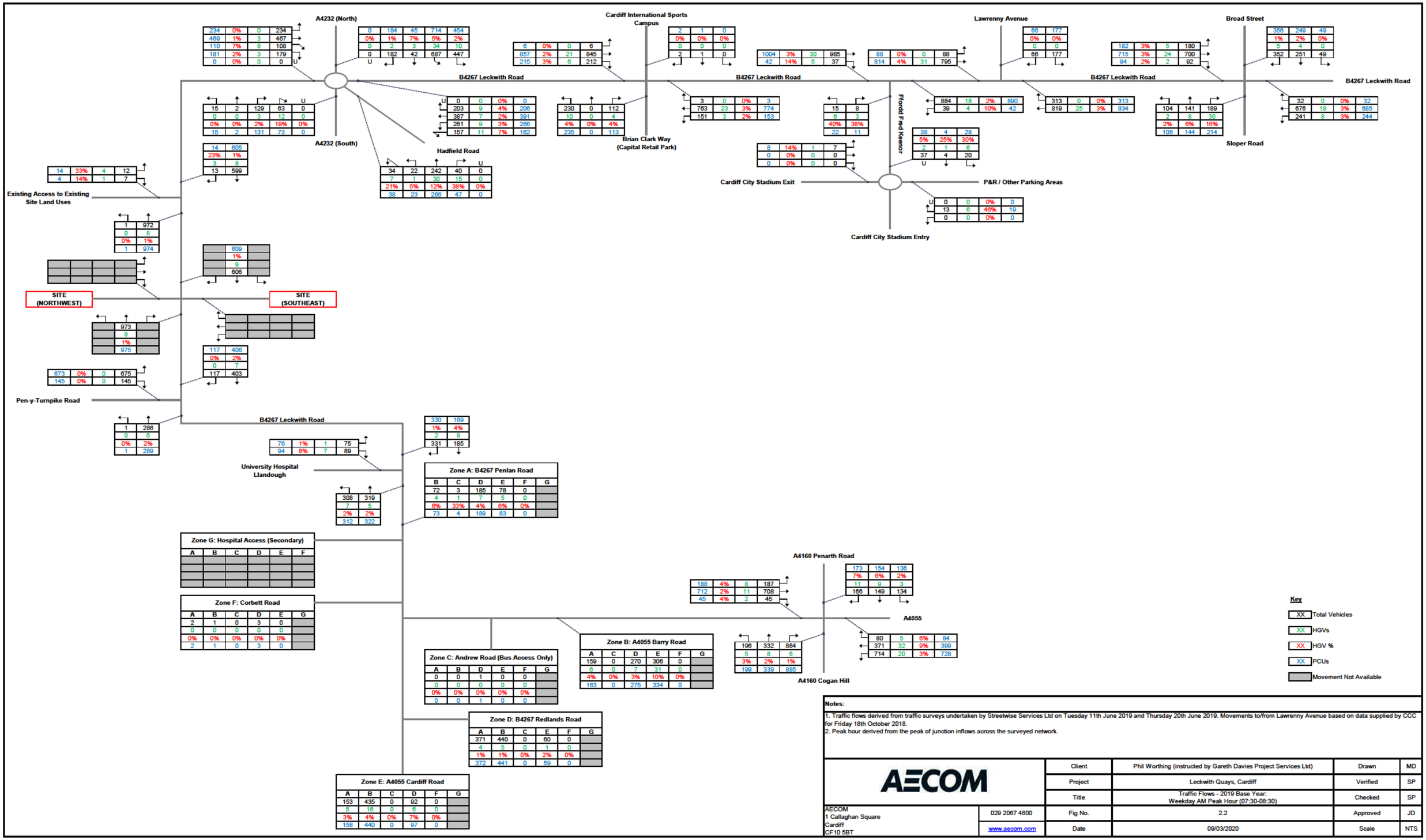
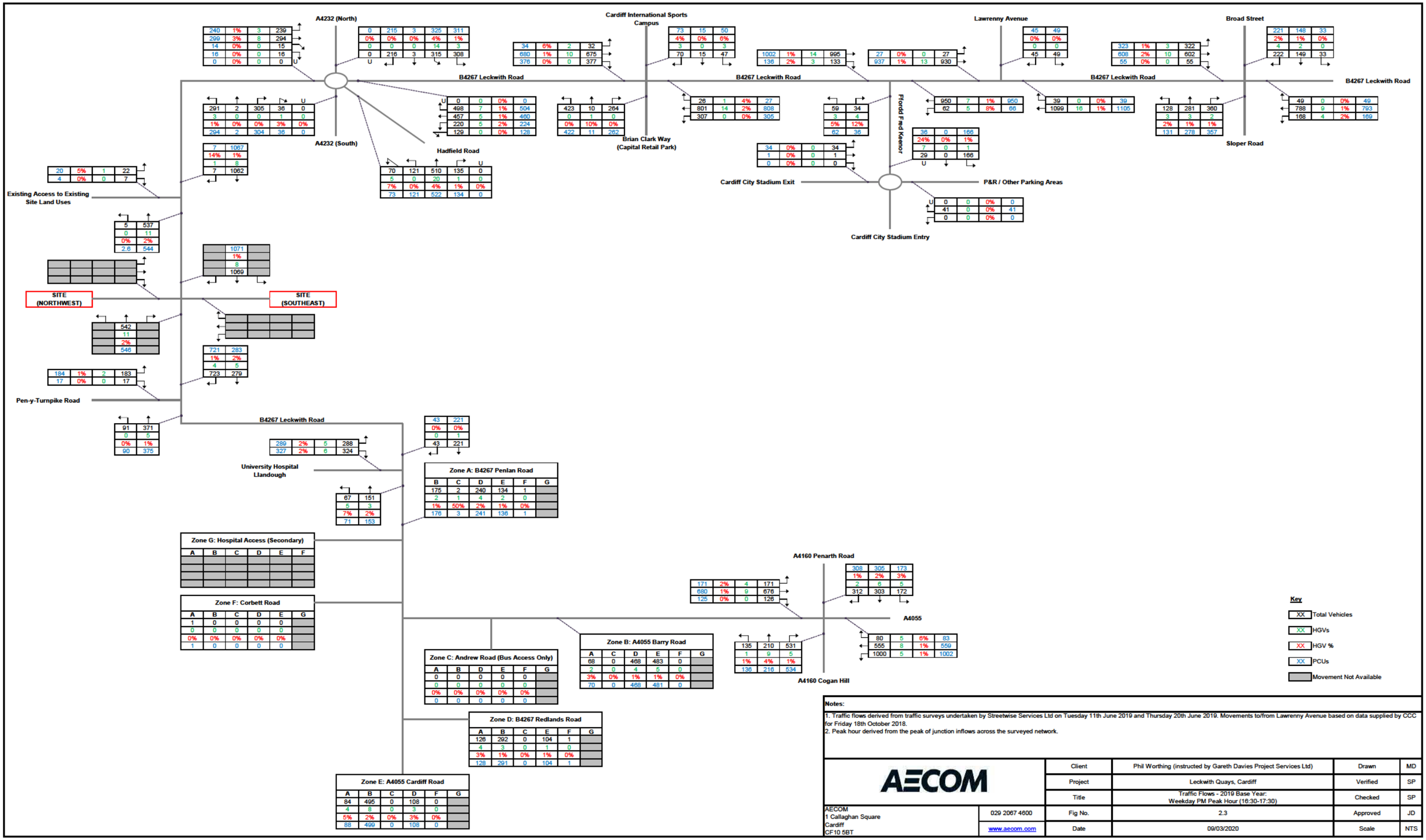


Notes:

1. Traffic flows derived from traffic surveys undertaken by Streetwise Services Ltd on Tuesday 11th June 2019 and Thursday 20th June 2019. Movements to/from Lawrenny Avenue based on data supplied by CCC for Friday 18th October 2018.
2. Peak hour derived from the peak of junction inflows across the surveyed network.

AECOM		Client	Phil Worthing (instructed by Gareth Davies Project Services Ltd)	Drawn	MD
		Project	Leckwith Quays, Cardiff	Verified	SP
		Title	Traffic Flows - 2019 Base Year: Weekday AM Peak Hour (07:30-08:30)	Checked	SP
AECOM 1 Callaghan Square Cardiff CF10 5BT	029 2067 4600 www.aecom.com	Fig No.	2.2	Approved	JD
		Date	09/03/2020	Scale	NTS


A4232 (North)
A4232 (South)
B4267 Leckwith Road
Cardiff International Sports Campus
Brian Clark Way (Capital Retail Park)
Hadfield Road
Lawrenny Avenue
Broad Street
Sloper Road
Flodd Fred Keenor
Cardiff City Stadium Exit
Cardiff City Stadium Entry
P&R / Other Parking Areas
Existing Access to Existing Site Land Uses
SITE (NORTHWEST)
SITE (SOUTHEAST)
Pen-y-Turnpike Road
B4267 Leckwith Road
University Hospital Llandough
A4160 Penarth Road
A4055
A4160 Cogan Hill
Zone A: B4267 Penlan Road
Zone B: A4055 Barry Road
Zone C: Andrew Road (Bus Access Only)
Zone D: B4267 Redlands Road
Zone E: A4055 Cardiff Road
Zone F: Corbett Road
Zone G: Hospital Access (Secondary)
Key
XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
Movement Not Available
Notes:
1. Traffic flows derived from traffic surveys undertaken by Streetwise Services Ltd on Tuesday 11th June 2019 and Thursday 20th June 2019. Movements to/from Lawrenny Avenue based on data supplied by CCC for Friday 18th October 2018.
2. Peak hour derived from the peak of junction inflows across the surveyed network.
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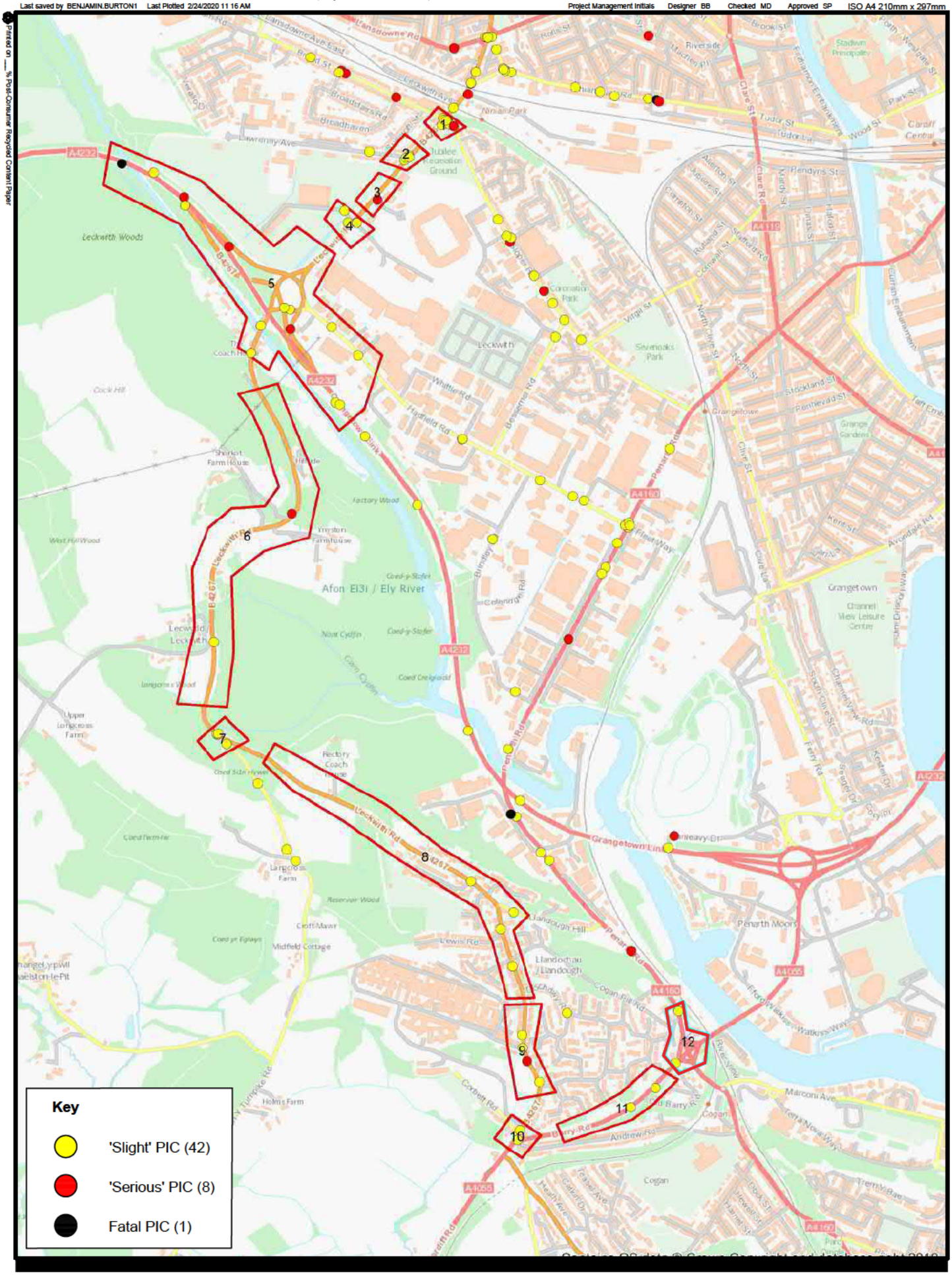
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Project: Leckwith Quays, Cardiff
Title: Traffic Flows - 2019 Base Year: Weekday PM Peak Hour (16:30-17:30)
Fig No.: 2.3
Date: 09/03/2020
Drawn: MD
Verified: SP
Checked: SP
Approved: JD
Scale: NTS



Leckwith Quays, Cardiff

Transport Assessment

Figure 2.4: Personal Injury Collision Data Plot

AECOM

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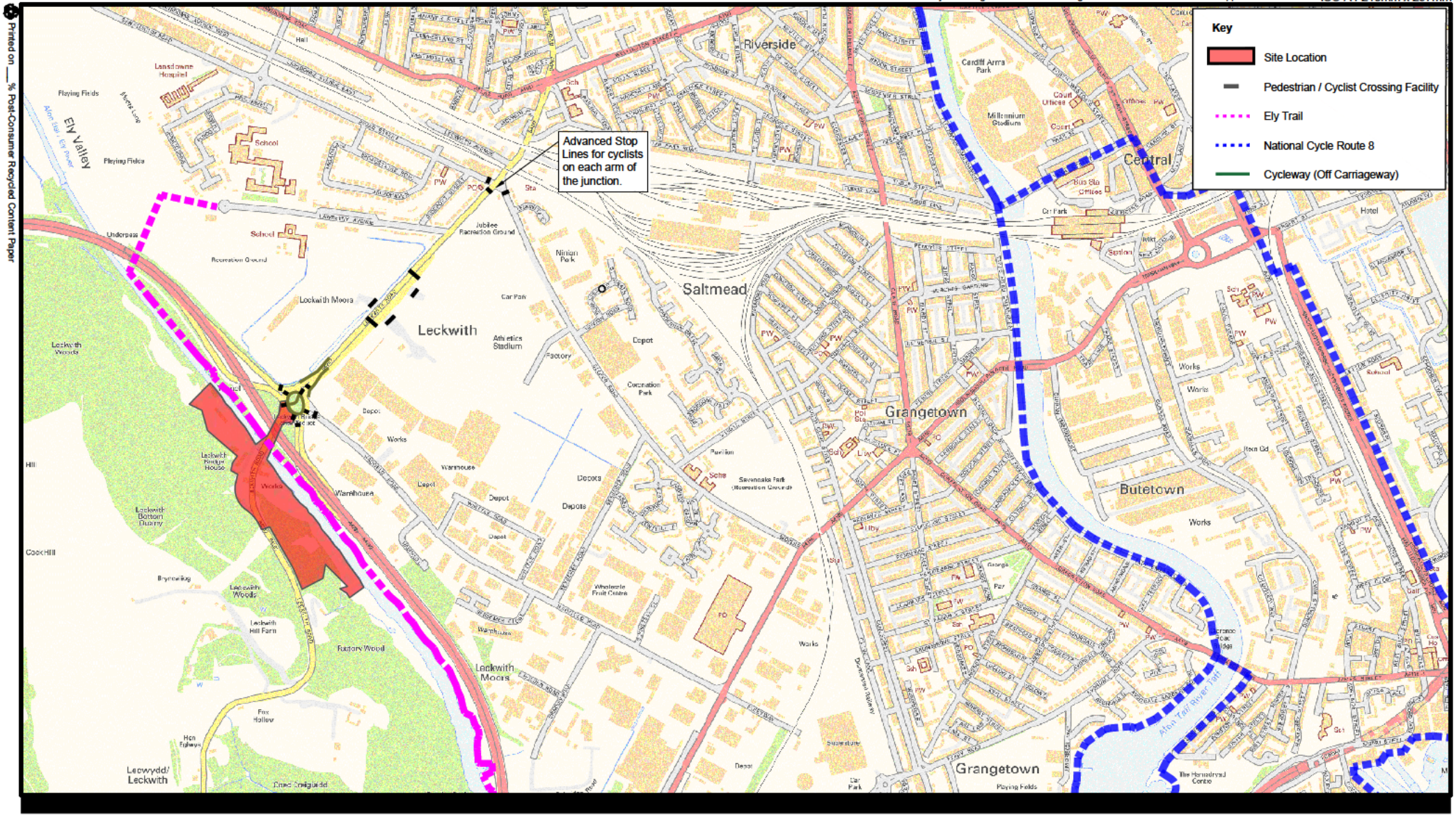

Leckwith Quays, Cardiff

Transport Assessment

Figure 2.5: Walking and Cycling Facilities

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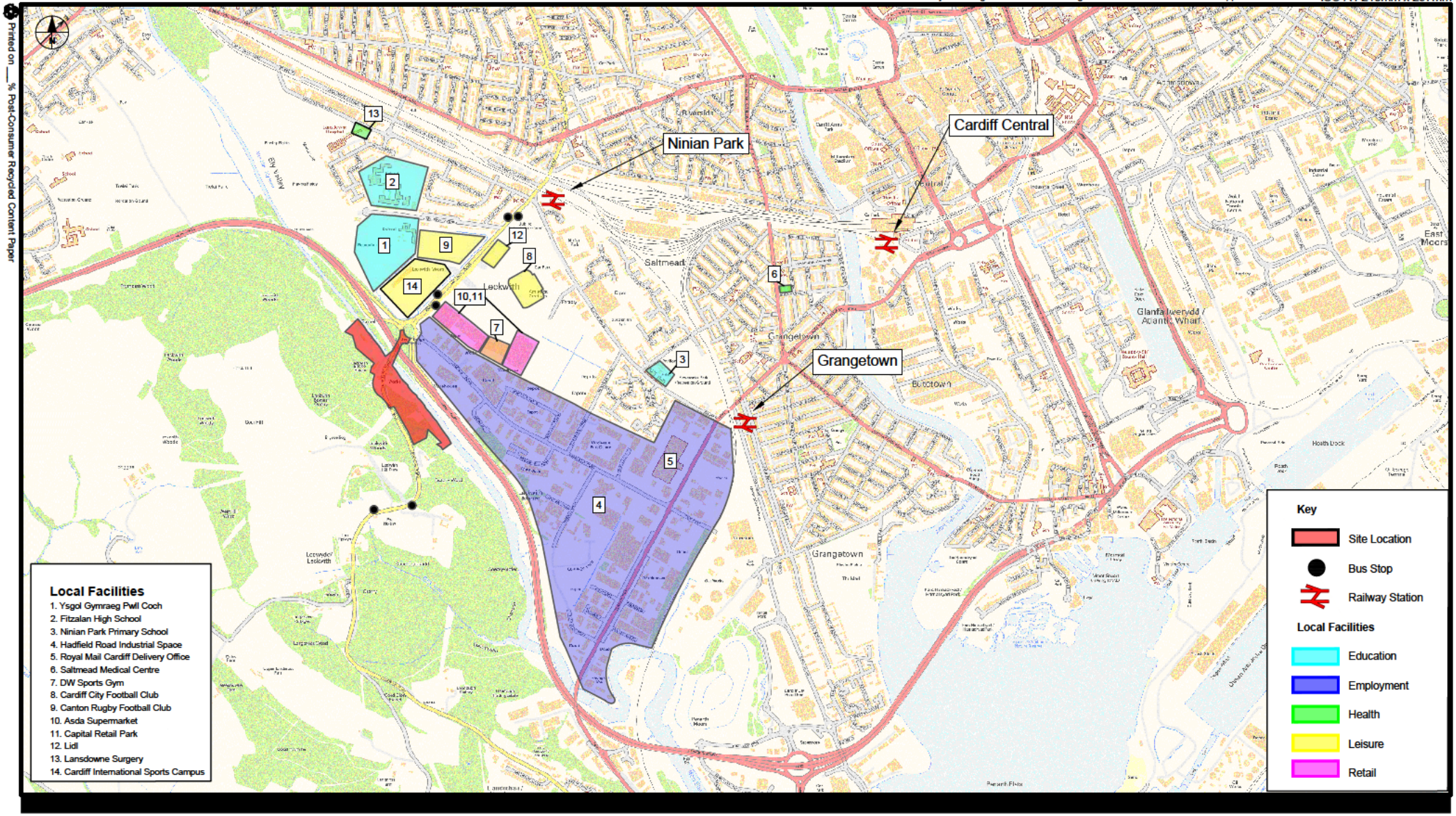

Leckwith Quays, Cardiff

Transport Assessment

Figure 2.6: Local Facilities Plan

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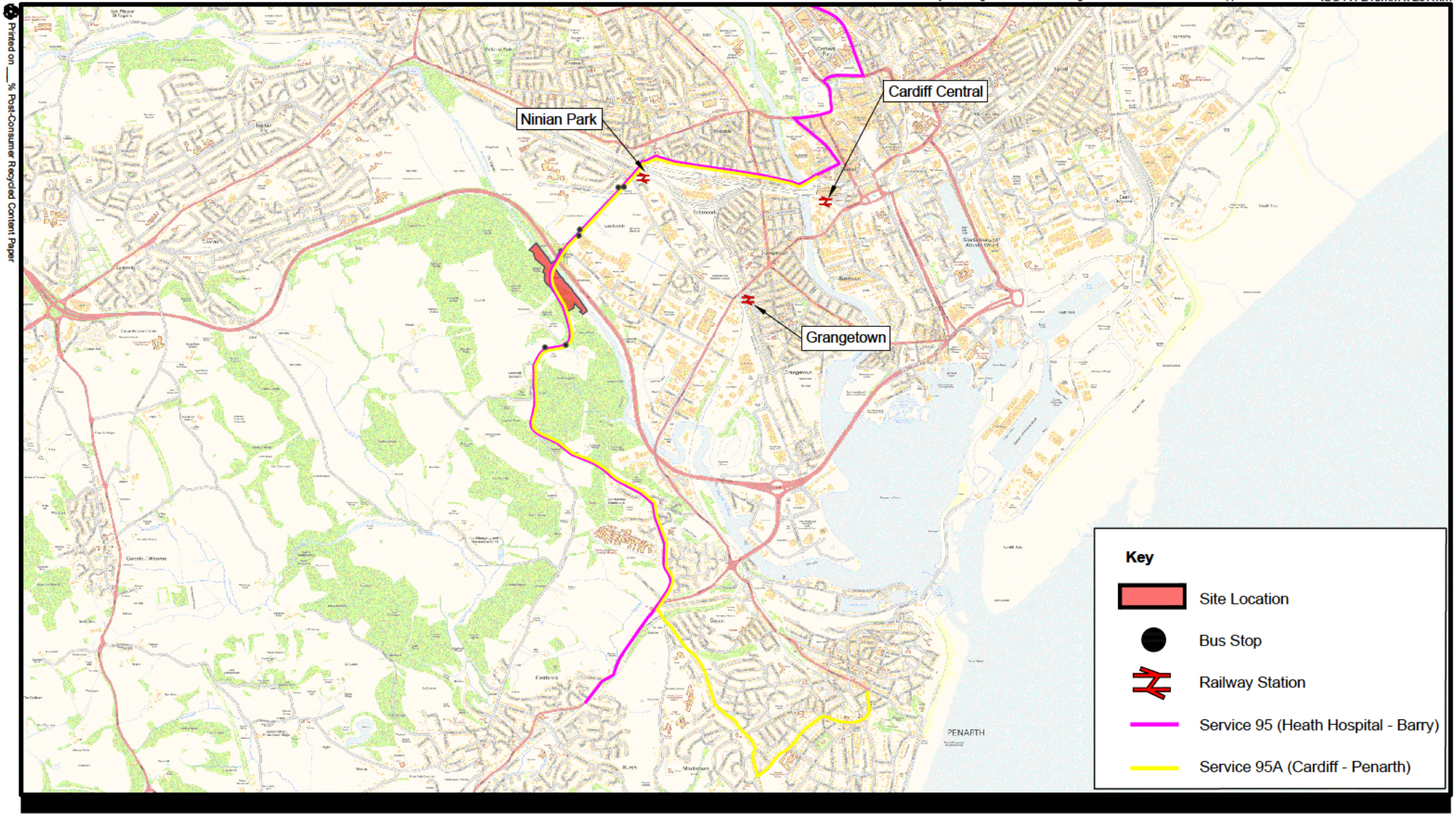

Leckwith Quays, Cardiff

Transport Assessment

Figure 2.7: Bus Services Plan

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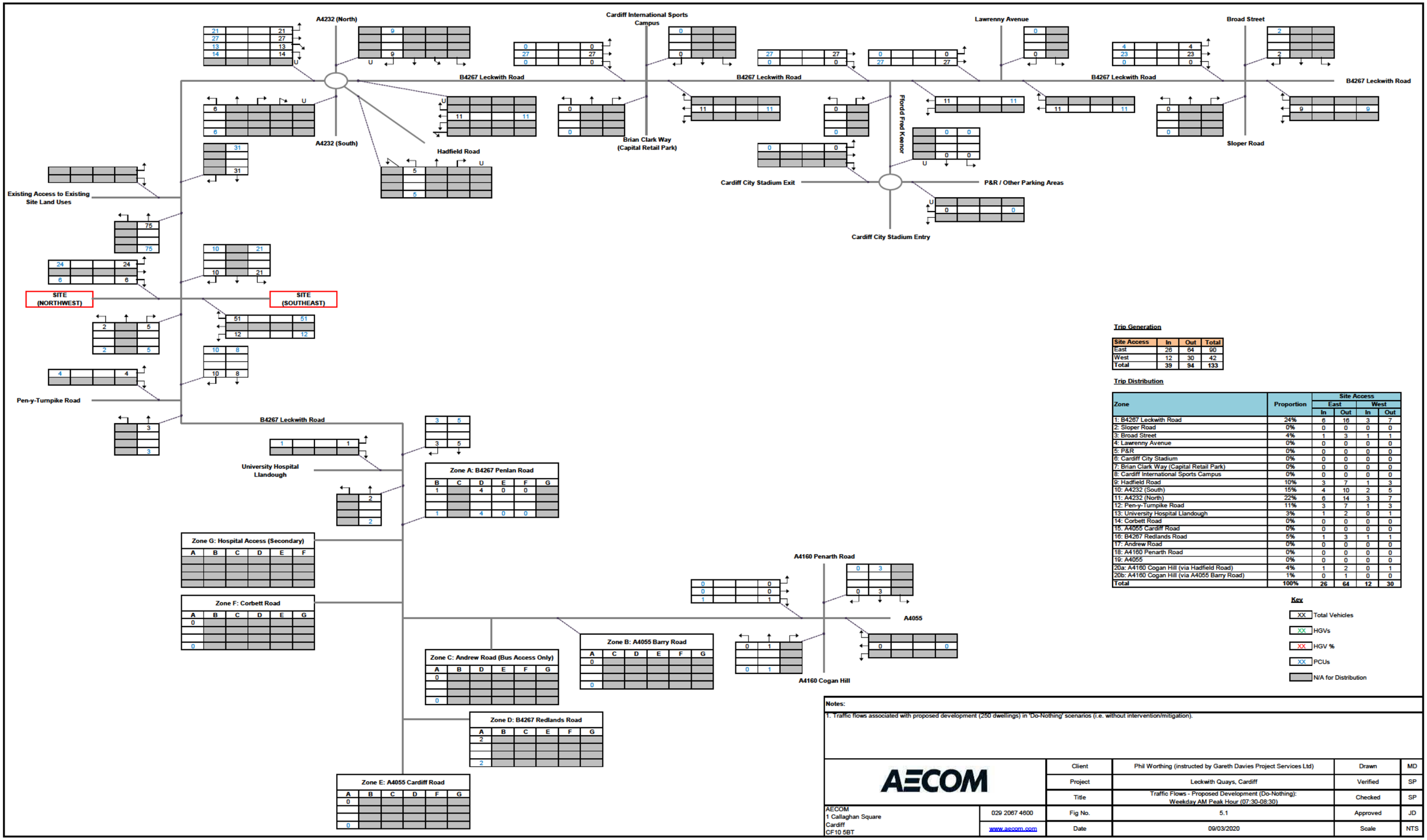

Trip Generation

Site Access	In	Out	Total
East	26	64	90
West	12	30	42
Total	**39**	**94**	**133**

Trip Distribution

Zone	Proportion	Site Access			
		East		West	
		In	Out	In	Out
1: B4267 Leckwith Road	24%	6	16	3	7
2: Sloper Road	0%	0	0	0	0
3: Broad Street	4%	1	3	1	1
4: Lawrenny Avenue	0%	0	0	0	0
5: P&R	0%	0	0	0	0
6: Cardiff City Stadium	0%	0	0	0	0
7: Brian Clark Way (Capital Retail Park)	0%	0	0	0	0
8: Cardiff International Sports Campus	0%	0	0	0	0
9: Hadfield Road	10%	3	7	1	3
10: A4232 (South)	15%	4	10	2	5
11: A4232 (North)	22%	6	14	3	7
12: Pen-y-Turnpike Road	11%	3	7	1	3
13: University Hospital Llandough	3%	1	2	0	1
14: Corbett Road	0%	0	0	0	0
15: A4055 Cardiff Road	0%	0	0	0	0
16: B4267 Redlands Road	5%	1	3	1	1
17: Andrew Road	0%	0	0	0	0
18: A4160 Penarth Road	0%	0	0	0	0
19: A4055	0%	0	0	0	0
20a: A4160 Cogan Hill (via Hadfield Road)	4%	1	2	0	1
20b: A4160 Cogan Hill (via A4055 Barry Road)	1%	0	1	0	0
Total	**100%**	**26**	**64**	**12**	**30**

Key

XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
N/A for Distribution

Notes:

1. Traffic flows associated with proposed development (250 dwellings) in 'Do-Nothing' scenarios (i.e. without intervention/mitigation).

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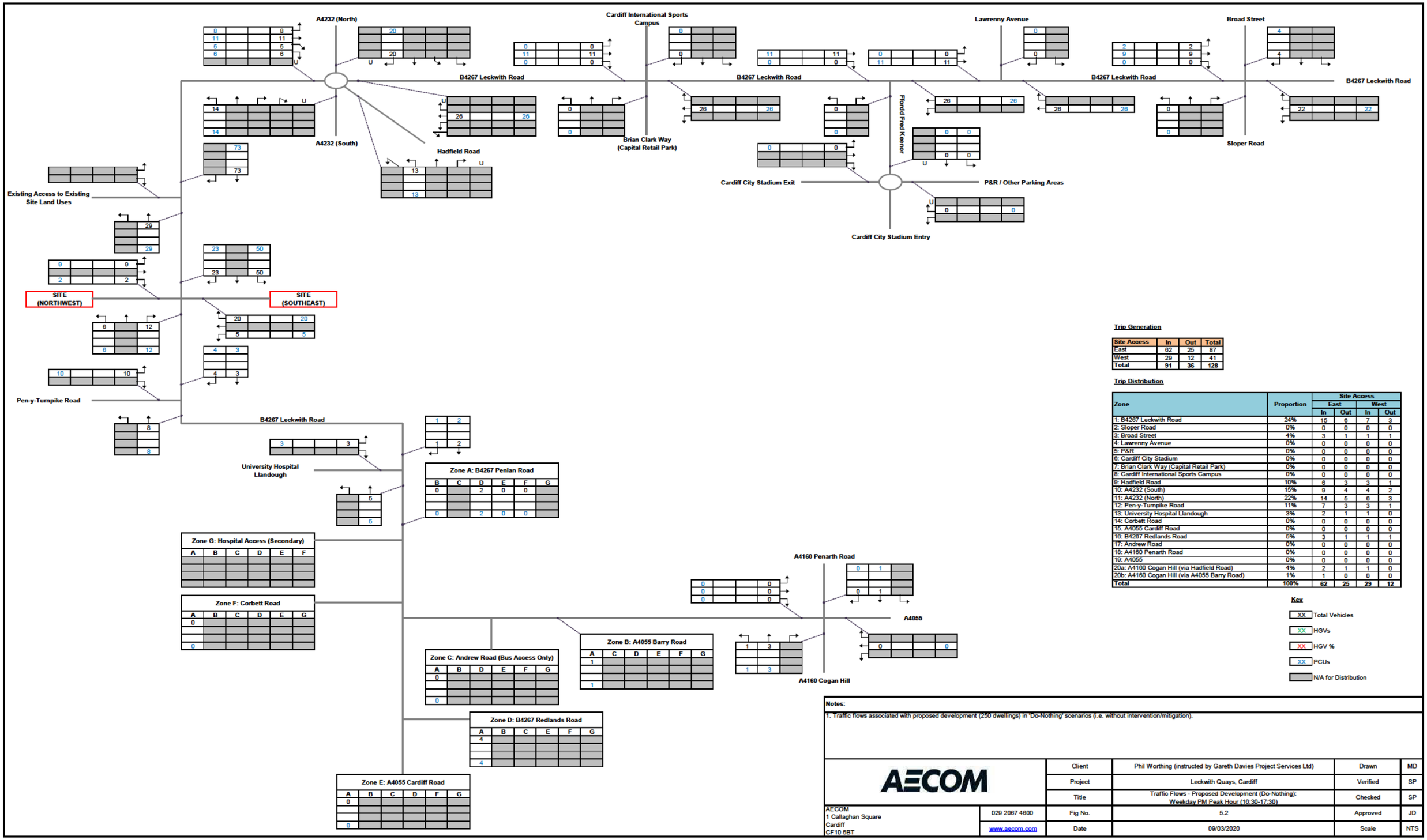
Client	Phil Worthing (instructed by Gareth Davies Project Services Ltd)	Drawn	MD
Project	Leckwith Quays, Cardiff	Verified	SP
Title	Traffic Flows - Proposed Development (Do-Nothing): Weekday AM Peak Hour (07:30-08:30)	Checked	SP
Fig No.	5.1	Approved	JD
Date	09/03/2020	Scale	NTS



Trip Generation

Site Access	In	Out	Total
East	62	25	87
West	29	12	41
Total	**91**	**36**	**128**

Trip Distribution

Zone	Proportion	Site Access			
		East		West	
		In	Out	In	Out
1: B4267 Leckwith Road	24%	15	6	7	3
2: Sloper Road	0%	0	0	0	0
3: Broad Street	4%	3	1	1	1
4: Lawrenny Avenue	0%	0	0	0	0
5: P&R	0%	0	0	0	0
6: Cardiff City Stadium	0%	0	0	0	0
7: Brian Clark Way (Capital Retail Park)	0%	0	0	0	0
8: Cardiff International Sports Campus	0%	0	0	0	0
9: Hadfield Road	10%	6	3	3	1
10: A4232 (South)	15%	9	4	4	2
11: A4232 (North)	22%	14	5	6	3
12: Pen-y-Turnpike Road	11%	7	3	3	1
13: University Hospital Llandough	3%	2	1	1	0
14: Corbett Road	0%	0	0	0	0
15: A4055 Cardiff Road	0%	0	0	0	0
16: B4267 Redlands Road	5%	3	1	1	1
17: Andrew Road	0%	0	0	0	0
18: A4160 Penarth Road	0%	0	0	0	0
19: A4055	0%	0	0	0	0
20a: A4160 Cogan Hill (via Hadfield Road)	4%	2	1	1	0
20b: A4160 Cogan Hill (via A4055 Barry Road)	1%	1	0	0	0
Total	**100%**	**62**	**25**	**29**	**12**

Key

XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
N/A for Distribution

Notes:

1. Traffic flows associated with proposed development (250 dwellings) in 'Do-Nothing' scenarios (i.e. without intervention/mitigation).

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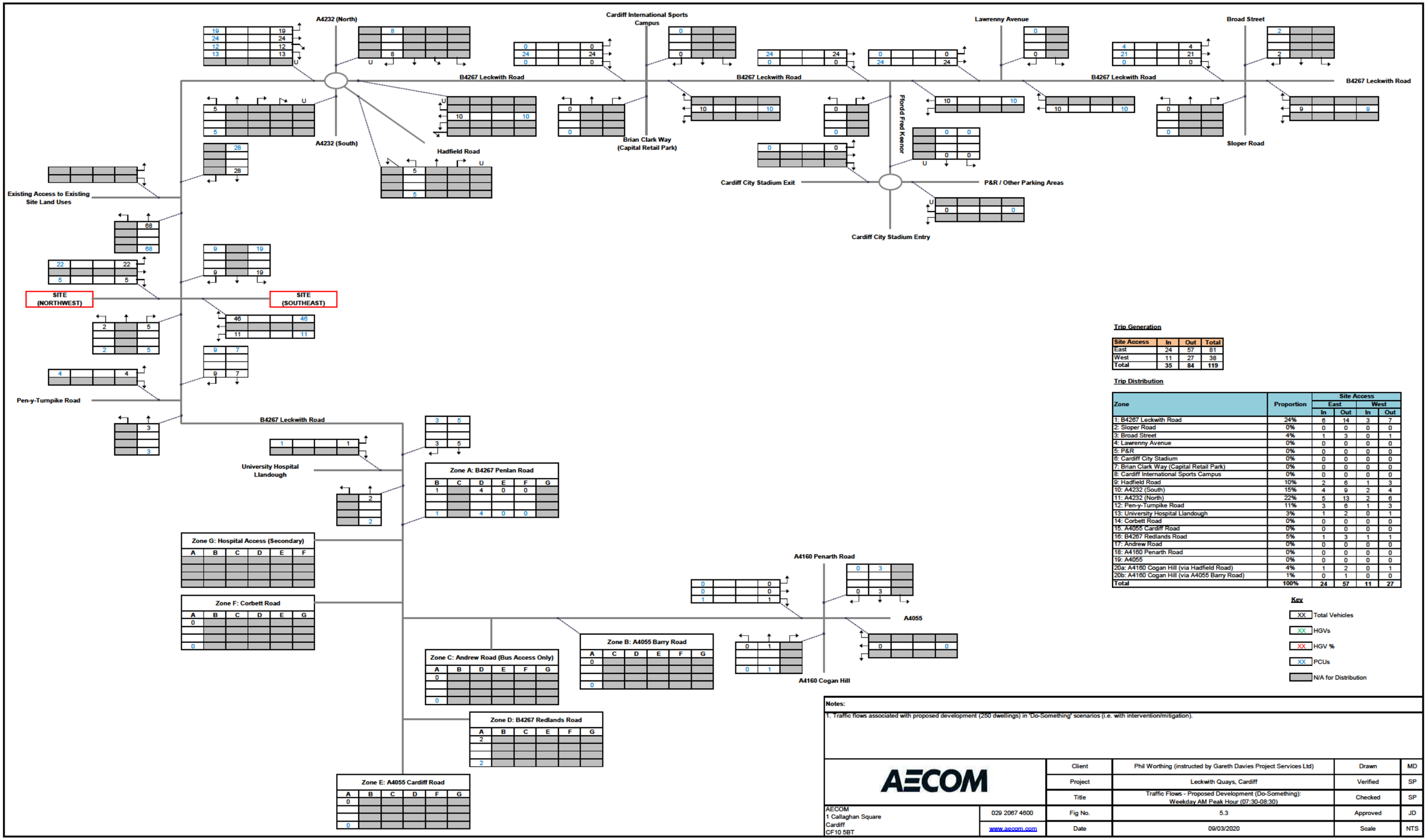
Fig No.	5.2	Approved	JD
Date	09/03/2020	Scale	NTS



Trip Generation

Site Access	In	Out	Total
East	24	57	81
West	11	27	38
Total	**35**	**84**	**119**

Trip Distribution

Zone	Proportion	Site Access East In	Site Access East Out	Site Access West In	Site Access West Out
1: B4267 Leckwith Road	24%	6	14	3	7
2: Sloper Road	0%	0	0	0	0
3: Broad Street	4%	1	3	0	1
4: Lawrenny Avenue	0%	0	0	0	0
5: P&R	0%	0	0	0	0
6: Cardiff City Stadium	0%	0	0	0	0
7: Brian Clark Way (Capital Retail Park)	0%	0	0	0	0
8: Cardiff International Sports Campus	0%	0	0	0	0
9: Hadfield Road	10%	2	6	1	3
10: A4232 (South)	15%	4	9	2	4
11: A4232 (North)	22%	5	13	2	6
12: Pen-y-Turnpike Road	11%	3	6	1	3
13: University Hospital Llandough	3%	1	2	0	1
14: Corbett Road	0%	0	0	0	0
15: A4055 Cardiff Road	0%	0	0	0	0
16: B4267 Redlands Road	5%	1	3	1	1
17: Andrew Road	0%	0	0	0	0
18: A4160 Penarth Road	0%	0	0	0	0
19: A4055	0%	0	0	0	0
20a: A4160 Cogan Hill (via Hadfield Road)	4%	1	2	0	1
20b: A4160 Cogan Hill (via A4055 Barry Road)	1%	0	1	0	0
Total	**100%**	**24**	**57**	**11**	**27**

Key

XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
N/A for Distribution

Notes:

1. Traffic flows associated with proposed development (250 dwellings) in 'Do-Something' scenarios (i.e. with intervention/mitigation).

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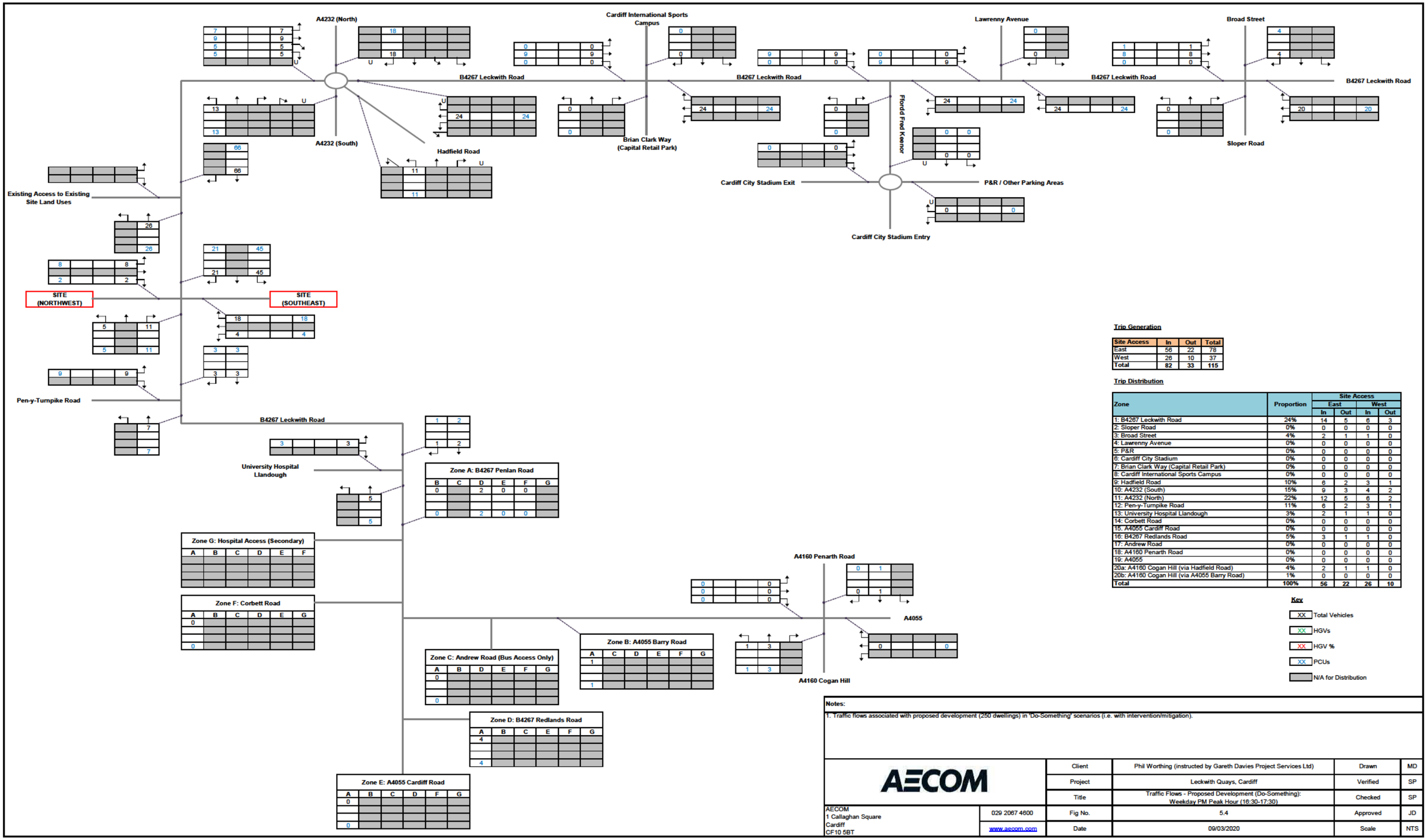

Trip Generation

Site Access	In	Out	Total
East	56	22	78
West	26	10	37
Total	**82**	**33**	**115**

Trip Distribution

Zone	Proportion	Site Access			
		East		West	
		In	Out	In	Out
1: B4267 Leckwith Road	24%	14	5	6	3
2: Sloper Road	0%	0	0	0	0
3: Broad Street	4%	2	1	1	0
4: Lawrenny Avenue	0%	0	0	0	0
5: P&R	0%	0	0	0	0
6: Cardiff City Stadium	0%	0	0	0	0
7: Brian Clark Way (Capital Retail Park)	0%	0	0	0	0
8: Cardiff International Sports Campus	0%	0	0	0	0
9: Hadfield Road	10%	6	2	3	1
10: A4232 (South)	15%	9	3	4	2
11: A4232 (North)	22%	12	5	6	2
12: Pen-y-Turnpike Road	11%	6	2	3	1
13: University Hospital Llandough	3%	2	1	1	0
14: Corbett Road	0%	0	0	0	0
15: A4055 Cardiff Road	0%	0	0	0	0
16: B4267 Redlands Road	5%	3	1	1	0
17: Andrew Road	0%	0	0	0	0
18: A4160 Penarth Road	0%	0	0	0	0
19: A4055	0%	0	0	0	0
20a: A4160 Cogan Hill (via Hadfield Road)	4%	2	1	1	0
20b: A4160 Cogan Hill (via A4055 Barry Road)	1%	0	0	0	0
Total	**100%**	**56**	**22**	**26**	**10**

Key

- XX Total Vehicles
- XX HGVs
- XX HGV %
- XX PCUs
- N/A for Distribution

Notes:

1. Traffic flows associated with proposed development (250 dwellings) in 'Do-Something' scenarios (i.e. with intervention/mitigation).

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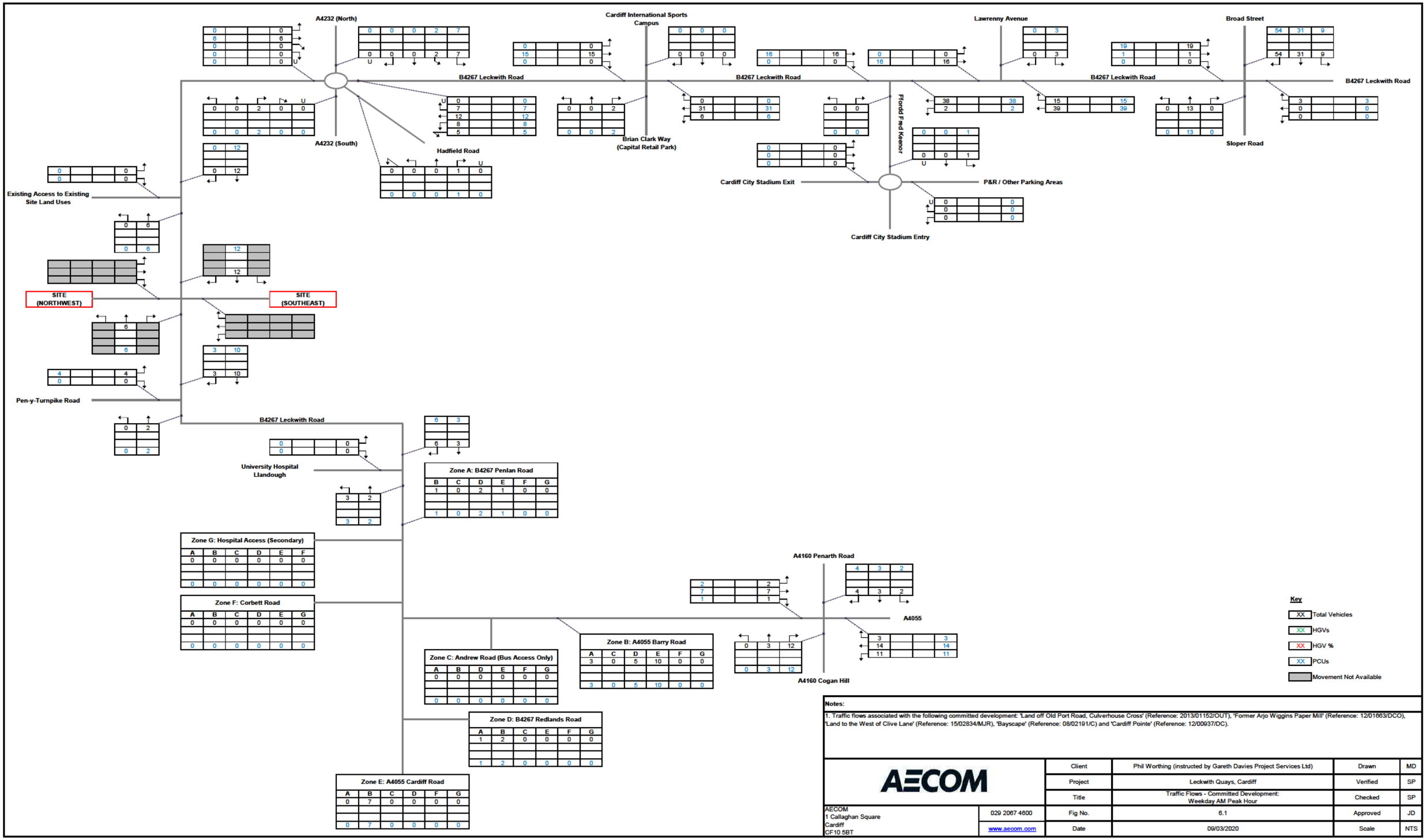

Notes:

1. Traffic flows associated with the following committed development: 'Land off Old Port Road, Culverhouse Cross' (Reference: 2013/01152/OUT), 'Former Arjo Wiggins Paper Mill' (Reference: 12/01663/DCO), 'Land to the West of Clive Lane' (Reference: 15/02834/MJR), 'Bayscape' (Reference: 08/02191/C) and 'Cardiff Pointe' (Reference: 12/00937/DC).

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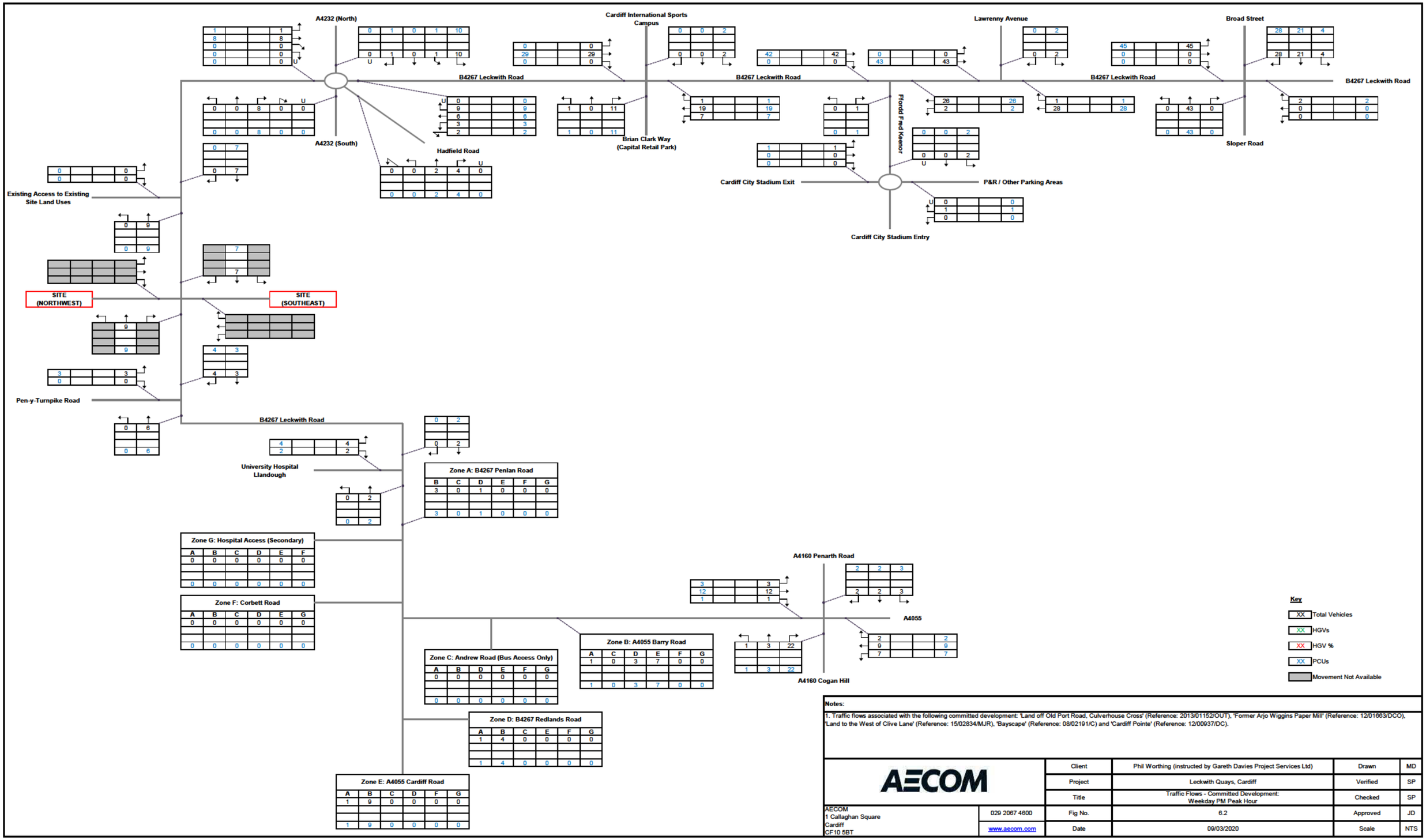
Project	Leckwith Quays, Cardiff	Verified	SP
Title	Traffic Flows - Committed Development: Weekday AM Peak Hour	Checked	SP
Fig No.	6.1	Approved	JD
Date	09/03/2020	Scale	NTS



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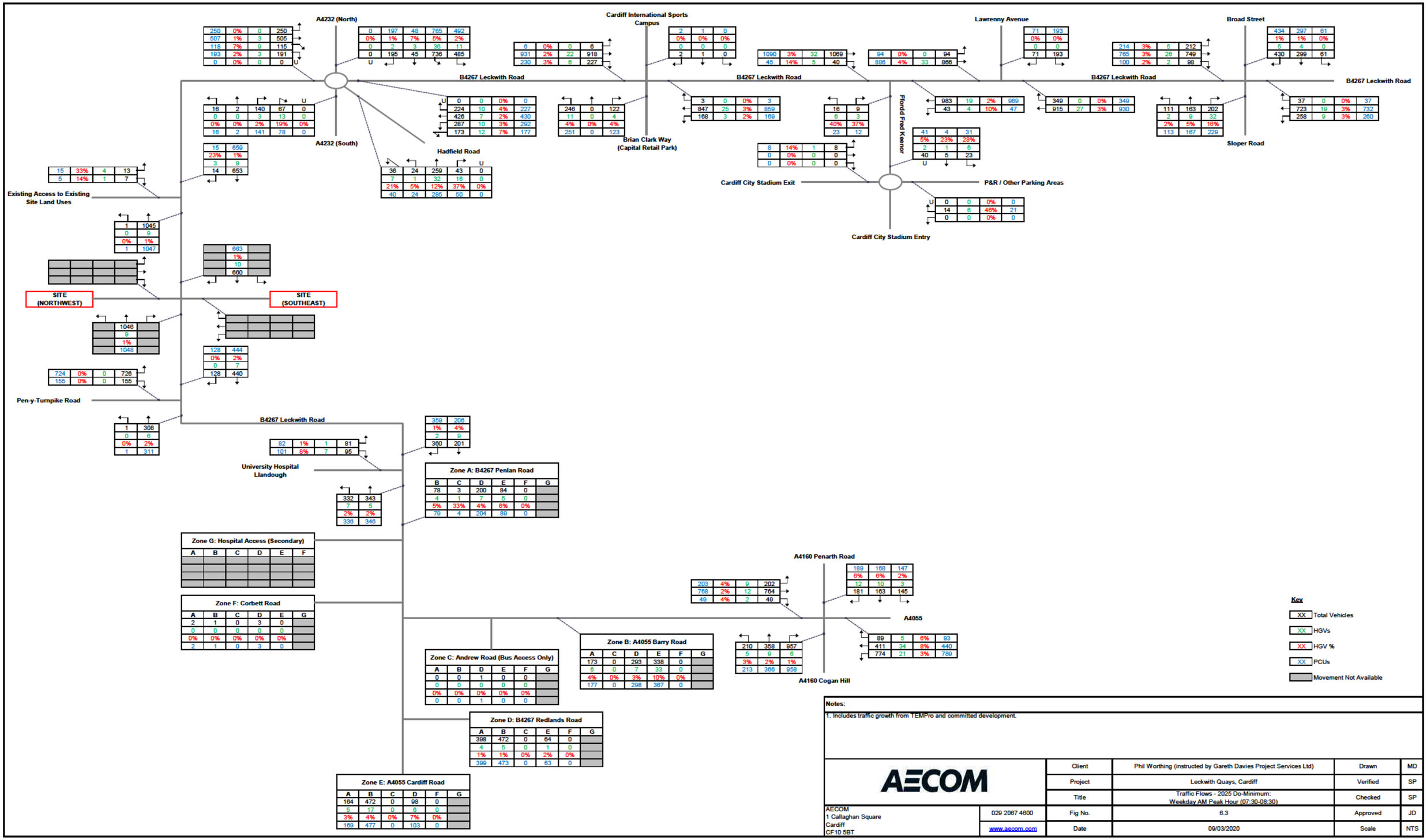
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Brian Clark Way (Capital Retail Park)
Hadfield Road
Lawrenny Avenue
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Cardiff City Stadium Exit
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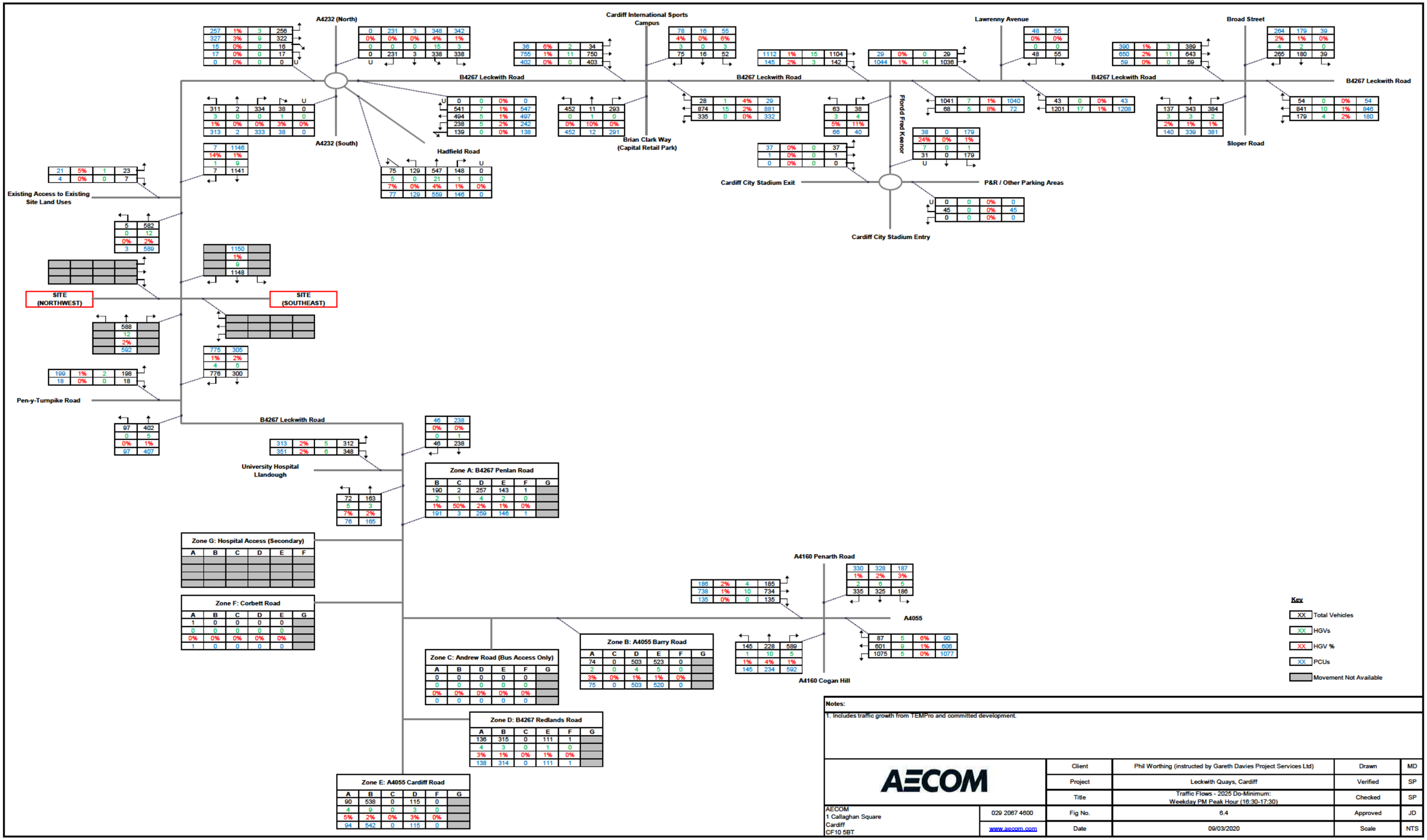
A4055
Zone A: B4267 Penlan Road
Zone B: A4055 Barry Road
Zone C: Andrew Road (Bus Access Only)
Zone D: B4267 Redlands Road
Zone E: A4055 Cardiff Road
Zone F: Corbett Road
Zone G: Hospital Access (Secondary)
Key
XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
Movement Not Available
Notes:
1. Includes traffic growth from TEMPro and committed development.
AECOM
1 Callaghan Square
Cardiff
CF10 5BT
029 2067 4600
www.aecom.com
Client
Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Drawn
MD
Project
Leckwith Quays, Cardiff
Verified
SP
Title
Traffic Flows - 2025 Do-Minimum:
Weekday AM Peak Hour (07:30-08:30)
Checked
SP
Fig No.
6.3
Approved
JD
Date
09/03/2020
Scale
NTS


A4232 (North)
A4232 (South)
B4267 Leckwith Road
Cardiff International Sports Campus
Brian Clark Way (Capital Retail Park)
Hadfield Road
Lawrenny Avenue
Broad Street
Sloper Road
Florida Fred Kennor
Cardiff City Stadium Exit
Cardiff City Stadium Entry
P&R / Other Parking Areas
Existing Access to Existing Site Land Uses
SITE (NORTHWEST)
SITE (SOUTHEAST)
Pen-y-Turnpike Road
University Hospital Llandough
A4160 Penarth Road
A4055
A4160 Cogan Hill
Zone A: B4267 Penlan Road
Zone B: A4055 Barry Road
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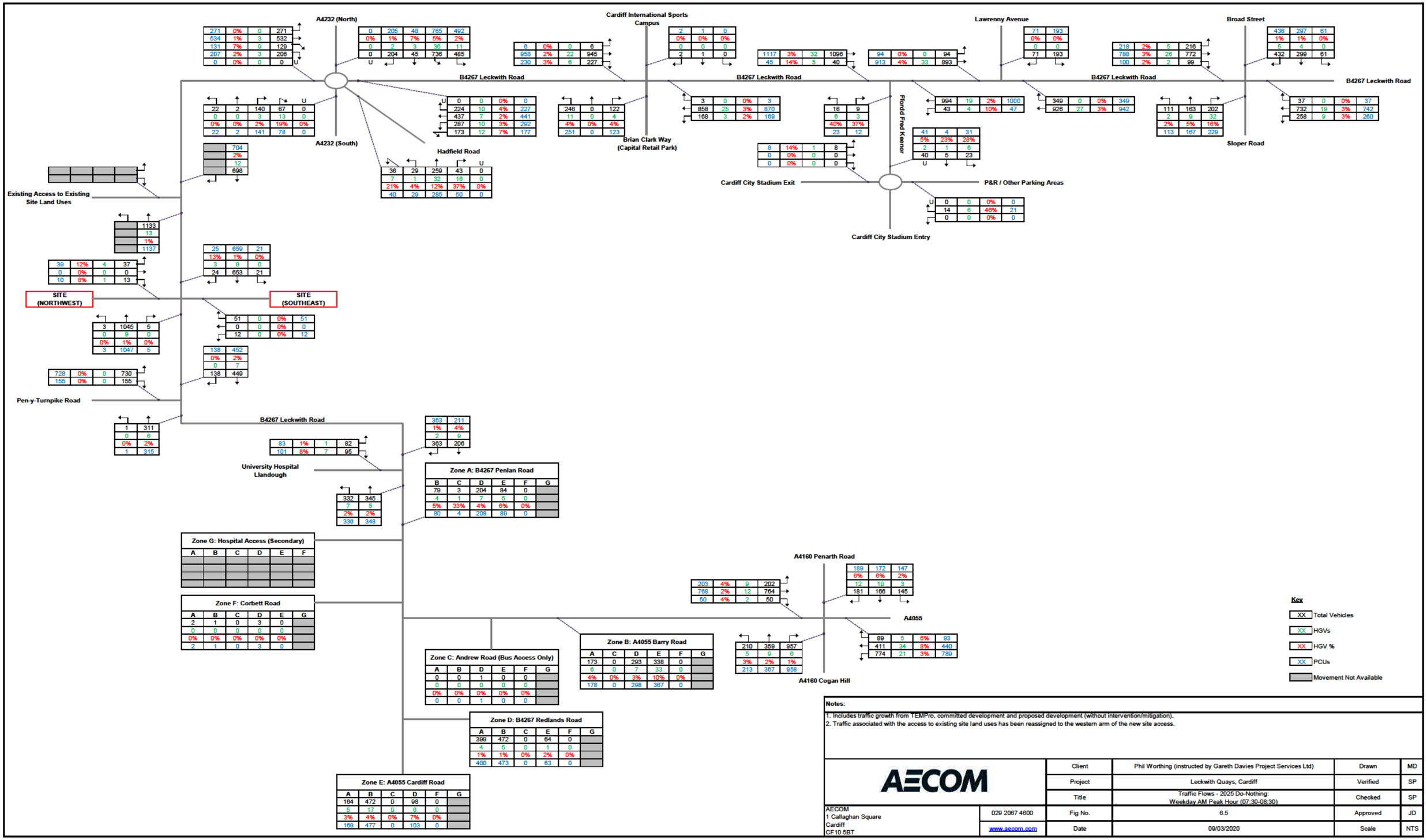
Zone G: Hospital Access (Secondary)
Key
XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
Movement Not Available
Notes:
1. Includes traffic growth from TEMPro and committed development.
AECOM
1 Callaghan Square
Cardiff
CF10 5BT
029 2067 4600
www.aecom.com
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Project: Leckwith Quays, Cardiff
Title: Traffic Flows - 2025 Do-Minimum: Weekday PM Peak Hour (16:30-17:30)
Fig No.: 6.4
Date: 09/03/2020
Drawn: MD
Verified: SP
Checked: SP
Approved: JD
Scale: NTS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B4267 Leckwith Road
Cardiff International Sports Campus
Brian Clark Way (Capital Retail Park)
Lawrenny Avenue
Broad Street
Sloper Road
Hadfield Road
Florida Fred Keenor
Cardiff City Stadium Exit
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P&R / Other Parking Areas
Existing Access to Existing Site Land Uses
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SITE (SOUTHEAST)
Pen-y-Turnpike Road
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Zone F: Corbett Road
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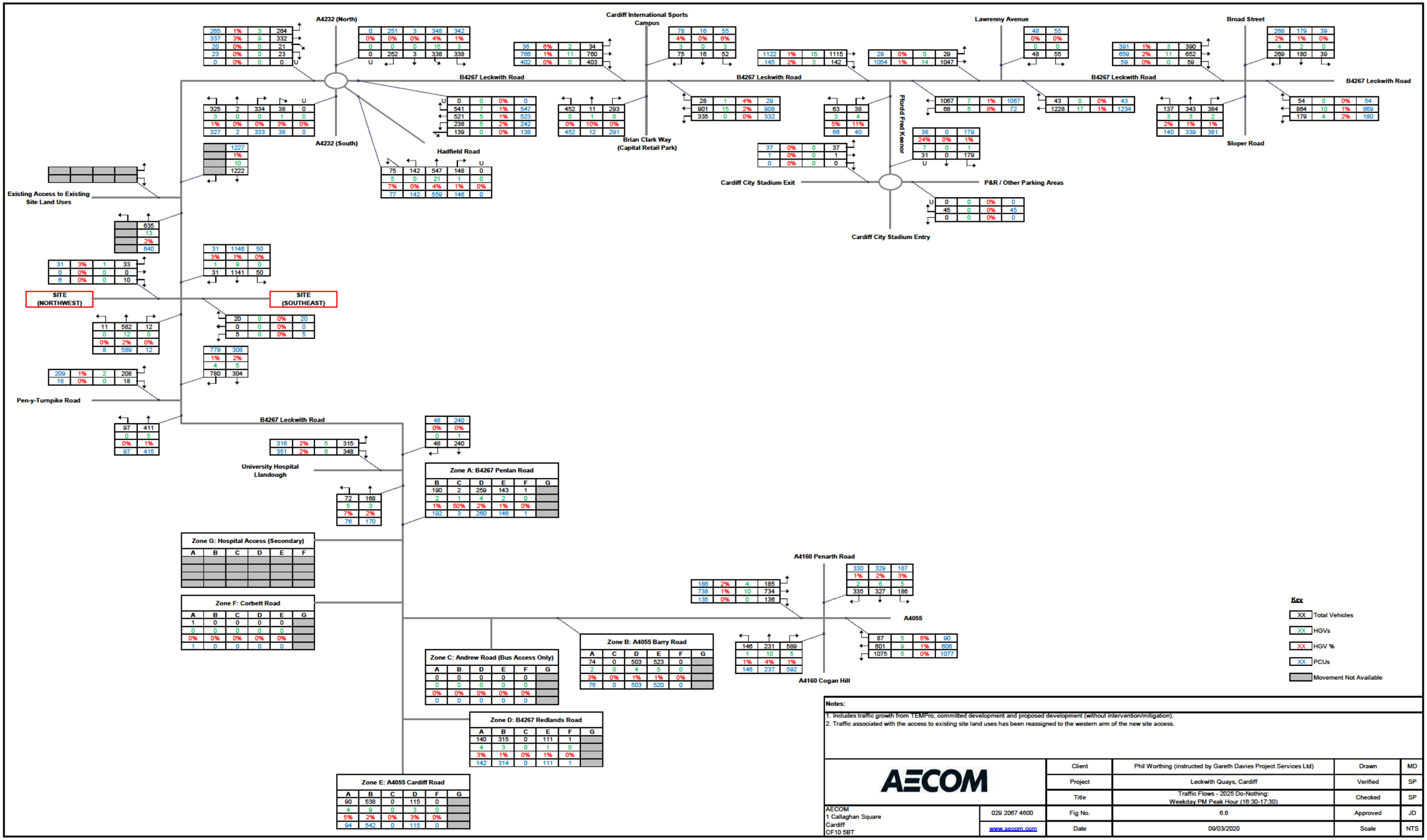
Key
XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
Movement Not Available
Notes:
1. Includes traffic growth from TEMPro, committed development and proposed development (without intervention/mitigation).
2. Traffic associated with the access to existing site land uses has been reassigned to the western arm of the new site access.
AECOM
AECOM
1 Callaghan Square
Cardiff
CF10 5BT
029 2067 4600
www.aecom.com
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Drawn: MD
Project: Leckwith Quays, Cardiff
Verified: SP
Title: Traffic Flows - 2025 Do-Nothing: Weekday AM Peak Hour (07:30-08:30)
Checked: SP
Fig No.: 6.5
Approved: JD
Date: 09/03/2020
Scale: NTS



Notes:

1. Includes traffic growth from TEMPro, committed development and proposed development (without intervention/mitigation).
2. Traffic associated with the access to existing site land uses has been reassigned to the western arm of the new site access.

AECOM	Client	Phil Worthing (instructed by Gareth Davies Project Services Ltd)	Drawn: MD
	Project	Leckwith Quays, Cardiff	Verified: SP
	Title	Traffic Flows - 2025 Do-Nothing: Weekday PM Peak Hour (16:30-17:30)	Checked: SP
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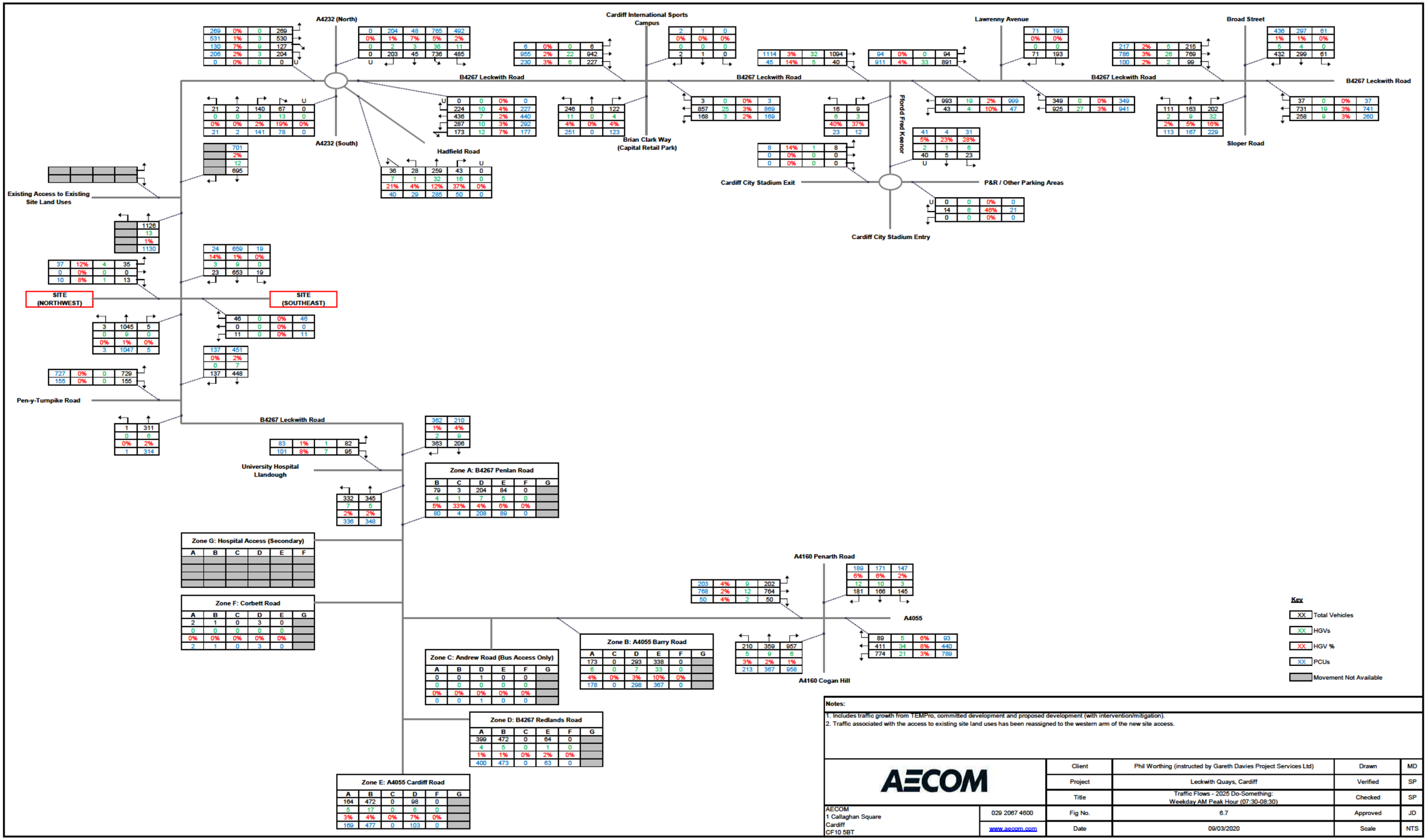
	Date	09/03/2020	Scale: NTS


A4232 (North)
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B4267 Leckwith Road
Cardiff International Sports Campus
Brian Clark Way (Capital Retail Park)
Hadfield Road
Lawrenny Avenue
Broad Street
Sloper Road
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P&R / Other Parking Areas
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SITE (SOUTHEAST)
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Zone E: A4055 Cardiff Road
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Key
XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
Movement Not Available
Notes:
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2. Traffic associated with the access to existing site land uses has been reassigned to the western arm of the new site access.
AECOM
AECOM
1 Callaghan Square
Cardiff
CF10 5BT
029 2067 4600
www.aecom.com
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Drawn: MD
Project: Leckwith Quays, Cardiff
Verified: SP
Title: Traffic Flows - 2025 Do-Something: Weekday AM Peak Hour (07:30-08:30)
Checked: SP
Fig No.: 6.7
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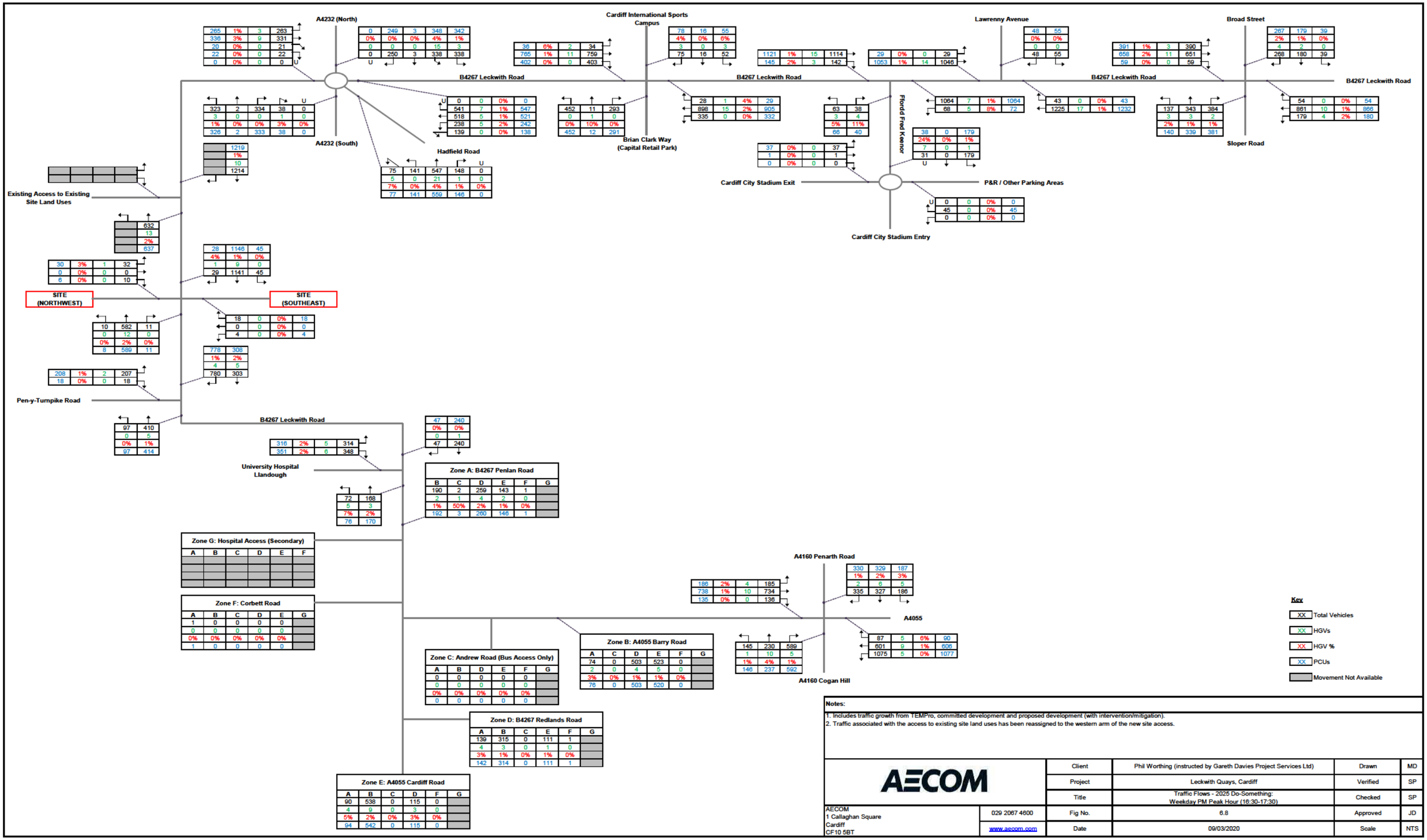
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Brian Clark Way (Capital Retail Park)
Hadfield Road
Lawrenny Avenue
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XX Total Vehicles
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XX PCUs
Movement Not Available
Notes:
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029 2067 4600
www.aecom.com
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Drawn: MD
Project: Leckwith Quays, Cardiff
Verified: SP
Title: Traffic Flows - 2025 Do-Something: Weekday PM Peak Hour (16:30-17:30)
Checked: SP
Fig No.: 6.8
Approved: JD
Date: 09/03/2020
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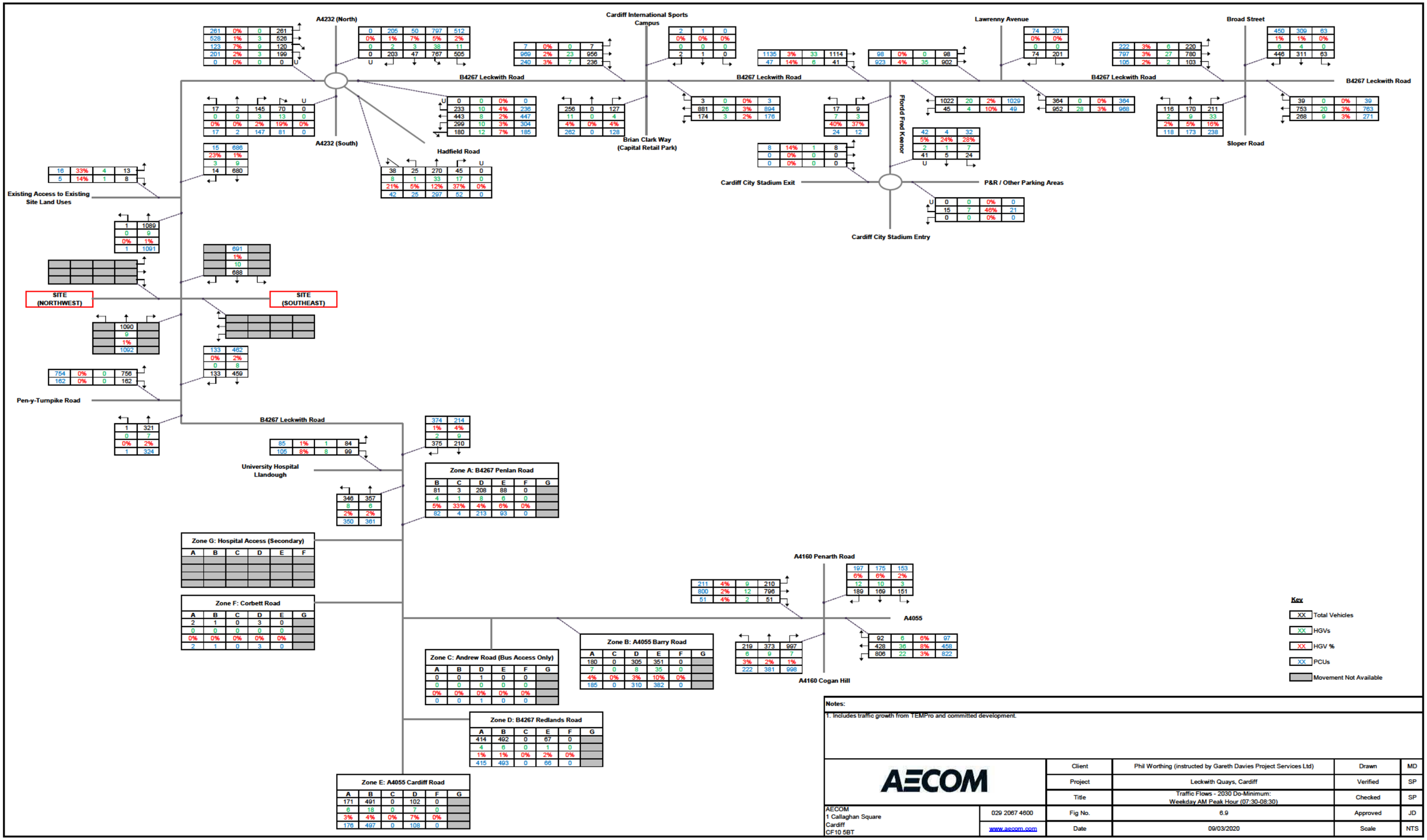
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Cardiff International Sports Campus
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Hadfield Road
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Zone G: Hospital Access (Secondary)
Key
XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
Movement Not Available
Notes:
1. Includes traffic growth from TEMPro and committed development.
AECOM
1 Callaghan Square
Cardiff
CF10 5BT
029 2067 4600
www.aecom.com
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Drawn: MD
Project: Leckwith Quays, Cardiff
Verified: SP
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Fig No.: 6.9
Approved: JD
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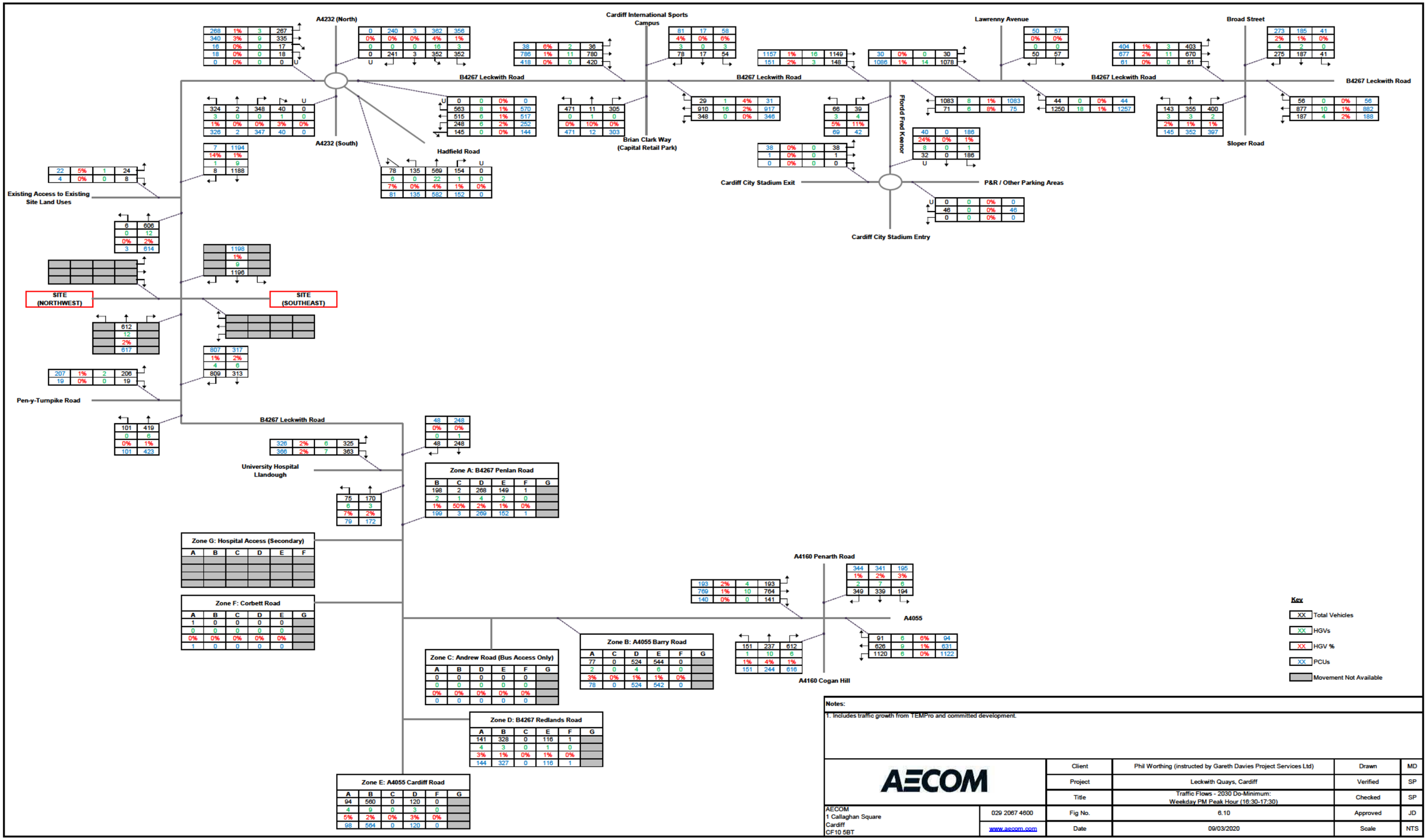
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B4267 Leckwith Road
Cardiff International Sports Campus
Brian Clark Way (Capital Retail Park)
Hadfield Road
Lawrenny Avenue
Broad Street
Sloper Road
Florida Fred Kennor
Cardiff City Stadium Exit
Cardiff City Stadium Entry
P&R / Other Parking Areas
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SITE (NORTHWEST)
SITE (SOUTHEAST)
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University Hospital Llandough
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Zone A: B4267 Penlan Road
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Zone G: Hospital Access (Secondary)
Key
XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
Movement Not Available
Notes:
1. Includes traffic growth from TEMPro and committed development.
AECOM
1 Callaghan Square
Cardiff
CF10 5BT
029 2067 4600
www.aecom.com
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Project: Leckwith Quays, Cardiff
Title: Traffic Flows - 2030 Do-Minimum: Weekday PM Peak Hour (16:30-17:30)
Fig No.: 6.10
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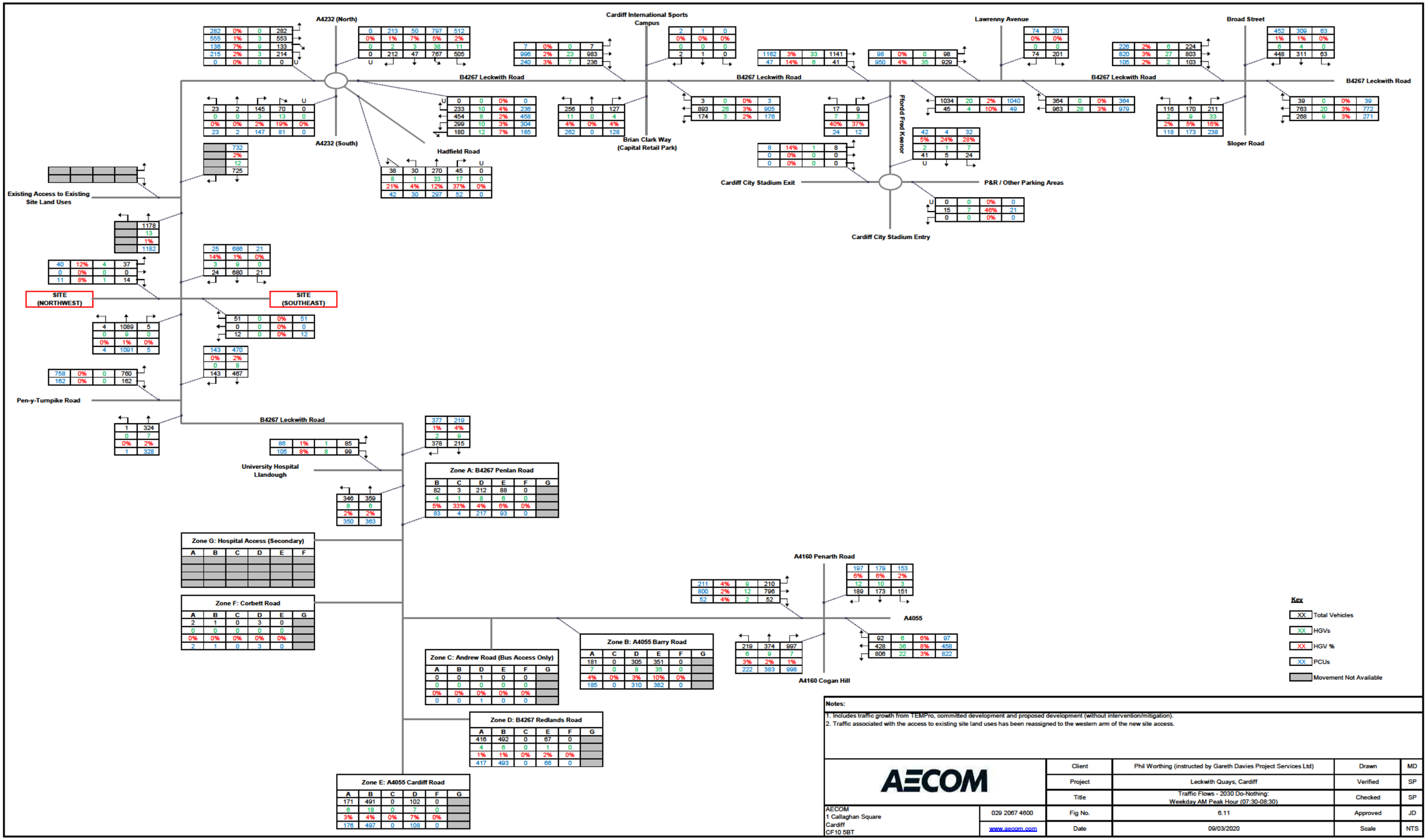
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B4267 Leckwith Road
Cardiff International Sports Campus
Brian Clark Way (Capital Retail Park)
Lawrenny Avenue
Broad Street
Sloper Road
Hadfield Road
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Cardiff City Stadium Exit
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Existing Access to Existing Site Land Uses
SITE (NORTHWEST)
SITE (SOUTHEAST)
Pen-y-Turnpike Road
B4267 Leckwith Road
University Hospital Llandough
A4160 Penarth Road
A4055
A4160 Cogan Hill
Zone A: B4267 Penlan Road
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Zone C: Andrew Road (Bus Access Only)
Zone D: B4267 Redlands Road
Zone E: A4055 Cardiff Road
Zone F: Corbett Road
Zone G: Hospital Access (Secondary)
Key
XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
Movement Not Available
Notes:
1. Includes traffic growth from TEMPro, committed development and proposed development (without intervention/mitigation).
2. Traffic associated with the access to existing site land uses has been reassigned to the western arm of the new site access.
AECOM
AECOM
1 Callaghan Square
Cardiff
CF10 5BT
029 2067 4600
www.aecom.com
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Drawn: MD
Project: Leckwith Quays, Cardiff
Verified: SP
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Fig No.: 6.11
Approved: JD
Date: 09/03/2020
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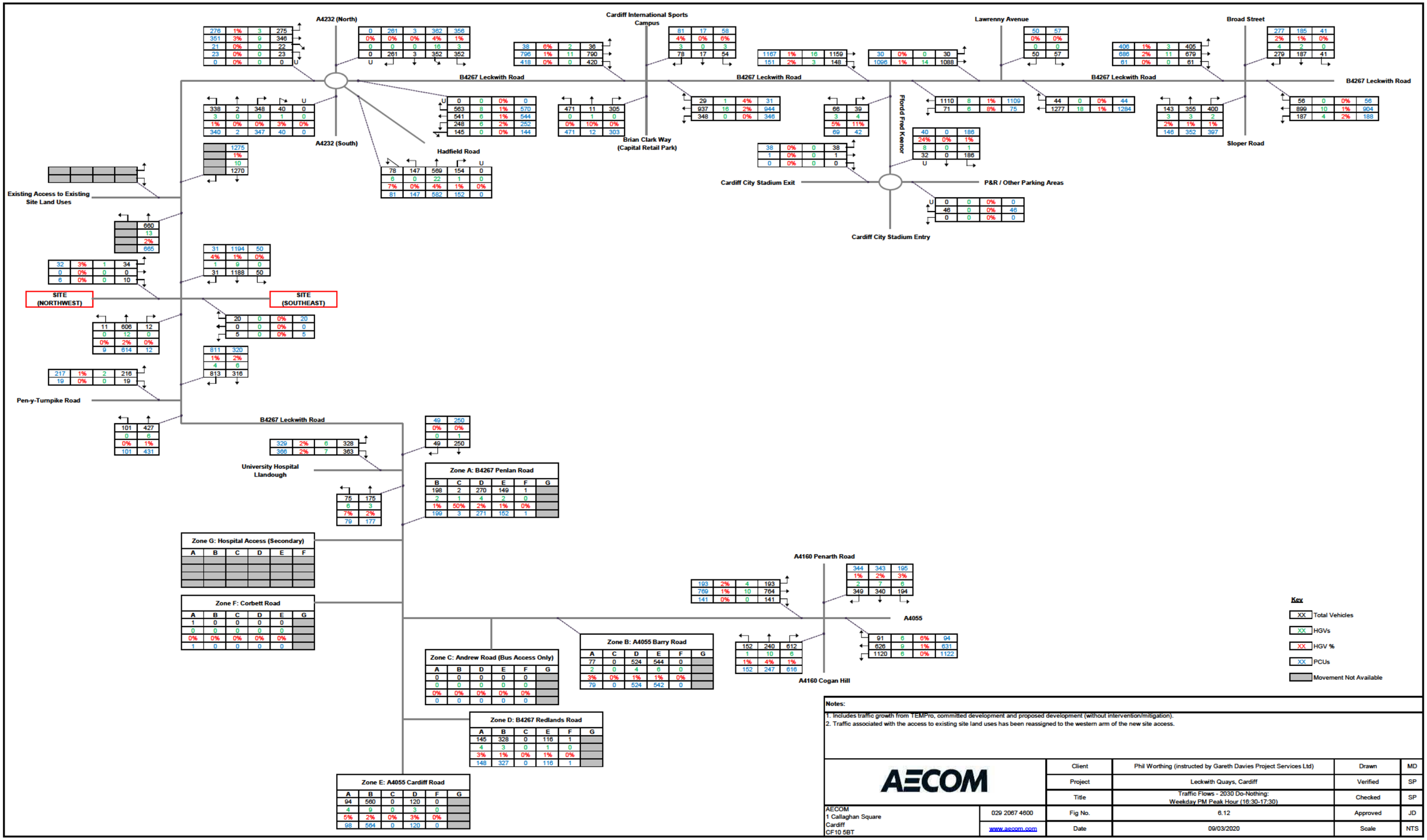
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Cardiff International Sports Campus
Brian Clark Way (Capital Retail Park)
Lawrenny Avenue
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Sloper Road
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Florida Fred Keenor
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P&R / Other Parking Areas
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SITE (SOUTHEAST)
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XX HGVs
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AECOM
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1 Callaghan Square
Cardiff
CF10 5BT
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www.aecom.com
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Project: Leckwith Quays, Cardiff
Title: Traffic Flows - 2030 Do-Nothing: Weekday PM Peak Hour (16:30-17:30)
Fig No.: 6.12
Date: 09/03/2020
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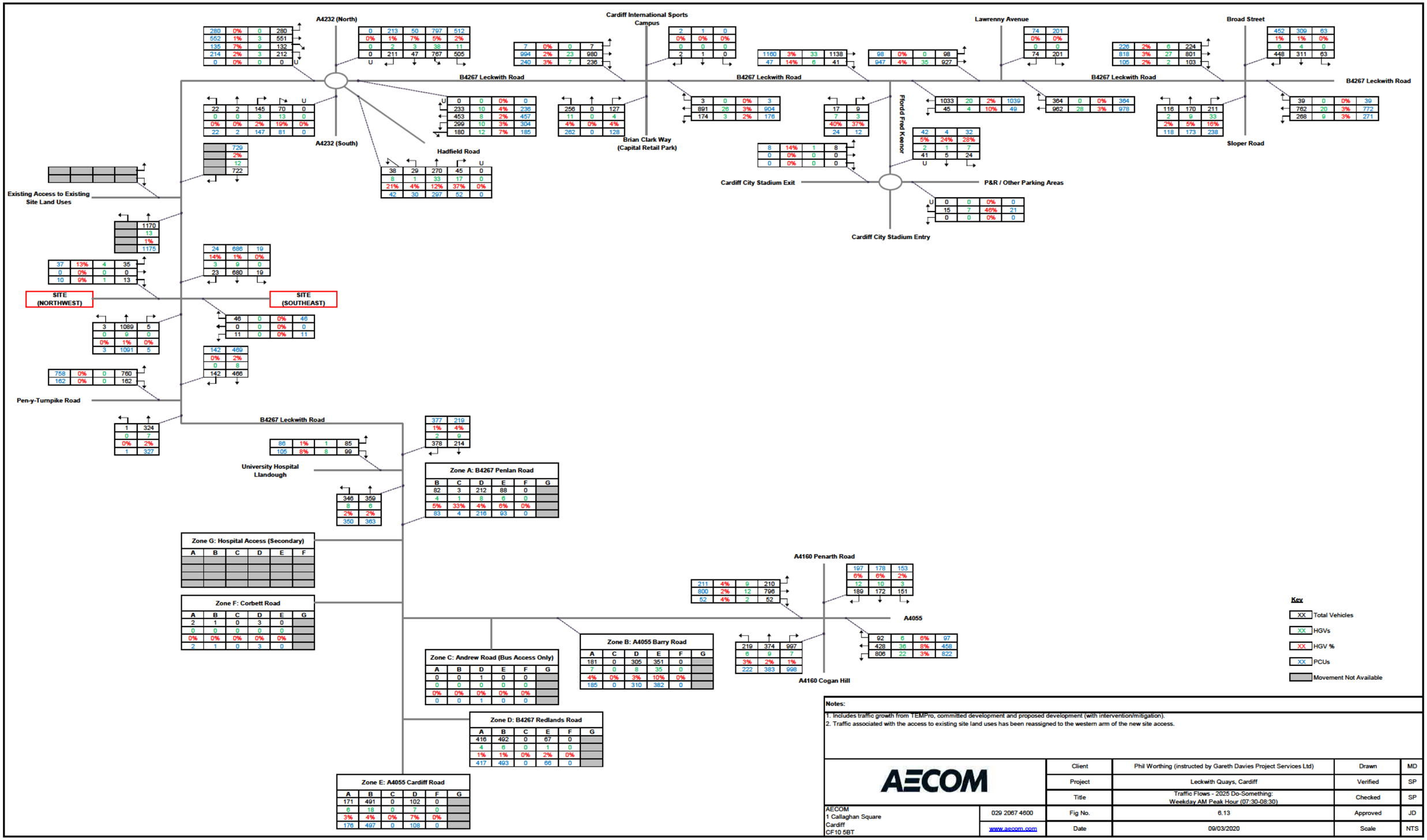
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B4267 Leckwith Road
Cardiff International Sports Campus
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Project
Leckwith Quays, Cardiff
Verified
SP
Title
Traffic Flows - 2025 Do-Something:
Weekday AM Peak Hour (07:30-08:30)
Checked
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Fig No.
6.13
Approved
JD
Date
09/03/2020
Scale
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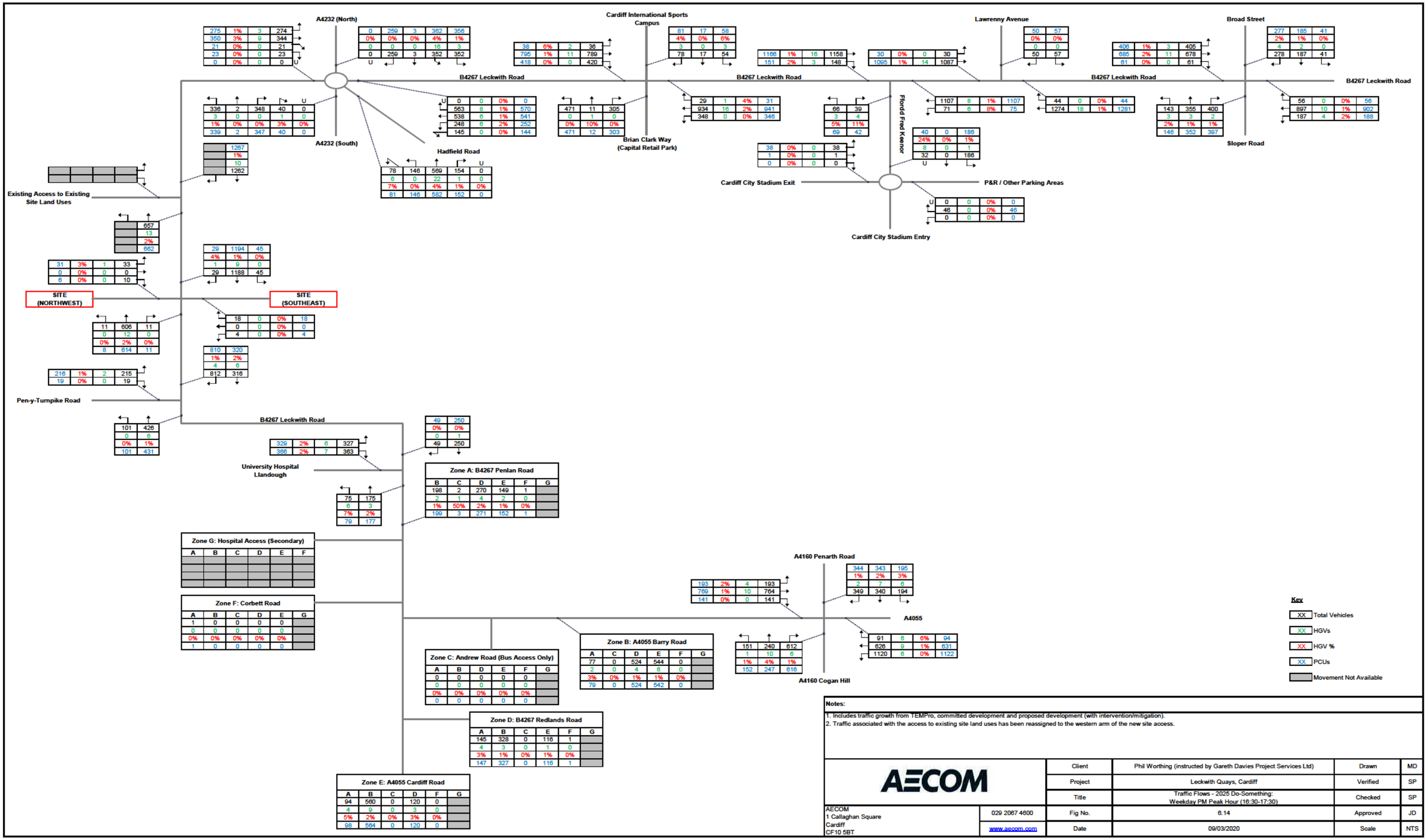
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029 2067 4600
www.aecom.com
Client: Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Drawn: MD
Project: Leckwith Quays, Cardiff
Verified: SP
Title: Traffic Flows - 2025 Do-Something: Weekday PM Peak Hour (16:30-17:30)
Checked: SP
Fig No.: 6.14
Approved: JD
Date: 09/03/2020
Scale: NTS

Appendix A:

Site Layout

AREA 01

AREA 02

AREA 03

DWELLING MIX + GIFA

BLOCK A

50no. 2B 4P apartments.
Dwelling size average: 70m2

BLOCK B

19no. 3B 5P houses (HOUSE TYPE B).
Dwelling size average: 116m2
18no. 2B 4P duplex (Duplex Dwelling Type 7)
Dwelling size average: 73m2

BLOCK C

31no. 2B 4P apartmenta
Dwelling size average: 70m2

BLOCK D

28no. 2B 4P duplex
(Duplex Dwelling Types 1 + 2)
Dwelling size average: 94m2

BLOCK E

18no. 3B 5P duplex (Duplex Dwelling Types 3 + 4)
Dwelling size average: 113m2

BLOCK F

14no. 2B 4P duplex
(Duplex Dwelling Type 5)
Dwelling size average: 81m2
14no. 3B 5P duplex
(Duplex Dwelling Type 6)
Dwelling size average: 118m2

HOUSE TYPE A

7no. 3B 5P houses
Dwelling size average: 125m2

HOUSE TYPE C

8no. 3B 5P houses
Dwelling size average: 96m2

HOUSE TYPE D

7no. 4B 7P houses
Dwelling size average: 165m2

HOUSE TYPE E

14no. 3B 5P houses
Dwelling size average: 178m2

DWELLING MIX:

Apartments	95
Duplex Dwelling	78
Houses:	55
TOTAL	228

PAC SUBMISSION

1844/S.102

LECKWITH QUAY

PROPOSED MASTERPLAN

1:1250@A1 FEB 20

LOYN+CO ARCHITECTS

02920 711432 | architecture@loyn.co.uk
88 Glebe Street Penarth CF64 1EF | loyn.co.uk

Appendix B:

Transport Assessment Scoping Note and Correspondence with Local Highway Authorities

Technical Note

Project:	**Leckwith Quay, Cardiff**	Job No:	**60608933**
Subject:	**Transport Assessment Scoping Note**		
Prepared by:	**Matt Davies (Senior Consultant)**	Date:	**11/09/2019**
Checked by:	**Spiro Panagi (Associate Director)**	Date:	**12/09/2019**
Approved by:	**Spiro Panagi (Associate Director)**	Date:	**12/09/2019**

The following table sets out the proposed scope of a Transport Assessment (TA) in respect of the proposed residential development at Leckwith Quay, Cardiff. Any future planning submission made for these proposals will be done in the manner of a joint application to both the Vale of Glamorgan (VoG) and City and County of Cardiff (CCC) authorities. This Scoping Note will be issued to both Local Highway Authorities (LHAs) and agreement will be sought with discussion and amendments shared for the purposes of transparency.

The Scoping Note has been informed by the Pre-application Consultation Response received from the VoG on the 2nd September 2016 and recent discussion in July 2019 with CCC officers.

1	**Site Location and Existing Land Use**	The site is located in Leckwith, approximately 2.5km to the southwest of Cardiff City Centre. It is bounded to the northeast by the Ely River and is otherwise surrounded by woodland. A grade-separated section of the B4267 Leckwith Road intersects the site in a north-south alignment. The site is situated at the border of the Vale of Glamorgan (VoG) and the City and County of Cardiff (CCC), but is within the administrative area of VoG, which is both the Local Planning Authority (LPA) and Local Highway Authority (LHA). The existing site is currently used for commercial / light industrial uses. It is accessed via a junction with the B4267 Leckwith Road, just north of the Ely River. This access also serves the Ely Trail, which is a primarily off-road walking/cycling route. There is a bridge over the Ely River that connects the site and the access. The B4267 Leckwith Road connects to the A4232 at the 'Leckwith Interchange', approximately 100m to the northeast of the site access.
2	**Development Proposal**	The existing Leckwith Bridge is in need of replacement and it is understood that this development may provide the new infrastructure while also create a new site access. The current development proposals are for a residential development of up to 252 dwellings. The site will be served via a new signal-controlled crossroads junction on the B4267 Leckwith Road, via a new bridge arrangement. The existing site is subject to a number of physical constraints and master planning work is still ongoing. As a general guide, the south-eastern arm will serve residential development of around 160 dwellings. The north-western arm will serve residential development of around 92 dwellings, along with some existing commercial uses to be retained on the site. The TA will include details of the following: ▪ Access arrangements for vehicles, pedestrians and cyclists; ▪ Internal transport layout for the site; ▪ Cycle and car parking provision; and

		▪ Swept Path Analysis (SPA) to demonstrate that larger vehicles (refuse and emergency) can be accommodated. Early indications are that the development layout is being set out on the basis of parking provision of one space per dwelling. This is in part as recognition of the sustainable travel area located adjacent to the site and in part as a requirement for development viability. We would welcome early views on this approach.
3	**Planning Policy Review**	The development proposals will be considered in relation to relevant national, regional and local policy and guidance. Whilst the site lies within the VoG, given its proximity to Cardiff, consideration will also be given to the polices and guidance of CC. The national policies to reviewed are as follows: ▪ Planning Policy Wales (PPW) Edition 10 (December 2018); ▪ Technical Advice Note (TAN) 18: Transport (March 2007); ▪ The Wales Transport Strategy (April 2008); ▪ National Transport Finance Plan (September 2015); ▪ Active Travel (Wales) Act 2013; and ▪ Wellbeing of Future Generations (Wales) Act 2015. The policies of the VoG to be reviewed are as follows: ▪ The VoG Local Development Plan (LDP) 2011-2026 (adopted June 2017); ▪ The VoG Local Transport Plan (LTP) 2015-2030; and ▪ The VoG Parking Standards Supplementary Planning Guidance (SPG) to the LDP (March 2019). The policies and guidance of CC to be reviewed are as follows: ▪ Cardiff LDP 2006-2026 (adopted January 2016); ▪ Cardiff LTP 2015-2020; ▪ Managing Transportation Impacts (Incorporating Parking Standards) SPG (July 2018); and ▪ Cardiff Residential Design Guide SPG (January 2017). The TA will clearly demonstrate the development's compliance to the above policies and corresponding objectives. This is will be demonstrated within the policy chapter (following the setting out of the development proposals), linking specific development proposals to the policies and their objectives. A summary will be provided within the TA conclusions.
4	**Existing Situation and Site Accessibility**	The TA will include the following: ▪ Description of the site location and existing usage; ▪ Description of the local highway network, including carriageway widths, speed limits, street lighting, etc; ▪ Description of the existing highway operational conditions with reference to traffic survey data, along with queuing conditions at key junctions; ▪ Analysis of Personal Injury Collision (PIC) data; ▪ Description of existing walking/cycling facilities; ▪ Description of public transport services; and ▪ Identification of key local facilities and their accessibility by sustainable modes.

5	**Data Collection**	PIC data will be obtained from the Welsh Government (WG) for the latest five year period, covering the study area included at **Appendix A**. This will include the site and up to the junction known locally as 'Merrie Harrier' as requested by VoG. Traffic surveys have been undertaken on the local highway network surrounding the development to identify the existing traffic generation of the site and highway operational conditions. The extent of the traffic study area was informed by, and agreed with, each LHA prior to commission. The traffic surveys were undertaken on Tuesday 11th June 2019 and Thursday 20th June 2019, covering the weekday peak periods (07:00-10:00 and 16:00-19:00). These dates are a neutral day and month, as confirmed by national guidelines. The locations of the surveys are shown on the plan at **Appendix B**. The surveyed junctions were as follows: 1. B4267 Leckwith Road / Sloper Road / Broad Street (four-arm signal-controlled crossroads junction). 2. B4267 Leckwith Road / Ffordd Fred Keenor (three-arm signal-controlled junction). 3. P&R / Cardiff City Stadium / Ffordd Fred Keenor (four-arm roundabout junction). 4. B4267 Leckwith Road / Brian Clarke Way / Cardiff International Sports Campus (four-arm signal-controlled crossroads junction). 5. B4267 Leckwith Road / Hadfield Road / A4232 (large signal-controlled gyratory, also known as 'Leckwith Interchange'). 6. B4267 Leckwith Road / Access to Industrial Uses/Ely Trail (three-arm priority T-junction). This is the existing site access. 7. B4267 Leckwith Road / Pen-y-Turnpike Road (three-arm priority T-junction). 8. B4267 Penlan Road / University Hospital Llandough (three-arm signal-controlled junction). 9. B4267 Leckwith Road / A4055 Barry Road / Andrew Road / B4267 Redlands Road / A4055 Cardiff Road / Corbett Road / Secondary Access to University Hospital (network comprising a three-arm signal-controlled junction, four-arm signal controlled junction and a three-arm priority T-junction, also known as 'Merrie Harrier'). 10. A4055 / A4160 Cogan Hill / A4160 Penarth Road (four-arm signal-controlled junction). AECOM has performed checks to ensure that the data is complete and with no obvious errors. The junction traffic data has been used to develop a network study area; this will be used to assess and forecast traffic impact of the proposals and to inform junction capacity assessments. Based on total traffic flows across the surveyed network, the analysis has identified that the weekday AM and PM peak hours are 07:30-08:30 and 16:30-17:30, respectively. These periods will be used for assessment purposes.
6	**Trip Generation**	The traffic generation of the proposed development has been forecast using trip rates derived from an interrogation of TRICS, the industry standard database. Sites meeting the following criteria have been selected, based on the TRICS guidance:

- 'Residential – Houses Privately Owned' dataset;
- Located in England and Wales (excluding Greater London), and on the 'Edge of Town';
- 50 to 500 dwellings;
- Car ownership levels of 1.1 to 1.5 cars / vans per dwelling;
- No Travel Plan.

The car ownership band has been selected based on analysis of the 2011 Census data, specifically the 'QS416EW - Car or van availability' dataset. The analysis has been undertaken for Middle Super Output Areas (MSOAs) neighbouring the site. The analysis is included at **Appendix C**; whilst the average car ownership across the MSOAs was 1.2 per dwelling, the highest level has been used for selection of parameters in TRICS to ensure derivation of robust trip rates. Sites with no Travel Plan have been selected to ensure that the impact of the proposed development is first considered without the effects of such mitigation proposals. The TRICS outputs are included at **Appendix D.** The derived vehicle trip rates and forecast traffic generation (for a development of 252 units) are summarised in **Table 6.1** below.

Table 6.1: Vehicle Trip Rates and Traffic Generation

Time Period	Direction	Trip Rates (per dwelling)	Trip Generation (252 dwellings)
AM Peak Hour	Arrivals	0.155	39
	Departures	0.375	95
	Two-Way	**0.530**	**134**
PM Peak Hour	Arrivals	0.365	92
	Departures	0.145	37
	Two Way	**0.510**	**129**

The TA will include forecasts of the trip generation on other modes of travel (i.e. walking, cycling, public transport). This will be derived with reference to TRICS and the 2011 Census data.

Analysis of the survey data has identified that the existing site generates circa 30 two-way vehicle trips during the AM and PM peak hours. A proportion of these existing trips will be removed as part of the development of the site, but some existing commercial uses will remain. To ensure a robust approach, it is not proposed to apply discounting to the traffic generation forecasts.

7 Trip Distribution

The distribution of school development traffic has been based on analysis of the 2011 Census data, specifically the 'WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)' dataset. The analysis has been undertaken for the 'Cardiff 040' and 'The Vale of Glamorgan 006' MSOAs; these MSOAs comprise the site/existing residential development neighbouring the site and are therefore considered to provide a good indication of the destinations of trips from the proposed development.

Traffic has been distributed taking account of the origin/destination and route choice (determined from journey times from online journey planners for the weekday peak hours). The analysis and derived distribution are included at **Appendix E**.

In regard to traffic with an origin/destination in the City Centre (the 'Cardiff 032' MSOA), it is considered that this will utilise the Leckwith P&R, as costs are far

		lower than that those associated with City Centre parking. This equates to 6% of the traffic generation of the proposed development routeing to/from the P&R.
8	**Traffic Impact Assessment**	Assessment Scenarios: ▪ The planning application is proposed to be submitted in 2020. The impact of the proposed development on the highway network will be assessed using a future year of 2025, which is five years after registration of the planning application. This is likely to be the point by which the proposed development will be complete, based on consent in 2020, commencement of construction in 2021 and a build-rate of 50-75 dwellings per year. ▪ The TA will assess the impact of the development proposals for the future year (2025) both without and with the development proposals. ▪ The 'without development' scenario will include traffic growth (based on growth factors derived from TEMPro) and traffic from neighbouring 'committed development'. This is considered the future baseline. We request that the LHAs provide a list of 'committed development' it considers to suitable for inclusion for examination. In the previous response, VoG advised the following sites were considered as committed: - Caerleon Road, (2014/00282/OUT – 70 dwellings) - The Leckwith Motor Company (2014/01401/OUT - 21 dwellings) - Land at Cross Common Road (2015/00392/OUT – 50 dwellings) We will check the current status of these sites and take appropriate action in terms of adjusting traffic flows to allow for traffic which is consented. The morning and evening weekday peaks hours will be considered. The peak hours for development traffic generation will be consistent with the peak hours selected for assessment. Traffic growth factors derived from TEMPro (Version 7.2) will be applied to the traffic data to establish traffic flows in the future year. Assessment of the Impact of Development Trips: ▪ The extensive traffic survey study area will be used to determine the impact of the development traffic as it dissipates from the point of generation. ▪ The assessments will identify the percentage impact of the proposed development in terms of traffic flows at each of the surveyed junction (by arm). ▪ An initial percentage impact assessment has been undertaken, based on the current forecasts regarding traffic generation, distribution and assignment. This analysis is included at **Appendix F**. ▪ This analysis together with professional judgement will be used to determine the requirement for further consideration of junction locations. Junction Capacity Assessment: ▪ Should the increase in traffic at the surveyed junctions be considered to warrant capacity assessment through professional judgement and/or exceed 5% on any arm, this will be undertaken using the industry-standard TRL software program 'Junctions 9' (for priority and roundabout junctions) and JCT Consultancy software program 'LinSig'. ▪ From the initial percentage impact assessment analysis, it is considered appropriate from the onset to undertake capacity assessment for the following existing junctions: - B4267 Leckwith Road / Ffordd Fred Keenor; - P&R / Cardiff City Stadium / Ffordd Fred Keenor; - Leckwith Interchange; and

		- B4267 Leckwith Road / Pen-y-Turnpike Road. ▪ Capacity assessment will also be undertaken of the proposed site access.
9	**Transport Implementation Strategy (TIS)**	The TA will include a TIS, which will consider potential measures to increase the mode share of sustainable travel modes by site users. A Travel Plan will be committed to and, if required, can be submitted with the planning application and will be prepared in accordance with TAN 18, and with regard to guidance published by CC (i.e. Managing Transportation Impacts (Incorporating Parking Standards) SPG (July 2018)).
10	**Construction Traffic**	The TA will include discussion of potential routeing arrangements and estimates of construction traffic.

Appendix A:

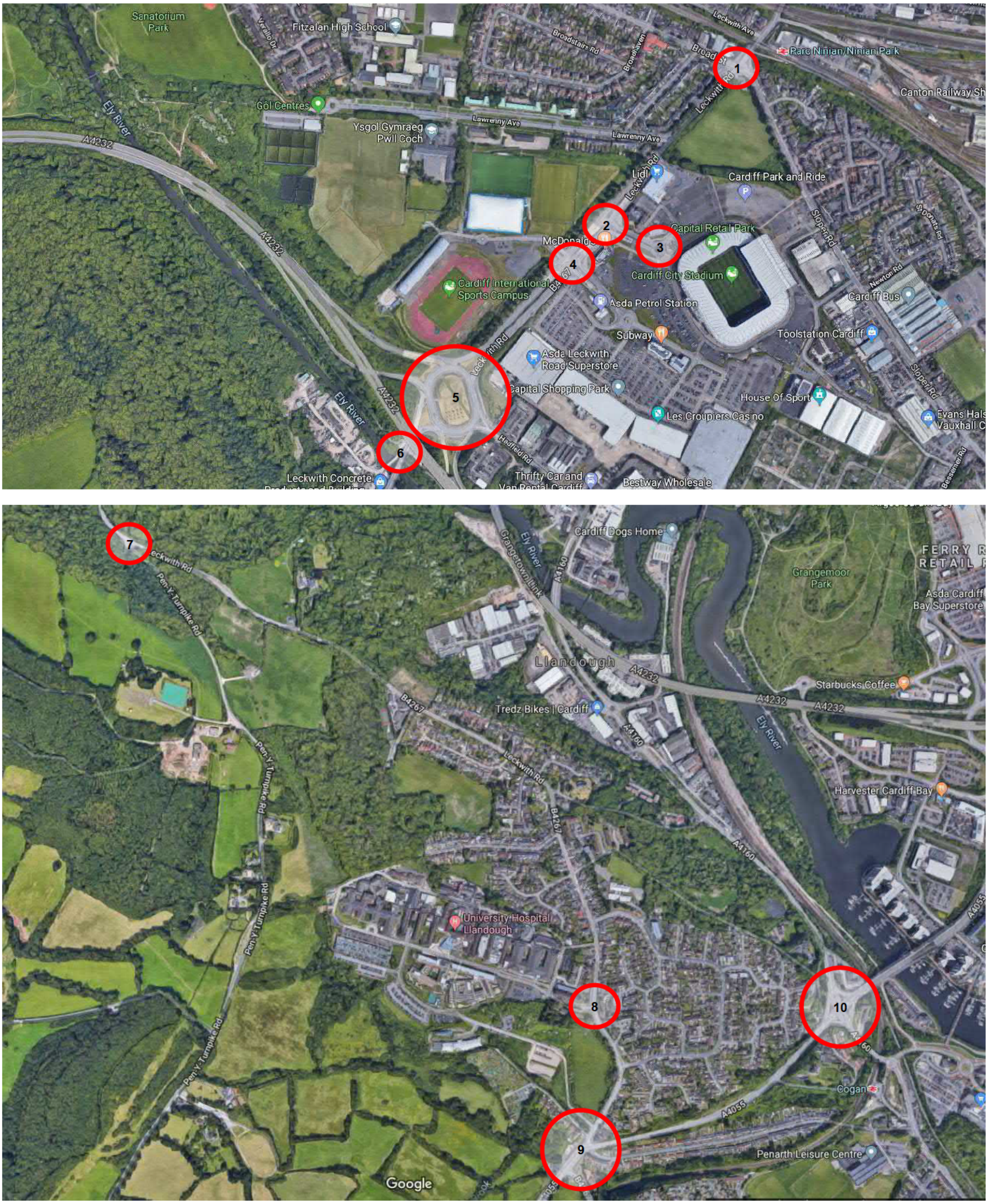
Personal Injury Collision Data Study Area

Leckwith Quays, Cardiff
Personal Injury Collision Data: Study Area

Appendix B:

Traffic Survey Locations

Leckwith Quay, Cardiff
Traffic Survey Locations



Locations:

1. B4267 Leckwith Road / Sloper Road / Broad Street (four-arm signal-controlled crossroads junction).
2. B4267 Leckwith Road / Fford Fred Keenor (three-arm signal-controlled junction).
3. P&R / Cardiff City Stadium / Fford Fred Keenor (four-arm roundabout junction).
4. B4267 Leckwith Road / Brian Clarke Way / Cardiff International Sports Campus (four-arm signal-controlled crossroads junction).
5. B4267 Leckwith Road / Hadfield Road / A4232 (large signal-controlled gyratory, also known as 'Leckwith Interchange').
6. B4267 Leckwith Road / Access to Industrial Uses/Ely Trail (three-arm priority T-junction).
7. B4267 Leckwith Road / Pen-y-Turnpike Road (three-arm priority T-junction).
8. B4267 Penlan Road / University Hospital Llandough (three-arm signal-controlled junction).
9. B4267 Leckwith Road / A4055 Barry Road / Andrew Road / B4267 Redlands Road / A4055 Cardiff Road / Corbett Road / Secondary Access to University Hospital (network comprising a three-arm signal-controlled junction, four-arm signal controlled junction and a three-arm priority T-junction).
10. A4055 / A4160 Cogan Hill / A4160 Penarth Road (four-arm signal-controlled junction, including slip roads).

Appendix C:

Car Ownership Data

2011 Census - Car Ownership Data

Raw Data

Cars	MSOA		Total
	Cardiff 040	The Vale of Glamorgan 006	
All categories: Car or van availability	3,566	3,333	6,899
No cars or vans in household	1,108	482	1,590
1 car or van in household	1,648	1,430	3,078
2 cars or vans in household	665	1,077	1,742
3 cars or vans in household	122	259	381
4 or more cars or vans in household	23	85	108

Note: Data from 2011 Census. Dataset: QS416EW - Car or van availability

Average Car Ownership

No. of Cars	MSOA		Total
	Cardiff 040	The Vale of Glamorgan 006	
0	0	0	0
1	1,648	1,430	3,078
2	1,330	2,154	3,484
3	366	777	1,143
4	92	340	432
Total	**3,436**	**4,701**	**8,137**
Average Car Ownership	**1.0**	**1.4**	**1.2**

Appendix D:

TRICS Outputs

Calculation Reference: AUDIT-204605-190723-0713

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	2 days
	KC	KENT	1 days
	SC	SURREY	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
Actual Range: 54 to 288 (units:)
Range Selected by User: 50 to 500 (units:)

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/11 to 20/11/18

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	1 days
Wednesday	2 days
Thursday	2 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town	7

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	6
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3	7 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,000 or Less	1 days
5,001 to 10,000	3 days
10,001 to 15,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

1.1 to 1.5	7 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	7 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	7 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 ES-03-A-03 MIXED HOUSES & FLATS EAST SUSSEX
SHEPHAM LANE
POLEGATE

Edge of Town
Residential Zone
Total Number of dwellings: 212
Survey date: MONDAY *11/07/16* *Survey Type: MANUAL*

2 ES-03-A-04 MIXED HOUSES & FLATS EAST SUSSEX
NEW LYDD ROAD
CAMBER

Edge of Town
Residential Zone
Total Number of dwellings: 134
Survey date: FRIDAY *15/07/16* *Survey Type: MANUAL*

3 KC-03-A-07 MIXED HOUSES KENT
RECULVER ROAD
HERNE BAY

Edge of Town
Residential Zone
Total Number of dwellings: 288
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

4 NY-03-A-10 HOUSES AND FLATS NORTH YORKSHIRE
BOROUGHBRIDGE ROAD
RIPON

Edge of Town
No Sub Category
Total Number of dwellings: 71
Survey date: TUESDAY *17/09/13* *Survey Type: MANUAL*

5 SC-03-A-04 DETACHED & TERRACED SURREY
HIGH ROAD
BYFLEET

Edge of Town
Residential Zone
Total Number of dwellings: 71
Survey date: THURSDAY *23/01/14* *Survey Type: MANUAL*

6 SH-03-A-05 SEMI-DETACHED/TERRACED SHROPSHIRE
SANDCROFT
TELFORD
SUTTON HILL
Edge of Town
Residential Zone
Total Number of dwellings: 54
Survey date: THURSDAY *24/10/13* *Survey Type: MANUAL*

7 ST-03-A-07 DETACHED & SEMI-DETACHED STAFFORDSHIRE
BEACONSIDE
STAFFORD
MARSTON GATE
Edge of Town
Residential Zone
Total Number of dwellings: 248
Survey date: WEDNESDAY *22/11/17* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.106	7	154	0.276	7	154	0.382
08:00 - 09:00	7	154	0.155	7	154	0.375	7	154	0.530
09:00 - 10:00	7	154	0.133	7	154	0.167	7	154	0.300
10:00 - 11:00	7	154	0.127	7	154	0.152	7	154	0.279
11:00 - 12:00	7	154	0.142	7	154	0.176	7	154	0.318
12:00 - 13:00	7	154	0.160	7	154	0.154	7	154	0.314
13:00 - 14:00	7	154	0.173	7	154	0.158	7	154	0.331
14:00 - 15:00	7	154	0.200	7	154	0.173	7	154	0.373
15:00 - 16:00	7	154	0.263	7	154	0.170	7	154	0.433
16:00 - 17:00	7	154	0.285	7	154	0.193	7	154	0.478
17:00 - 18:00	7	154	0.365	7	154	0.145	7	154	0.510
18:00 - 19:00	7	154	0.278	7	154	0.186	7	154	0.464
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.387			2.325			4.712

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	54 - 288 (units:)
Survey date date range:	01/01/11 - 20/11/18
Number of weekdays (Monday-Friday):	7
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.005	7	154	0.005	7	154	0.010
08:00 - 09:00	7	154	0.003	7	154	0.002	7	154	0.005
09:00 - 10:00	7	154	0.001	7	154	0.001	7	154	0.002
10:00 - 11:00	7	154	0.001	7	154	0.000	7	154	0.001
11:00 - 12:00	7	154	0.003	7	154	0.004	7	154	0.007
12:00 - 13:00	7	154	0.001	7	154	0.001	7	154	0.002
13:00 - 14:00	7	154	0.002	7	154	0.001	7	154	0.003
14:00 - 15:00	7	154	0.006	7	154	0.005	7	154	0.011
15:00 - 16:00	7	154	0.003	7	154	0.004	7	154	0.007
16:00 - 17:00	7	154	0.004	7	154	0.004	7	154	0.008
17:00 - 18:00	7	154	0.003	7	154	0.002	7	154	0.005
18:00 - 19:00	7	154	0.002	7	154	0.003	7	154	0.005
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.034			0.032			0.066

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.002	7	154	0.001	7	154	0.003
08:00 - 09:00	7	154	0.001	7	154	0.001	7	154	0.002
09:00 - 10:00	7	154	0.003	7	154	0.001	7	154	0.004
10:00 - 11:00	7	154	0.003	7	154	0.002	7	154	0.005
11:00 - 12:00	7	154	0.002	7	154	0.001	7	154	0.003
12:00 - 13:00	7	154	0.003	7	154	0.005	7	154	0.008
13:00 - 14:00	7	154	0.004	7	154	0.001	7	154	0.005
14:00 - 15:00	7	154	0.000	7	154	0.004	7	154	0.004
15:00 - 16:00	7	154	0.003	7	154	0.002	7	154	0.005
16:00 - 17:00	7	154	0.002	7	154	0.004	7	154	0.006
17:00 - 18:00	7	154	0.002	7	154	0.000	7	154	0.002
18:00 - 19:00	7	154	0.000	7	154	0.000	7	154	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.025			0.022			0.047

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.000	7	154	0.000	7	154	0.000
08:00 - 09:00	7	154	0.000	7	154	0.000	7	154	0.000
09:00 - 10:00	7	154	0.000	7	154	0.000	7	154	0.000
10:00 - 11:00	7	154	0.000	7	154	0.000	7	154	0.000
11:00 - 12:00	7	154	0.002	7	154	0.002	7	154	0.004
12:00 - 13:00	7	154	0.000	7	154	0.000	7	154	0.000
13:00 - 14:00	7	154	0.000	7	154	0.000	7	154	0.000
14:00 - 15:00	7	154	0.000	7	154	0.000	7	154	0.000
15:00 - 16:00	7	154	0.000	7	154	0.000	7	154	0.000
16:00 - 17:00	7	154	0.000	7	154	0.000	7	154	0.000
17:00 - 18:00	7	154	0.000	7	154	0.000	7	154	0.000
18:00 - 19:00	7	154	0.000	7	154	0.000	7	154	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.002	7	154	0.006	7	154	0.008
08:00 - 09:00	7	154	0.000	7	154	0.009	7	154	0.009
09:00 - 10:00	7	154	0.000	7	154	0.003	7	154	0.003
10:00 - 11:00	7	154	0.000	7	154	0.004	7	154	0.004
11:00 - 12:00	7	154	0.003	7	154	0.001	7	154	0.004
12:00 - 13:00	7	154	0.000	7	154	0.001	7	154	0.001
13:00 - 14:00	7	154	0.004	7	154	0.001	7	154	0.005
14:00 - 15:00	7	154	0.003	7	154	0.001	7	154	0.004
15:00 - 16:00	7	154	0.003	7	154	0.001	7	154	0.004
16:00 - 17:00	7	154	0.009	7	154	0.002	7	154	0.011
17:00 - 18:00	7	154	0.006	7	154	0.003	7	154	0.009
18:00 - 19:00	7	154	0.004	7	154	0.004	7	154	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.034			0.036			0.070

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.067	7	154	0.217	7	154	0.284
08:00 - 09:00	7	154	0.114	7	154	0.299	7	154	0.413
09:00 - 10:00	7	154	0.092	7	154	0.124	7	154	0.216
10:00 - 11:00	7	154	0.089	7	154	0.119	7	154	0.208
11:00 - 12:00	7	154	0.101	7	154	0.127	7	154	0.228
12:00 - 13:00	7	154	0.113	7	154	0.111	7	154	0.224
13:00 - 14:00	7	154	0.124	7	154	0.109	7	154	0.233
14:00 - 15:00	7	154	0.154	7	154	0.130	7	154	0.284
15:00 - 16:00	7	154	0.215	7	154	0.117	7	154	0.332
16:00 - 17:00	7	154	0.224	7	154	0.140	7	154	0.364
17:00 - 18:00	7	154	0.285	7	154	0.117	7	154	0.402
18:00 - 19:00	7	154	0.234	7	154	0.156	7	154	0.390
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.812			1.766			3.578

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
LGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.024	7	154	0.029	7	154	0.053
08:00 - 09:00	7	154	0.022	7	154	0.024	7	154	0.046
09:00 - 10:00	7	154	0.025	7	154	0.023	7	154	0.048
10:00 - 11:00	7	154	0.023	7	154	0.020	7	154	0.043
11:00 - 12:00	7	154	0.019	7	154	0.028	7	154	0.047
12:00 - 13:00	7	154	0.028	7	154	0.022	7	154	0.050
13:00 - 14:00	7	154	0.030	7	154	0.027	7	154	0.057
14:00 - 15:00	7	154	0.027	7	154	0.022	7	154	0.049
15:00 - 16:00	7	154	0.021	7	154	0.033	7	154	0.054
16:00 - 17:00	7	154	0.021	7	154	0.030	7	154	0.051
17:00 - 18:00	7	154	0.036	7	154	0.016	7	154	0.052
18:00 - 19:00	7	154	0.015	7	154	0.018	7	154	0.033
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.291			0.292			0.583

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MOTOR CYCLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.000	7	154	0.000	7	154	0.000
08:00 - 09:00	7	154	0.000	7	154	0.002	7	154	0.002
09:00 - 10:00	7	154	0.000	7	154	0.002	7	154	0.002
10:00 - 11:00	7	154	0.003	7	154	0.000	7	154	0.003
11:00 - 12:00	7	154	0.001	7	154	0.001	7	154	0.002
12:00 - 13:00	7	154	0.001	7	154	0.001	7	154	0.002
13:00 - 14:00	7	154	0.001	7	154	0.000	7	154	0.001
14:00 - 15:00	7	154	0.000	7	154	0.000	7	154	0.000
15:00 - 16:00	7	154	0.000	7	154	0.000	7	154	0.000
16:00 - 17:00	7	154	0.001	7	154	0.002	7	154	0.003
17:00 - 18:00	7	154	0.003	7	154	0.000	7	154	0.003
18:00 - 19:00	7	154	0.000	7	154	0.000	7	154	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.010			0.008			0.018

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Appendix E:

Census Analysis (for Trip Distribution)

2 e s s- - A a s s

A a s s M e e A ea M A) a a

a ase e a s

Dat set WU03EW - ocat on o u ual es dence and pla e o wo k by m thod o t avel to wo k (MSOA eve)
opu at on All usu l esid nts ag d 6 and o e n emp oyment the week be o e he census
Uni s e sons
Date 20
Method o t avel o wo k D ivng a ca o an
Usual Residence Ca di 40 he Vale o Glamo gan 0 6
ONS C own Copy ght Rese ved [om N m s on 2 Sep embe 20 9]

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a e W k M A)	T a											e k x Z e											
		42 7 e k a	2 e a	a ee	4 a e Ave e		a a m	7 a akWa a a ea a k)	a e a a s am s	9 a e a	A42 2)	A42 2)	2 e - - T ke a	ve s s a a	4 e a	A4 a a	42 7 e a s a	7 A e a	A4 e a a	9 A4	2 a A4 a v a a e a)	2 A4 a v a A4 a a)	T a
B dgend 0 9	2											2											2
B dgend 0	9											9											9
B dgend 0 3	2											2											2
B dgend 0 4	20											0											20
B dgend 0 5	26											6											26
Cae ph l y0 2	7											7											7
Cae ph l y0 3	0											0											0
Cae ph l y020	2											2											2
Cae ph l y023	6											6											6
Cae ph l y024	0											0											0
Ca di 003	60	30										0											60
Ca di 005	70	70																					70
Ca di 006	2	6										6											2
Ca di 007		55									55												
Ca di 008	7	7																					7
Ca di 009	0	0																					0
Ca di 0 0	22																						22
Ca di 0	5										5												5
Ca di 0 2	8	8																					8
Ca di 0 4																							
Ca di 0 6		55									55												
Ca di 0 7	6	6																					6
Ca di 0 8	44	44																					44
Ca di 0 9	3	3																					3
Ca di 020	29	45		45																			29
Ca di 02	27	27																					27
Ca di 022	27										27												27
Ca di 023	5	5																					5
Ca di 024	5	25									25												5
Ca di 025	49	49																					49
Ca di 026	9	595		595																			9
Ca di 028	3	3																					3
Ca di 029	26	3									3												26
Ca di 030	7	7																					7
Ca di 03	20			20																			20
Ca di 032	277					277																	277
Ca di 033	47	47																					47
Ca di 034	02	02																					02
Ca di 035	6			6																			6
Ca di 036	67	335									335												67
Ca di 037	36										36												36
Ca di 038	78										78												78
Ca di 040	37			685								685											37
Ca di 04	35			75								75											35
Ca di 042	46	46																					46
Ca di 043																							
Ca di 044	5		75							75													5
Ca di 045	4											4											4
Ca di 046	7									7													7
Ca di 048	293										293												293
Ca di 049	57	0	0	0	0	0	0	0	0	93	64	0	0	0	0	0	0	0	0	0	0	0	57
Ca di 049A																							
Ca di 049B	32										32												32
Ca di 049C																							
Ca di 049D										0	0												
Ca di 049E	20										20												20
Ca di 049	93									93													93
Ha bo ough 0 0	3											3											3
Me hy d l 004	9											9											9
Me hy d l 008	7											7											7
Monmou hshi e 009	5											5											5
Nea h o t a bot 0 9	7											7											7
Newpo t 00	7											7											7
Newpo t 004	0											0											0
Newpo t 006	5											5											5
Newpo t 0 2	8											8											8
Newpo t 0 4	7											7											7
Newpo t 0 5	9											9											9
Newpo t 0 6	5											5											5
Newpo t 0 8	24											4											24
Newpo t 0 9	5											5											5
Newpo t 020	44	44																					44
Rhondda C non a 00	6											6											6
Rhondda C non a 0 2	5											5											5
Rhondda C non a 02	9											9											9
Rhondda C non a 022	6											6											6
Rhondda C non a 025	7											7											7
Rhondda C non a 026	4											4											4
Rhondda C non a 027	9											9											9
Rhondda C non a 029	0											0											0
Rhondda C non a 030	40											0											40
Rhondda C non a 03	9											9											9
Sou h Glou este s i e 0 7	8											8											8
Swansea 02	5											5											5
he Vale o G amo gan 00	5											5											5
he Vale o G amo gan 002	2											2											2
he Vale o G amo gan 003	90	0	0	0	0	0	0	0	0	0	0	7	3	0	0	0	0	0	0	0	0	0	90
he Vale o G amo gan 003A	35											5											35
he Vale o G amo gan 003B	6											3	3										6
he Vale o G amo gan 003C	8											8											8
he Vale o G amo gan 003D	4											4											4
he Vale o G amo gan 004	9	0	0	0	0	0	0	0	0	74	0	0	0	74	0	0	36	0	0	0	3	3	9
he Vale o G amo gan 004A	3																3						3
he Vale o G amo gan 004B	7																				3	3	7
he Vale o G amo gan 004C	32																32						32
he Vale o G amo gan 004D																							
he Vale o G amo gan 004E	48									74				74									48
he Vale o G amo gan 004	0																0						0
he Vale o G amo gan 005	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0	0	0	75	6	50
he Vale o G amo gan 005A	26																3				3		26
he Vale o G amo gan 005B																							
he Vale o G amo gan 005C	24																2				2		24
he Vale o G amo gan 005D	48																24				24		48
he Vale o G amo gan 005E	32																				6	6	32
he Vale o G amo gan 005	9																9				9		9
he Vale o G amo gan 006	30	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	30
he Vale o G amo gan 006A	50												50										50
he Vale o G amo gan 006B	28												28										28
he Vale o G amo gan 006C	26												26										26
he Vale o G amo gan 006D	20												20										20
he Vale o G amo gan 006E	6												6										6
he Vale o G amo gan 007	8											9	9										8
he Vale o G amo gan 008	37	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	7	0	0	0	0	0	37
he Vale o G amo gan 008A	2																2						2
he Vale o G amo gan 008B	3																3						3
he Vale o G amo gan 008C	2																2						2
he Vale o G amo gan 008D	0												0										0
he Vale o G amo gan 008E	26												26										26
he Vale o G amo gan 008	5												5										5
he Vale o G amo gan 009	57											285	285										57
he Vale o G amo gan 0 0	20											0	0										20
he Vale o G amo gan 0 2	75											375	375										75
he Vale o G amo gan 0 3	23											5	5										23
he Vale o G amo gan 0 4	38											9	9										38
he Vale o G amo gan 0 5	6											305	305										6
o aen 008	5											5											5
o aen 0 0																							
o aen 0 3	5											5											5
T a	44 7	799		9		277				4 9	7	97	472	4			2				7	9	44 7
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Note MSOAs w th o al o less than 5 h ve been omi ted om the anal sis Whe e an MSOA s oo a ge to dete m ne an app op ia e o ig in des ina ion hese have been b oken own in o the const tue t owe Supe Output A eas (SOAs) based on he p opo t ons below

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	a di 049B	58	20%
	a di 049C		0%
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he Vale o G amo gan 003	he Vale o Glamo gan 003A	43	39%
	he Vale o Glamo gan 003B	7	6%
	he Vale o Glamo gan 003C	0	9%
	he Vale o Glamo gan 003D	5	46%
	a		%
he Vale o G amo gan 004	he Vale o Glamo gan 004A	4	2%
	he Vale o Glamo gan 004B	9	4%
	he Vale o Glamo gan 004C	43	7%
	he Vale o Glamo gan 004D		0%
	he Vale o Glamo gan 004E	97	78%
	he Vale o Glamo gan 004	0	0%
	a	2 4	%
he Vale o G amo gan 005	he Vale o Glamo gan 005A	35	7%
	he Vale o Glamo gan 005B	2	%
	he Vale o Glamo gan 005C	32	6%
	he Vale o Glamo gan 005D	64	32%
	he Vale o Glamo gan 005E	43	2 %
	he Vale o Glamo gan 005	25	2%
	a	2	%
he Vale o G amo gan 006	he Vale o Glamo gan 006A	98	39%
	he Vale o Glamo gan 006B	57	23%
	he Vale o Glamo gan 006C	52	2 %
	he Vale o Glamo gan 006D	38	5%
	he Vale o Glamo gan 006E	6	2%
	a	2	%
he Vale o G amo gan 008	he Vale o Glamo gan 008A	2	5%
	he Vale o Glamo gan 008B	3	8%
	he Vale o Glamo gan 008C	2	5%
	he Vale o Glamo gan 008D	0	0%
	he Vale o Glamo gan 008E	27	69%
	he Vale o Glamo gan 008	5	3%
	a	9	%

Not s u the ana ys s has been nde ta en o MSOAs which cove a a ge a ea the e a e mul ip e est nat ons w th n he MSOA

m a s

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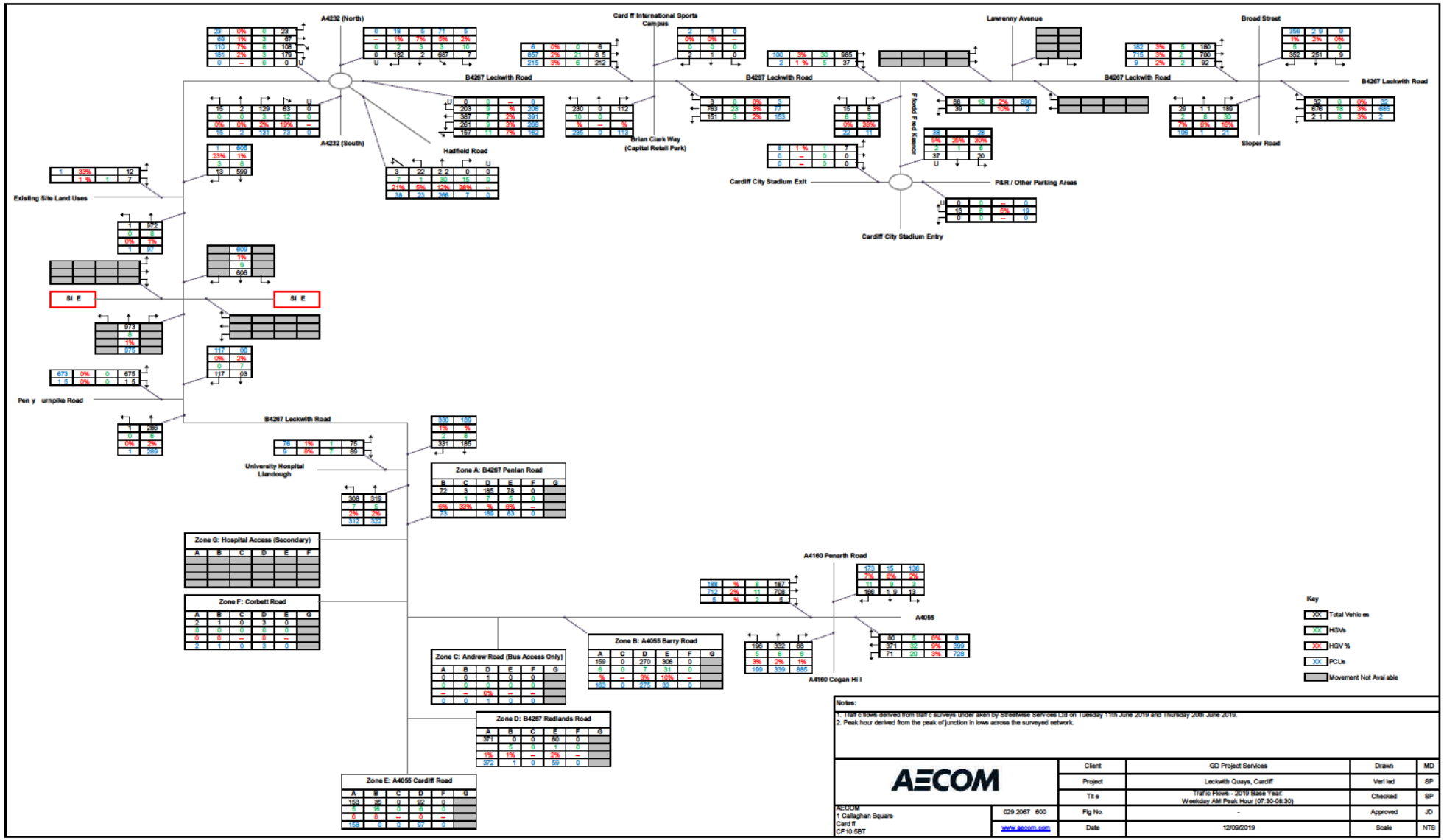
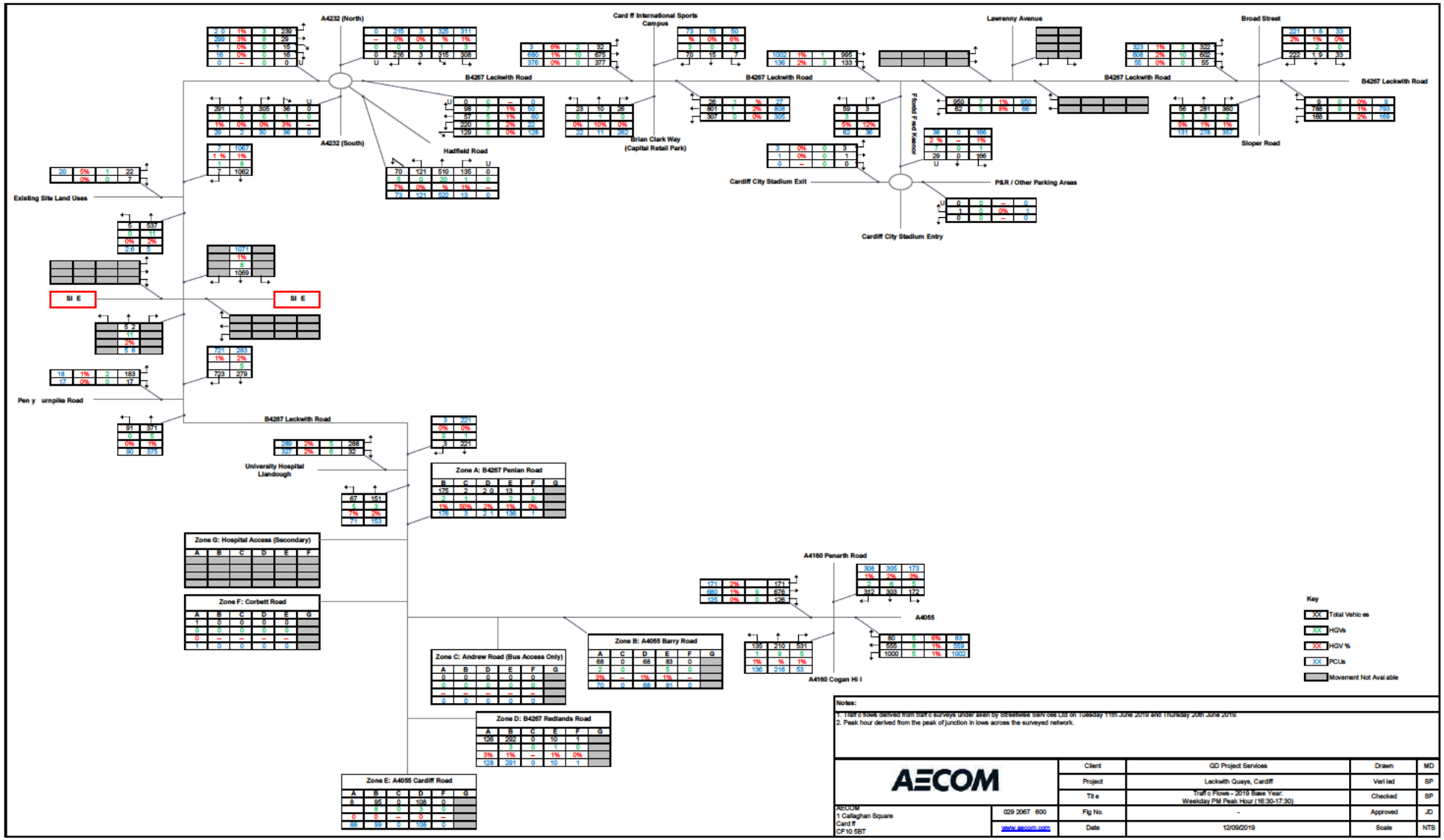
B4267 eckw th Road	8%
2 S ope Road	0%
3 B oad St eet	4%
4 w enny A enue	0%
5 &R	6%
6 Ca di C ty Stad um	0%
7 B ian C a k Way (Capi al Reta l a k)	0%
8 Ca di n e nat onal Spo s Campus	0%
9 Had ie d Road	0%
0 A4232 (Sou h)	5%
A4232 (No h)	22%
2 en y- u np ke Road	%
3 Un ve s ty Hospi al la dough	3%
4 Co be t Road	0%
5 A4055 Ca di Road	0%
6 B4267 Redlands Road	5%
7 And ew Road	0%
8 A4 60 ena h Road	0%
9 A4055	0%
20a A4 60 Cogan Hi l (v a Had e d Road)	4%
20b A4 60 Cogan Hi l (v a A4055 Ba y Road)	%
T a	%

Appendix F:

Traffic Flows and Percentage Impact Assessment


A4232 (North)
A4232 (South)
Card ff International Sports Campus
Lawrenny Avenue
Broad Street
B4267 Leckwith Road
Brian Clark Way (Capital Retail Park)
Hadfield Road
Sloper Road
Cardiff City Stadium Exit
Cardiff City Stadium Entry
P&R / Other Parking Areas
Existing Site Land Uses
SI E
SI E
Pen y urnpike Road
University Hospital Llandough
A4160 Penarth Road
A4055
A4160 Cogan Hi l
Zone A: B4267 Penlan Road
Zone B: A4055 Barry Road
Zone C: Andrew Road (Bus Access Only)
Zone D: B4267 Redlands Road
Zone E: A4055 Cardiff Road
Zone F: Corbett Road
Zone G: Hospital Access (Secondary)
Key
XX Total Vehic es
XX HGVs
XX HGV %
XX PCUs
Movement Not Avai able
Notes:
1. Traffic flows derived from traffic surveys undertaken by Streetwise Services Ltd on Tuesday 11th June 2019 and Thursday 20th June 2019.
2. Peak hour derived from the peak of junction in lows across the surveyed network.
AECOM
1 Callaghan Square
Card ff
CF10 5BT
029 2067 600
www.aecom.com
Client
GD Project Services
Project
Leckwith Quays, Cardiff
Tit e
Traffic Flows - 2019 Base Year:
Weekday AM Peak Hour (07:30-08:30)
Fig No.
-
Date
12/09/2019
Drawn
MD
Verified
SP
Checked
SP
Approved
JD
Scale
NTS


A4232 (North)
A4232 (South)
Card ff International Sports Campus
Lawrenny Avenue
Broad Street
B4267 Leckwith Road
Brian Clark Way (Capital Retail Park)
Hadfield Road
Sloper Road
Flood F ed Kvenor
Cardiff City Stadium Exit
P&R / Other Parking Areas
Cardiff City Stadium Entry
Existing Site Land Uses
SI E
SI E
Pen y urnpike Road
University Hospital Llandough
Zone A: B4267 Penlan Road
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Zone C: Andrew Road (Bus Access Only)
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Zone E: A4055 Cardiff Road
Zone F: Corbett Road
Zone G: Hospital Access (Secondary)
A4160 Penarth Road
A4055
A4160 Cogan Hi l
Key
XX Total Vehic es
XX HGVs
XX HGV %
XX PCUs
Movement Not Avai able
Notes:
1. Traff c flows derived from traff c surveys under aken by Streetwise Serv ces Ltd on Tuesday 11th June 2019 and Thursday 20th June 2019.
2. Peak hour derived from the peak of junction in lowe across the surveyed network.
AECOM
1 Callaghan Square
Card ff
CF10 5BT
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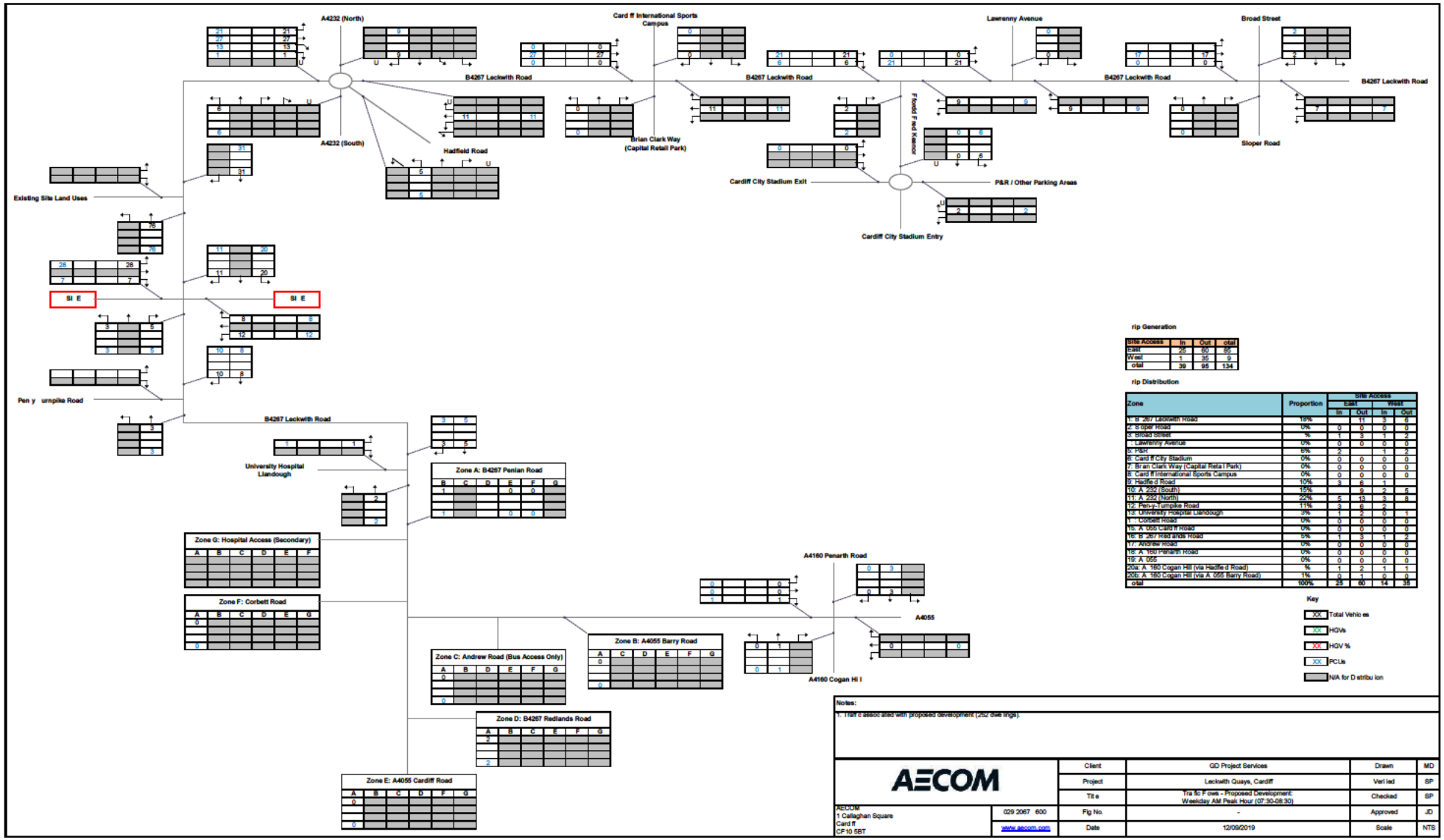
www.aecom.com
Client
GD Project Services
Project
Leckwith Quays, Cardiff
Tit e
Traff c Flows - 2019 Base Year:
Weekday PM Peak Hour (16:30-17:30)
Fig No.
-
Date
12/09/2019
Drawn
MD
Ver ied
SP
Checked
SP
Approved
JD
Scale
NTS



Trip Generation

Site Access	In	Out	Total
East	25	60	85
West	1	35	9
Total	39	95	134

Trip Distribution

Zone	Proportion	Site Access			
		East		West	
		In	Out	In	Out
1: B 267 Leckwith Road	18%		11	3	6
2: Sloper Road	0%	0	0	0	0
3: Broad Street	%	1	3	1	2
4: Lawrenny Avenue	0%	0	0	0	0
5: P&R	6%	2		1	2
6: Cardiff City Stadium	0%	0	0	0	0
7: Brian Clark Way (Capital Retail Park)	0%	0	0	0	0
8: Cardiff International Sports Campus	0%	0	0	0	0
9: Hadfield Road	10%	3	6	1	
10: A 232 (South)	15%		9	2	5
11: A 232 (North)	22%	5	13	3	8
12: Penarth Turnpike Road	11%	3	6	2	
13: University Hospital Llandough	3%	1	2	0	1
14: Corbett Road	0%	0	0	0	0
15: A 055 Cardiff Road	0%	0	0	0	0
16: B 267 Redlands Road	5%	1	3	1	2
17: Andrew Road	0%	0	0	0	0
18: A 160 Penarth Road	0%	0	0	0	0
19: A 055	0%	0	0	0	0
20a: A 160 Cogan Hill (via Hadfield Road)	%	1	2	1	1
20b: A 160 Cogan Hill (via A 055 Barry Road)	1%	0	1	0	0
Total	100%	25	60	14	35

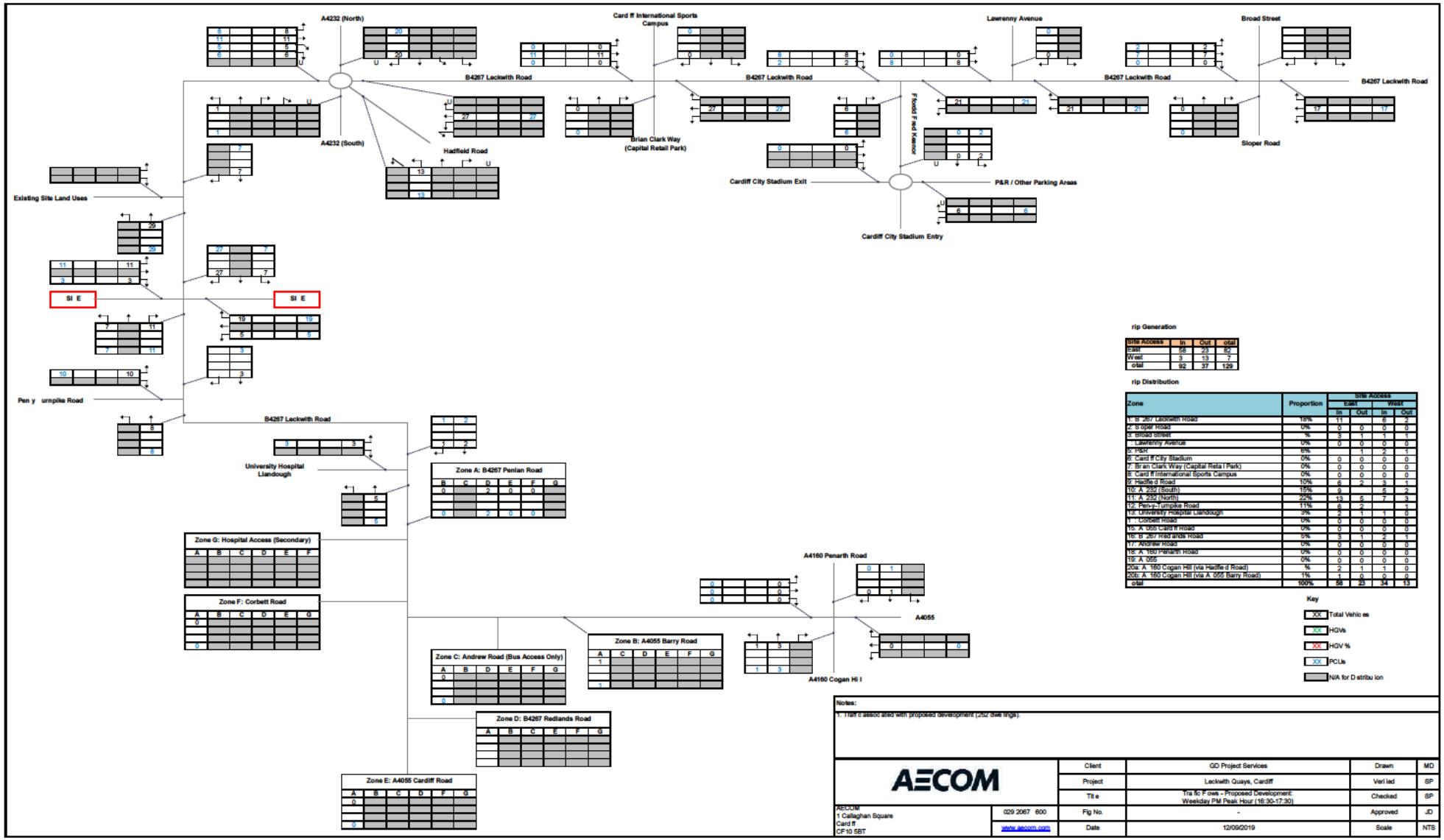
Key

XX Total Vehicles
XX HGVs
XX HGV %
XX PCUs
N/A for Distribution

Notes:

1. Traffic associated with proposed development (252 dwellings).

AECOM		Client	GD Project Services	Drawn	MD
		Project	Leckwith Quays, Cardiff	Verified	SP
		Title	Traffic Flows - Proposed Development: Weekday AM Peak Hour (07:30-08:30)	Checked	SP
AECOM 1 Callaghan Square Cardiff CF10 5BT	029 2067 6000 www.aecom.com	Fig No.	-	Approved	JD
		Date	12/09/2019	Scale	NTS


A4232 (North)
A4232 (South)
Card ff International Sports Campus
Lawrenny Avenue
Broad Street
B4267 Leckwith Road
Hadfield Road
Brian Clark Way (Capital Retail Park)
Cardiff City Stadium Exit
Cardiff City Stadium Entry
P&R / Other Parking Areas
Sloper Road
Existing Site Land Uses
Pen y urnpike Road
University Hospital Llandough
A4160 Penarth Road
A4055
A4160 Cogan Hill
Zone A: B4267 Penlan Road
Zone B: A4055 Barry Road
Zone C: Andrew Road (Bus Access Only)
Zone D: B4267 Redlands Road
Zone E: A4055 Cardiff Road
Zone F: Corbett Road
Zone G: Hospital Access (Secondary)
Trip Generation
Site Access | In | Out | Total
East | 58 | 23 | 82
West | 3 | 13 | 7
Total | 92 | 37 | 129
Trip Distribution
Zone | Proportion | Site Access East In | East Out | West In | West Out
1: B 267 Leckwith Road | 18% | 11 | | 6 | 2
2: Sloper Road | 0% | 0 | 0 | 0 | 0
3: Broad Street | % | 1 | 1 | 1 | 1
4: Lawrenny Avenue | 0% | 0 | 0 | 0 | 0
5: P&R | 6% | | 1 | 2 | 1
6: Card ff City Stadium | 0% | 0 | 0 | 0 | 0
7: Brian Clark Way (Capital Reta l Park) | 0% | 0 | 0 | 0 | 0
8: Card ff International Sports Campus | 0% | 0 | 0 | 0 | 0
9: Hadfie d Road | 10% | 6 | 2 | 3 | 1
10: A 232 (South) | 15% | 9 | | 5 | 2
11: A 232 (North) | 22% | 13 | 5 | 7 | 3
12: Pen-y-Turnpike Road | 11% | 6 | 2 | | 1
13: University Hospital Llandough | 3% | 2 | 1 | 1 | 0
14: Corbett Road | 0% | 0 | 0 | 0 | 0
15: A 055 Card ff Road | 0% | 0 | 0 | 0 | 0
16: B 267 Hied ands Road | 5% | 3 | 1 | 2 | 1
17: Andrew Road | 0% | 0 | 0 | 0 | 0
18: A 160 Penarth Road | 0% | 0 | 0 | 0 | 0
19: A 055 | 0% | 0 | 0 | 0 | 0
20a: A 160 Cogan Hill (via Hadfie d Road) | % | 2 | 1 | 1 | 0
20b: A 160 Cogan Hill (via A 055 Barry Road) | 1% | 1 | 0 | 0 | 0
Total | 100% | 58 | 23 | 34 | 13
Key
XX Total Vehic es
XX HGVs
XX HGV %
XX PCUs
N/A for D stribu ion
Notes:
1. Traffic associated with proposed development (252 dwellings).
AECOM
AECOM
1 Callaghan Square
Card ff
CF10 5BT
029 2067 600
www.aecom.com
Client | GD Project Services | Drawn | MD
Project | Leckwith Quays, Cardiff | Verified | SP
Title | Traffic Flows - Proposed Development: Weekday PM Peak Hour (16:30-17:30) | Checked | SP
Fig No. | - | Approved | JD
Date | 12/09/2019 | Scale | NTS

Percentage Impact

Junction Labels

1 - B4267 Leckwith Road / Sloper Road / Broad Street
2 - B4267 Leckwith Road / Ffordd Fred Keenor
3 - P&R / Cardiff City Stadium / Ffordd Fred Keenor
4 - B4267 Leckwith Road / Brian Clarke Way / Cardiff International Sports Campus
5 - A4232 / B4267 Leckwith Road / Hadfield Road
7 - B4267 Leckwith Road / Pen-y-Turnpike Road
8 - B4267 Penlan Road / University Hospital Llandough
9 - B4267 Penlan Road / A4055 Barry Road / Andrew Road / B4267 Redlands Road / A4055 Cardiff Road / Corbett Road
10 - A4055 / A4160 Cogan Hill / A4160 Penarth Road

Junction Inflows

Junction		Weekday AM Peak Hour			Weekday PM Peak Hour		
No.	Arm	2019 Base	Proposed Development	% Change	2019 Base	Proposed Development	% Change
1	A - B4267 Leckwith Road (Northeast)	949	7	1%	1,005	17	2%
	B - Sloper Road	359	0	0%	697	0	0%
	C - B4267 Leckwith Road (Southwest	972	21	2%	979	8	1%
	D - Broad Street	652	2	0%	404	4	1%
	Total	**2,932**	**30**	**1%**	**3,085**	**29**	**1%**
2	A - B4267 Leckwith Road (Northeast)	923	9	1%	1,012	21	2%
	B - Ffordd Fred Keenor	23	2	11%	93	6	6%
	C - B4267 Leckwith Road (Southwest)	1,022	27	3%	1,128	11	1%
	Total	**1,968**	**39**	**2%**	**2,233**	**37**	**2%**
3	P&R / Other Parking Areas	13	2	19%	41	6	14%
	Cardiff City Stadium Exit	7	0	0%	35	0	0%
	Ffordd Fred Keenor	61	6	10%	195	2	1%
	Total	**81**	**8**	**10%**	**271**	**8**	**3%**
4	A - B4267 Leckwith Road (Northeast)	917	11	1%	1,134	27	2%
	B - Brian Clarke Way	342	0	0%	697	0	0%
	C - B4267 Leckwith Road (Southwest)	1,063	27	3%	1,084	11	1%
	D - CISC	3	0	0%	132	0	0%
	Total	**2,325**	**39**	**2%**	**3,047**	**37**	**1%**
5	A - B4267 Leckwith Road (Northeast)	1,008	11	1%	1,304	27	2%
	B - Hadfield Road	338	5	2%	836	13	2%
	C - A4232 (South)	209	6	3%	634	14	2%
	D - B4267 Leckwith Road (Southwest)	988	76	8%	564	29	5%
	E - A4232 (North)	1,358	9	1%	842	20	2%
	Total	**3,901**	**107**	**3%**	**4,180**	**103**	**2%**
7	A - B4267 Leckwith Road (Southeast)	287	3	1%	462	8	2%
	B - Pen-y-Turnpike Road	820	4	1%	200	10	5%
	C - B4267 Leckwith Road (Northwest)	520	19	4%	1,002	7	1%
	Total	**1,627**	**26**	**2%**	**1,664**	**25**	**2%**
8	A - B4267 Penlan Road (North)	516	8	2%	264	3	1%
	B - B4267 Penlan Road (South)	627	2	0%	151	5	3%
	C - University Hospital Llandough	164	1	1%	612	3	1%
	Total	**1,307**	**12**	**1%**	**1,027**	**11**	**1%**
9	A - B4267 Penlan Road	338	5	2%	552	2	0%
	B - A4055 Barry Road	735	0	0%	1,019	1	0%
	C - Andrew Road	1	0	0%	0	0	--
	D - B4267 Redlands Road	871	2	0%	523	4	1%
	E - A4055 Cardiff Road	680	0	0%	687	0	0%
	F - Corbett Road	6	0	0%	1	0	0%
	Total	**2,631**	**7**	**0%**	**2,782**	**7**	**0%**
10	A - A4055 (Northeast)	1,165	0	0%	1,635	0	0%
	B - A4160 Cogan Hill	1,412	2	0%	876	4	0%
	C - A4055 (Southwest)	940	1	0%	973	0	0%
	D - A4160 Penarth Road	449	3	1%	787	1	0%
	Total	**3,966**	**6**	**0%**	**4,271**	**6**	**0%**
Total		**20,738**	**275**	**1%**	**22,560**	**265**	**1%**

Date/Dyddiad: 5 December 2019

Ask for/Gofynwch am: Administration

Telephone/Rhif ffon: (01446) 704656

Your Ref/Eich Cyf:

My Ref/Cyf: P/DC/2019/01198/SC2

e-mail/e-bost: Planning@valeofglamorgan.gov.uk

The Vale of Glamorgan Council
Dock Office, Barry Docks,Barry CF63 4RT
Tel: (01446) 700111

Cyngor Bro Morgannwg
Swyddfa'r Doc, Dociau'r Barri, Y Barri CF63 4RT
Ffôn: (01446) 700111

www.valeofglamorgan.gov.uk

Ms Emma Fortune
RPS
2, Callaghan Square,
Cardiff.
CF10 5AZ

Dear Madam,

Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.
Request for a formal Screening Opinion on the scope of an Environmental Statement (ES) to be submitted in conjunction with a hybrid planning application for residential development (to be submitted in Outline), associated highway and bridge improvement works (to be submitted in Full)
at Land at Leckwith Quays, Leckwith Road

The Council in accordance with the application and plans registered by the Council on 31 October 2019 is of the opinion that an environmental statement should cover the topics set out in the application documents, Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017, this report and the observations made by the planning authority's technical advisers.

Yours faithfully,

V.L. Robinson

Operational Manager Development Management

2019/01198/SC2 Received on 31 October 2019

Ms Emma Fortune RPS, 2, Callaghan Square,, Cardiff., CF10 5AZ

Land at Leckwith Quays, Leckwith Road

Request for a formal opinion on the scope of an Environmental Statement (ES) to be submitted in conjunction with a hybrid planning application for residential development (to be submitted in Outline), associated highway and bridge improvement works (to be submitted in Full)

A formal request has been made under Regulation 14 the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017) for a Scoping Opinion prior to the preparation of an Environmental Statement to accompany a planning application.

SITE AND CONTEXT

Nearly eight hectares in area, the site consists of industrial buildings, associated hard-surfaced land, woodland, a section of an adopted highway (Leckwith Road) and a section of the Leckwith roundabout, which is under Cardiff Council's authority. It is next to the River Ely, Leckwith Woods and the A4232. Nearby uses include a retail park, a trading estate and two sports stadiums within Cardiff.

The Local Development Plan does not allocate the site for a particular land use. For policy purposes, though, the site is in the countryside, Flood Zones A, B, C1 and C2, the Cwrt-y-Ala Basin Special Landscape Area (SLA) and a mineral safeguarding area (limestone, category two). The site includes parts of the 'Factory Wood' and 'Leckwith Woods' Sites of Importance of Nature Conservation (SINCs), several protected trees, a grade II* listed structure (Old Leckwith Bridge), a scheduled ancient monument (Old Leckwith Bridge) and several other features of archaeological interest. One public right of way (ref. L2/1/1) enters the site from the south-west, while the Ely Trail, which is used for walking and cycling, is on the other side of the River Ely. A Site of Special Scientific Interest (SSSI) (ref. 'Cwm Cydfin') is less than a kilometre south-east of the site.

DESCRIPTION OF DEVELOPMENT

The applicants intend to build circa 250 dwellings on the site with associated public open space, landscaping and parking areas.

The proposals include the realignment of the existing B4267 Leckwith Road link and a new bridge crossing of the River Ely. The new bridge has been positioned immediately upstream of the existing, listed, masonry bridge which is to be retained to allow pedestrian and cyclist access to the site.

The proposed development falls within Section 10 (b) (Infrastructure Projects) of Schedule 2 of the 2017 Regulations. Part 10(b) relates to Urban Development Projects where sites exceed 5 hectares or the proposed development exceeds 150 dwellings. For such Schedule 2 Developments the 2017 Regulations require that Environmental Impact Assessment (EIA) be undertaken where the development is likely to have 'significant effects on the environment by virtue of factors such as its nature, size or location.

A planning application for EIA development would need to include an environmental statement (ES). To identify the 'scope and level of detail' to be provided in the environmental statement, the applicants now seek the planning authority's 'scoping opinion' under Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.

PLANNING HISTORY

The site's recorded planning history is not relevant to this request for a scoping opinion.

CONSULTATIONS

Michaelston le Pit with Leckwith Community Council was consulted and said the following:

Highways and transport

The transport section of the ES should account for traffic associated with football matches at Cardiff City Stadium.

Ecology

The ES should account for the proposal's effect on ancient woodland.

Landscape

The community council does not agree that 'views into the site are extremely limited and only really available from close to the eastern boundary'. In addition, the 'tallest proposed building is considerably higher than any of the existing buildings on the site or buildings in the vicinity'.

Archaeology

A planning application should perhaps include field surveys and investigations in addition to a desk-based study.

Climate change and health

The applicants have 'scoped out' these topics but perhaps a planning application should account for 'climate-change-induced' flooding on the site and the proposal's impact on local schools, health facilities and public transport.

Additional comments

Concerned about the proposal's effect on woodland, ecology and local infrastructure and a listed house (the community council does not identify the listed house, and no such house appears in the planning authority's records or on Cadw's website). Also concerned that the 'offer of a new bridge may strongly influence [the planning authority's] decision'.

The **highway authority** was consulted and said the following:

- Parking: The transport section of the ES should refer to the Parking Standards SPG and 'indicate the availability of more sustainable modes of transport that could influence and reduce the use of the private car in order to justify the reduction of one space per dwelling';
- Traffic flows: 'The information related to the traffic flows across the surveyed network needs to be provided in order for the Highway authority to agree the above AM and PM peak hours';
- Trip distribution: The transport section of the ES should clearly explain how the Leckwith park-and-rise facility would reduce the proposal's overall traffic by 6%;
- Future traffic: The transport section of the ES should account for the impact of the proposal until 2030;
- Local impact: The transport section of the ES should assess the proposal's impact on the junction of the Merrie Harrier and Redlands Road;
- Appendices: 'The Appendices have not been provided with the scoping note and [need] to be provided in order for the Highway authority consider the scoping note as a whole'.

Cardiff County Council was consulted but has not commented on the application.

The **Council's drainage section** was consulted but has not commented on the application.

Environmental-health officers (Shared Regulatory Services (Pollution)) were consulted and said the following:

Noise

Road traffic

'The EIA Scoping Report produced by RPS already indicates that a noise assessment has been carried out by Mach Acoustics to assess noise and vibration. That report indicates very high levels of noise associated with nearby traffic sources and this will need to be taken into account at the design stage, to design out these issues through massing and internal and external arrangement.'

Demolition and construction

'Noise from demolition and construction is likely to be addressed through the outline planning process, at which time it is likely that this department would ask for a Construction and Environmental Management Plan (CEMP) to be submitted, with possibly a request for a condition limiting working hours, and hours of deliveries relating to construction. The CEMP would address noise, dust, and other air quality issues. However due to the location of the nearby highway, A4232, these noise issues would likely be a component of the Environmental Statement submitted under the EIA.'

Plant

'Noise emitted from fixed plant and equipment on the development should be considered within the ES.'

Contamination

'The applicant has indicated that Ground Conditions Assessments will be included within the scope of the proposed Environmental Statement. It is noted that their preliminary assessments have identified the need for intrusive investigations in relation to the risk from ground gas and contamination, to inform any remediation/mitigation measures.'

Although it did not express any concern over the applicants' approach at the 'scoping opinion' stage, SRS did say that it would probably recommend that planning permission carry standard conditions about ground-gas protection, contaminated land, imported soil, imported aggregates and the use of site-won materials.

The **Councils Conservation and Design officer** was consulted and has made the following comments.

It is noted that the Scoping Request Letter ("SRL") states that an Archaeological Desk Based Assessment ("DBA") has been prepared which has defined a study area for the 'archaeology' topic which has identified forty-two sites of direct archaeological interest with ten of those being in the proposed development area. It is further noted that the DBA has not been submitted and the extent of the study area has not been demonstrated.

The Applicant should be able to demonstrate that the study area is sufficiently wide to capture all historic assets that could be significantly affected by the proposed development not just archaeology.

The SRL identifies the direct archaeological sites that are identified within the site, however, the assessment should consider both the site itself and the study area to ensure that all historic assets that could be affected by the proposed development are properly identified, assessed and reported on in the Environmental Statement "ES".

The Scoping Report notes that the ES will consider all practical and reasonable measures which can be implemented to preserve, mitigate or record the heritage assets associated with the site and the selected measures, in accordance with best practice standards, will be included within the ES Chapter.
Such measures should be identified prior to the submission of the application, so that features and impacts are identified and assessed, and mitigation measures proposed as necessary, and the information included in the ES.
Cross reference should be made from this chapter of the ES to the Landscape and Visual chapter.

Glamorgan-Gwent Archaeological Trust (GGAT) was consulted and said that the approach set out in the application documents is acceptable. However, until it is able to read a desk-based assessment in detail, GGAT cannot rule out asking the applicants to carry out further archaeological work.

Cadw (Ancient Monuments) was consulted and said the following:

'There are 13 scheduled monuments, 10 registered historic parks and gardens and 430 listed buildings are located inside 3km of the proposed development. However due to intervening topography, buildings and vegetation block all views between them apart from scheduled monument/Listed Building Old Leckwith Bridge. Consequently apart from Old Leckwith Bridge the proposed development will have no impact on the setting of any designated heritage asset.'

'We have not been given the opportunity to read the archaeological desk based assessment and therefore cannot comment if the impact on the scheduled monument/listed building has been full assessed in accordance with current guidance … . [In any case,] the environmental statement will need to clearly include measures which will be implemented to preserve the scheduled monument/listed building and mitigate any impact to its setting.'

The **Councils Ecology Officer** was consulted and has made the following comments:

‘We recommend that the applicant consult their ecologists to determine which ecological surveys will be required for this site. We have no specific survey requirements , however, we draw the applicants attention to the mature trees on site and the potential to support bat roost(s), therefore bat tree assessment/survey will be required, in addition to a PEA / Phase I habitat mapping of the site.’

The **Councils Landscape Section** was consulted but did not comment on the application.

Natural Resources Wales (NRW) was consulted and said the following:

Land contamination

‘We note, and concur with, the intention to undertake intrusive ground investigations which will serve to inform any required remediation mitigation measures. Full details should be included within the ES.’

Water quality

‘The presence of sensitive receptors including abstractions from the **near-by spring and a private drinking water supply** will also need to be considered in relation to the proposed development and appropriate mitigation measures included, to protect water quality [emphasis added].’

‘[It] is stated that the **River Ely** may also be impacted by pollution during and after the site’s development [emphasis added]. The ES should consider all aspects of pollution risk including drainage, site run off, silt control and waste storage and appropriate mitigation measures considered.’

‘We are aware that the applicant intends to undertake a **WFD (Water Framework Directive) scoping assessment**, to assess the potential impacts of the proposed development on the water environment [emphasis added]. We would take this opportunity to advise the applicant that this site falls within the Cardiff Bay waterbody GB30947042, not the Ely water body GB109057027270. The results of the WFD assessment should be included within the ES.’

Ecology

The ES should include:

- ‘sufficient information to enable the local planning authorities to determine the extent of any environmental impacts arising from the proposed scheme on legally protected species, including those which may also comprise notified features of designated sites affected by the proposals’; and
- ‘a description of all the existing natural resources and wildlife interests within and in the vicinity of the proposed development, together with a detailed assessment of the likely impacts and significance of those impacts’.

Flood risk management

‘The proposed development site lies partially within zone C1, as defined by the Development Advice Map (DAM) referred to in Technical Advice Note 15: Development and Flood Risk (TAN15) (July 2004). The site is shown to be partially within our flood maps.’

Dinas Powys ward members were consulted but did not comment on the application.

REPRESENTATIONS

The planning authority has not received any letters of representation about the request for a scoping opinion.

REPORT

Planning Policies and Guidance

Local Development Plan:

Section 38 of The Planning and Compulsory Purchase Act 2004 requires that in determining a planning application the determination must be in accordance with the Development Plan unless material considerations indicate otherwise. The Development Plan for the area comprises the Vale of Glamorgan Adopted Local Development Plan 2011-2026, which was formally adopted by the Council on 28 June 2017, and within which the following policies are of relevance:

Strategic Policies:

POLICY SP1 – Delivering the Strategy
POLICY SP7– Transportation
POLICY SP8 – Sustainable Waste Management
POLICY SP9 – Minerals
POLICY SP10 – Built and Natural Environment

Managing Growth Policies:

POLICY MG16 – Transport Proposals
POLICY MG17 – Special Landscape Areas
POLICY MG21 – Sites of Importance for Nature Conservation, Regionally Important Geological and Geomorphological Sites and Priority Habitats and Species
POLICY MG22 – Development in Minerals Safeguarding Areas

Managing Development Policies:

POLICY MD1 – Location of New Development
POLICY MD2 – Design of New Development
POLICY MD7 – Environmental Protection
POLICY MD8 – Historic Environment
POLICY MD9 – Promoting Biodiversity

In addition to the Adopted LDP the following policy, guidance and documentation supports the relevant LDP policies.

Planning Policy Wales:

National planning policy in the form of Planning Policy Wales (Edition 10, 2018) (PPW) is of relevance to the determination of this application.

The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.

The following chapters and sections are of particular relevance in the assessment of this planning application:

Chapter 3 - Strategic and Spatial Choices

- Sustainable Management of Natural Resources

Chapter 6 - Distinctive and Natural Places

- Recognising the Special Characteristics of Places (The Historic Environment, Green Infrastructure, Landscape, Biodiversity and Ecological Networks, Coastal Areas)
- Recognising the Environmental Qualities of Places (water and flood risk, air quality and soundscape, lighting, unlocking potential by taking a de-risking approach)

Technical Advice Notes:

The Welsh Government has provided additional guidance in the form of Technical Advice Notes. The following are of relevance:

- Technical Advice Note 5 – Nature Conservation and Planning (2009)
- Technical Advice Note 10 – Tree Preservation Orders (1997)
- Technical Advice Note 11 – Noise (1997)
- Technical Advice Note 15 – Development and Flood Risk (2004)
- Technical Advice Note 18 – Transport (2007)
- Technical Advice Note 20 – Planning and the Welsh Language (2017)
- Technical Advice Note 21 – Waste (2014)
- Technical Advice Note 24 – The Historic Environment (2017)

Supplementary Planning Guidance:

In addition to the adopted Local Development Plan, the Council has approved Supplementary Planning Guidance (SPG). Some SPG documents refer to previous adopted UDP policies and to ensure conformity with LDP policies, a review will be carried out as soon as is practicable following adoption of the LDP. The Council considers that the content and guidance of the adopted SPGs remains relevant and has approved the continued use of these SPGs as material considerations in the determination of planning applications until they are replaced or otherwise withdrawn. The following SPG are of relevance:

- Biodiversity and Development (2018)
- Design in the Landscape
- Minerals Safeguarding (2018)
- Trees, Woodlands, Hedgerows and Development (2018)

Other relevant evidence or policy guidance:

- Welsh Office Circular 11/99 – Environmental Impact Assessment

- Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017.

Well-being of Future Generations (Wales) Act 2015

The Well-being of Future Generations Act (Wales) 2015 places a duty on the Council to take reasonable steps in exercising its functions to meet its sustainable development (or wellbeing) objectives. This report has been prepared in consideration of the Council's duty and the "sustainable development principle", as set out in the 2015 Act. In reaching the recommendation set out below, the Council has sought to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.

Issues

In accordance with paragraph 14(6) of the Regulations, the planning authority must take into account the following topics before adopting a scoping opinion:

- any information provided by the applicant about the proposed development;
- the specific characteristics of the particular development;
- the specific characteristics of development of the type concerned; and
- the environmental features likely to be significantly affected by the development.

In accordance with paragraph 14(2)(a) of the Regulations, the applicants have provide the planning authority with:

- a plan sufficient to identify the land;
- a brief description of the nature and purpose of the development including its location and technical capacity;
- its likely significant effects on the environment; and
- such other information or representations as the person making the request may wish to provide or make.

The application documents include:

- existing site plan;
- several parameters plans (land uses, building heights and access routes);
- a detailed covering letter;
- technical note about scope of transport assessment;

- air-quality scoping note.

The covering letter states that an environmental statement would cover the following topics:

- highways;
- ecology;
- landscape;
- flooding and drainage;
- land contamination;
- archaeology;
- noise;
- vibration;
- air quality.

The covering letter discusses these topics in some detail but the planning authority recommends that an ES include the following details too:

Highways

Traffic flows

To allow the highway authority to consider peak times, the transport section of the ES should include information about traffic flows across the surveyed network.

Trip distribution

The transport section of the ES should clearly explain how the Leckwith park-and-rise facility would reduce the proposal's overall traffic by 6%.

Future traffic

The transport section of the ES should account for the impact of the proposal until 2030.

Local impact

The transport section of the ES should assess the proposal's impact on the junction of the Merrie Harrier and Redlands Road.

Ecology

The ecology section of the ES should account for the proposal's impact on the SSSI to the south-east of the site.

Landscape

The landscape section of the ES should account for short-, medium- and long-distance views of the site, such as those from the Ely Trail, Leckwith, Ely (Trelai Park, for example) and elevated positions in Cardiff city centre.

Air quality

The air-quality section of the ES should set out arrangements for controlling the amount and movement of dust during demolition and construction.

RECOMMENDATION

An environmental statement should cover the topics set out in the application documents, Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017, this report and the observations made by the planning authority's technical advisers.

It is considered that the scoping opinion decision complies with the Council's well-being objectives and the sustainable development principle in accordance with the requirements of the Well-being of Future Generations (Wales) Act 2015. Environmental Impact Assessment submitted should cover the matters referred to in Schedule 4 of the Town and Country Planning (Environmental Impact Assessment((England and Wales) Regulations 1999, as referred to in the information details as submitted with the request but should also include an assessment of the following:

NOTE:

Please note that this consent is specific to the plans and particulars approved as part of the application. Any departure from the approved plans will constitute unauthorised development and may be liable to enforcement action. You (or any subsequent developer) should advise the Council of any actual or proposed variations from the approved plans immediately so that you can be advised how to best resolve the matter.

In addition, any conditions that the Council has imposed on this consent will be listed above and should be read carefully. It is your (or any subsequent developers) responsibility to ensure that the terms of all conditions are met in full at the appropriate time (as outlined in the specific condition).

The commencement of development without firstly meeting in full the terms of any conditions that require the submission of details prior to the commencement of development will constitute unauthorised development. This will necessitate the submission of a further application to retain the unauthorised development and may render you liable to formal enforcement action.

Failure on the part of the developer to observe the requirements of any other conditions could result in the Council pursuing formal enforcement action in the form of a Breach of Condition Notice.

DEVELOPMENT MANAGEMENT
DELEGATION OF PLANNING FUNCTIONS FORM

City Development

LOCAL GOVERNMENT ACT 1972 SECTION 101
DELEGATION OF PLANNING FUNCTIONS - SCOPING OPINION

Application No: SC 19/00016/MJR
Proposal: SCOPING REQUEST FOR ENVIRONMENTAL STATEMENT
Location: LAND AT LECKWITH ROAD, LECKWITH

The above proposal has been scoped with regard to the need for the preparation of an Environmental Statement to accompany the application, in accordance with the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (hereafter 'the Regulations').

(i) Introduction

This request for a scoping opinion relates to proposals for residential development, and highway improvement works including a new overbridge on land at Leckwith Road, Leckwith.

This scoping opinion has been prepared by Cardiff Council in response to the information contained within the letter by the RPS Group dated 31 October 2019 and the Transport Assessment Scoping Note provided by Aecom on 20 December 2019.

The opinion comprises a brief description of the site and the proposals, a summary of the consultation responses, and the scoping opinion.

The Local Planning Authority has taken the following into account before adopting its opinion in accordance with Regulation 14(6) of the Regulations:

(i) any information provided by the applicant about the proposed development;
(ii) the specific characteristics of the particular development;
(iii) the specific characteristics of development of the type concerned; and
(iv) the environmental features likely to be significantly affected by the development

(ii) Description of The Proposed Development and Site Context

The Proposed Development

A hybrid planning application for residential development, highway and bridge improvement works is being prepared for land at Leckwith Road, Leckwith. The residential element of the application will be submitted in outline and the highway and bridge improvement works will be submitted in full.

The proposals seek to redevelop the existing brownfield site for residential uses (circa 250 units) comprising a mix of houses and apartments with associated public open space, landscaping and parking areas. The proposals include the realignment of the existing B4267 Leckwith Road link and a new bridge crossing of the River Ely. The existing B4267 runs through the site on a viaduct which is in a very poor state of repair. The new road alignment has been arranged to allow the existing road to remain open during its construction. The new bridge has been positioned immediately upstream of the existing, listed, masonry bridge which is to be retained to allow pedestrian and cyclist access to the site.

The existing site is subject to a number of physical constraints. It is currently proposed that the development is split into two parcels on either side of the proposed new bridge crossing - referred to as the northern (1.3 ha) plateau and the southern plateau (6.4 ha). The northern area will deliver a residential development of around 80 dwellings, whilst the southern plateau will deliver circa 170 dwellings. A new signalised four arm junction is proposed to allow access to each development parcel. The site extends along approximately 890 metres of the Ely riverbank on the Vale of Glamorgan side.

The development proposals are cross boundary in that the residential element of the proposed development lies solely within the administrative boundary of the Vale of Glamorgan whilst some of the highway works fall within the administrative boundary of Cardiff and the jurisdiction of Cardiff Council.

Due to the cross-boundary nature of the development the applicant intends to submit an Environmental Statement (ES) that is common to both Authorities, the scope of the ES having first been informed by Scoping Opinions that will ensure that the issues raised by both Authorities, and their consultees, have been adequately assessed.

The proposed development falls within Section 10 (b) (Infrastructure Projects) of Schedule 2 of the 2017 Regulations. Part 10(b) relates to Urban Development Projects where sites exceed 5 hectares or the proposed development exceeds 150 dwellings. For such Schedule 2 Developments the 2017 Regulations require that Environmental Impact Assessment (EIA) be undertaken where the development is likely to have 'significant effects on the environment by virtue of factors such as its nature, size or location'. Due to the nature of the proposals, and in response to the pre-application response provided in relation to the proposals by Vale of Glamorgan

Council in July 2016, it has been agreed that an EIA of the proposed development will be undertaken and the consequential ES will be submitted in support of the application to both Authorities.

Site Context

The site comprises approximately 7.7 Hectares of land known as Leckwith Yard/Works and is accessed off the B4267 Leckwith Road via the 'Old Leckwith Bridge' which is a Grade II* listed building and Scheduled Ancient Monument. This access also serves the Ely Trail which is, primarily, an off-road walking/cycling route. The Leckwith Road Viaduct rises and continues to run above and across the site continuing up towards Llandough. The site is made up of two plateaux either side of the bridge which are both largely cleared and levelled. The land is currently used for commercial and industrial uses comprising a number of buildings and hard standing areas. The site is located adjacent to the River Ely and the Grangetown-Ely Link Road which runs along the north-eastern boundary of the site. To the south and west large areas of woodland, comprising Leckwith Wood and Factory Woods, border the site.

The site does not have any international or national biodiversity designations however the Factory Woods are designated locally as a Site of Importance for Nature Conservation (SINC).

The site is located within the Ely Valley & Ridge Slopes Special Landscape Area (SLA) and lies within Flood Zone C1 as shown on the relevant Development Advice Map of the Welsh Government's Technical Advice Note 15 (Flood Risk). It is therefore formally recorded as being "served by significant infrastructure including flood defences".

The site is also located within a Health and Safety Executive Consultation Zone and the implications thereof will be addressed within the ES.

(iii) **Consultation Responses**

Socio-Economic Impacts

The proposed scope is considered to be acceptable. It is noted that effects of the development on health are referenced. Risks to human health must be considered in EIA development as required by the EIA Regulations (Schedule 4 Part 5(d)).

Highways and Transportation

The Operational Manager, Transportation has provided the following comments:

They would expect the Environmental Statement to consider the impact of the proposed site upon the following locations, where traffic might be expected to utilise Cardiff roads. These would be those already surveyed by AECOM as listed in section 5 Data Collection of the AECOM Technical Note.

The data collected would illustrate the traffic peaks and have identified local traffic peaks. The wider spread of traffic and the potential impacts should be considered wherever possible.

He has no comment on the parking standards to be applied in the Vale, however he would support the use of reduced car parking standards to deter the potential for car borne traffic being used to access Cardiff. The development should also demonstrate its support for Active Travel by the provision of NMU routes and adequate cycle parking provision for residents. Cardiff is fully supportive of WG's Active Travel Act and the need for all developments to take full account of these matters. To this end he would request additional/specific attention be paid to active travel and suitability of routes/access to/from the proposed bridge and public transport facilities.

The limited operational period of the Leckwith P&R during the week should be considered when allocating traffic movements to / from Cardiff. Is it realistic to assume that the P&R would constitute a meaningful quantum of commuter traffic. Otherwise the traffic distribution data is missing from the letter submitted by RPS.

The use of Tempro is accepted. The determination of the necessity to undertake a junction assessment should be agreed with the highway authority (as intimated), rather than dependent upon the "5% rule".

He would expect to see a travel plan to be provided with the Transport Assessment.

The traffic impact of the new housing will need to be managed. The access to / from the site is reasonably compromised as it stands. The site is essentially a cul-de-sac. The demolition / construction works will also require significant consideration of traffic routes. It is likely to cause a large number of movements and the removal / delivery of significant quantities of material to / from the site.

Ecology

The Council's Ecologist advises that the Environmental Statement needs to consider impacts upon Otters, nesting birds, foraging and commuting bats, and the riverine habitats of the River Ely SINC.

In addition, the 2016 EcIA Guidelines make it clear that any ecological impact assessment, whether standalone or part of an Environmental Statement, should consider the impacts upon ecosystems, as well as habitats and species. Statements to this effect are found throughout the document, for example at sections 1.3, 1.9,

2.3, 4.1 and 4.8 etc. All Environmental Statements submitted to Cardiff Council should demonstrate how the impacts upon ecosystems have been assessed, in accordance with the 2016 EcIA Guidelines. This will allow Cardiff Council to demonstrate compliance with the ecosystem approach as required by Section 6 of the Environment (Wales) Act 2016.

Natural Resources Wales advises that the ES should include sufficient information to enable the local planning authorities to determine the extent of any environmental impacts arising from the proposed scheme on legally protected species, including those which may also comprise notified features of designated sites affected by the proposals. The ES should include a description of all the existing natural resources and wildlife interests within and in the vicinity of the proposed development, together with a detailed assessment of the likely impacts and significance of those impacts.

Any habitat surveys should accord with the NCC Phase 1 survey guidelines (NCC (1990) Handbook for Phase 1 habitat survey. NCC, Peterborough). They advise that Phase 1 surveys are undertaken and completed during the summer to ensure the best chance of identifying the habitats present.

They advise the site is subject to assessment to determine the likelihood of protected species and that that targeted species surveys are undertaken for all species scoped in. These should comply with current best practice guidelines and in the event that the surveys deviate or there are good reasons for deviation that full justification for this is included within the ES. Should protected species be found during the surveys, information must be provided identifying the species-specific impacts in the short, medium and long term together with any mitigation and compensation measures proposed to offset the impacts identified. They advise that the ES sets out how the long-term site security of any mitigation or compensation will be assured, including management and monitoring information and long term financial and management responsibility. Where the potential for significant impacts on protected species is identified, they advocate that a Conservation Plan is prepared for the relevant species and included as an Annex to the ES. Where a European Protected Species is identified and the development proposal will contravene the legal protection they are afforded, a licence should be sought from NRW. The ES must include consideration of the requirements for a licence and set out how the works will satisfy the three requirements as set out in the Conservation of Habitats and Species Regulations 2017. One of these requires that the development authorised will 'not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range'. These requirements are also translated into planning policy through Planning Policy Wales (PPW) December 2018, section 6.4.22 and 6.4.23 and Technical Advice Note (TAN) 5, Nature Conservation and Planning (September 2009). The local planning authority will take them into account when considering the ES where a European Protected Species is present.

Note: Otter are known to be breeding in the locality. Adult and juvenile otter footprints were recorded under the A48 road bridge in spring 2019. Otter breeding habitat is limited in this area, surveys should identify potential natal holts and safe secluded areas for the mother otter to move her young to. Riparian zone design should consider the provision of secluded habitat for otter.

They recommend that the developer consults the local authorities' Ecologists on the scope of the work, to ensure that regional and local biodiversity issues are adequately considered, particularly those habitats and species listed in the relevant Local Biodiversity Action Plan, and are that are considered important for the conservation of biological diversity in Wales. They also recommend that the developer contact other relevant people/organisations for biological information/records relevant to the site and its surrounds. These include the relevant Local Records Centre and any local ecological interest groups (e.g. bat groups, mammal groups).

Landscape and Visual Character

It is recommended that the assessment of landscape and visual impacts of the proposed development has regard to the 'Guidelines for Landscape and Visual Assessment, Third Edition (2013): The Landscape Institute and Institute of Environmental Management and Assessment.'

The stages of assessment should include landscape value, character and susceptibility to change, and sensitivity enabling an assessment of the magnitude and significance of the effects to be assessed.

It is acknowledged that views into the site are limited.

Flooding and Hydrology

In respect of flooding, Natural Resources Wales (NRW) advise that the development site lies partially within zone C1, as defined by the Development Advice Map (DAM) referred to in Technical Advice Note 15: Development and Flood Risk (TAN15) (July 2004). The site is shown to be partially within NRW's flood maps. They note that a Flood Consequences Assessment (FCA) will be undertaken in support of the planning application. Section 6 of TAN15 requires the Local Authority to determine whether the development at this location is justified. The FCA should meet the criteria set out in TAN15.

Regarding hydrology, the drainage strategy for both surface and foul water drainage should be considered. Further information is required in the form of site and ground water assessments, to determine opportunities for the use of sustainable drainage schemes. The presence of sensitive receptors including abstractions from the near-by spring and a private drinking water supply will also need to be considered in

relation to the proposed development and appropriate mitigation measures included, to protect water quality.

They note under point 4 of the Ecology section that the River Ely may also be impacted by pollution during and after the development. The ES should consider all aspects of pollution risk including drainage, site run off, silt control and waste storage and appropriate mitigation measures considered.

They are aware that the applicant intends to undertake a WFD (Water Framework Directive) scoping assessment, to assess the potential impacts of the proposed development on the water environment. They would take this opportunity to advise the applicant that this site falls within the Cardiff Bay waterbody GB30947042, not the Ely water body GB109057027270. The results of the WFD assessment should be included within the ES.

The watercourse known as the River Ely is scheduled as a statutory main river, pursuant to the Water Resources Act 1991. Your client will need to apply for a Flood Risk Activity Permit if they wish to undertake any work in, over, under, adjacent to, or within 8m of the top of bank of this main river. Further information is available at: https://naturalresources.wales/permits-andpermissions/flood-risk-activities/?lang=en

Ground Conditions

Natural Resources Wales advises that there is potential for the previous contaminative uses on the site to have led to land contamination. They note that a Preliminary Ground Condition baseline survey has been undertaken by WSP and the risk to controlled waters is considered to be high. They note, and concur with, the intention to undertake intrusive ground investigations which will serve to inform any required remediation mitigation measures. Full details should be included within the ES.

They recommend that the developers:

1. Follow the risk management framework provided in CLR11, Model procedures for the management of land contamination, when dealing with land affected by contamination.

2. Refer to the Environment Agency "Guiding Principles for Land Contamination" (which has been adopted by NRW) for the type of information required in order to assess risks to controlled waters from the site. The local authority can advise on risk to other receptors, e.g. human health.

The Council's Contaminated Land Team notes that Ground Conditions Assessments will be included within the scope of the proposed Environmental Statement. It is noted that their preliminary assessments have identified the need for intrusive

investigations in relation to the risk from ground gas and contamination, to inform any remediation/mitigation measures. They have no further comments at this stage.

Archaeology

Glamorgan Gwent Archaeological Trust (GGAT) notes that a desk-based assessment has been undertaken by GGAT Projects in order to consider the nature and location of archaeological resources and designated heritage assets on and nearby the site. It identified ten sites within the proposed development area, including Leckwith Bridge, a Scheduled Monument and Grade II* Listed Building. The proposed development will have a 'Major' to 'Minor' effect on these identified sites and the assessment contains 'practical and reasonable measures which can be implemented to preserve, mitigate or record the heritage assets'. However such measures are not specified in the scoping document. Nevertheless, such an approach is appropriate, and they look forward to reading the assessment in detail. It should be noted that, depending on the results of the assessment and the details of the proposal, additional archaeological work may be required. Such work could be required pre-determination, or secured by a condition. Furthermore, due to the presence of a Scheduled Monument within the development area, Cadw will need to be consulted over the proposal.

The Council's Conservation Officer advises that the ES should consider how the development will impact on the significance of the scheduled monument. This should include an assessment of how physically it will be affected and how the setting contributes to the bridge.

Noise and Vibration

The Noise Pollution Officer has considered the noise assessment carried out by Mach Acoustics to assess noise and vibration. The report's findings indicate very high levels of noise associated with nearby traffic sources which will need to be a component of the Environmental Statement.

Noise emitted from fixed plant and equipment on the development should also be considered within the Environmental Statement.

Air Quality

No comments have been provided by the Air Quality Officer.

Climate Change

It is noted that climate change will be considered within the flooding and hydrology and air quality chapters. This is accepted.

Human Health

It is recommended that risks to human health be assessed and referred to under the topics covering noise and vibration, air quality, ground conditions and landscape and visual.

(iv) **Scoping Opinion**

In preparing the Environmental Statement, I would draw your attention to the requirements for Environmental Statements set out in Regulation 17 and Schedule 4 to the EIA Regulations.

Regulation 5(e) of Schedule 4 to the EIA Regulations requires that the cumulative effects with other existing and/or approved projects must be taken into account in an EIA.

The Council considers that, subject to the comments above, the issues identified in the submitted scoping report should be included in the Environmental Impact Assessment to enable the Council to consider the likely environmental effects of the development and whether these are likely to be significant.

Please note that this scoping opinion is provided without prejudice and does not preclude Cardiff Council from requesting further information, in accordance with Regulation 24 of the Regulations, should the need arise.

Signed (Case Officer): _____ **Date** 31/1/20

Signed (Operational Manager): _____ **Date** 31/01/20.

Signed (Admin - Letter sent to Agent/Applicant): _____ **Date** _____

(and copy placed on planning register)

Appendix C:

Site Access – Proposed Design (Option 2)

DO NOT SCALE

NEW KERBLINE TO TIE INTO EXISTING

A4232

NEW 3.5m FOOTWAY TO TIE INTO EXISTING FOOTWAY WIDTH

70m STOPPING SIGHT DISTANCE (SSD)

LECKWITH ROUNDABOUT

R90.4m

A4232 NORTH BRIDGE ABUTMENT

PRELIMINARY LOCATION FOR LECKWITH ROUNDABOUT DIRECTIONAL SIGN WITH A4232 TUNNEL CLOSURE INFORMATION

R89.75m

CONTROLLED TOUCAN CROSSING

ELY RIVER

CYCLE/FOOTWAY TO BE REALIGNED, RETAINING WALLS TO BRING UP TO NEW ROAD LEVEL

UNCONTROLLED CROSSING

UNCONTROLLED PEDESTRIAN CROSSING WITH REFUGE

NEW 3.5m FOOWAY TO TIE INTO EXISTING FOOTWAY WIDTH

A4232 SOUTH BRIDGE ABUTMENT

ACCESS TO 3RD PARTY LAND MAINTAINED, EXISTING VEHICLE CROSSOVER EXTENDED TO NEW CARRIAGEWAY

SECTION OF WALL REQUIRING REMOVAL

JUNCTION INTERVISIBILITY

UNCONTROLLED PEDESTRIAN & CYCLE CROSSING WITH REFUGE

CYCLE/FOOTWAY TO BE REALIGNED

LECKWITH OLD BRIDGE

A4232

CYCLE/FOOTWAY LINK INTO DEVELOPMENT

ELY RIVER

UNCONTROLLED CROSSING

ACCESS CROSSOVER TO TO DEVELOPMENT PUMPING STATION COMPOUND

9m DISTANCE TO BUS STOP FROM STOP LINE

INDICATIVE RETAINING WALL TO MITIGATE 1 IN 1 SLOPE SHOWN BETWEEN CH. 110m TO 190m ON LEFT HAND SIDE

NEW CARRIAGEWAY TO TIE BACK INTO EXISTING

FOOTWAY TO TIE INTO EXISTING, CYCLE DROP OFF TO BE PROVIDED

FOOTWAY PINCH POINT DUE TO EXISTING FOOTWAY TERMINATION & HIGHWAY RETAINING WALL.

EXISTING FOOTWAY APPROX 1.5M WIDE

NEW SPEED GATEWAY, TRAFFIC REGULATION ORDER REQUIRED TO REDUCE EXISTING 40MPH TO 30MPH

NEW KERBLINE TO TIE INTO EXISTING

PROPOSED NEW 7.2M WIDE HIGHWAY TO TRANSITION TO EXISTING WIDTH APPROXIMATELY 9.3m WIDE

NOTES

1. DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY.
2. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (AOD)
3. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
4. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND IS SUBJECT TO DETAILED DESIGN
5. HIGHWAY GEOMETRY & DESIGN IS SUBJECT TO TECHNICAL APPROVAL OF THE ADOPTING HIGHWAY AUTHORITIES

DRAWING STATUS: DRAFT - FOR PLANNING

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wsp.com

CLIENT: -

PROJECT: LECKWITH QUAYS

ARCHITECT:

TITLE: HIGHWAY GENERAL ARRANGEMENT OPTION 2

SCALE @ A1:	CHECKED:		APPROVED:
1:500	AW		GW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70053561	SID	SID	September 19

DRAWING No: 70053561-XX-XX-102 REV: P02

File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70053561\70053561-XX-XX-102_GA OPTION2_DWG, printed on 12 February 2020 17:56:25, by Davies, Sion

Appendix D:

Census Analysis – Car Ownership Levels

2011 Census Analysis - Car Ownership Levels

Raw Data

Cars	MSOA		Total
	Cardiff 040	The Vale of Glamorgan 006	
All categories: Car or van availability	3,566	3,333	6,899
No cars or vans in household	1,108	482	1,590
1 car or van in household	1,648	1,430	3,078
2 cars or vans in household	665	1,077	1,742
3 cars or vans in household	122	259	381
4 or more cars or vans in household	23	85	108

Note: Data from 2011 Census. Dataset: QS416EW - Car or van availability

Average Car Ownership

No. of Cars	MSOA		Total
	Cardiff 040	The Vale of Glamorgan 006	
1	1,648	1,430	3,078
2	1,330	2,154	3,484
3	366	777	1,143
4	92	340	432
Total Cars	**3,436**	**4,701**	**8,137**
Total Households	**3,566**	**3,333**	**6,899**
Average Car Ownership	**1.0**	**1.4**	**1.2**

Appendix E:

TRICS Outputs

Calculation Reference: AUDIT-204605-190723-0713

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	2 days
	KC	KENT	1 days
	SC	SURREY	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
	ST	STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
Actual Range: 54 to 288 (units:)
Range Selected by User: 50 to 500 (units:)

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/11 to 20/11/18

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	1 days
Wednesday	2 days
Thursday	2 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town	7

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	6
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3	7 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,000 or Less	1 days
5,001 to 10,000	3 days
10,001 to 15,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

1.1 to 1.5	7 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	7 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	7 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 ES-03-A-03 MIXED HOUSES & FLATS EAST SUSSEX
SHEPHAM LANE
POLEGATE

Edge of Town
Residential Zone
Total Number of dwellings: 212
Survey date: MONDAY *11/07/16* *Survey Type: MANUAL*

2 ES-03-A-04 MIXED HOUSES & FLATS EAST SUSSEX
NEW LYDD ROAD
CAMBER

Edge of Town
Residential Zone
Total Number of dwellings: 134
Survey date: FRIDAY *15/07/16* *Survey Type: MANUAL*

3 KC-03-A-07 MIXED HOUSES KENT
RECULVER ROAD
HERNE BAY

Edge of Town
Residential Zone
Total Number of dwellings: 288
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

4 NY-03-A-10 HOUSES AND FLATS NORTH YORKSHIRE
BOROUGHBRIDGE ROAD
RIPON

Edge of Town
No Sub Category
Total Number of dwellings: 71
Survey date: TUESDAY *17/09/13* *Survey Type: MANUAL*

5 SC-03-A-04 DETACHED & TERRACED SURREY
HIGH ROAD
BYFLEET

Edge of Town
Residential Zone
Total Number of dwellings: 71
Survey date: THURSDAY *23/01/14* *Survey Type: MANUAL*

6 SH-03-A-05 SEMI-DETACHED/TERRACED SHROPSHIRE
SANDCROFT
TELFORD
SUTTON HILL
Edge of Town
Residential Zone
Total Number of dwellings: 54
Survey date: THURSDAY *24/10/13* *Survey Type: MANUAL*

7 ST-03-A-07 DETACHED & SEMI-DETACHED STAFFORDSHIRE
BEACONSIDE
STAFFORD
MARSTON GATE
Edge of Town
Residential Zone
Total Number of dwellings: 248
Survey date: WEDNESDAY *22/11/17* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.106	7	154	0.276	7	154	0.382
08:00 - 09:00	7	154	0.155	7	154	0.375	7	154	0.530
09:00 - 10:00	7	154	0.133	7	154	0.167	7	154	0.300
10:00 - 11:00	7	154	0.127	7	154	0.152	7	154	0.279
11:00 - 12:00	7	154	0.142	7	154	0.176	7	154	0.318
12:00 - 13:00	7	154	0.160	7	154	0.154	7	154	0.314
13:00 - 14:00	7	154	0.173	7	154	0.158	7	154	0.331
14:00 - 15:00	7	154	0.200	7	154	0.173	7	154	0.373
15:00 - 16:00	7	154	0.263	7	154	0.170	7	154	0.433
16:00 - 17:00	7	154	0.285	7	154	0.193	7	154	0.478
17:00 - 18:00	7	154	0.365	7	154	0.145	7	154	0.510
18:00 - 19:00	7	154	0.278	7	154	0.186	7	154	0.464
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.387			2.325			4.712

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	54 - 288 (units:)
Survey date date range:	01/01/11 - 20/11/18
Number of weekdays (Monday-Friday):	7
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.005	7	154	0.005	7	154	0.010
08:00 - 09:00	7	154	0.003	7	154	0.002	7	154	0.005
09:00 - 10:00	7	154	0.001	7	154	0.001	7	154	0.002
10:00 - 11:00	7	154	0.001	7	154	0.000	7	154	0.001
11:00 - 12:00	7	154	0.003	7	154	0.004	7	154	0.007
12:00 - 13:00	7	154	0.001	7	154	0.001	7	154	0.002
13:00 - 14:00	7	154	0.002	7	154	0.001	7	154	0.003
14:00 - 15:00	7	154	0.006	7	154	0.005	7	154	0.011
15:00 - 16:00	7	154	0.003	7	154	0.004	7	154	0.007
16:00 - 17:00	7	154	0.004	7	154	0.004	7	154	0.008
17:00 - 18:00	7	154	0.003	7	154	0.002	7	154	0.005
18:00 - 19:00	7	154	0.002	7	154	0.003	7	154	0.005
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.034			0.032			0.066

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.002	7	154	0.001	7	154	0.003
08:00 - 09:00	7	154	0.001	7	154	0.001	7	154	0.002
09:00 - 10:00	7	154	0.003	7	154	0.001	7	154	0.004
10:00 - 11:00	7	154	0.003	7	154	0.002	7	154	0.005
11:00 - 12:00	7	154	0.002	7	154	0.001	7	154	0.003
12:00 - 13:00	7	154	0.003	7	154	0.005	7	154	0.008
13:00 - 14:00	7	154	0.004	7	154	0.001	7	154	0.005
14:00 - 15:00	7	154	0.000	7	154	0.004	7	154	0.004
15:00 - 16:00	7	154	0.003	7	154	0.002	7	154	0.005
16:00 - 17:00	7	154	0.002	7	154	0.004	7	154	0.006
17:00 - 18:00	7	154	0.002	7	154	0.000	7	154	0.002
18:00 - 19:00	7	154	0.000	7	154	0.000	7	154	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.025			0.022			0.047

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.000	7	154	0.000	7	154	0.000
08:00 - 09:00	7	154	0.000	7	154	0.000	7	154	0.000
09:00 - 10:00	7	154	0.000	7	154	0.000	7	154	0.000
10:00 - 11:00	7	154	0.000	7	154	0.000	7	154	0.000
11:00 - 12:00	7	154	0.002	7	154	0.002	7	154	0.004
12:00 - 13:00	7	154	0.000	7	154	0.000	7	154	0.000
13:00 - 14:00	7	154	0.000	7	154	0.000	7	154	0.000
14:00 - 15:00	7	154	0.000	7	154	0.000	7	154	0.000
15:00 - 16:00	7	154	0.000	7	154	0.000	7	154	0.000
16:00 - 17:00	7	154	0.000	7	154	0.000	7	154	0.000
17:00 - 18:00	7	154	0.000	7	154	0.000	7	154	0.000
18:00 - 19:00	7	154	0.000	7	154	0.000	7	154	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.002			0.002			0.004

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.002	7	154	0.006	7	154	0.008
08:00 - 09:00	7	154	0.000	7	154	0.009	7	154	0.009
09:00 - 10:00	7	154	0.000	7	154	0.003	7	154	0.003
10:00 - 11:00	7	154	0.000	7	154	0.004	7	154	0.004
11:00 - 12:00	7	154	0.003	7	154	0.001	7	154	0.004
12:00 - 13:00	7	154	0.000	7	154	0.001	7	154	0.001
13:00 - 14:00	7	154	0.004	7	154	0.001	7	154	0.005
14:00 - 15:00	7	154	0.003	7	154	0.001	7	154	0.004
15:00 - 16:00	7	154	0.003	7	154	0.001	7	154	0.004
16:00 - 17:00	7	154	0.009	7	154	0.002	7	154	0.011
17:00 - 18:00	7	154	0.006	7	154	0.003	7	154	0.009
18:00 - 19:00	7	154	0.004	7	154	0.004	7	154	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.034			0.036			0.070

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
CARS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.067	7	154	0.217	7	154	0.284
08:00 - 09:00	7	154	0.114	7	154	0.299	7	154	0.413
09:00 - 10:00	7	154	0.092	7	154	0.124	7	154	0.216
10:00 - 11:00	7	154	0.089	7	154	0.119	7	154	0.208
11:00 - 12:00	7	154	0.101	7	154	0.127	7	154	0.228
12:00 - 13:00	7	154	0.113	7	154	0.111	7	154	0.224
13:00 - 14:00	7	154	0.124	7	154	0.109	7	154	0.233
14:00 - 15:00	7	154	0.154	7	154	0.130	7	154	0.284
15:00 - 16:00	7	154	0.215	7	154	0.117	7	154	0.332
16:00 - 17:00	7	154	0.224	7	154	0.140	7	154	0.364
17:00 - 18:00	7	154	0.285	7	154	0.117	7	154	0.402
18:00 - 19:00	7	154	0.234	7	154	0.156	7	154	0.390
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.812			1.766			3.578

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
LGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.024	7	154	0.029	7	154	0.053
08:00 - 09:00	7	154	0.022	7	154	0.024	7	154	0.046
09:00 - 10:00	7	154	0.025	7	154	0.023	7	154	0.048
10:00 - 11:00	7	154	0.023	7	154	0.020	7	154	0.043
11:00 - 12:00	7	154	0.019	7	154	0.028	7	154	0.047
12:00 - 13:00	7	154	0.028	7	154	0.022	7	154	0.050
13:00 - 14:00	7	154	0.030	7	154	0.027	7	154	0.057
14:00 - 15:00	7	154	0.027	7	154	0.022	7	154	0.049
15:00 - 16:00	7	154	0.021	7	154	0.033	7	154	0.054
16:00 - 17:00	7	154	0.021	7	154	0.030	7	154	0.051
17:00 - 18:00	7	154	0.036	7	154	0.016	7	154	0.052
18:00 - 19:00	7	154	0.015	7	154	0.018	7	154	0.033
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.291			0.292			0.583

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MOTOR CYCLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	154	0.000	7	154	0.000	7	154	0.000
08:00 - 09:00	7	154	0.000	7	154	0.002	7	154	0.002
09:00 - 10:00	7	154	0.000	7	154	0.002	7	154	0.002
10:00 - 11:00	7	154	0.003	7	154	0.000	7	154	0.003
11:00 - 12:00	7	154	0.001	7	154	0.001	7	154	0.002
12:00 - 13:00	7	154	0.001	7	154	0.001	7	154	0.002
13:00 - 14:00	7	154	0.001	7	154	0.000	7	154	0.001
14:00 - 15:00	7	154	0.000	7	154	0.000	7	154	0.000
15:00 - 16:00	7	154	0.000	7	154	0.000	7	154	0.000
16:00 - 17:00	7	154	0.001	7	154	0.002	7	154	0.003
17:00 - 18:00	7	154	0.003	7	154	0.000	7	154	0.003
18:00 - 19:00	7	154	0.000	7	154	0.000	7	154	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.010			0.008			0.018

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Calculation Reference: AUDIT-204605-191219-1252

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
VEHICLES

Selected regions and areas:
05 EAST MIDLANDS
NR NORTHAMPTONSHIRE 1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
Actual Range: 102 to 102 (units:)
Range Selected by User: 6 to 4334 (units:)

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/11 to 08/07/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:
Saturday 1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:
Manual count 1 days
Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:
Suburban Area (PPS6 Out of Centre) 1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:
Residential Zone 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:
C3 1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Secondary Filtering selection (Cont.):

Population within 1 mile:
20,001 to 25,000 1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:
125,001 to 250,000 1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:
1.1 to 1.5 1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:
No 1 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:
No PTAL Present 1 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 NR-03-A-01 HOUSES NORTHAMPTONSHIRE
BOUGHTON GREEN ROAD
NORTHAMPTON
KINGSTHORPE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 102
Survey date: SATURDAY *22/09/12* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	102	0.010	1	102	0.039	1	102	0.049
08:00 - 09:00	1	102	0.059	1	102	0.108	1	102	0.167
09:00 - 10:00	1	102	0.088	1	102	0.137	1	102	0.225
10:00 - 11:00	1	102	0.098	1	102	0.108	1	102	0.206
11:00 - 12:00	1	102	0.039	1	102	0.186	1	102	0.225
12:00 - 13:00	1	102	0.108	1	102	0.216	1	102	0.324
13:00 - 14:00	1	102	0.157	1	102	0.108	1	102	0.265
14:00 - 15:00	1	102	0.118	1	102	0.118	1	102	0.236
15:00 - 16:00	1	102	0.176	1	102	0.098	1	102	0.274
16:00 - 17:00	1	102	0.196	1	102	0.108	1	102	0.304
17:00 - 18:00	1	102	0.147	1	102	0.137	1	102	0.284
18:00 - 19:00	1	102	0.118	1	102	0.069	1	102	0.187
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.314			1.432			2.746

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	102 - 102 (units:)
Survey date date range:	01/01/11 - 08/07/19
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	1
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Appendix F:

Census Analysis – Traffic Distribution

2 e s s A a s s - T a s

A a s s M e e A ea M A) a a

a ase e a s

Dat set WU03EW - ocat on o u ual es dence and pla e o wo k by m thod o t avel to wo k (MSOA eve)
opu at on All usu l esid nts ag d 6 and o e n emp oyment the week be o e he census
Uni s e sons
Date 20
Method o t avel o wo k D iv ng a ca o an
Usual Residence Ca di 40 he Vale o Glamo gan 0 6
ONS C own Copy ght Rese ved [om N m s on 2 Sep embe 20 9]

s M A

a e W k M A)	T a	e k x Z e																					T a
		42 7 e k a	2 e a	a ee	4 a e Ave e			7 a akWa a a ea a k)		9 a e a	A42 2)	A42 2)	2 e-- T ke a	ve s s a a	4 e a	A4 a a	42 7 e a s a	7 A e a	A4 e a a	9 A4	2 a A4 a va a e a)	2 A4 a vaA4 a a)	
B dgend0 9	2											2											2
B dgend0	9											9											9
B dgend0 3	2											2											2
B dgend0 4	20											0											20
B dgend0 5	26											6											26
Cae ph l y0 2	7											7											7
Cae ph l y0 3	0											0											0
Cae ph l y020	2											2											2
Cae ph l y023	6											6											6
Cae ph l y024	0											0											0
Ca di 003	60	30										0											60
Ca di 005	70	70																					70
Ca di 006	2	6										6											2
Ca di 007		55									55												
Ca di 008	7	7																					7
Ca di 009	0	0																					0
Ca di 0 0	22																						22
Ca di 0	5										5												5
Ca di 0 2	8	8																					8
Ca di 0 4																							
Ca di 0 6		55									55												
Ca di 0 7	6	6																					6
Ca di 0 8	44	44																					44
Ca di 0 9	3	3																					3
Ca di 020	29	45		45																			29
Ca di 02	27	27																					27
Ca di 022	27										27												27
Ca di 023	5	5																					5
Ca di 024	5	25									25												5
Ca di 025	49	49																					49
Ca di 026	9	595		595																			9
Ca di 028	3	3																					3
Ca di 029	26	3									3												26
Ca di 030	7	7																					7
Ca di 03	20			20																			20
Ca di 032	277	277																					277
Ca di 033	47	47																					47
Ca di 034	02	02																					02
Ca di 035	6			6																			6
Ca di 036	67	335									335												67
Ca di 037	36										36												36
Ca di 038	78										78												78
Ca di 040	37			685								685											37
Ca di 04	35			75								75											35
Ca di 042	46	46																					46
Ca di 043																							
Ca di 044	5		75							75													5
Ca di 045	4											4											4
Ca di 046	7									7													7
Ca di 048	293										293												293
Ca di 049	57	0	0	0	0	0	0	0	0	93	64	0	0	0	0	0	0	0	0	0	0	0	57
Ca di 049A																							
Ca di 049B	32										32												32
Ca di 049C																							
Ca di 049D										0	0												
Ca di 049E	20										20												20
Ca di 049	93									93													93
Ha bo ough0 0	3											3											3
Me hy d l 004	9											9											9
Me hy d l 008	7											7											7
Monmou hshi e 009	5											5											5
Neah o t a bot0 9	7											7											7
Newpo t00	7											7											7
Newpo t004	0											0											0
Newpo t006	5											5											5
Newpo t0 2	8											8											8
Newpo t0 4	7											7											7
Newpo t0 5	9											9											9
Newpo t0 6	5											5											5
Newpo t0 8	24											4											24
Newpo t0 9	5											5											5
Newpo t020	44	44																					44
Rhondda C non a 00	6											6											6
Rhondda C non a 0 2	5											5											5
Rhondda C non a 02	9											9											9
Rhondda C non a 022	6											6											6
Rhondda C non a 025	7											7											7
Rhondda C non a 026	4											4											4
Rhondda C non a 027	9											9											9
Rhondda C non a 029	0											0											0
Rhondda C non a 030	40											0											40
Rhondda C non a 03	9											9											9
Sou h Glou este s i e0 7	8											8											8
Swansea 02	5											5											5
he Vale o G amo gan 00	5											5											5
he Vale o G amo gan 002	2											2											2
he Vale o G amo gan 003	90	0	0	0	0	0	0	0	0	0	0	7	3	0	0	0	0	0	0	0	0	0	90
he Vale o G amo gan 003A	35											5											35
he Vale o G amo gan 003B	6											3	3										6
he Vale o G amo gan 003C	8											8											8
he Vale o G amo gan 003D	4											4											4
he Vale o G amo gan 004	9	0	0	0	0	0	0	0	0	74	0	0	0	74	0	0	36	0	0	0	3	3	9
he Vale o G amo gan 004A	3																3						3
he Vale o G amo gan 004B	7																				3	3	7
he Vale o G amo gan 004C	32																32						32
he Vale o G amo gan 004D																							
he Vale o G amo gan 004E	48									74				74									48
he Vale o G amo gan 004	0																0						0
he Vale o G amo gan 005	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	0	0	0	75	6	50
he Vale o G amo gan 005A	26																3				3		26
he Vale o G amo gan 005B																							
he Vale o G amo gan 005C	24																2				2		24
he Vale o G amo gan 005D	48																24				24		48
he Vale o G amo gan 005E	32																				6	6	32
he Vale o G amo gan 005	9																9				9		9
he Vale o G amo gan 006	30	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	0	0	0	0	0	0	30
he Vale o G amo gan 006A	50												50										50
he Vale o G amo gan 006B	28												28										28
he Vale o G amo gan 006C	26												26										26
he Vale o G amo gan 006D	20												20										20
he Vale o G amo gan 006E	6												6										6
he Vale o G amo gan 007	8											9	9										8
he Vale o G amo gan 008	37	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0	7	0	0	0	0	0	37
he Vale o G amo gan 008A	2																2						2
he Vale o G amo gan 008B	3																3						3
he Vale o G amo gan 008C	2																2						2
he Vale o G amo gan 008D	0												0										0
he Vale o G amo gan 008E	26												26										26
he Vale o G amo gan 008	5												5										5
he Vale o G amo gan 009	57											285	285										57
he Vale o G amo gan 0 0	20											0	0										20
he Vale o G amo gan 0 2	75											375	375										75
he Vale o G amo gan 0 3	23											5	5										23
he Vale o G amo gan 0 4	38											9	9										38
he Vale o G amo gan 0 5	6											305	305										6
o aen 008	5											5											5
o aen 0 0																							
o aen 0 3	5											5											5
T a	**4 4 7**	**7**		**9**						**4 9**	**7**	**97**	**472**	**4**			**2**				**7**	**9**	**44 7**
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Note MSOAs w th o al o less than 5 h ve been omi ted om the anal sis Whe e an MSOA s oo a ge to dete m ne an app op ia e o igin des ina ion hese have been b oken own in o the const tue t owe Supe Output A eas (SOAs) based on he p opo t ons below

A a s s e e A ea A) a a

a ase e a s

Dat set WU03EW - ocat on o u ual es dence and pla e o wo k (OA eve)
opu at on All usu l esid nts ag d 6 and o e n emp oyment the week be o e he census
Uni s e sons
Date 20
Usual Residence Ca di 39 Ca di 040 Ca di 04 Ca di 043 Ca di 045 he V le o G amo g n 006
ONS C own Copy ght Rese ved [om N m s on 2 Sep embe 20 9]

M A	A		
Ca di 049	a di 049A	9	7%
	a di 049B	58	20%
	a di 049C		0%
	a di 049D		0%
	a di 049E	37	3%
	a di 049	68	59%
	a	**2 4**	**%**
he Vale o G amo gan 003	he Vale o Glamo gan 003A	43	39%
	he Vale o Glamo gan 003B	7	6%
	he Vale o Glamo gan 003C	0	9%
	he Vale o Glamo gan 003D	5	46%
	a		**%**
he Vale o G amo gan 004	he Vale o Glamo gan 004A	4	2%
	he Vale o Glamo gan 004B	9	4%
	he Vale o Glamo gan 004C	43	7%
	he Vale o Glamo gan 004D		0%
	he Vale o Glamo gan 004E	97	78%
	he Vale o Glamo gan 004	0	0%
	a	**2 4**	**%**
he Vale o G amo gan 005	he Vale o Glamo gan 005A	35	7%
	he Vale o Glamo gan 005B	2	%
	he Vale o Glamo gan 005C	32	6%
	he Vale o Glamo gan 005D	64	32%
	he Vale o Glamo gan 005E	43	2 %
	he Vale o Glamo gan 005	25	2%
	a	**2**	**%**
he Vale o G amo gan 006	he Vale o Glamo gan 006A	98	39%
	he Vale o Glamo gan 006B	57	23%
	he Vale o Glamo gan 006C	52	2 %
	he Vale o Glamo gan 006D	38	5%
	he Vale o Glamo gan 006E	6	2%
	a	**2**	**%**
he Vale o G amo gan 008	he Vale o Glamo gan 008A	2	5%
	he Vale o Glamo gan 008B	3	8%
	he Vale o Glamo gan 008C	2	5%
	he Vale o Glamo gan 008D	0	0%
	he Vale o Glamo gan 008E	27	69%
	he Vale o Glamo gan 008	5	3%
	a	**9**	**%**

Not s u the ana ys s has been nde ta en o MSOAs which cove a a ge a ea the e a e mul ip e est nat ons w th n he MSOA

m a s

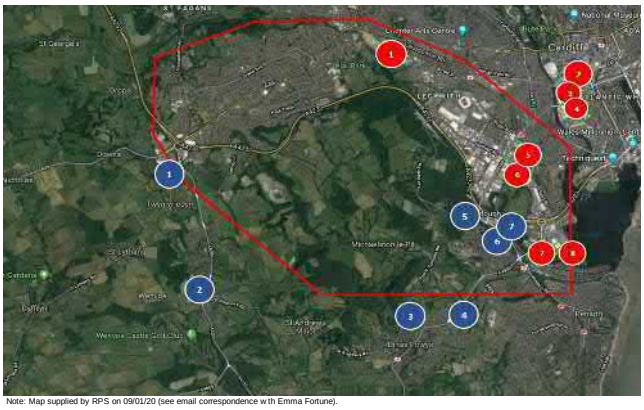
Z e	
B4267 eckw th Road	24%
2 S ope Road	0%
3 B oad St eet	4%
4 w enny A enue	0%
5 &R	0%
6 Ca di C ty Stad um	0%
7 B ian C a k Way (Capi al Reta l a k)	0%
8 Ca di n e nat onal Spo s Campus	0%
9 Had ie d Road	0%
0 A4232 (Sou h)	5%
A4232 (No h)	22%
2 en y- u np ke Road	%
3 Un ve s ty Hospi al la dough	3%
4 Co be t Road	0%
5 A4055 Ca di Road	0%
6 B4267 Redlands Road	5%
7 And ew Road	0%
8 A4 60 ena h Road	0%
9 A4055	0%
20a A4 60 Cogan Hi l (v a Had e d Road)	4%
20b A4 60 Cogan Hi l (v a A4055 Ba y Road)	%
T a	**%**

Appendix G:

Committed Developments

Committed Developments

Map



Note: Map supplied by RPS on 09/01/20 (see email correspondence w th Emma Fortune).

Site Information

HOUSING ALLOCA IONS IN CARDIFF COUNCIL LOCAL PLAN AND SI ES WI H PLANNING PERMISSION OF OVER 50 UNI S						
Map Ref (RED)	Application Number	Address	Description	Decision	Decision Date	AECOM ransport Comments
1	12/01663/DCO	Ely Paper M ll, Base Reel Store, Paper Mill Road, Canton, Cardiff	Mixed use scheme compr sing up to 900 dwellings, ive/work un ts employment and assoc ated commercial uses, new highway access and publ cly accessible green space (OUTLINE)	Permission granted	15-Aug-1	53 dwe lings remain of the consent (based on CCC s '5 Year Housing Land Supply Report 2019)'. The Transport Assessment includes traf ic generation forecasts or the B 267 Leckwith Road/S oper Road/Broad Street junct on. A pro-rata factor has been appl ed to forecast the traff c generation of the remaining consented development at this junction. Beyond this, traff c has been distributed based on observed turning proportions.
2	N/A	Card ff Central Enterpr se Zone and Regional Transport Hub	No appl cat ons submitted for this al oca ion	N/A	N/A	No forecasts are ava lable or the traf ic generation of this site but, given ts status as an LDP a location, it is considered that this is captured by TEMP o growth.
3	16 0050 MJR	O d Imper al Bu ldings, Trade Street, Butetown, Card ff, CF10 5DQ	Demolit on of wil iams court except no. 1 & 3 which shall be retained and converted from b1 use (off ces) to a1/a2 a3 use. new bu ld resident al development cons sting of no. 102 1 & 2-bed flats with ground loor reta l units fronting trade street and undercroft car parking for 5 vehicles	Permission granted	1 -Nov-16	No detai s of traff c generation are included in the planning submission but, given its status as an LDP allocat on, t is considered that this s captured by TEMPro growth.
	17/01672/MJR	ITEC Training Solu ions, 6 Curran Road Crawshay Court, Butetown, Cardiff, CF10 5TG	Demol tion of existing bui dings and construct on of 25 storey apartment building (1 0 no. units) w th ancil ary areas, parking, a1/a3 unit(s) and res dent's roof terrace	Permission granted	07-Aug-19	The Transport Statement included in the planning submission forecasts that the s te will generate 1 and 28 veh cle trips during the AM and PM peak hours respectively, but provdes no deta ls of the traff c d stribution. Given ts locat on and sca e, it is considered that the s te wi l generate minimal movements on the study area network. Furthermore, the site s a located in the LDP and is the efore considered to be captured by TEMPro growth.
5	15 0283 MJR	Land to the West of Clive Lane, Grangetown, Cardiff	Hybrid app ica ion comprising an outline appl cat on for residential deve opment (up to 116 no. new dwellings), including demolit on of no. 130 Clive street and assoc ated garage to create new means of vehicu ar access from Clive street and full appl cant (OUTLINE)	Permission granted	07-Nov-16	The Transport Statement included in the planning submission forecasts that the s te will generate 1 and 37 veh cle trips during the AM and PM peak hours respectively. Traff c is shown as routeing to/from the A 160 Penarth Road at ts junction with Clive Street; this is the extent of the study area for this site. For robustness, it t has been assumed that th s tra fic will route to/from Barons Court and be distributed on the network based on observed turning proport ons (w th movements to/from some arms not allowed as they are not considered appropriate routes from their point of origin).
6	N/A	Former Gas Works, Ferry Road	No appl cat ons submitted for this al oca ion	N/A	N/A	No forecasts are ava lable or the traf ic generation of this site but, given ts status as an LDP a location, it is considered that this is captured by TEMP o growth.
7	08/02191/C	Bayscape, Cambrian Marina and adjoining land at Watkiss Way, Cardiff	Hotel (including conference suite, gym, spa, restaurants and bars), res den ial, retail, off ce and food and drink un ts, parking and service areas, new access, pub ic realm and new river edge revetment	Permission granted	29-Sep-10	The res dential component has been bu lt out (based on CCC's '5 Year Housing Land Supply Report 2019'), so only non-res dential uses need to be included. The Transport Assessment included with the planning submission provdes forecasts for the hotel/con erence uses; these are forecast to generate 166 and 138 vehic e trips during the AM and PM peak hours. Distribut on deta ls are also provided. These have been uti ised to manually assign trips from th s site on o the study area et o
8	12/00937/DC	Card ff Pointe (Figurehead Homes)	Erec ion of 561 no. dwe lings, 982 sq.m a1 retail/d1 non residential institut on f oorspace, veh cu ar and pedestrian access, parking and servicing, landscaping, remed al works to revetments, renovation and repair of ex sting canti ever walkway and erect on of new cant lever walkway	Permission granted	05-Apr-13	62 dwe lings remain of the consent (based on CCC s '5 Year Housing Land Supply Report 2019'). The Transport Assessment included in the p anning submission provdes traf ic low d agrams or the generat on/distribut on or the fu l s te and therefore a p o rata reduction (from 561 to 62 dwellings) has been appl ed to ensure there s no double-counting of development already completed. Turning movements are shown at Barons Court; this s the extent of the study area for this site. It is assumed that tra fic o/from the A 055 Barry Road wi l route to/from Merrr e Harrier and be dist ibuted based on observed turning proportions (with movements to/from some arms not allowed as they are not cons dered appropriate routes for the o igin/destination or not considered an appropriate or gin/destination).

HOUSING ALLOCA IONS IN VALE OF GLAMORGAN LOCAL PLAN (POL CY MG2)						
Map Ref (BLUE)	Application Number	Location	Description	Decision	Decision Date	AECOM ransport Comments
1	2013/01152/OUT	ITV Wales, Culverhouse Cross	Demol tion of existing bui dings and redeve opment of s te for res dential purposes. at Land Off Old Port Road, Culverhouse Cross (ITV)	Permission granted	31-Mar-1	201 of the 250 consented dwe lings have been completed (based on the VoG's 'Local Development Plan: 1st Annual Montiroing Report Ap il 2018 to March 2019'). The T ansport Assessment included in the planning submiss on shows traff c routeing to/from the A 232 (South) at Culverhouse Cross during the AM and PM peak hours; this is the extent of the study area for the site. For robustness, t has been assumed that this traffic will route to/from Leckwith Interchange and be distributed on the network based on observed turning proport ons (w th movements to/from some arms not a lowed as they are not cons dered appropriate rou es f om their point of origin).
2	2015/00601/RES	Land to the West of Port Road, Wenvoe	Reserved Matters for part of site (relating to Outline consent 2013/0088 /OUT) for a site total of 132 dwellings and associated andscaping and works	Permission granted	12-Feb-16	131 of the 132 consented dwe lings have been completed (based on the VoG's 'Local Development Plan: 1st Annual Montiroing Report Ap il 2018 to March 2019'). The traffic assoc ated with the one remaining dwel ing w ll generate no more than one veh cle trip during the peak hours and, given ts status as a housing al ocation, it is assumed that this is captured TEMP o g o t
3	2015/00095/FUL	Land at Ardwyn, Pen-y-Turnpike	Construct on of e ghteen dwellings and assoc ated works (NMA)	Permission granted	2 -Nov-15	The consented development has been completed (based on the VoG's 'Local Deve opment Plan: 1st Annual Montiroing Report April 2018 to March 2019').
	2017/0072 /RES	Land off Caerleon Road, Dinas Powys	Approval of all reserved matters on outline consent 201 /00282/OUT for residential development	Permission granted	08-Dec-17	22 of the 70 consented dwellings have been comple ed (based on the VoG s 'Local Deve opment Plan: 1st Annual Montiroing Report April 2018 to March 2019'). The Transpo t Statement included in the p anning submission forecasts the s te will generate 5 and 2 vehic e trips during the AM and PM peak hours respectively for the full deve opment. For the remaining consented development (8 dwe lings), this equates to 31 and 35 veh cle trips during the AM and PM peak hours respectively. However, the Transport Statement does not include traf ic low d agrams or de ails of the traffic distribution, so it has therefore not been posible to manua ly ass gn this traff c onto the netwo k. Given ts status as a housing al oca ion, it is assumed that this s captured by TEMPro growth.
5	2018/01023/FUL	Land No th of Leckwith Road	Proposed res dential deve opment comprising 0 a fordab e un ts (comprising a mix of 1 and 2 bed apartments) along with assoc ated parking, highway and anci lary works	Permission granted	29-Mar-19	The Transport Statement included in the planning submission forecasts that the s te will generate 25 vehic e trips during the AM and PM peak hours. However, it provdes insuff cient detai s in regard to distribut on to al ow this to be manually assigned onto the network. However, given its status as a housing allocat on, t is assumed that this s captured by TEMPro growth.
6	N/A	Land South of Llandough H ll / Penarth Road	No appl cat ons submitted for this al oca ion	N/A	N/A	No forecasts are ava lable or the traf ic generation of this site but, given ts status as an LDP a location, it is assumed that this is captured by TEMP o growth.
7	N/A	L andough Landings	No appl cat ons submitted for this al oca ion	N/A	N/A	No forecasts are ava lable or the traf ic generation of this site but, given ts status as an LDP a location, it is assumed that this is captured by TEMP o growth.

Appendix H:

Forecast Changes in Traffic Flows

Forecast Changes in Traffic Flows

Junction Labels

1. B4267 Leckwith Road/Sloper Road/Broad Street
2. B4267 Leckwith Road/Lawrenny Avenue
3. B4267 Leckwith Road/Ffordd Fred Keenor
4. Ffordd Fred Keenor/Access to CCFC and P&R
5. B4267 Leckwith Road/Brian Clarke Way/CISC
6. Leckwith Interchange
8. B4267 Leckwith Road/Pen-y-Turnpike Road
9. B4267 Penlan Road/University Hospital Llandough
10. Merrie Harrier
11. Barons Court

Junction Inflows

Junction		Weekday AM Peak Hour				Weekday PM Peak Hour			
No.	Arm	2025 Do-Minimum	2025 Do-Nothing	Difference	% Change	2025 Do-Minimum	2025 Do-Nothing	Difference	% Change
1	A - B4267 Leckwith Road (Northeast)	1,018	1,027	9	1%	1,075	1,097	22	2%
	B - Sloper Road	476	477	0	0%	864	864	0	0%
	C - B4267 Leckwith Road (Southwest)	1,059	1,086	27	3%	1,091	1,101	11	1%
	D - Broad Street	790	792	2	0%	484	488	4	1%
	Total	**3,343**	**3,382**	**38**	**1%**	**3,514**	**3,551**	**37**	**1%**
2	A - B4267 Leckwith Road (Southwest)	960	988	27	3%	1,065	1,075	11	1%
	B - Lawrenny Avenue	263	263	0	0%	103	103	0	0%
	C - B4267 Leckwith Road (Northeast)	1,264	1,275	11	1%	1,244	1,270	26	2%
	Total	**2,488**	**2,526**	**38**	**2%**	**2,411**	**2,448**	**37**	**2%**
3	A - B4267 Leckwith Road (Northeast)	1,026	1,037	11	1%	1,108	1,135	26	2%
	B - Ffordd Fred Keenor	25	25	0	0%	101	101	0	0%
	C - B4267 Leckwith Road (Southwest)	1,109	1,136	27	2%	1,246	1,257	11	1%
	Total	**2,159**	**2,198**	**38**	**2%**	**2,455**	**2,492**	**37**	**2%**
4	A - P&R/Other Parking Areas	14	14	0	0%	45	45	0	0%
	B - CCFC Stadium Exit	8	8	0	0%	38	38	0	0%
	C - Ffordd Fred Keenor	67	67	0	0%	210	210	0	0%
	Total	**88**	**88**	**0**	**0%**	**293**	**293**	**0**	**0%**
5	A - B4267 Leckwith Road (Northeast)	1,018	1,029	11	1%	1,237	1,264	26	2%
	B - Brian Clarke Way	367	367	0	0%	756	756	0	0%
	C - B4267 Leckwith Road (Southwest)	1,151	1,178	27	2%	1,187	1,197	11	1%
	D - CISC	3	3	0	0%	143	143	0	0%
	Total	**2,539**	**2,578**	**38**	**2%**	**3,323**	**3,360**	**37**	**1%**
6	A - B4267 Leckwith Road (Northeast)	1,109	1,120	11	1%	1,412	1,439	26	2%
	B - Hadfield Road	362	368	5	1%	898	911	13	1%
	C - A4232 (South)	225	231	6	3%	685	699	14	2%
	D - B4267 Leckwith Road (Southwest)	1,062	1,138	75	7%	611	640	29	5%
	E - A4232 (North)	1,461	1,469	9	1%	911	931	20	2%
	Total	**4,219**	**4,325**	**107**	**3%**	**4,517**	**4,620**	**103**	**2%**
8	A - B4267 Leckwith Road (Southeast)	309	312	3	1%	500	508	8	2%
	B - Pen-y-Turnpike Road	881	885	4	0%	216	226	10	5%
	C - B4267 Leckwith Road (Northwest)	568	587	18	3%	1,077	1,084	7	1%
	Total	**1,758**	**1,784**	**26**	**1%**	**1,793**	**1,818**	**25**	**1%**
9	A - B4267 Penlan Road (North)	561	570	8	1%	284	288	3	1%
	B - B4267 Penlan Road (South)	675	677	2	0%	235	240	5	2%
	C - University Hospital Llandough	176	177	1	1%	660	663	3	0%
	Total	**1,412**	**1,424**	**12**	**1%**	**1,180**	**1,191**	**11**	**1%**
10	A - B4267 Penlan Road	365	370	5	1%	594	596	2	0%
	B - A4055 Barry Road	804	804	0	0%	1,099	1,100	1	0%
	C - Andrew Road	1	1	0	0%	0	0	0	-
	D - B4267 Redlands Road	934	936	2	0%	563	567	4	1%
	E - A4055 Cardiff Road	734	734	0	0%	743	743	0	0%
	F - Corbett Road	6	6	0	0%	1	1	0	0%
	Total	**2,844**	**2,852**	**7**	**0%**	**3,000**	**3,007**	**7**	**0%**
11	A - A4055 (Northeast)	1,274	1,274	0	0%	1,764	1,764	0	0%
	B - A4160 Cogan Hll	1,525	1,527	2	0%	961	965	4	0%
	C - A4055 (Southwest)	1,015	1,015	1	0%	1,055	1,055	0	0%
	D - A4160 Penarth Road	489	492	3	1%	847	848	1	0%
	Total	**4,302**	**4,308**	**6**	**0%**	**4,626**	**4,632**	**6**	**0%**
Total		**22,666**	**22,938**	**273**	**1%**	**24,701**	**24,963**	**263**	**1%**

Appendix I:

Site Access – Initial Design (Option 1)

DO NOT SCALE

NEW KERBLINE TO TIE INTO EXISTING A4232

NEW 3.5m FOOTWAY TO TIE INTO EXISTING FOOTWAY WIDTH

70m STOPPING SIGHT DISTANCE (SSD)

R90.4m

A4232 NORTH BRIDGE ABUTMENT

PRELIMINARY LOCATION FOR LECKWITH ROUNDABOUT DIRECTIONAL SIGN WITH A4232 TUNNEL CLOSURE INFORMATION

R98.75m

CONTROLLED TOUCAN CROSSING

ELY RIVER

CYCLE/FOOTWAY TO BE REALIGNED, RETAINING WALLS TO BRING UP TO NEW ROAD LEVEL

PROPOSED PUFFIN CROSSING

JUNCTION INTERVISIBILITY

PROPOSED TOUCAN CROSSING

ACCESS CROSSOVER TO TO DEVELOPMENT PUMPING STATION COMPOUND

90m DISTANCE TO BUS STOP FROM STOP LINE

70m FORWARD VISIBILITY SPLAY

90m FORWARD VISIBILITY SPLAY

INDICATIVE RETAINING WALL TO MITIGATE 1 IN 1 SLOPE SHOWN BETWEEN CH. 110m TO 190m ON LEFT HAND SIDE

NEW CARRIAGEWAY TO TIE BACK INTO EXISTING

FOOTWAY TO TIE INTO EXISTING, CYCLE DROP OFF TO BE PROVIDED

FOOTWAY PINCH POINT DUE TO EXISTING FOOTWAY TERMINATION & HIGHWAY RETAINING WALL.

EXISTING FOOTWAY APPROX 1.5M WIDE

NEW SPEED GATEWAY, TRAFFIC REGULATION ORDER REQUIRED TO REDUCE EXISTING 40MPH TO 30MPH

NEW KERBLINE TO TIE INTO EXISTING

PROPOSED NEW 7.2M WIDE HIGHWAY TO TRANSITION TO EXISTING WIDTH APPROXIMATELY 9.3m WIDE

LECKWITH ROUNDABOUT

NEW 3.5m FOOWAY TO TIE INTO EXISTING FOOTWAY WIDTH

A4232 SOUTH BRIDGE ABUTMENT

ACCESS TO 3RD PARTY LAND MAINTAINED, EXISTING VEHICLE CROSSOVER EXTENDED TO NEW CARRIAGEWAY

SECTION OF WALL REQUIRING REMOVAL

CYCLE/FOOTWAY TO BE REALIGNED

LECKWITH OLD BRIDGE

CYCLE/FOOTWAY LINK INTO DEVELOPMENT

ELY RIVER

A4232

NOTES

1. DO NOT SCALE FROM THIS DRAWING, USE FIGURED DIMENSIONS ONLY.
2. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM (AOD)
3. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
4. THIS DRAWING IS FOR PLANNING PURPOSES ONLY AND IS SUBJECT TO DETAILED DESIGN
5. HIGHWAY GEOMETRY & DESIGN IS SUBJECT TO TECHNICAL APPROVAL OF THE ADOPTING HIGHWAY AUTHORITIES

REV	DATE	BY	DESCRIPTION	CHK	APP
P03	1/09/2020	SJD	PS ACCESS, SUDAN ADDED	SD	GW
P02	22/01/2020	SJD	DEVELOPMENT JUNCTION TIE IN AMENDED		
P01	18/09/2019	MLD	REVISIONS TO LAYOU	XXX	XXX

DRAWING STATUS: DRAFT - FOR PLANNING

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1 Capital Quarter
Tyndall St
Cardiff
CF10 4BZ, UK

T+ 44 (0) 292 076 9200
wsp.com

CLIENT: -

ARCHITECT:

PROJECT: LECKWITH QUAYS

TITLE: HIGHWAY GENERAL ARRANGEMENT OPTION 1

SCALE @ A1:	CHECKED:		APPROVED:
1:500	AW		GW
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70053561	SID	SID	September 19

DRAWING No: 70053561-XX-XX-101 REV: P03

File name: \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70053561\70053561XX\70053561 - LECKWITH QUAY, CARDIFF\02 WIP\CIVILS\DRAWINGS\70053561-XX-XX-101_GA_P02.DWG, printed on 12 February 2020 17:12:47, by Davies, Sian

Appendix J:

Model Output Report: Junction 6 – Leckwith Interchange

AECOM LinSig Results

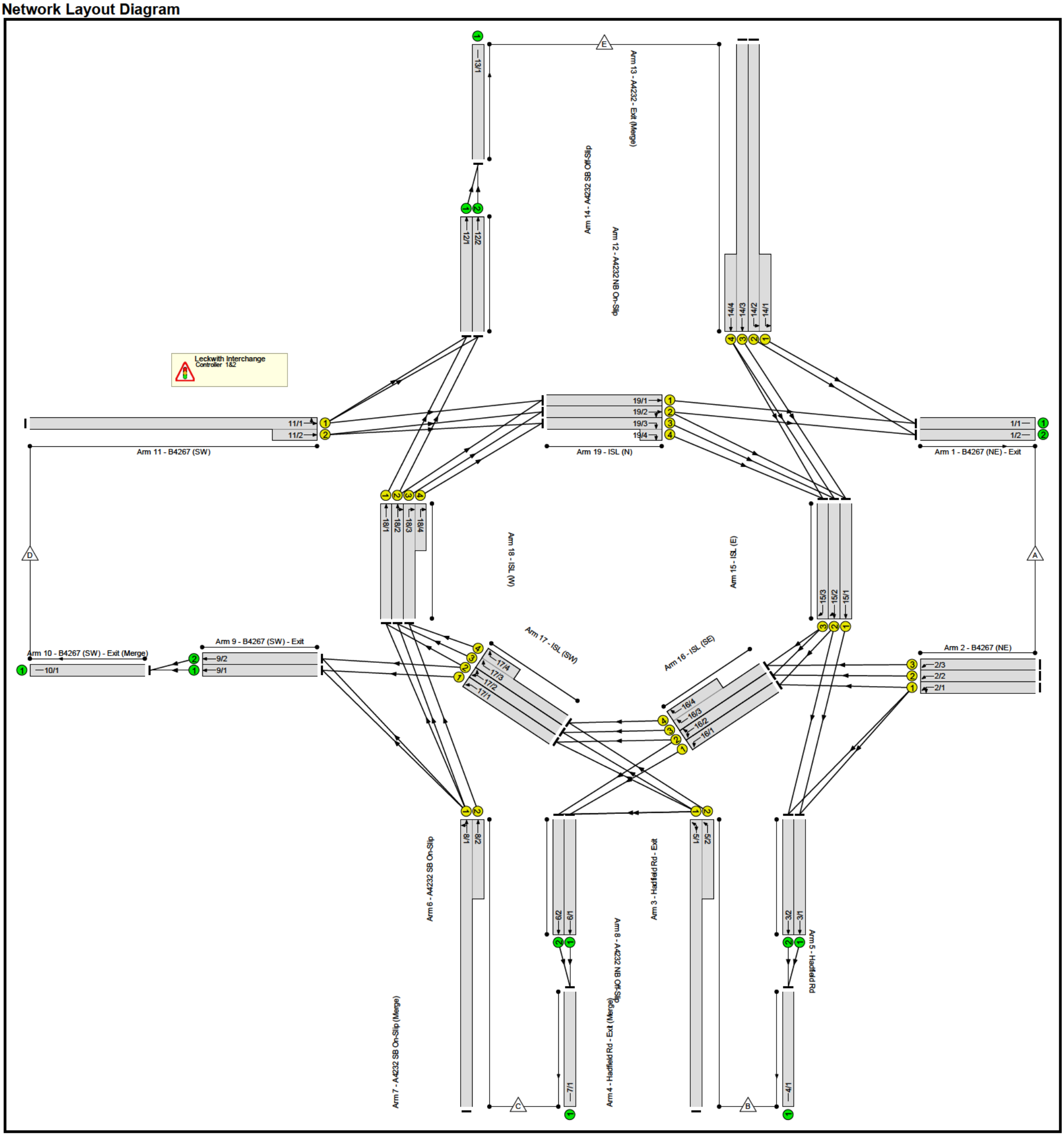
Project and User Details

Project:	**Leckwith Quays, Cardiff**
Title:	**Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)**
Location:	Leckwith, Cardiff
Client:	Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Additional detail:	
File name:	Leckwith Interchange.lsg3x
Author:	Matthew Davies
Company:	AECOM
Address:	1 Callaghan Square, Cardiff, CF10 5BT
Linsig Version:	3, 2, 39, 0

Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2019 Base - AM	2019 Base - AM	Network Control Plan 1	07:30 - 08:30	60	-4.8	44.08
2	2019 Base - PM	2019 Base - PM	Network Control Plan 1	16:30 - 17:30	60	-9.5	57.18
3	2025 Do-Minimum - AM	2025 Do-Minimum - AM	Network Control Plan 1	07:30 - 08:30	60	28.6	39.74
4	2025 Do-Minimum - PM	2025 Do-Minimum - PM	Network Control Plan 1	16:30 - 17:30	60	18.5	44.78
5	2025 Do-Nothing - AM	2025 Do-Nothing - AM	Network Control Plan 1	07:30 - 08:30	60	23.3	40.87
6	2025 Do-Nothing - PM	2025 Do-Nothing - PM	Network Control Plan 1	16:30 - 17:30	60	16.3	46.20
7	2025 Do-Something - AM	2025 Do-Something - AM	Network Control Plan 1	07:30 - 08:30	60	22.8	41.72
8	2025 Do-Something - PM	2025 Do-Something - PM	Network Control Plan 1	16:30 - 17:30	60	15.6	47.21
9	2030 Do-Minimum - AM	2030 Do-Minimum - AM	Network Control Plan 1	07:30 - 08:30	60	23.6	41.94
10	2030 Do-Minimum - PM	2030 Do-Minimum - PM	Network Control Plan 1	16:30 - 17:30	60	15.2	48.77
11	2030 Do-Nothing - AM	2030 Do-Nothing - AM	Network Control Plan 1	07:30 - 08:30	60	14.8	44.59
12	2030 Do-Nothing - PM	2030 Do-Nothing - PM	Network Control Plan 1	16:30 - 17:30	60	14.5	49.40
13	2030 Do-Something - AM	2030 Do-Something - AM	Network Control Plan 1	07:30 - 08:30	60	18.9	44.23
14	2030 Do-Something - PM	2030 Do-Something - PM	Network Control Plan 1	16:30 - 17:30	60	13.5	50.93

Network Layout Diagram



Lane Input Data

Junction: Leckwith Interchange

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 (B4267 (NE) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
1/2 (B4267 (NE) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
2/1 (B4267 (NE))	U	F	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 3 Left	70.00
											Arm 16 Ahead	100.00
2/2 (B4267 (NE))	U	F	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 16 Ahead	100.00
2/3 (B4267 (NE))	U	F	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 16 Ahead	100.00
3/1 (Hadfield Rd - Exit)	U		2	3	19.7	Geom	-	3.50	0.00	Y	Arm 4 Ahead	45.00
3/2 (Hadfield Rd - Exit)	U		2	3	20.0	Geom	-	3.50	0.00	Y	Arm 4 Ahead	45.00
4/1 (Hadfield Rd - Exit (Merge))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Hadfield Rd)	U	F	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 U-Turn	22.00
											Arm 17 Left	70.00
5/2 (Hadfield Rd)	U	F	2	3	10.4	Geom	-	3.50	0.00	Y	Arm 17 Left	120.00
6/1 (A4232 SB On-Slip)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Ahead	Inf
6/2 (A4232 SB On-Slip)	U		2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Ahead	Inf
7/1 (A4232 SB On-Slip (Merge))	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A4232 NB Off-Slip)	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 9 Left	25.00
											Arm 18 Ahead	Inf
8/2 (A4232 NB Off-Slip)	U	B	2	3	10.4	Geom	-	3.50	0.00	Y	Arm 18 Ahead	Inf
9/1 (B4267 (SW) - Exit)	U		2	3	7.3	Geom	-	5.00	0.00	Y	Arm 10 Ahead	25.00
9/2 (B4267 (SW) - Exit)	U		2	3	7.5	Geom	-	5.00	0.00	Y	Arm 10 Ahead	25.00
10/1 (B4267 (SW) - Exit (Merge))	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (B4267 (SW))	U	J	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 12 Left	35.00
											Arm 19 Ahead	70.00
11/2 (B4267 (SW))	U	J	2	3	5.9	Geom	-	3.50	0.00	Y	Arm 19 Ahead	70.00
12/1 (A4232 NB On-Slip)	U		2	3	8.2	Geom	-	5.00	0.00	Y	Arm 13 Ahead	25.00
12/2 (A4232 NB On-Slip)	U		2	3	8.7	Geom	-	5.00	0.00	Y	Arm 13 Ahead	25.00
13/1 (A4232 - Exit (Merge))	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A4232 SB Off-Slip)	U	B	2	3	10.1	Geom	-	3.25	0.00	Y	Arm 1 Left	70.00
14/2 (A4232 SB Off-Slip)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 1 Left	70.00
14/3 (A4232 SB Off-Slip)	U	B	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 15 Ahead	70.00
14/4 (A4232 SB Off-Slip)	U	B	2	3	10.1	Geom	-	3.25	0.00	Y	Arm 15 Ahead	70.00
15/1 (ISL (E))	U	E	2	3	9.9	Geom	-	4.50	0.00	Y	Arm 3 Ahead	110.00
15/2 (ISL (E))	U	E	2	3	9.0	Geom	-	4.00	0.00	Y	Arm 3 Ahead	110.00
											Arm 16 Right	60.00
15/3 (ISL (E))	U	E	2	3	8.2	Geom	-	4.00	0.00	Y	Arm 16 Right	55.00
16/1 (ISL (SE))	U	E	2	3	16.7	Geom	-	3.50	0.00	Y	Arm 6 Left	120.00
16/2 (ISL (SE))	U	E	2	3	16.0	Geom	-	3.50	0.00	Y	Arm 6 Left	120.00
											Arm 17 Right	45.00
16/3 (ISL (SE))	U	E	2	3	15.5	Geom	-	3.50	0.00	Y	Arm 17 Right	40.00

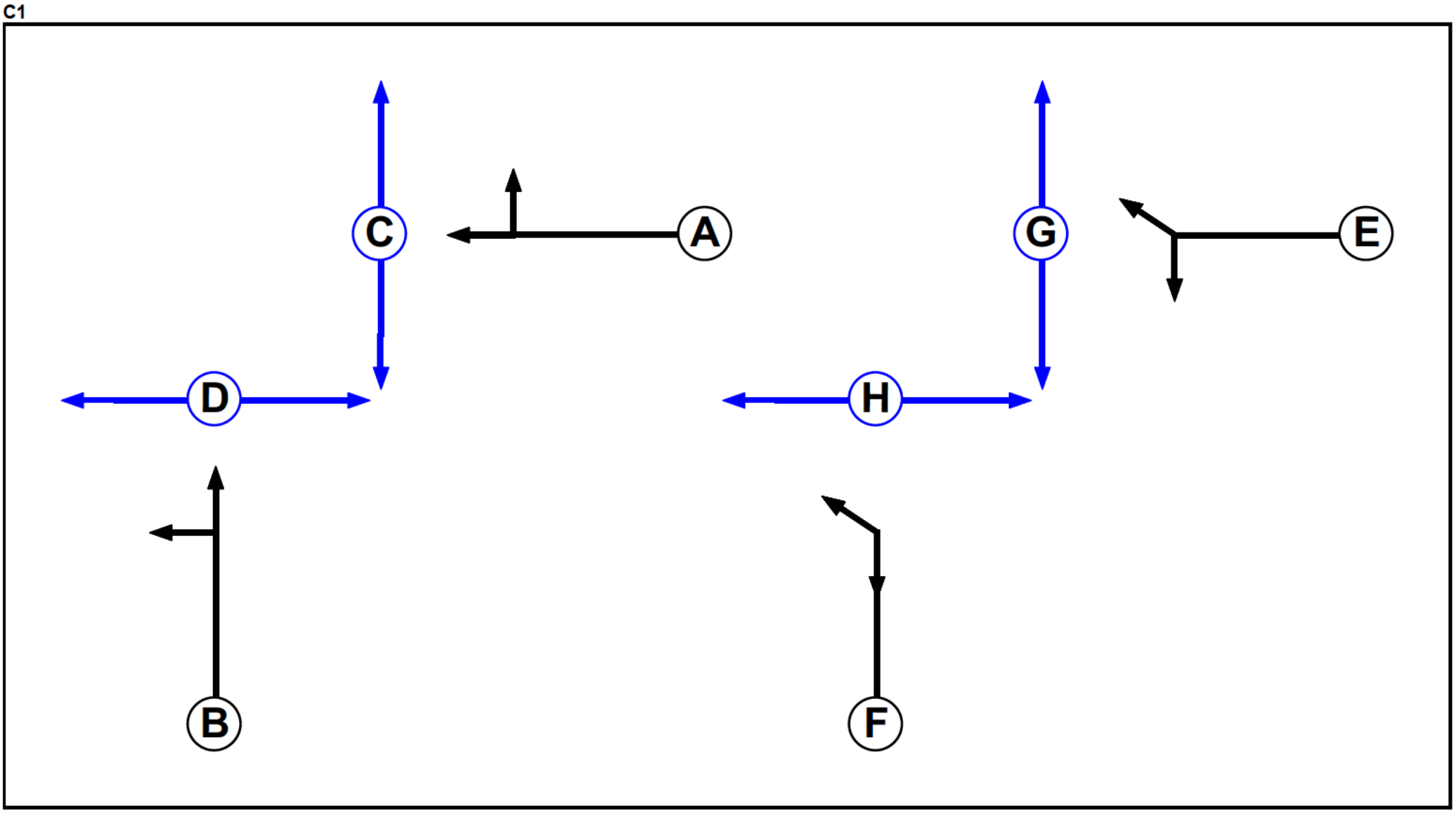
16/4 (ISL (SE))	U	E	2	3	7.8	Geom	-	4.00	0.00	Y	Arm 17 Right	35.00
17/1 (ISL (SW))	U	A	2	3	11.0	Geom	-	4.00	0.00	Y	Arm 9 Ahead	120.00
17/2 (ISL (SW))	U	A	2	3	9.9	Geom	-	4.00	0.00	Y	Arm 9 Ahead Arm 18 Right	120.00 40.00
17/3 (ISL (SW))	U	A	2	3	9.0	Geom	-	4.00	0.00	Y	Arm 18 Right	35.00
17/4 (ISL (SW))	U	A	2	3	5.0	Geom	-	4.00	0.00	Y	Arm 18 Right	30.00
18/1 (ISL (W))	U	I	2	3	12.0	Geom	-	3.50	0.00	Y	Arm 12 Ahead	90.00
18/2 (ISL (W))	U	I	2	3	12.0	Geom	-	3.50	0.00	Y	Arm 12 Ahead Arm 19 Right	90.00 45.00
18/3 (ISL (W))	U	I	2	3	12.0	Geom	-	3.50	0.00	Y	Arm 19 Right	40.00
18/4 (ISL (W))	U	I	2	3	6.1	Geom	-	3.50	0.00	Y	Arm 19 Right	35.00
19/1 (ISL (N))	U	A	2	3	11.7	Geom	-	4.00	0.00	Y	Arm 1 Ahead	100.00
19/2 (ISL (N))	U	A	2	3	11.0	Geom	-	4.00	0.00	Y	Arm 1 Ahead Arm 15 Right	90.00 45.00
19/3 (ISL (N))	U	A	2	3	10.1	Geom	-	4.00	0.00	Y	Arm 15 Right	40.00
19/4 (ISL (N))	U	A	2	3	2.9	Geom	-	4.00	0.00	Y	Arm 15 Right	35.00

Give-Way Lane Input Data

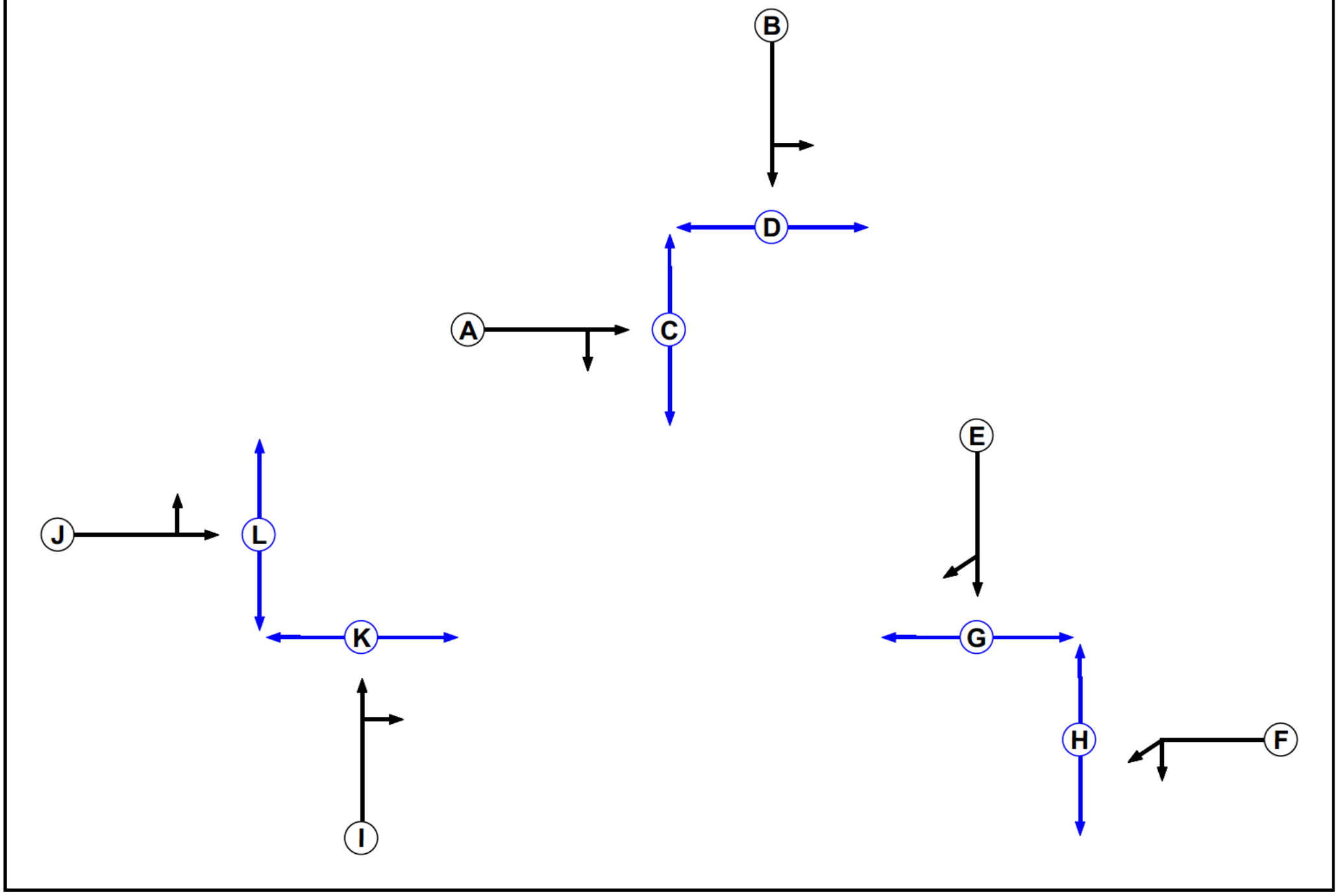
Junction: Leckwith Interchange
There are no Opposed Lanes in this Junction

Phase Diagram

C1



C2



Phase Input Data

C1

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		5	3
B	Traffic	1		5	0
C	Pedestrian	1		6	6
D	Pedestrian	1		6	6
E	Traffic	2		5	2
F	Traffic	2		5	0
G	Pedestrian	2		6	6
H	Pedestrian	2		6	6

C2

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		5	0
B	Traffic	1		5	0
C	Pedestrian	1		6	6
D	Pedestrian	1		6	6
E	Traffic	2		5	0
F	Traffic	2		5	0
G	Pedestrian	2		6	6
H	Pedestrian	2		6	6
I	Traffic	3		5	3
J	Traffic	3		5	0
K	Pedestrian	3		6	6
L	Pedestrian	3		6	6

Phase Intergreens Matrix

C1

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		6	5	-	-	-	-	-
	B	6		-	5	-	-	-	-
	C	15	-		-	-	-	-	-
	D	-	8	-		-	-	-	-
	E	-	-	-	-		6	5	-
	F	-	-	-	-	6		-	5
	G	-	-	-	-	15	-		-
	H	-	-	-	-	-	9	-	

C2

		Starting Phase											
		A	B	C	D	E	F	G	H	I	J	K	L
Terminating Phase	A		6	5	-	-	-	-	-	-	-	-	-
	B	6		-	5	-	-	-	-	-	-	-	-
	C	15	-		-	-	-	-	-	-	-	-	-
	D	-	11	-		-	-	-	-	-	-	-	-
	E	-	-	-	-		6	5	-	-	-	-	-
	F	-	-	-	-	6		-	5	-	-	-	-
	G	-	-	-	-	12	-		-	-	-	-	-
	H	-	-	-	-	-	11	-		-	-	-	-
	I	-	-	-	-	-	-	-	-		6	5	-
	J	-	-	-	-	-	-	-	-	6		-	5
	K	-	-	-	-	-	-	-	-	14	-		-
	L	-	-	-	-	-	-	-	-	-	8	-	

Phase Delays

C1

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	A	Losing	2	2
2	1	B	Losing	9	9

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	E	Losing	3	3
2	1	F	Losing	9	9

C2

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	A	Losing	5	5
2	1	B	Losing	9	9

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	E	Losing	5	5
2	1	F	Losing	6	6

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	I	Losing	2	2
2	1	J	Losing	8	8

Phases in Stage

C1

Stream	Stage No.	Phases in Stage
1	1	A D
1	2	B C
2	1	E H
2	2	F G

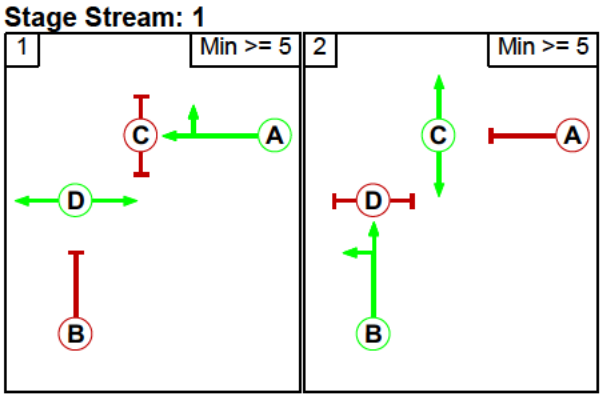
C2

Stream	Stage No.	Phases in Stage
1	1	A D
1	2	B C
2	1	E H
2	2	F G
3	1	I L
3	2	J K

Stage Diagram

C1

Stage Stream: 1



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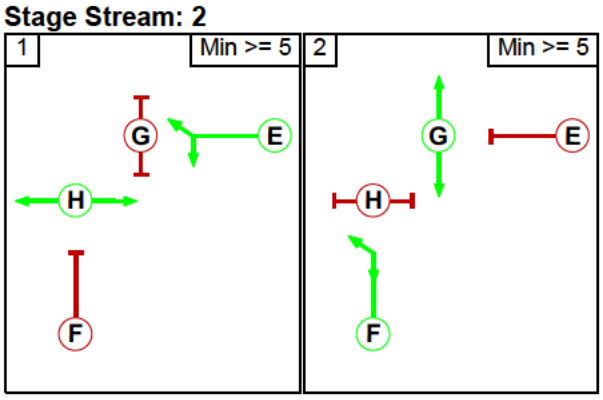
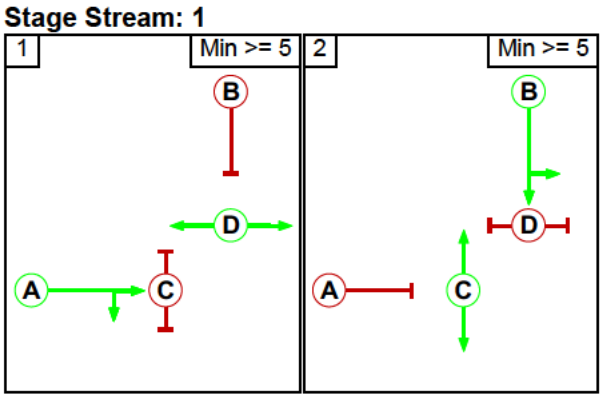


C2

Stage Stream: 1



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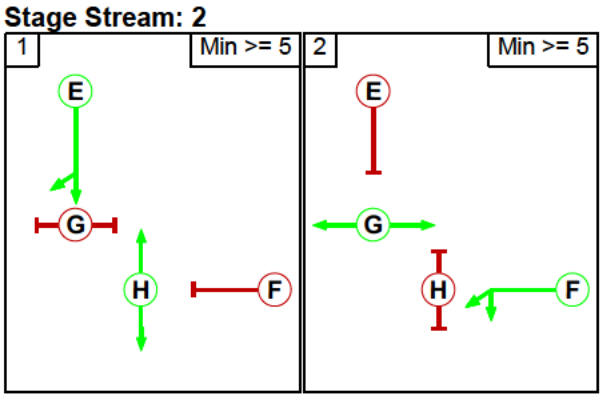
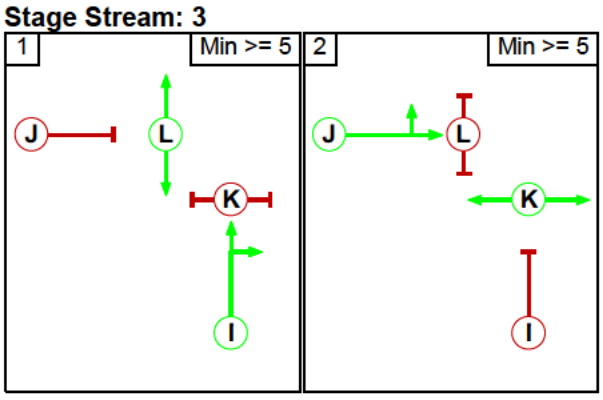


Stage Stream: 3



Network Control Plans

Plan	Controller	Sequence Name	Sequence
Network Control Plan 1	C1	Stage Sequence No. 1	Stream 1: 1,2 Stream 2: 1,2
	C2	Stage Sequence No. 1	Stream 1: 1,2 Stream 2: 1,2 Stream 3: 1,2

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2019 Base - AM'	07:30	08:30	01:00	
2: '2019 Base - PM'	16:30	17:30	01:00	
3: '2025 Do-Minimum - AM'	07:30	08:30	01:00	
4: '2025 Do-Minimum - PM'	16:30	17:30	01:00	
5: '2025 Do-Nothing - AM'	07:30	08:30	01:00	
6: '2025 Do-Nothing - PM'	16:30	17:30	01:00	
7: '2025 Do-Something - AM'	07:30	08:30	01:00	
8: '2025 Do-Something - PM'	16:30	17:30	01:00	
9: '2030 Do-Minimum - AM'	07:30	08:30	01:00	
10: '2030 Do-Minimum - PM'	16:30	17:30	01:00	
11: '2030 Do-Nothing - AM'	07:30	08:30	01:00	
12: '2030 Do-Nothing - PM'	16:30	17:30	01:00	
13: '2030 Do-Something - AM'	07:30	08:30	01:00	
14: '2030 Do-Something - PM'	16:30	17:30	01:00	

Traffic Flows, Desired

FG1: '2019 Base - AM'

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	162	266	391	206	1025
	B	47	0	38	23	266	374
	C	131	73	0	15	2	221
	D	469	110	181	0	234	994
	E	454	714	45	184	0	1397
	Tot.	1101	1059	530	613	708	4011

FG2: '2019 Base - PM'

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	128	224	460	504	1316
	B	134	0	73	121	522	850
	C	304	36	0	294	2	636
	D	299	14	16	0	240	569
	E	311	325	3	215	0	854
	Tot.	1048	503	316	1090	1268	4225

FG3: '2025 Do-Minimum - AM'

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	177	292	430	227	1126
	B	50	0	40	24	285	399
	C	141	78	0	16	2	237
	D	507	118	193	0	250	1068
	E	492	765	48	197	0	1502
	Tot.	1190	1138	573	667	764	4332

FG4: '2025 Do-Minimum - PM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	138	242	497	547	1424
	B	146	0	77	129	559	911
	C	333	38	0	313	2	686
	D	327	15	17	0	257	616
	E	342	348	3	231	0	924
	Tot.	1148	539	339	1170	1365	4561

FG5: '2025 Do-Nothing - AM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	177	292	441	227	1137
	B	50	0	40	29	285	404
	C	141	78	0	22	2	243
	D	534	131	207	0	271	1143
	E	492	765	48	205	0	1510
	Tot.	1217	1151	587	697	785	4437

FG6: '2025 Do-Nothing - PM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	138	242	523	547	1450
	B	146	0	77	142	559	924
	C	333	38	0	327	2	700
	D	337	20	23	0	265	645
	E	342	348	3	251	0	944
	Tot.	1158	544	345	1243	1373	4663

FG7: '2025 Do-Something - AM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	177	292	440	227	1136
	B	50	0	40	29	285	404
	C	141	78	0	21	2	242
	D	531	130	206	0	269	1136
	E	492	765	48	204	0	1509
	Tot.	1214	1150	586	694	783	4427

FG8: '2025 Do-Something - PM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	138	242	521	547	1448
	B	146	0	77	141	559	923
	C	333	38	0	326	2	699
	D	336	20	22	0	265	643
	E	342	348	3	249	0	942
	Tot.	1157	544	344	1237	1373	4655

FG9: '2030 Do-Minimum - AM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	185	304	447	236	1172
	B	52	0	42	25	297	416
	C	147	81	0	17	2	247
	D	528	123	201	0	261	1113
	E	512	797	50	205	0	1564
	Tot.	1239	1186	597	694	796	4512

FG10: '2030 Do-Minimum - PM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	144	252	517	570	1483
	B	152	0	81	135	582	950
	C	347	40	0	326	2	715
	D	340	16	18	0	268	642
	E	356	362	3	240	0	961
	Tot.	1195	562	354	1218	1422	4751

FG11: '2030 Do-Nothing - AM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	185	304	458	236	1183
	B	52	0	42	30	297	421
	C	147	81	0	23	2	253
	D	555	136	215	0	282	1188
	E	512	797	50	213	0	1572
	Tot.	1266	1199	611	724	817	4617

FG12: '2030 Do-Nothing - PM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	144	252	544	570	1510
	B	152	0	81	147	582	962
	C	347	40	0	340	2	729
	D	351	21	23	0	276	671
	E	356	362	3	261	0	982
	Tot.	1206	567	359	1292	1430	4854

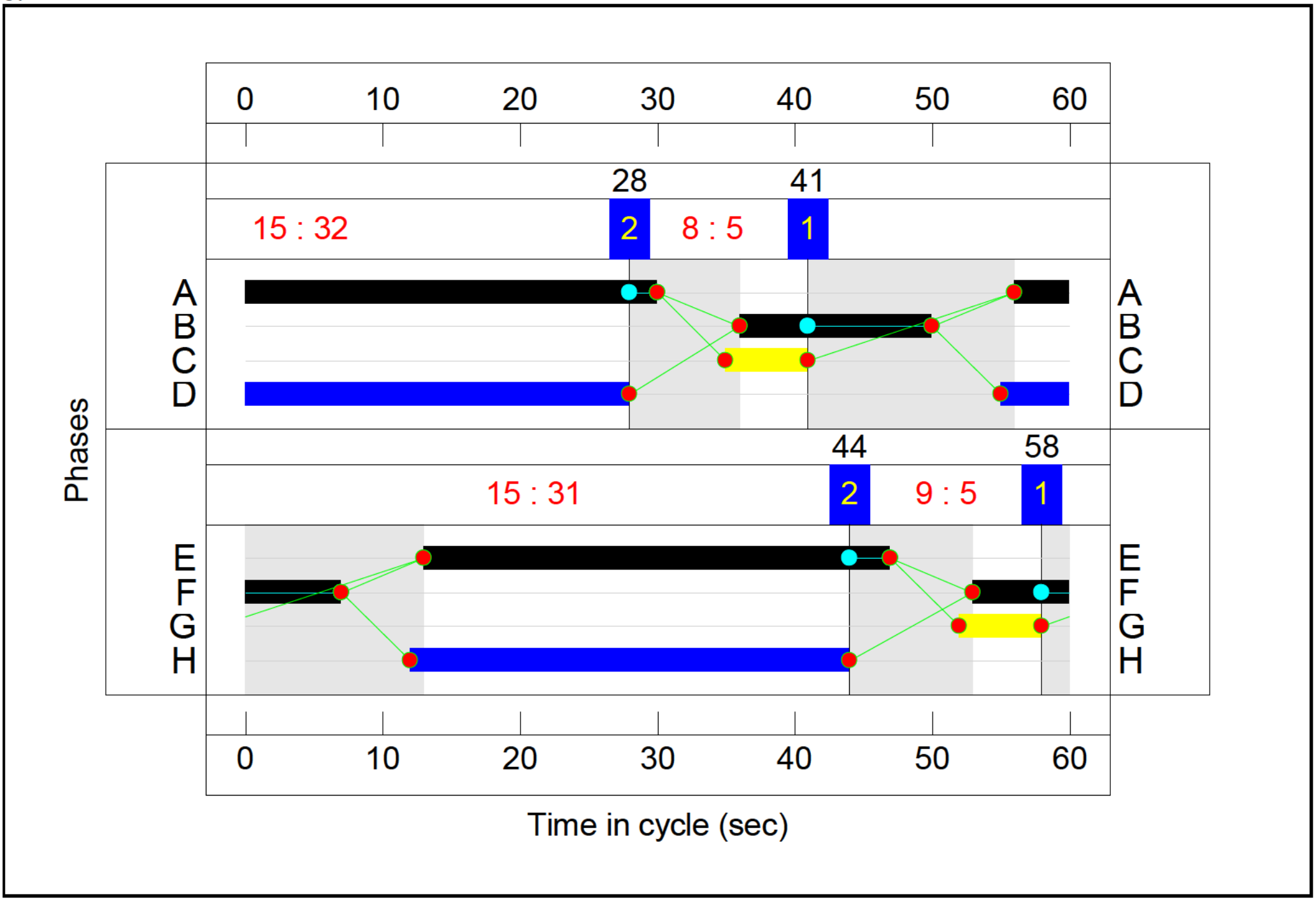
FG13: '2030 Do-Something - AM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	185	304	457	236	1182
	B	52	0	42	30	297	421
	C	147	81	0	22	2	252
	D	552	135	214	0	280	1181
	E	512	797	50	213	0	1572
	Tot.	1263	1198	610	722	815	4608

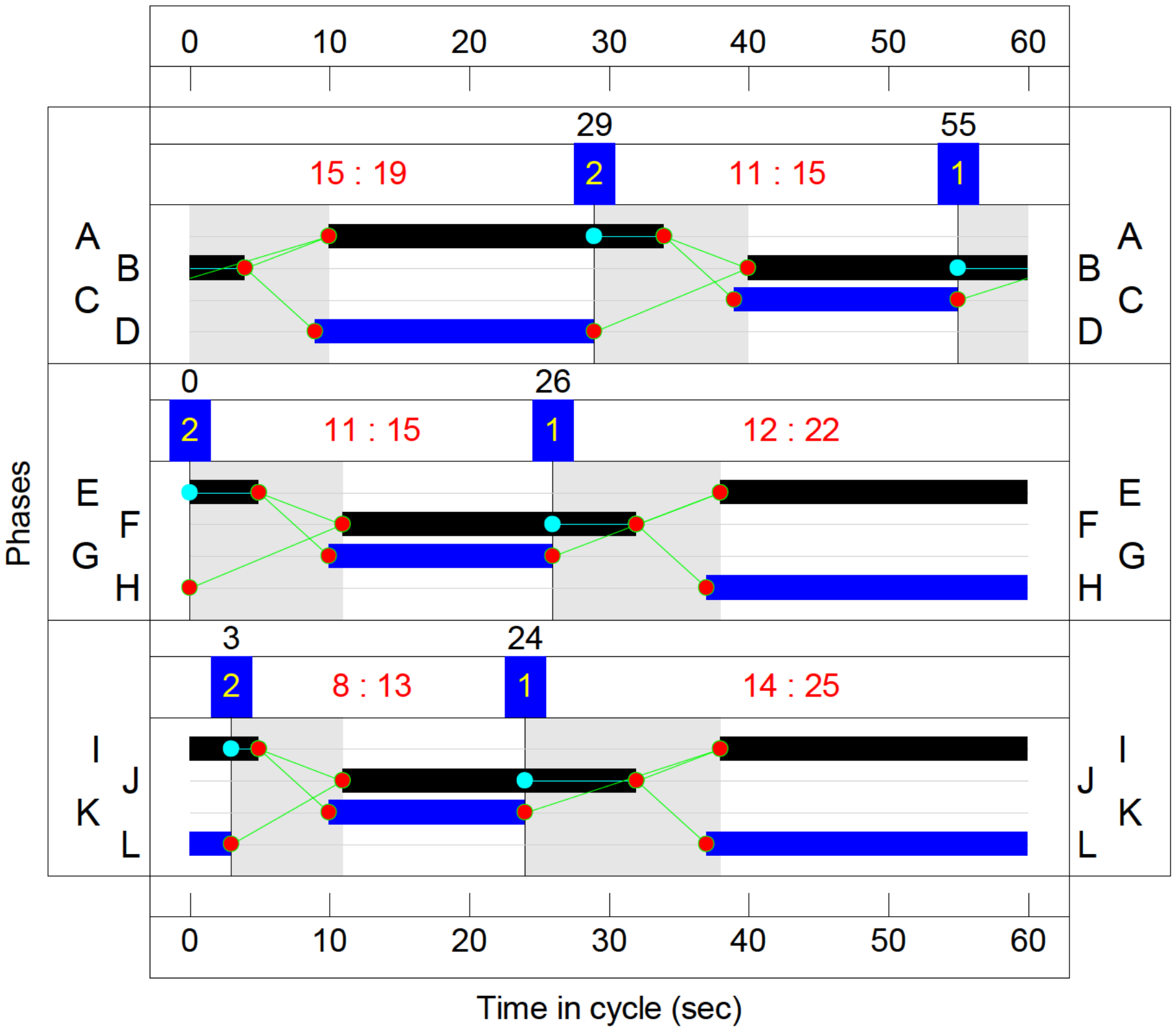
FG14: '2030 Do-Something - PM'
Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	144	252	541	570	1507
	B	152	0	81	146	582	961
	C	347	40	0	339	2	728
	D	350	21	23	0	275	669
	E	356	362	3	259	0	980
	Tot.	1205	567	359	1285	1429	4845

Signal Timings Diagram
Scenario 1: '2019 Base - AM' (FG1: '2019 Base - AM', Plan 1: 'Network Control Plan 1')
C1



C2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60
29
55
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11 : 15
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A
B
C
D
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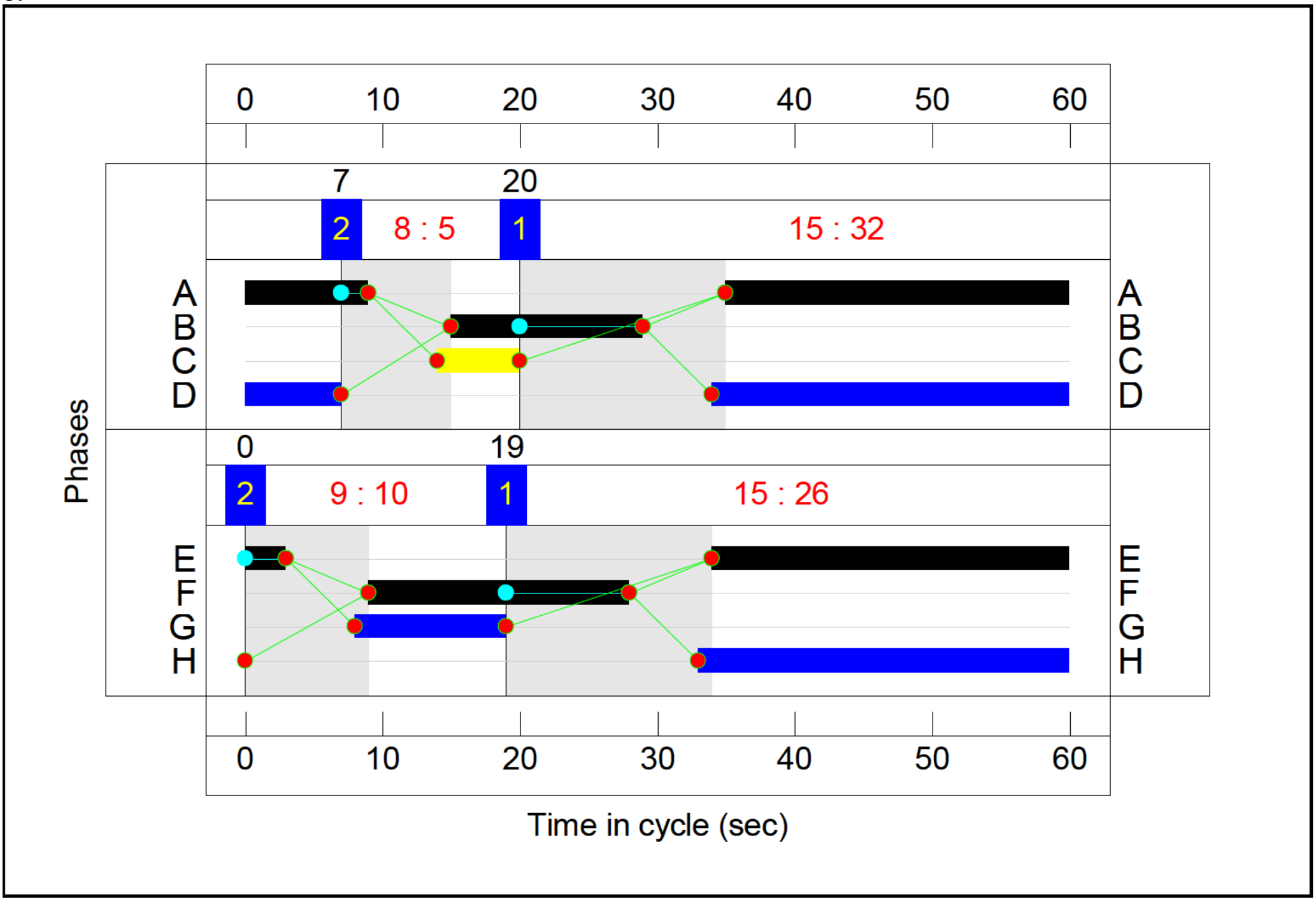
26
2
11 : 15
1
12 : 22
E
F
G
H
3
24
2
8 : 13
1
14 : 25
I
J
K
L
Phases
Time in cycle (sec)

Scenario 2: '2019 Base - PM' (FG2: '2019 Base - PM', Plan 1: 'Network Control Plan 1')
C1



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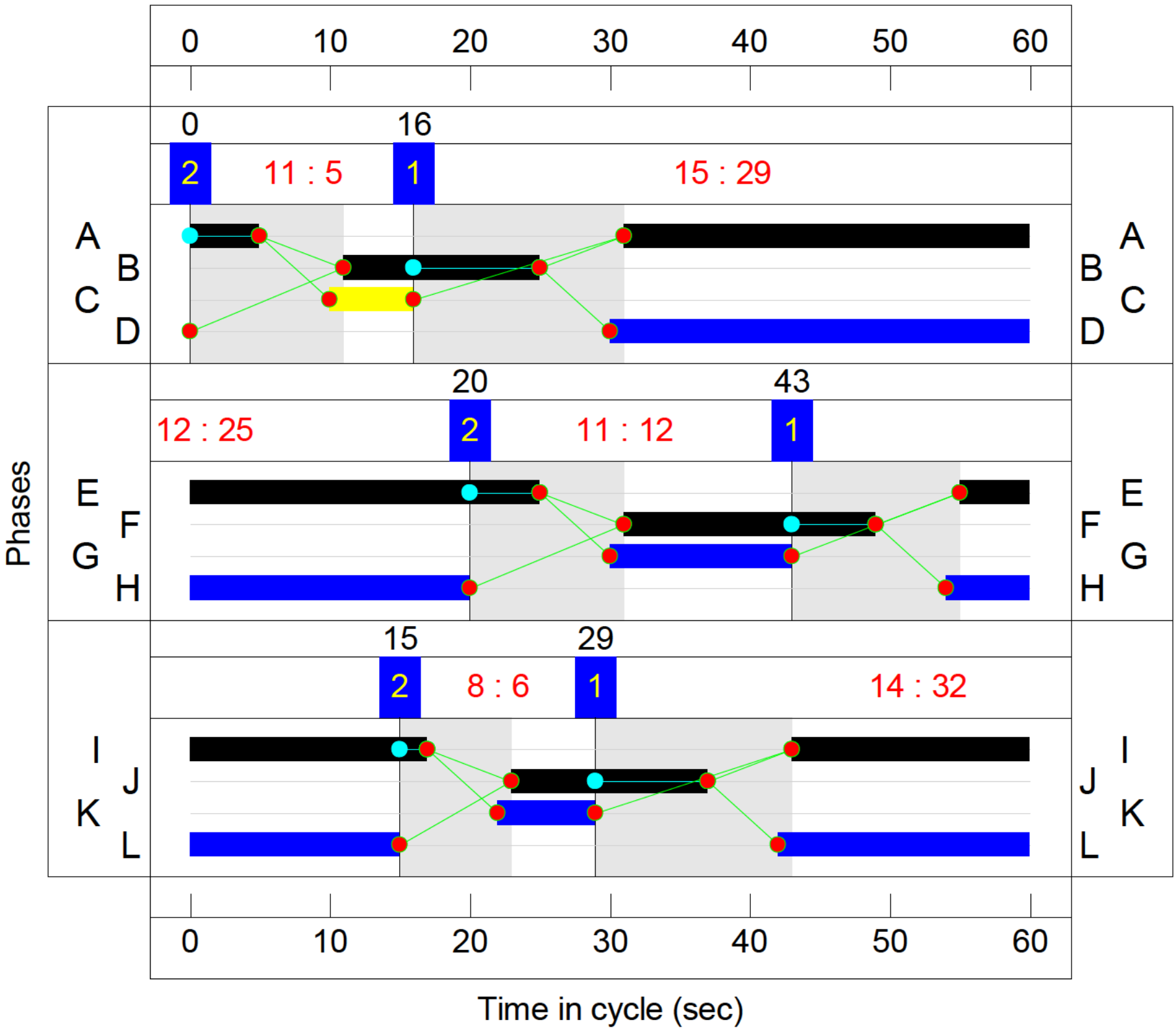
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20
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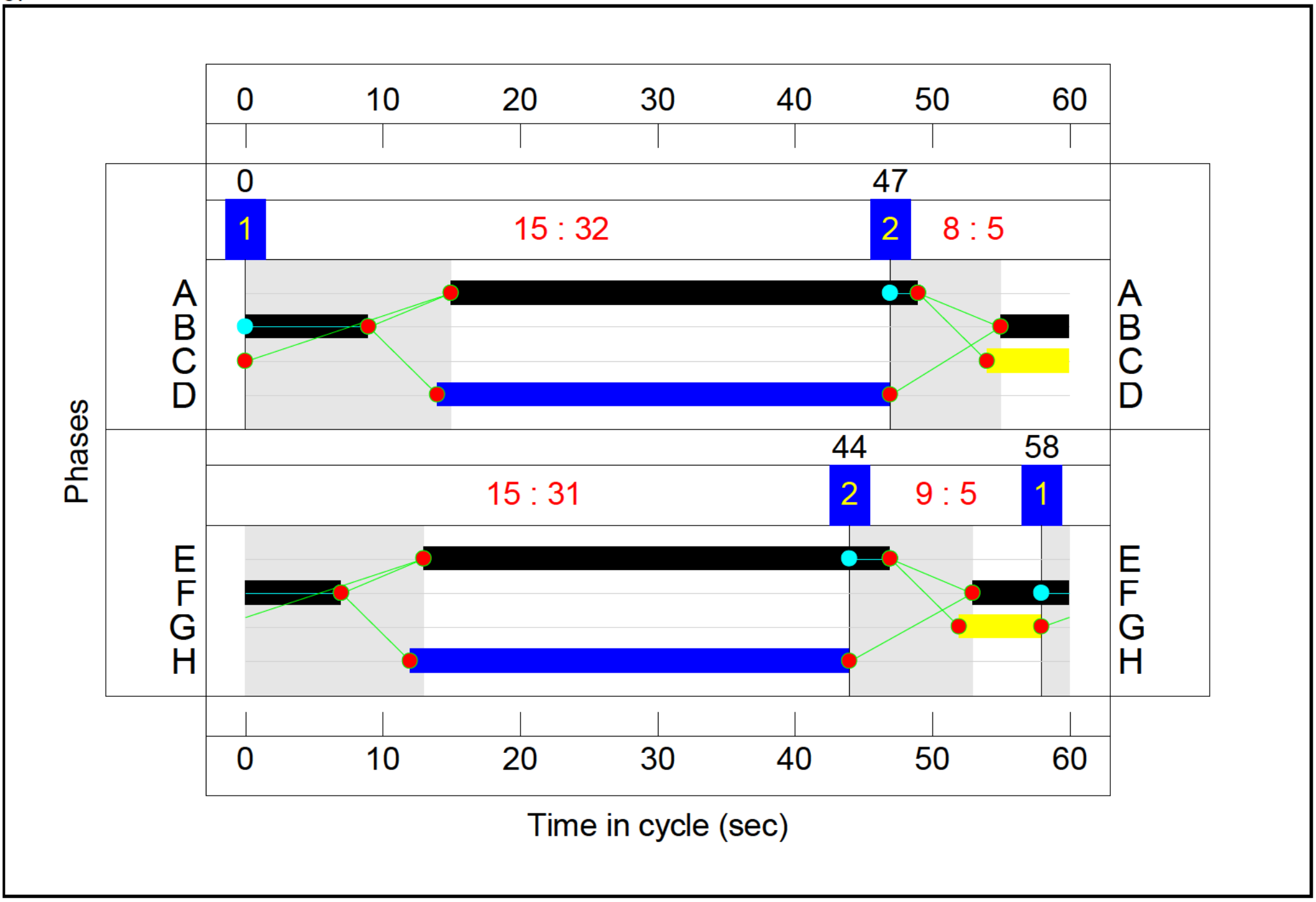
50
60
0
16
2
11 : 5
1
15 : 29
A
B
C
D
A
B
C
D
20
43
12 : 25
2
11 : 12
1
E
F
G
H
E
F
G
H
Phases
15
29
2
8 : 6
1
14 : 32
I
J
K
L
I
J
K
L
0
10
20
30
40
50
60
Time in cycle (sec)

Scenario 3: '2025 Do-Minimum - AM' (FG3: '2025 Do-Minimum - AM', Plan 1: 'Network Control Plan 1')
C1



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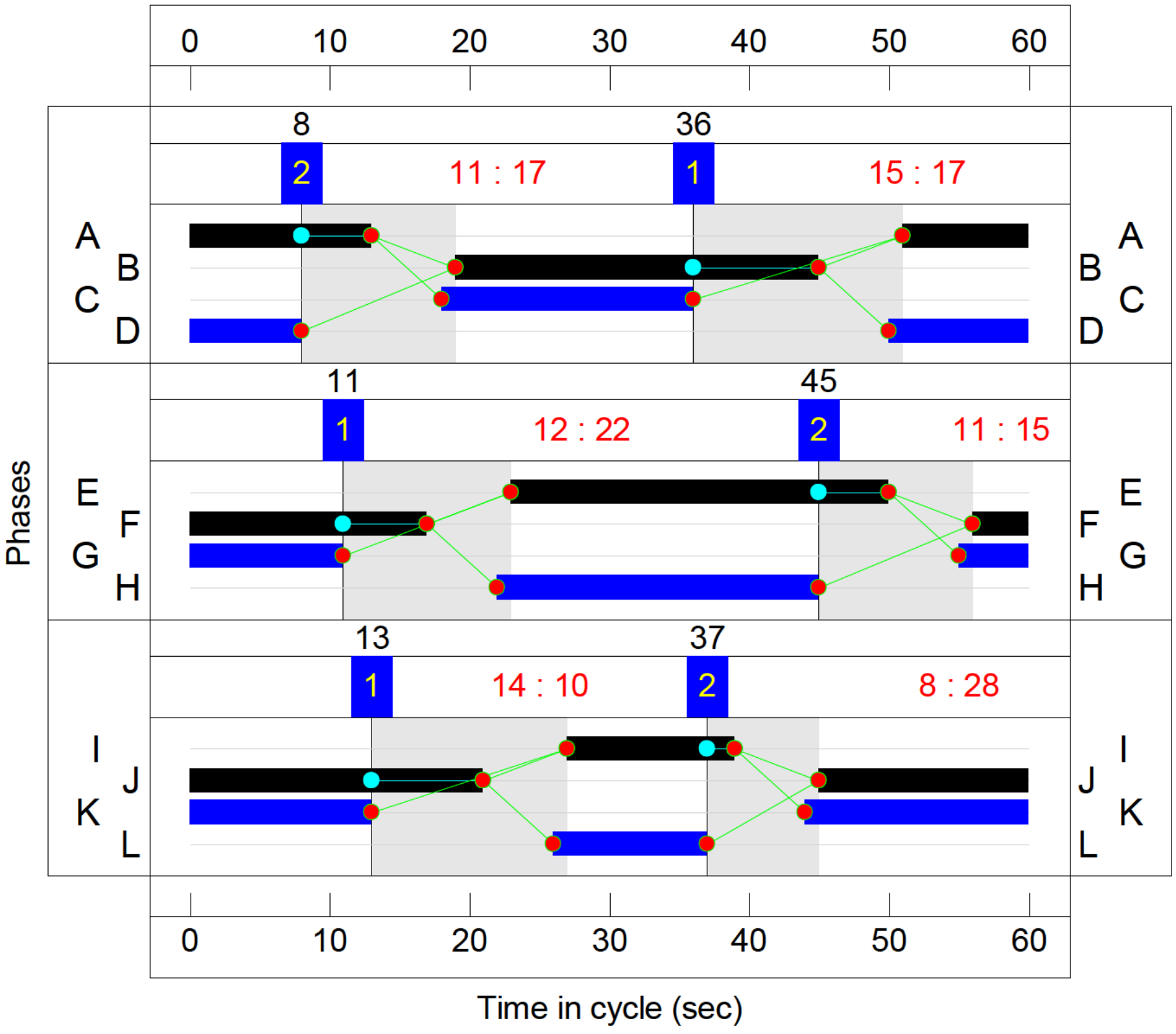
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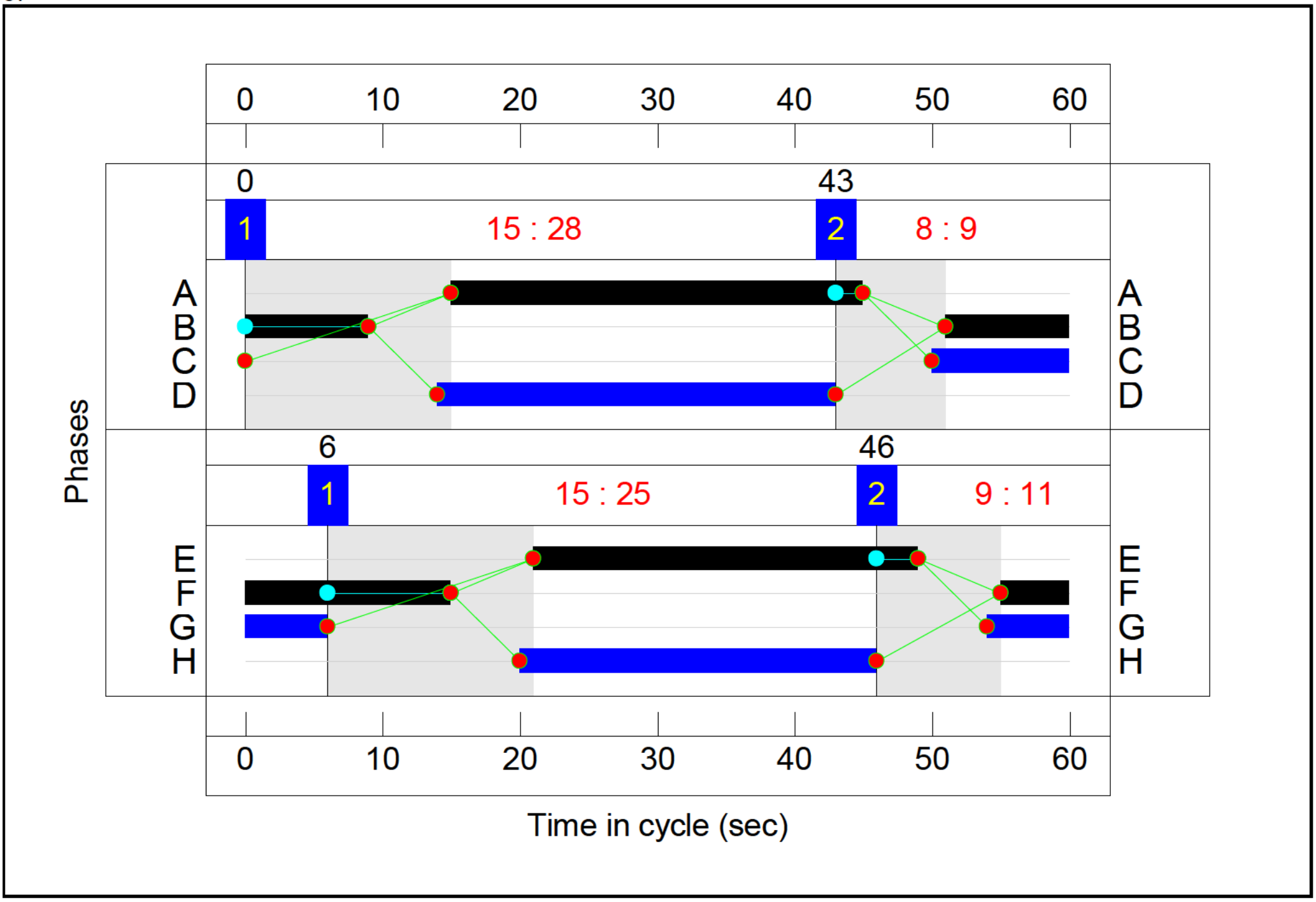
A
B
C
D
11
45
1
12 : 22
2
11 : 15
E
F
G
H
13
37
1
14 : 10
2
8 : 28
I
J
K
L
Phases
Time in cycle (sec)

Scenario 4: '2025 Do-Minimum - PM' (FG4: '2025 Do-Minimum - PM', Plan 1: 'Network Control Plan 1')
C1



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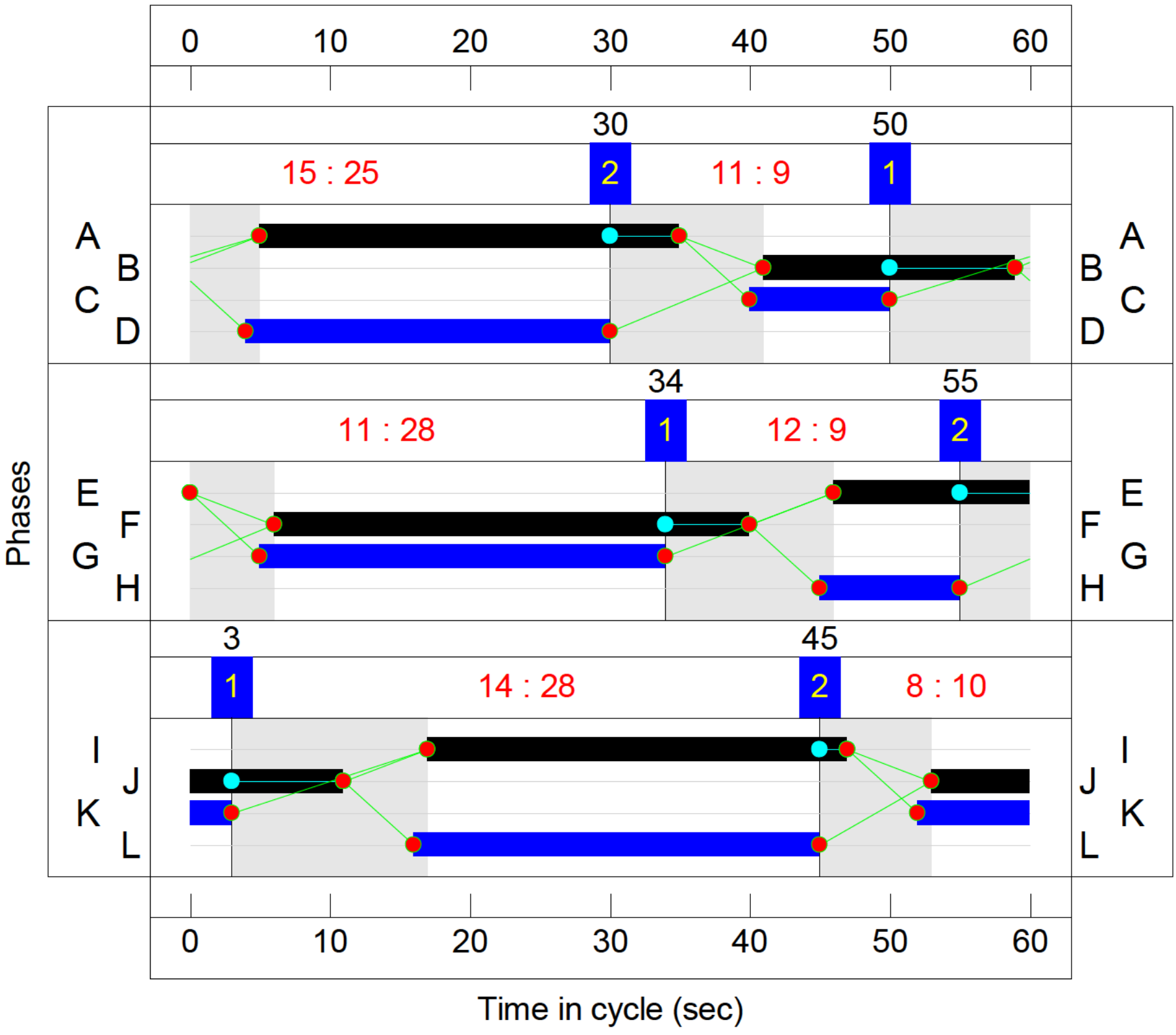
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60
30
50
15 : 25
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11 : 9
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A
B
C
D
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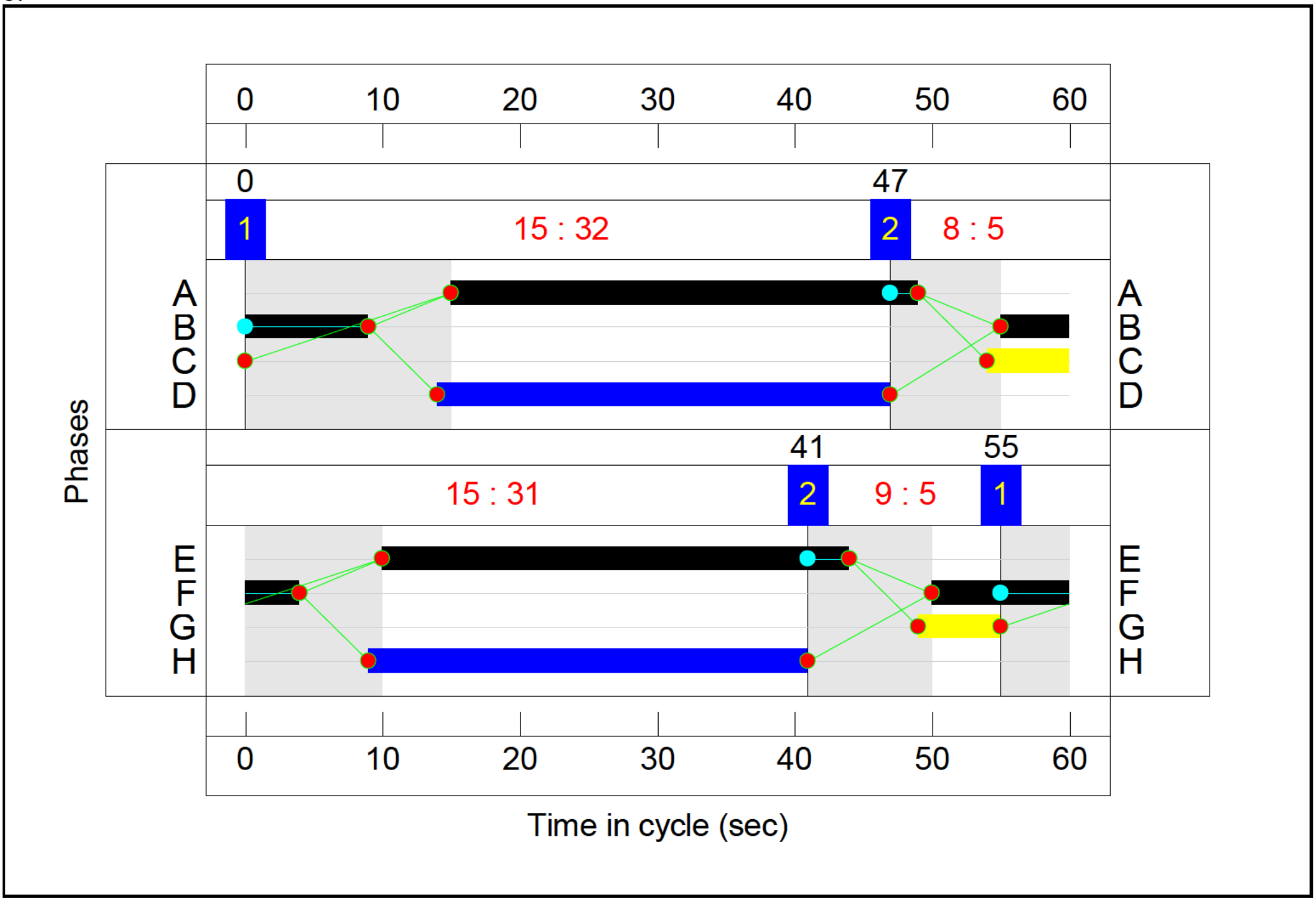
55
11 : 28
1
12 : 9
2
E
F
G
H
3
45
14 : 28
2
8 : 10
I
J
K
L
Phases
Time in cycle (sec)

Scenario 5: '2025 Do-Nothing - AM' (FG5: '2025 Do-Nothing - AM', Plan 1: 'Network Control Plan 1')
C1



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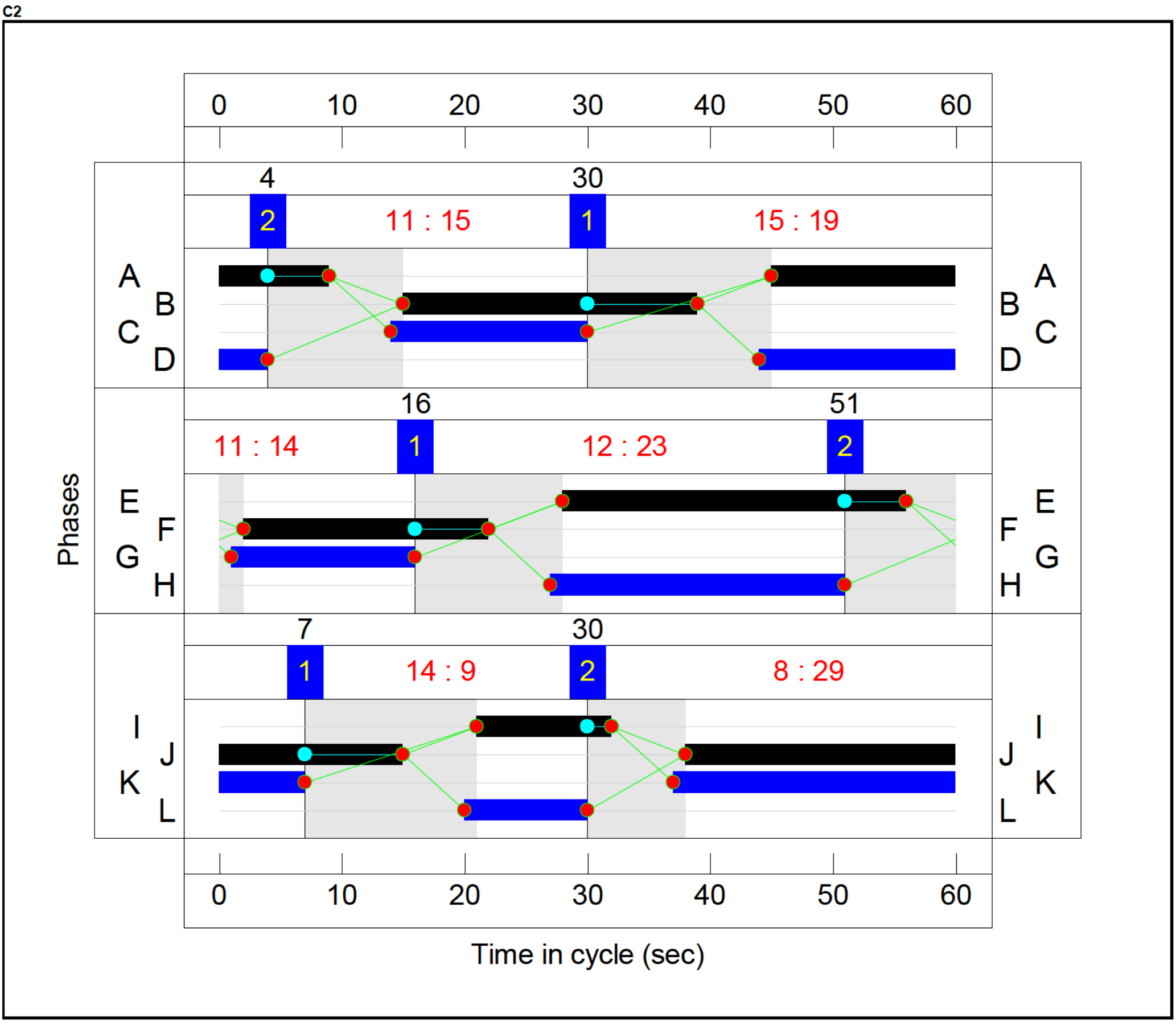
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60
4
30
2
11 : 15
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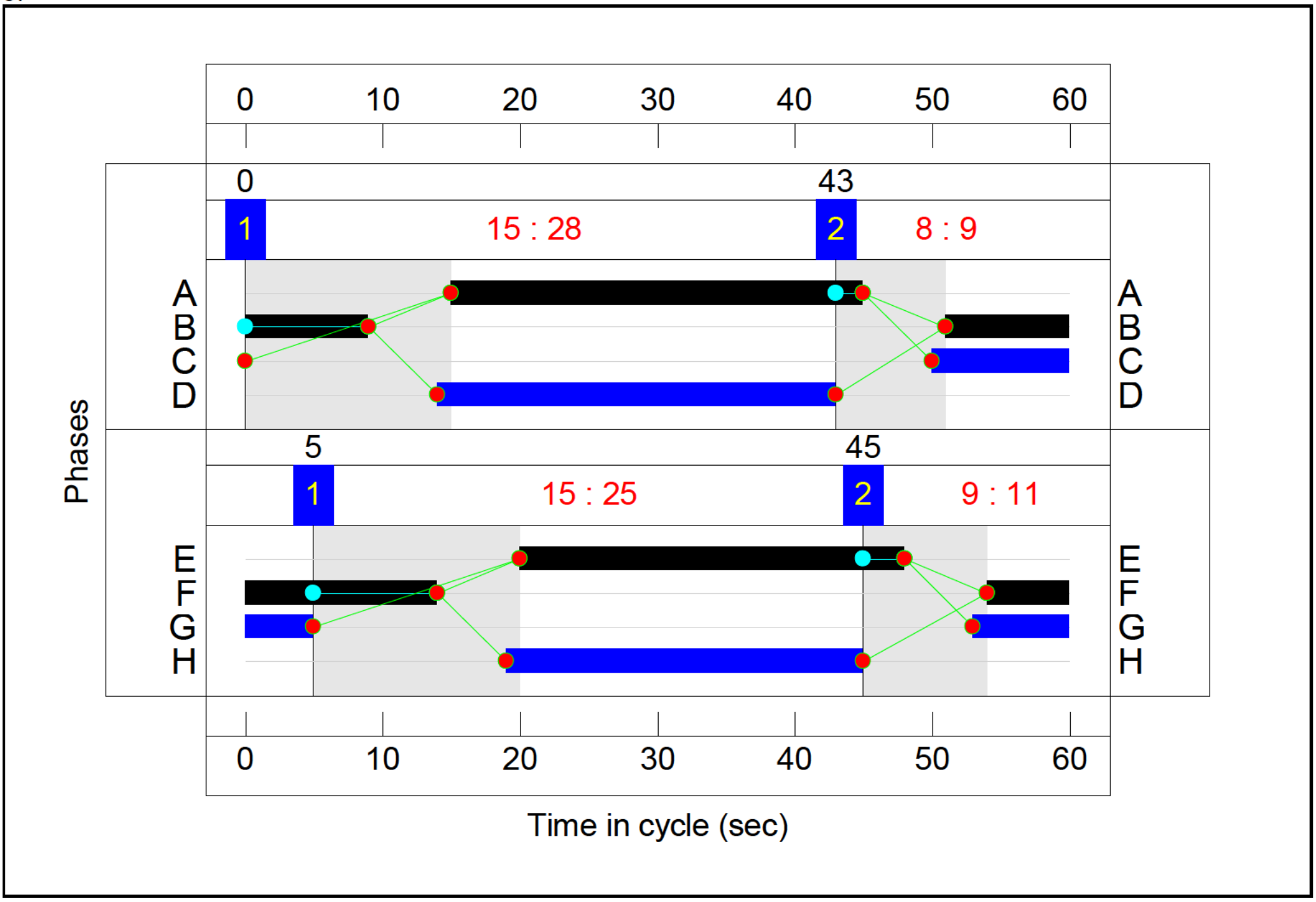
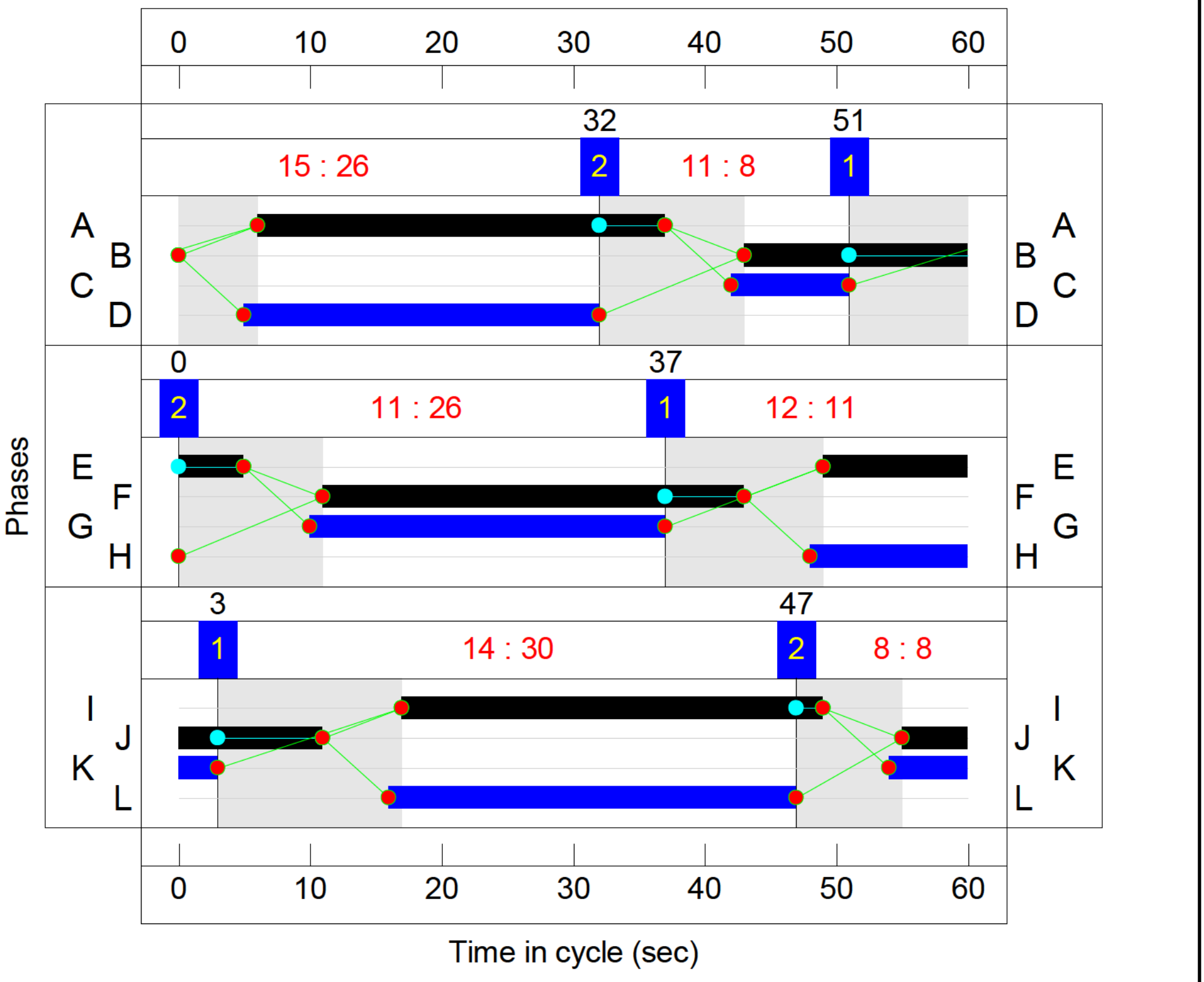
15 : 19
A
B
C
D
16
51
11 : 14
1
12 : 23
2
E
F
G
H
7
30
1
14 : 9
2
8 : 29
I
J
K
L
Phases
Time in cycle (sec)

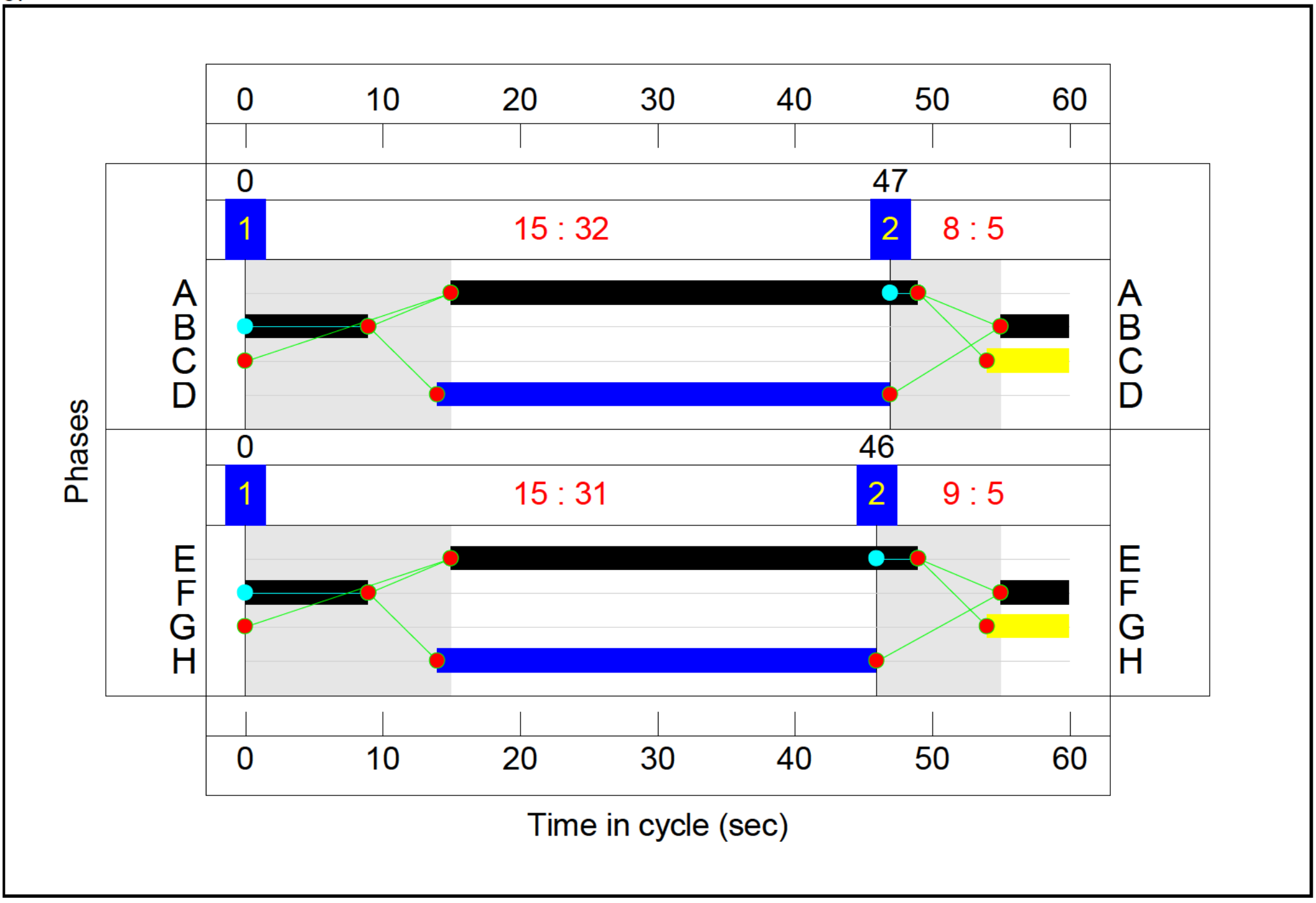
Scenario 6: '2025 Do-Nothing - PM' (FG6: '2025 Do-Nothing - PM', Plan 1: 'Network Control Plan 1')
C1



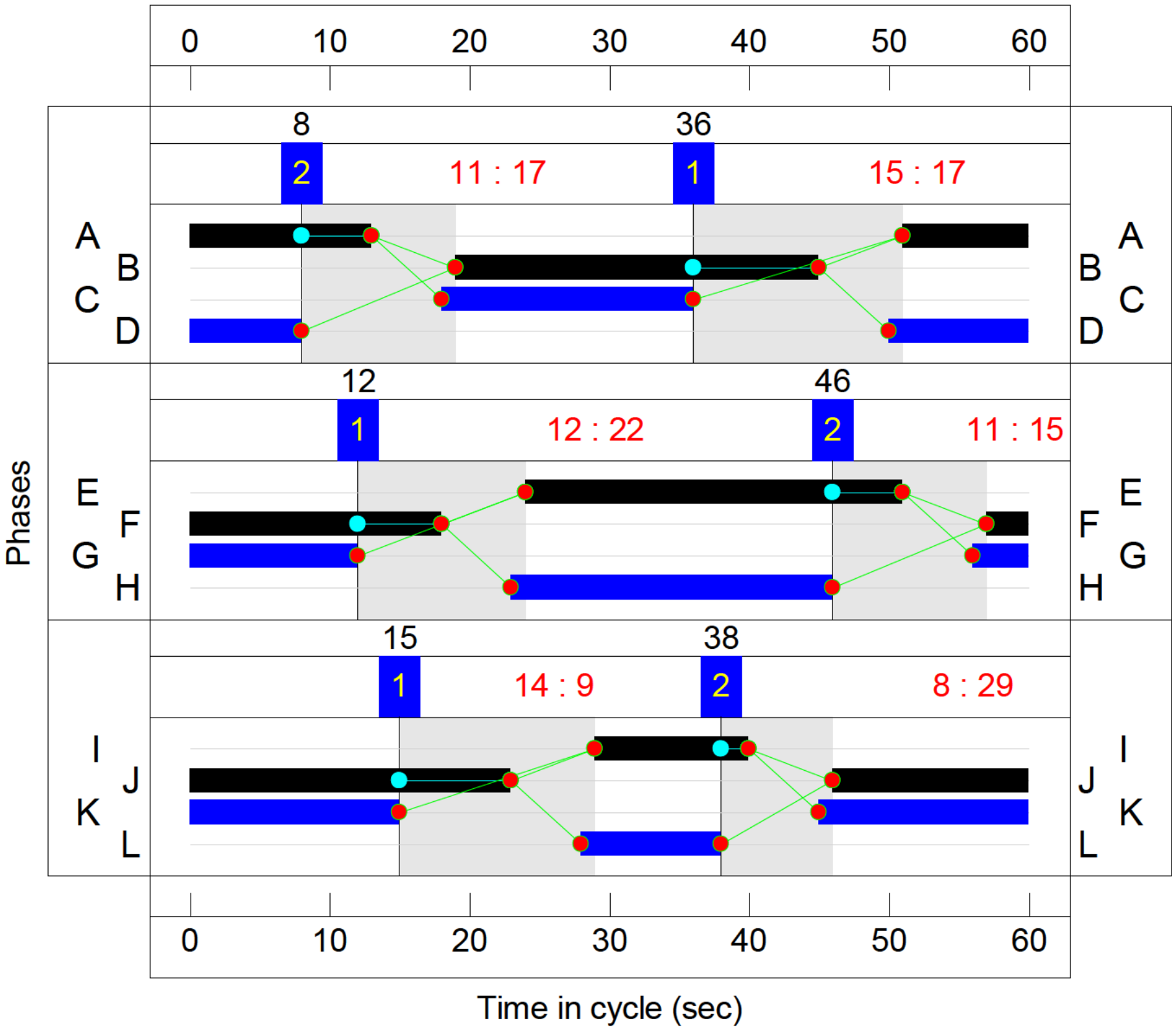
C2


0
10
20
30
40
50
60
32
51
15 : 26
2
11 : 8
1
A
B
C
D
0
37
2
11 : 26
1
12 : 11
E
F
G
H
3
47
1
14 : 30
2
8 : 8
I
J
K
L
Phases
Time in cycle (sec)

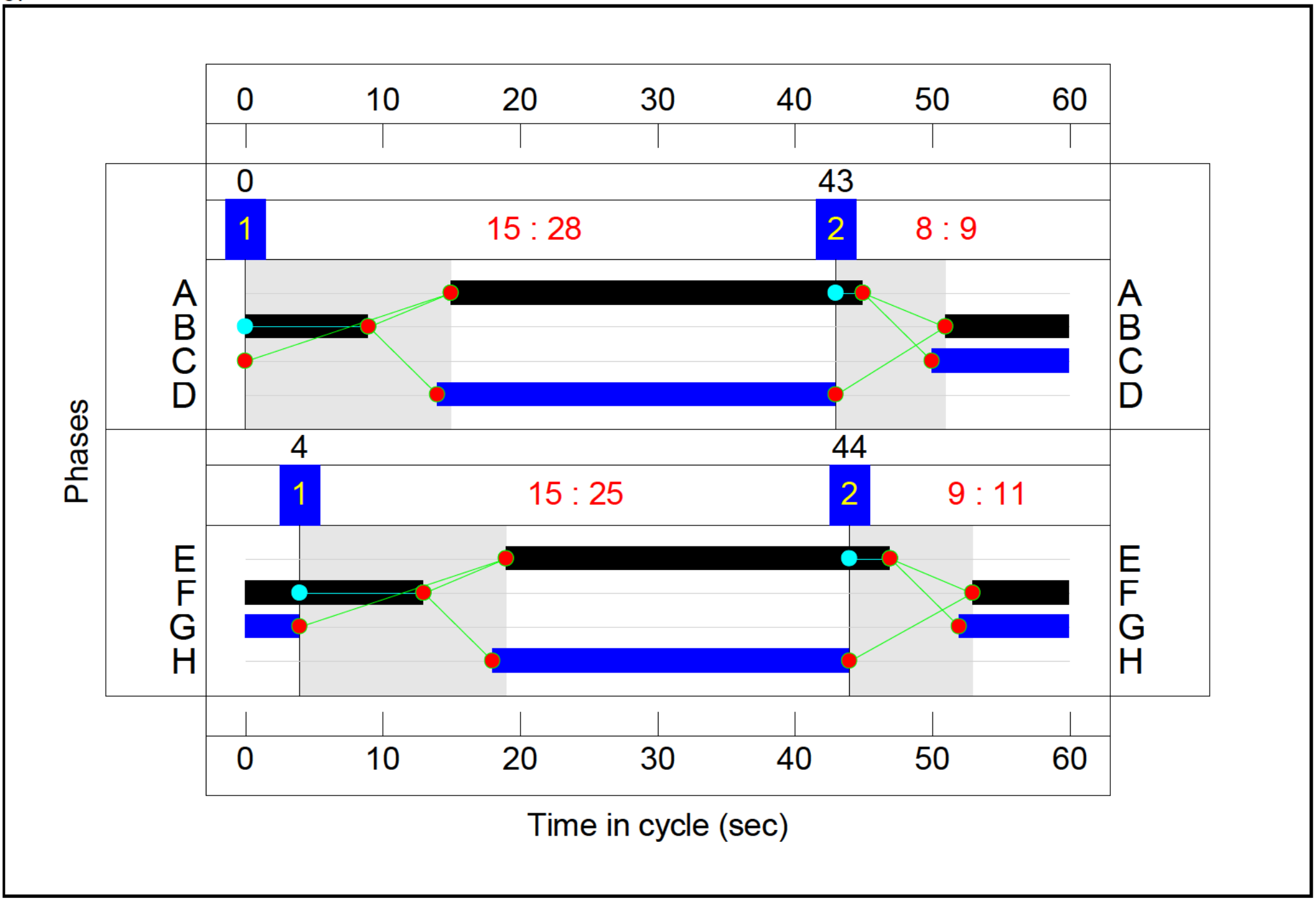
Scenario 7: '2025 Do-Something - AM' (FG7: '2025 Do-Something - AM', Plan 1: 'Network Control Plan 1')
C1



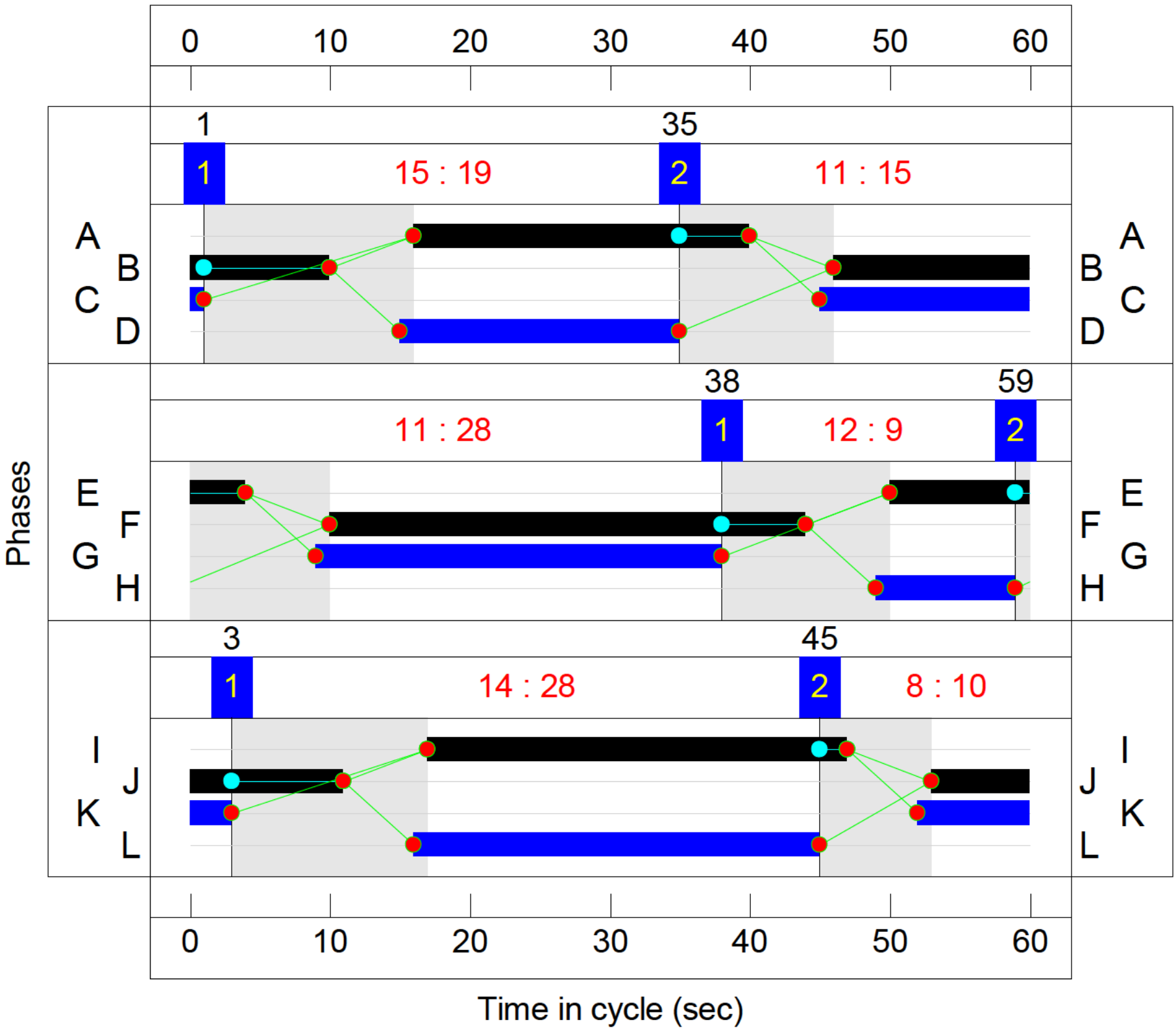
C2


0
10
20
30
40
50
60
8
36
2
11 : 17
1
15 : 17
A
B
C
D
12
46
1
12 : 22
2
11 : 15
E
F
G
H
15
38
1
14 : 9
2
8 : 29
I
J
K
L
Phases
Time in cycle (sec)

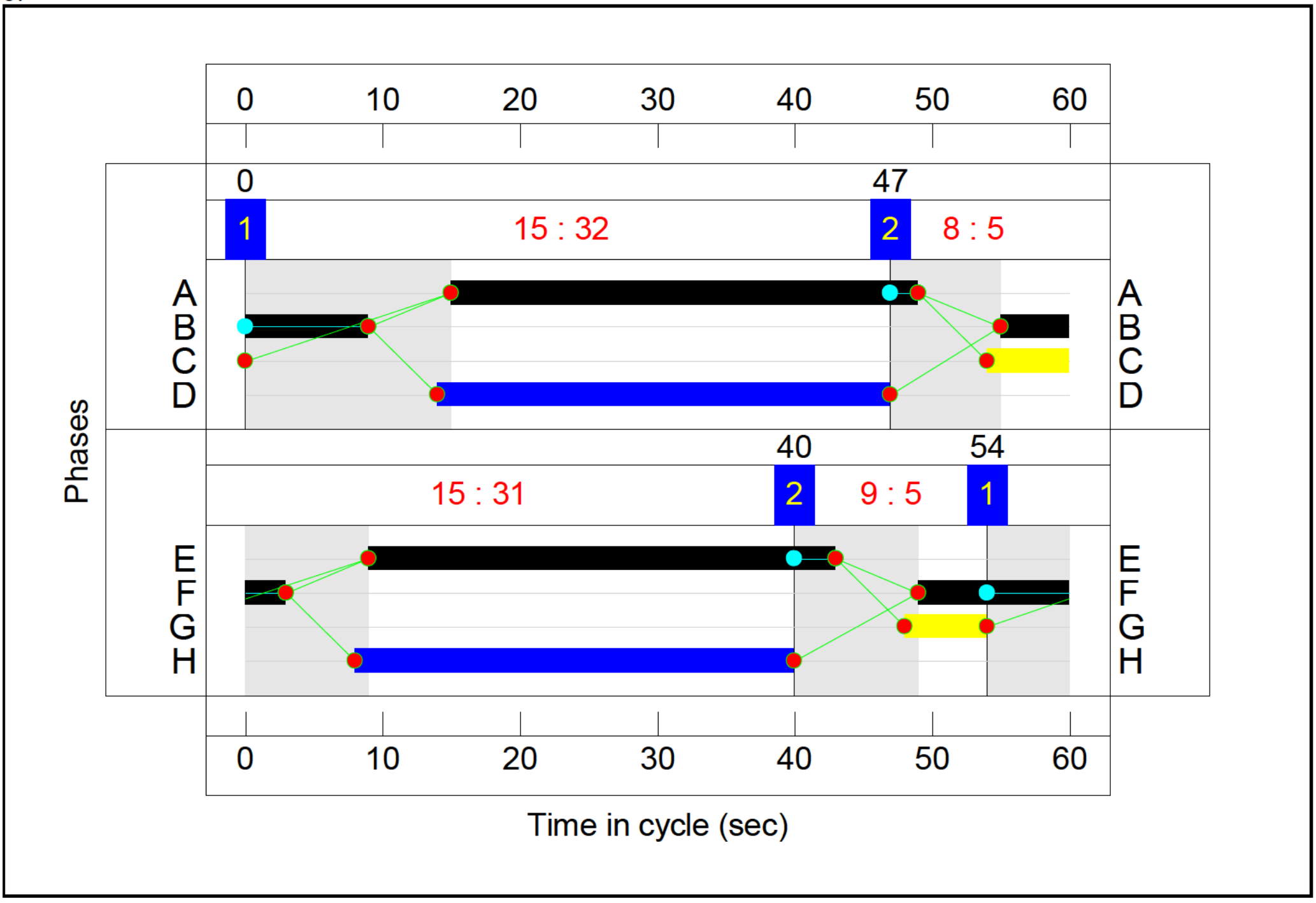
Scenario 8: '2025 Do-Something - PM' (FG8: '2025 Do-Something - PM', Plan 1: 'Network Control Plan 1')
C1



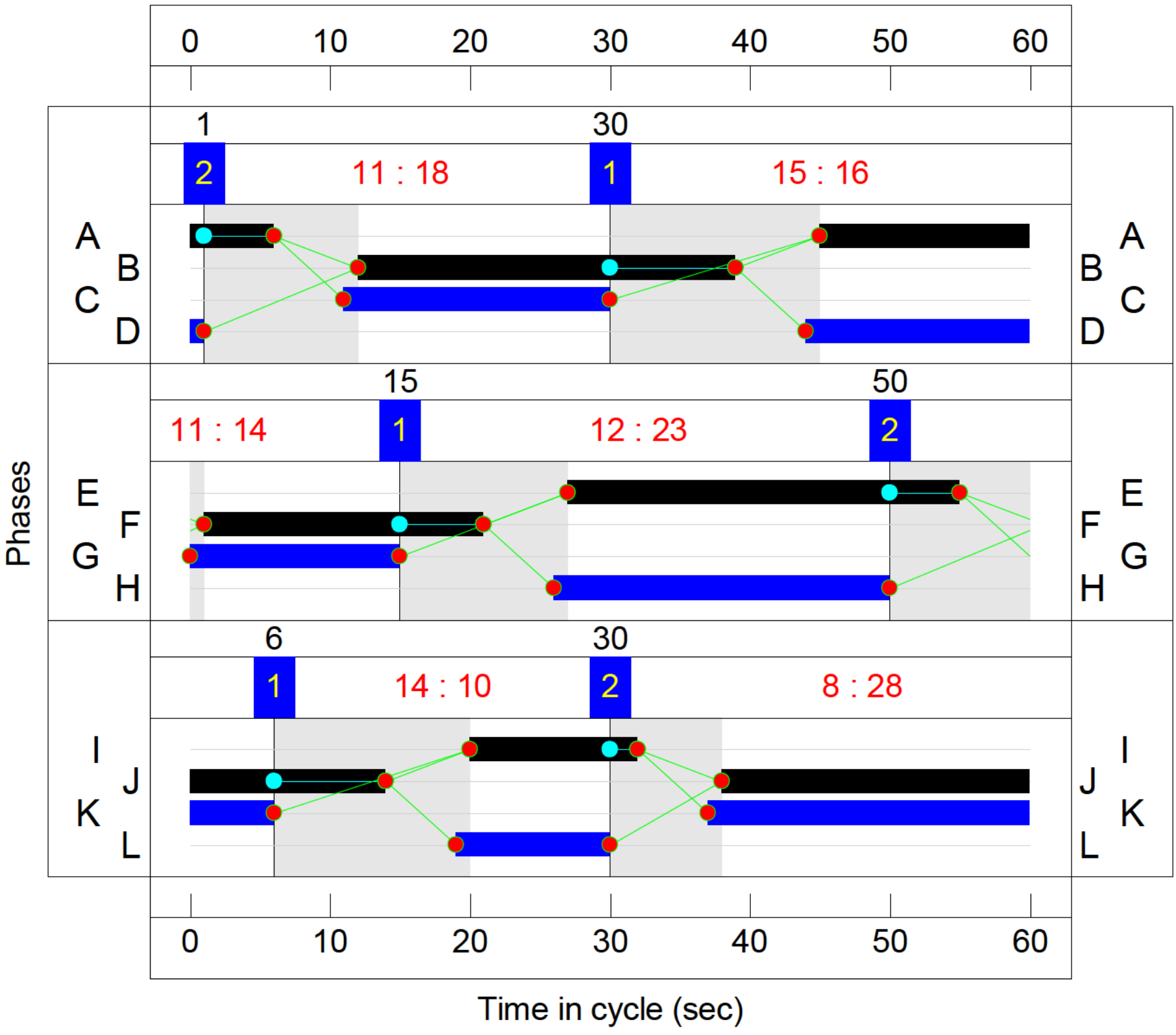
C2


0
10
20
30
40
50
60
1
35
1
15 : 19
2
11 : 15
A
B
C
D
38
59
11 : 28
1
12 : 9
2
E
F
G
H
3
45
1
14 : 28
2
8 : 10
I
J
K
L
Phases
Time in cycle (sec)

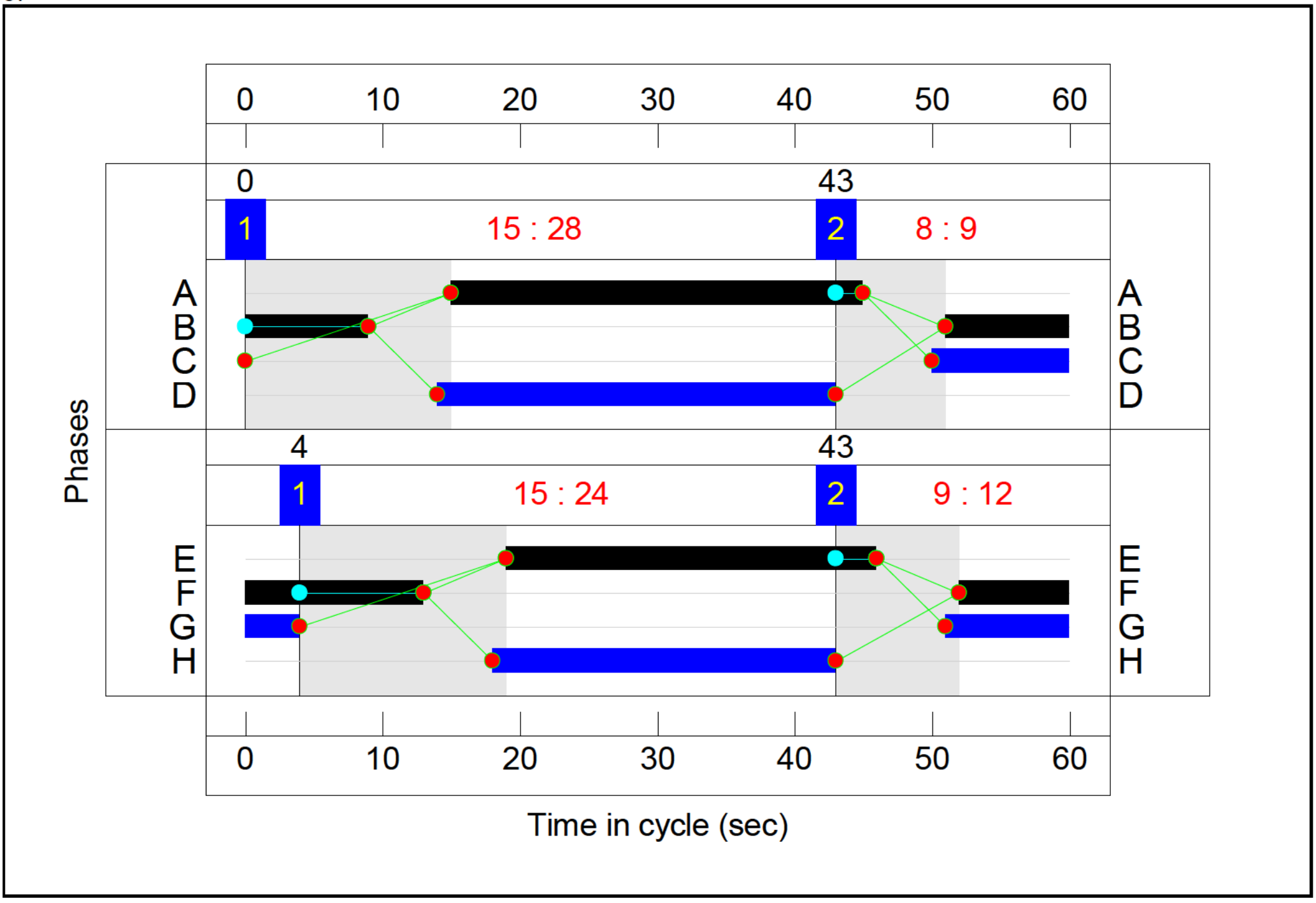
Scenario 9: '2030 Do-Minimum - AM' (FG9: '2030 Do-Minimum - AM', Plan 1: 'Network Control Plan 1')
C1



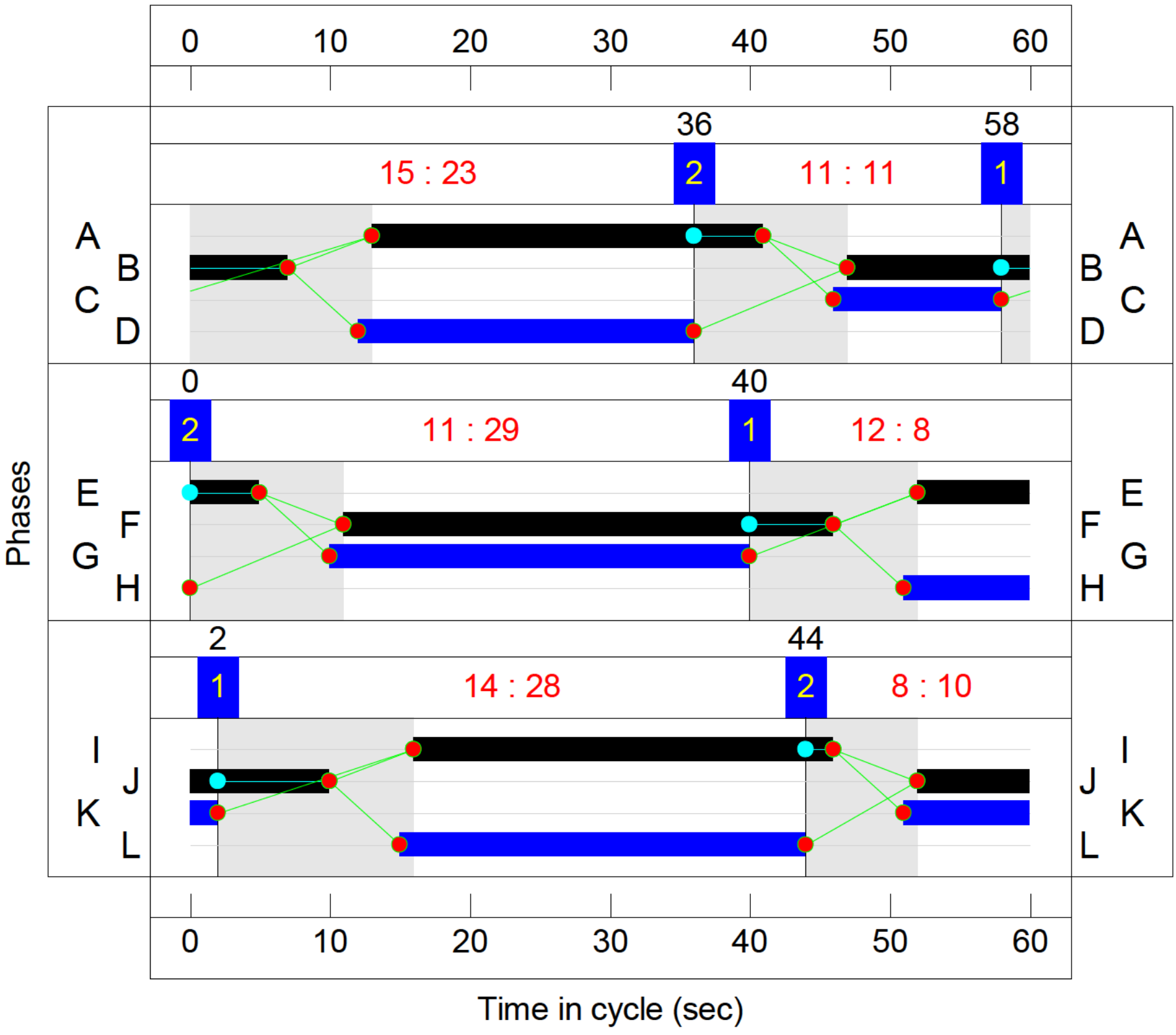
C2


0
10
20
30
40
50
60
1
30
2
11 : 18
1
15 : 16
A
B
C
D
B
A
C
D
15
50
11 : 14
1
12 : 23
2
E
F
G
H
F
E
G
H
6
30
1
14 : 10
2
8 : 28
I
J
K
L
J
I
K
L
Phases
Time in cycle (sec)

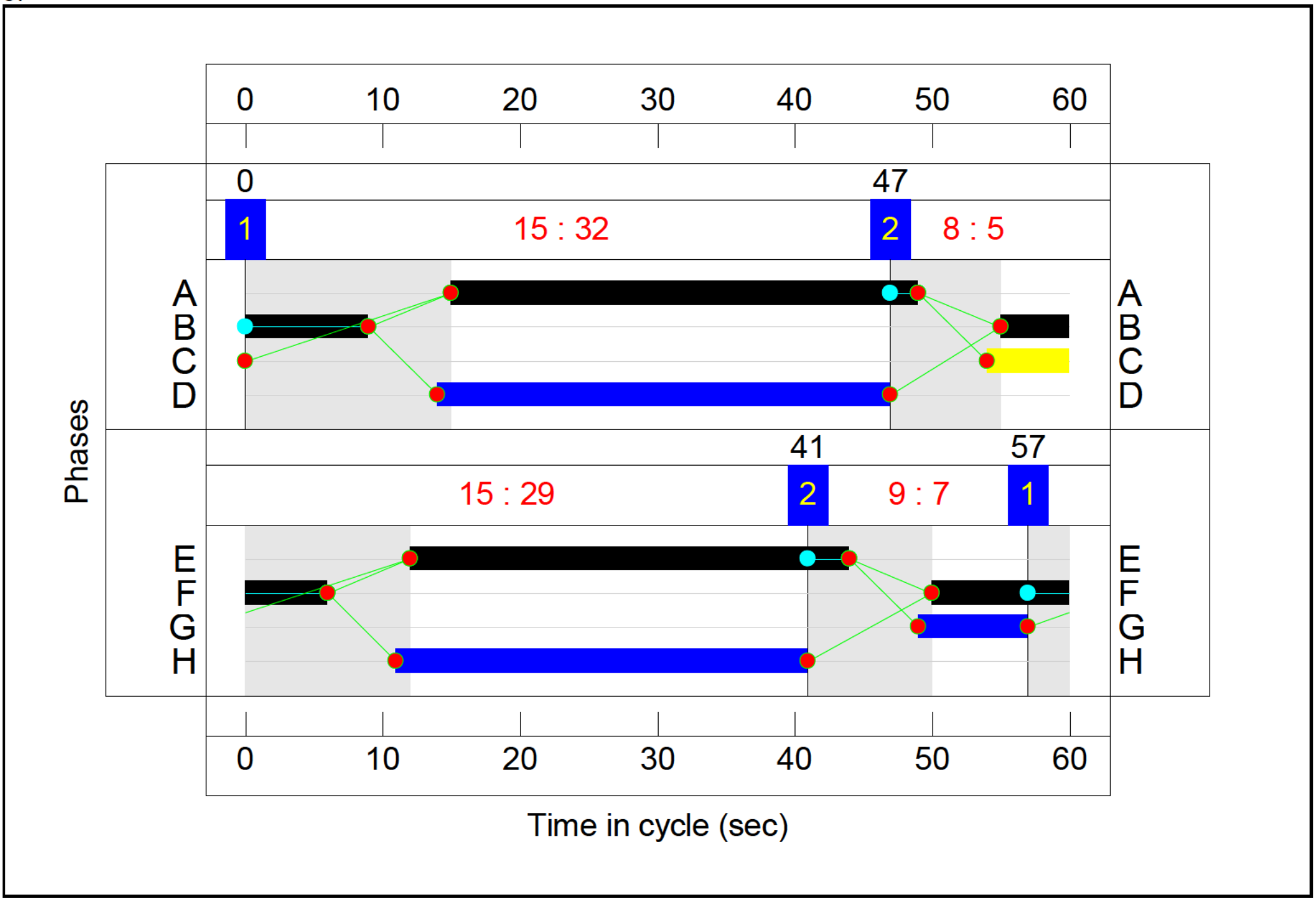
Scenario 10: '2030 Do-Minimum - PM' (FG10: '2030 Do-Minimum - PM', Plan 1: 'Network Control Plan 1')
C1



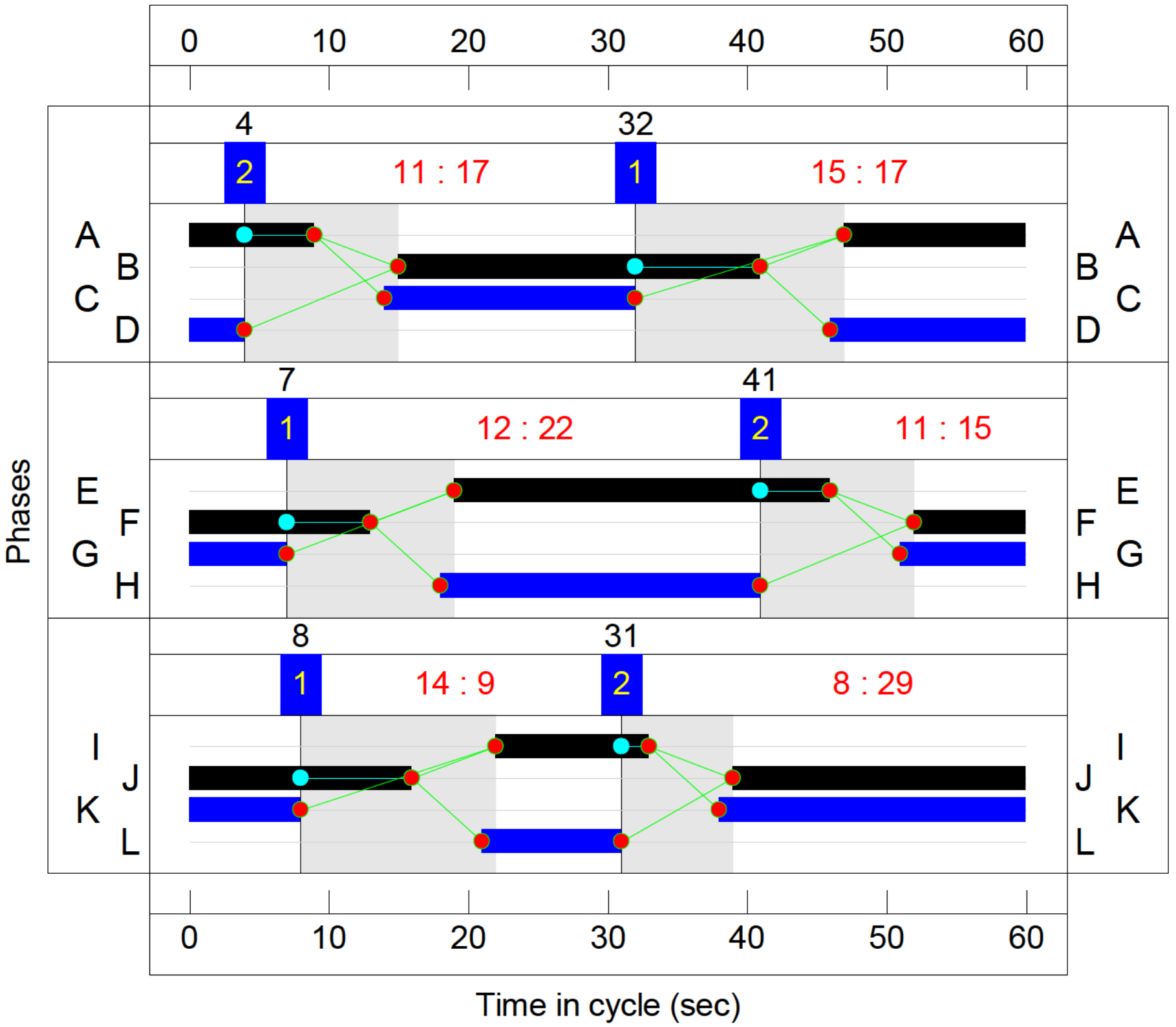
C2


0
10
20
30
40
50
60
36
58
15 : 23
2
11 : 11
1
A
B
C
D
0
40
2
11 : 29
1
12 : 8
E
F
G
H
2
44
1
14 : 28
2
8 : 10
I
J
K
L
Phases
Time in cycle (sec)

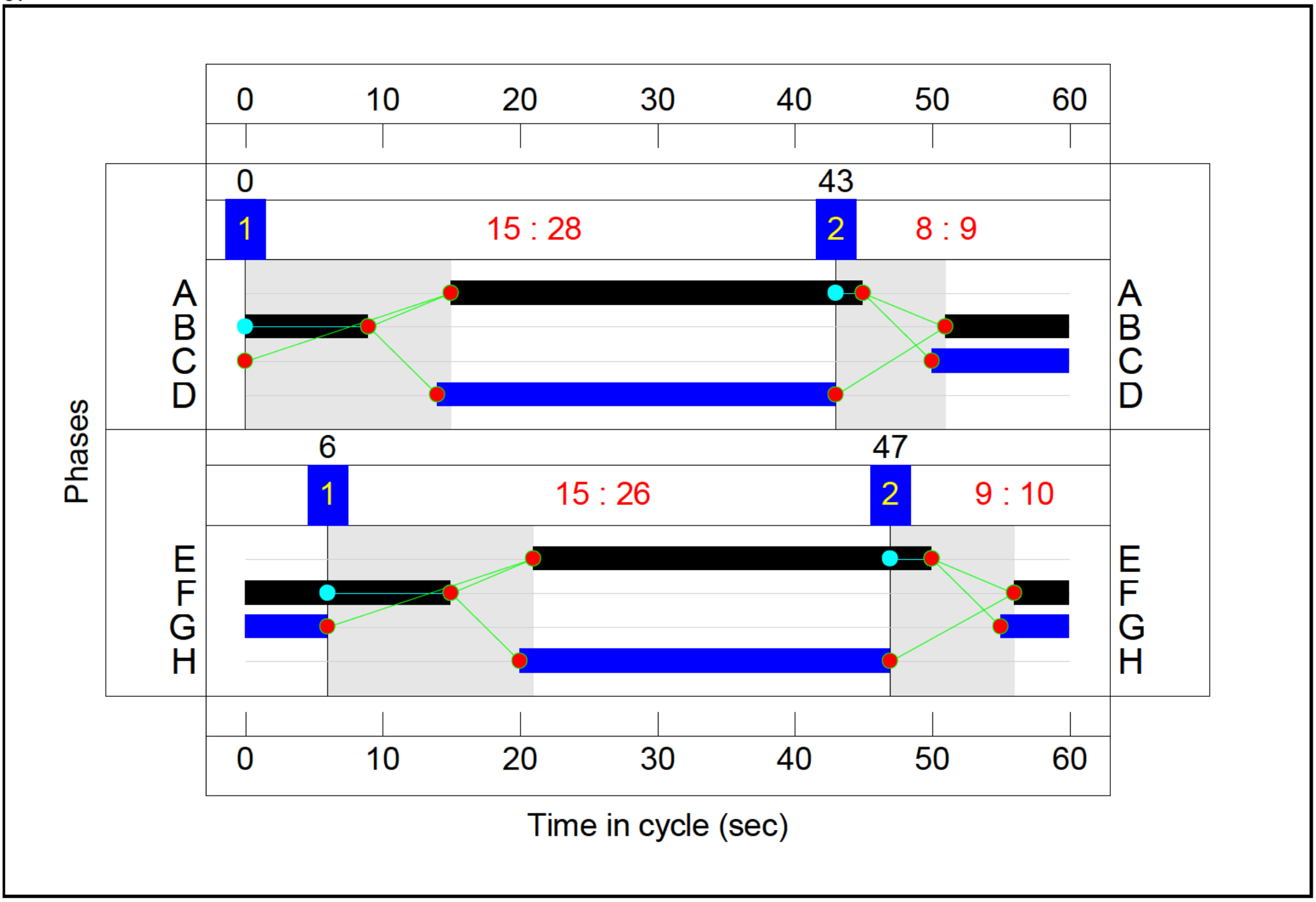
Scenario 11: '2030 Do-Nothing - AM' (FG11: '2030 Do-Nothing - AM', Plan 1: 'Network Control Plan 1')
C1



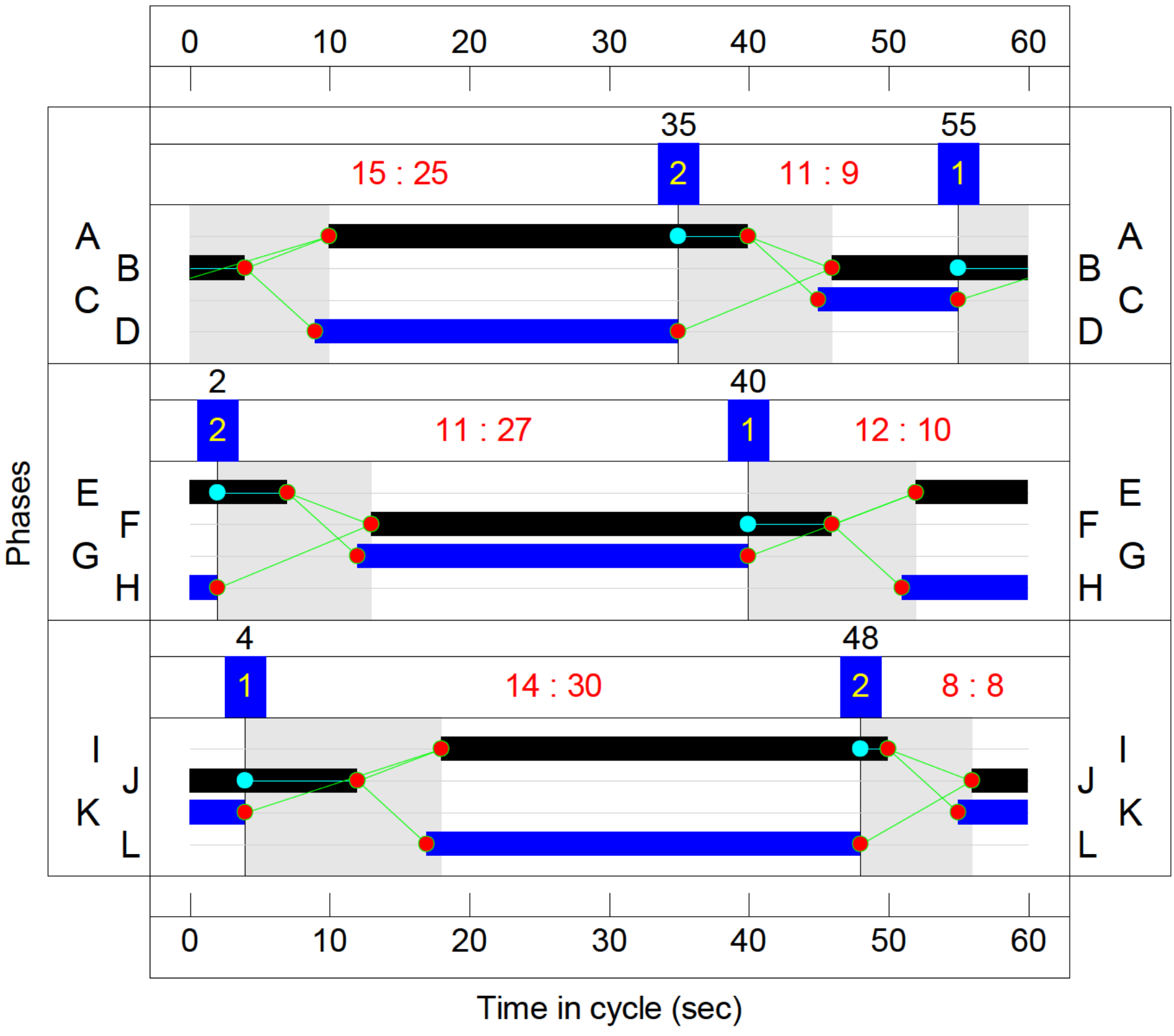
C2


0
10
20
30
40
50
60
4
32
2
11 : 17
1
15 : 17
A
B
C
D
A
B
C
D
7
41
1
12 : 22
2
11 : 15
E
F
G
H
E
F
G
H
Phases
8
31
1
14 : 9
2
8 : 29
I
J
K
L
I
J
K
L
0
10
20
30
40
50
60
Time in cycle (sec)

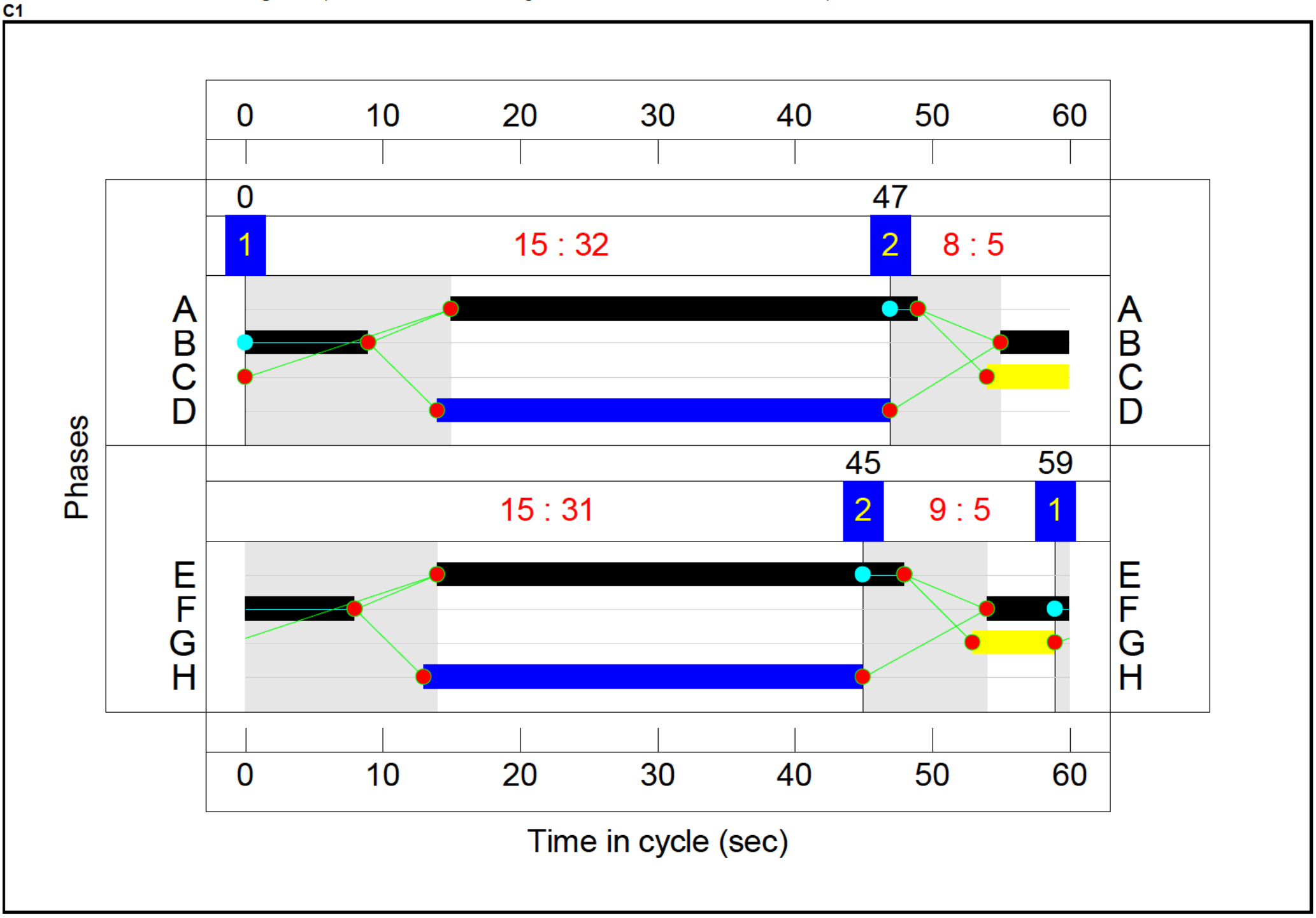
Scenario 12: '2030 Do-Nothing - PM' (FG12: '2030 Do-Nothing - PM', Plan 1: 'Network Control Plan 1')
C1



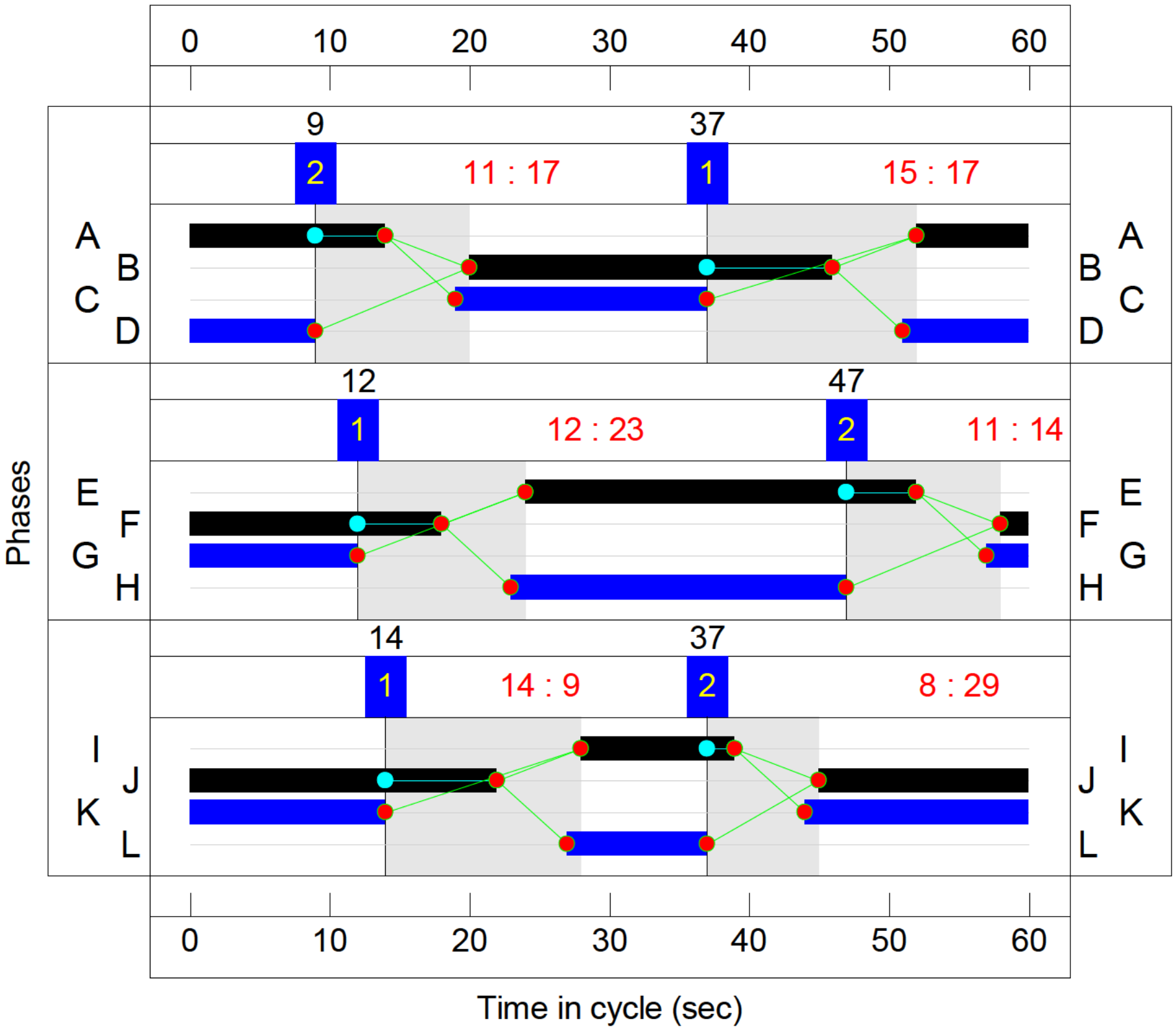
C2


0
10
20
30
40
50
60
35
55
15 : 25
2
11 : 9
1
A
B
C
D
2
40
2
11 : 27
1
12 : 10
E
F
G
H
4
48
1
14 : 30
2
8 : 8
I
J
K
L
Phases
Time in cycle (sec)

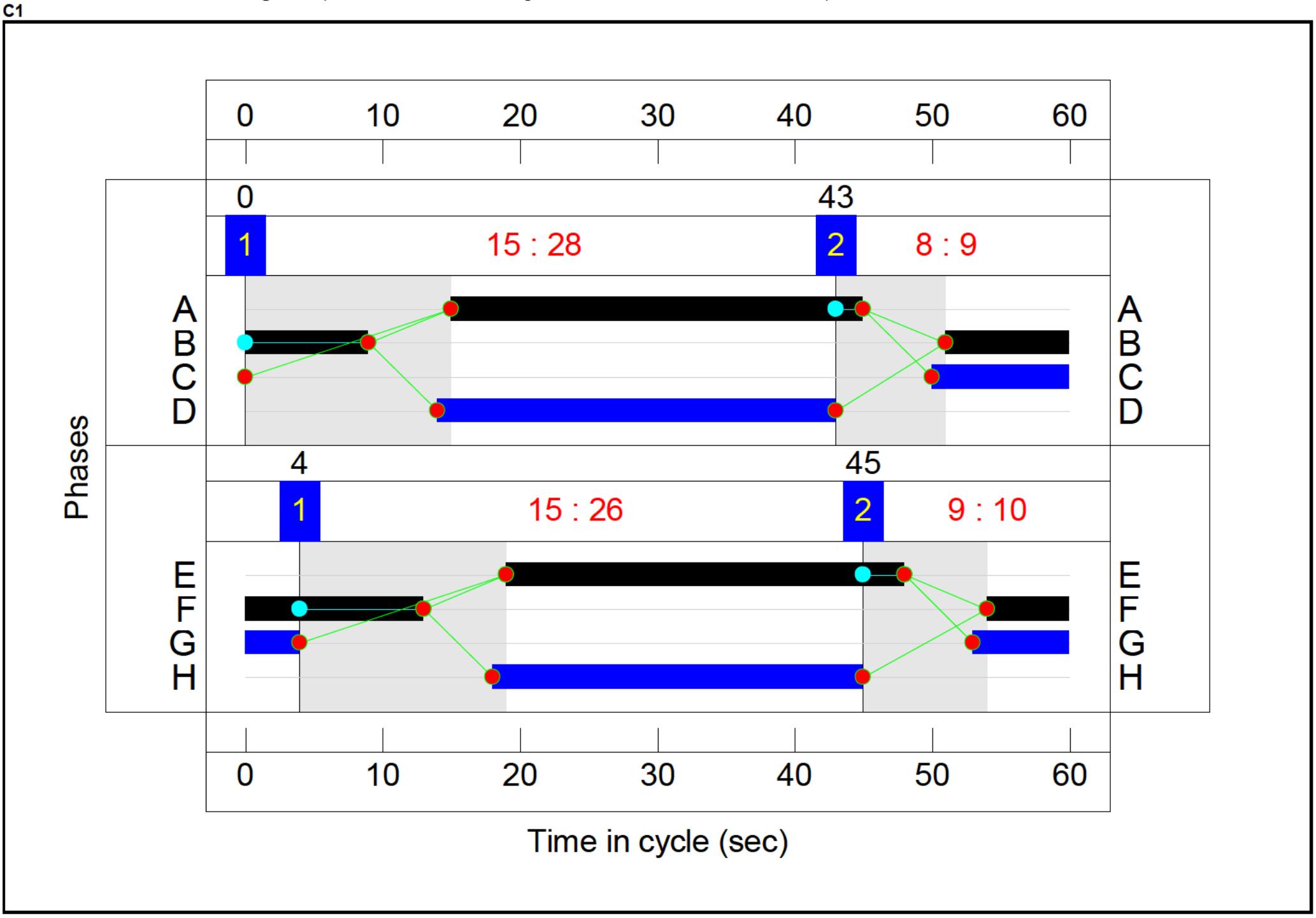
Scenario 13: '2030 Do-Something - AM' (FG13: '2030 Do-Something - AM', Plan 1: 'Network Control Plan 1')
C1



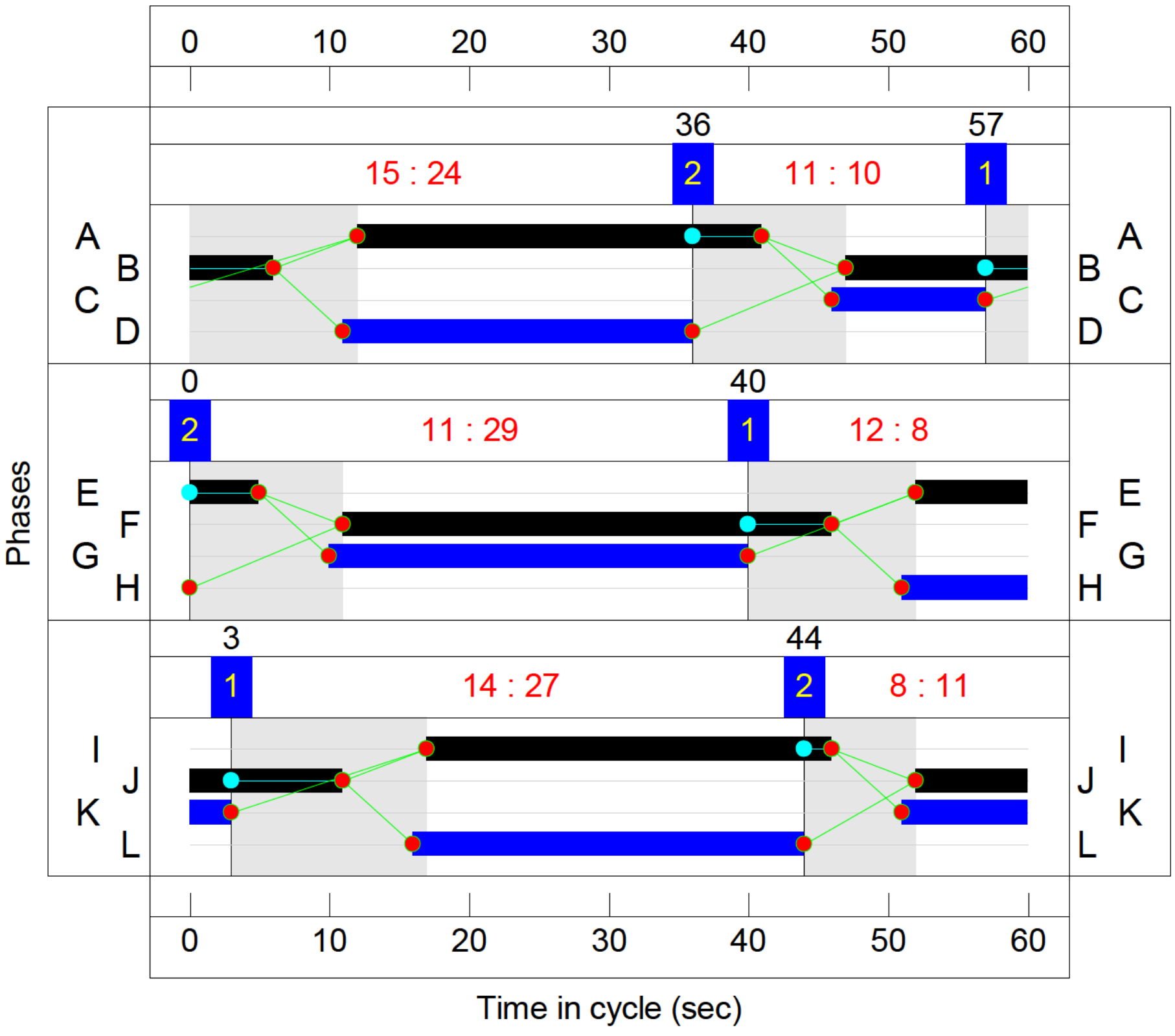
C2


0
10
20
30
40
50
60
9
37
2
11 : 17
1
15 : 17
A
B
C
D
A
B
C
D
12
47
1
12 : 23
2
11 : 14
E
F
G
H
E
F
G
H
Phases
14
37
1
14 : 9
2
8 : 29
I
J
K
L
I
J
K
L
0
10
20
30
40
50
60
Time in cycle (sec)

Scenario 14: '2030 Do-Something - PM' (FG14: '2030 Do-Something - PM', Plan 1: 'Network Control Plan 1')
C1



C2


0
10
20
30
40
50
60
36
57
15 : 24
2
11 : 10
1
A
B
C
D
0
40
2
11 : 29
1
12 : 8
E
F
G
H
3
44
1
14 : 27
2
8 : 11
I
J
K
L
Phases
Time in cycle (sec)

Network Results

Scenario 1: '2019 Base - AM' (FG1: '2019 Base - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**94.3%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**94.3%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	522	Inf	Inf	Inf	0.0%	522	522
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	579	Inf	Inf	Inf	0.0%	579	579
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	21	11	32	-	-	346	1930	1930	708	48.9%	346	346
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	21	11	32	-	-	321	1936	1936	710	45.2%	321	321
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	21	11	32	-	-	358	1936	1936	710	50.4%	358	358
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	571	1902	1902	1902	30.0%	571	571
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	488	1902	1902	1902	25.7%	488	488
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1059	Inf	Inf	Inf	0.0%	1059	1059
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	14	53	7	-	-	374	1907:1941	1907	477+485	40.3 : 37.5%	374	374
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	321	1965	1965	1965	16.3%	321	321
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	209	1965	1965	1965	10.6%	209	209
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	530	Inf	Inf	Inf	0.0%	530	530
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	14	36	50	-	-	221	1866:1965	1866	41+491	41.5 : 41.5%	221	221
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	304	1995	1995	1995	15.2%	304	304
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	309	1995	1995	1995	15.5%	309	309
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	613	Inf	Inf	Inf	0.0%	613	613
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	21	11	32	-	-	994	1906:1924	1906	561+493	94.3 : 94.3%	994	994
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	344	1995	1995	1995	17.2%	344	344
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	364	1995	1995	1995	18.2%	364	364
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	708	Inf	Inf	Inf	0.0%	708	708
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	24	40	4	-	-	454	1899:1899	1899	699+699	32.5 : 32.5%	454	454
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	24	40	4	-	-	943	1899:1899	1899	701+690	67.8 : 67.8%	943	943
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	27	38	5	-	-	508	2037	2037	951	53.4%	508	508

15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	27	38	5	-	-	508	1983	1983	925	54.9%	508	508
15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	27	38	5	-	-	291	1962	1962	916	31.8%	291	291
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	34	13	47	-	-	303	1941	1941	1132	26.8%	303	303
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	34	13	47	-	-	463	1917	1917	1118	41.4%	463	463
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	34	13	47	-	-	507	1894:1932	1894	988+293	39.6 : 39.6%	507	507
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	34	56	30	-	-	297	1990	1990	1161	25.6%	297	297
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	34	56	30	-	-	522	1970	1970	1149	45.4%	522	522
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	34	56	30	-	-	298	1932:1919	1932	1004+188	25.0 : 25.0%	298	298
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	27	38	5	-	-	223	1933	1933	902	24.7%	223	223
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	27	38	5	-	-	251	1933	1933	902	27.8%	251	251
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	27	38	5	-	-	251	1894:1884	1894	814+154	25.9 : 25.9%	251	251
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	24	10	34	-	-	295	1985	1985	827	35.7%	295	295
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	24	10	34	-	-	385	1979	1979	825	46.7%	385	385
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	24	10	34	-	-	331	1942:1932	1942	636+260	36.9 : 36.9%	331	331

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**28.4**	**15.7**	**0.0**	**44.1**	**-**	**5544.5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**94.3%**	**54.2**	**-**
Leckwith Interchange	**0**	**0**	**0**	**28.4**	**15.7**	**0.0**	**44.1**	**-**	**5544.5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**94.3%**	**54.2**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	1.4	0.5	-	1.9	19.6	265.3	0.8	3.5	4.4	0.5	4.9	-	0.00	48.9%	2.4	-
2/2	-	-	-	1.3	0.4	-	1.7	19.1	240.8	0.8	3.2	4.0	0.4	4.4	-	0.00	45.2%	2.1	-
2/3	-	-	-	1.5	0.5	-	2.0	19.9	274.5	0.8	3.6	4.6	0.5	5.1	-	0.00	50.4%	2.5	-
3/1	-	-	-	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	30.0%	0.2	-
3/2	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	25.7%	0.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	1.9	0.3	-	2.3	21.8	308.6	0.8	2.3	2.7	0.3	3.0	-	0.00	40.3 : 37.5%	2.8	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.3%	0.1	-
6/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.6%	0.1	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	1.1	0.4	-	1.5	24.5	182.8	0.8	2.4	2.8	0.4	3.2	-	0.00	41.5 : 41.5%	1.8	-
9/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.2%	0.1	-
9/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.5%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	4.6	6.8	-	11.4	41.2	983.7	1.0	5.3	10.3	6.8	17.1	-	0.00	94.3 : 94.3%	13.2	-
12/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	17.2%	0.1	-
12/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	18.2%	0.1	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.5	0.2	-	1.7	13.5	295.1	0.7	2.1	2.5	0.2	2.7	-	0.00	32.5 : 32.5%	2.2	-
14/3+14/4	-	-	-	3.6	1.0	-	4.6	17.6	723.0	0.8	4.4	6.1	1.0	7.1	-	0.00	67.8 : 67.8%	5.9	-
15/1	-	-	-	0.5	0.6	-	1.1	7.9	79.1	0.2	1.3	1.3	0.6	1.9	-	0.00	53.4%	1.3	-
15/2	-	-	-	1.2	0.6	-	1.8	13.0	279.1	0.5	3.9	4.5	0.6	5.1	-	0.00	54.9%	2.3	-
15/3	-	-	-	0.4	0.2	-	0.7	8.4	113.4	0.4	1.7	1.9	0.2	2.1	-	0.00	31.8%	0.9	-
16/1	-	-	-	0.6	0.2	-	0.8	9.2	115.1	0.4	1.9	1.9	0.2	2.1	-	0.00	26.8%	1.0	-
16/2	-	-	-	0.6	0.4	-	0.9	7.1	105.6	0.2	1.7	1.8	0.4	2.1	-	0.00	41.4%	1.1	-
16/3+16/4	-	-	-	0.5	0.3	-	0.8	5.8	228.4	0.5	2.1	8.9	0.3	9.2	-	0.00	39.6 : 39.6%	1.2	-
17/1	-	-	-	0.9	0.2	-	1.1	13.3	169.4	0.6	2.7	2.8	0.2	3.0	-	0.00	25.6%	1.4	-
17/2	-	-	-	1.1	0.4	-	1.5	10.1	267.2	0.5	2.9	4.5	0.4	4.9	-	0.00	45.4%	2.0	-
17/3+17/4	-	-	-	0.4	0.2	-	0.6	6.7	67.6	0.2	1.1	1.1	0.2	1.3	-	0.00	25.0 : 25.0%	0.7	-
18/1	-	-	-	1.4	0.2	-	1.5	24.7	192.1	0.9	2.9	3.2	0.2	3.4	-	0.00	24.7%	1.9	-
18/2	-	-	-	1.3	0.2	-	1.5	21.3	196.0	0.8	2.9	3.3	0.2	3.5	-	0.00	27.8%	1.8	-

18/3+18/4	-	-	-	0.3	0.2	-	0.5	7.5	107.5	0.4	0.7	7.2	0.2	7.3	-	0.00	25.9 : 25.9%	0.7	-
19/1	-	-	-	0.4	0.3	-	0.7	8.0	42.3	0.1	0.7	0.7	0.3	1.0	-	0.00	35.7%	0.7	-
19/2	-	-	-	1.5	0.4	-	1.9	17.7	235.0	0.6	3.8	3.9	0.4	4.4	-	0.00	46.7%	2.3	-
19/3+19/4	-	-	-	0.5	0.3	-	0.8	8.6	73.2	0.2	1.0	1.0	0.3	1.3	-	0.00	36.9 : 36.9%	0.9	-

C1	Stream: 1 PRC for Signalled Lanes (%):	98.1	Total Delay for Signalled Lanes (pcuHr):	4.62	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	117.4	Total Delay for Signalled Lanes (pcuHr):	4.77	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	32.8	Total Delay for Signalled Lanes (pcuHr):	9.65	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	63.9	Total Delay for Signalled Lanes (pcuHr):	9.20	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	-4.8	Total Delay for Signalled Lanes (pcuHr):	14.91	Cycle Time (s):	60
	PRC Over All Lanes (%):	-4.8	Total Delay Over All Lanes(pcuHr):	44.08		

Scenario 2: '2019 Base - PM' (FG2: '2019 Base - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**98.6%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**98.6%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	410	Inf	Inf	Inf	0.0%	410	410
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	638	Inf	Inf	Inf	0.0%	638	638
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	18	31	49	-	-	352	1932	1932	612	57.5%	352	352
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	18	31	49	-	-	458	1936	1936	613	74.7%	458	458
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	18	31	49	-	-	506	1936	1936	613	82.5%	506	506
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	314	1902	1902	1902	16.5%	314	314
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	189	1902	1902	1902	9.9%	189	189
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	503	Inf	Inf	Inf	0.0%	503	503
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	19	9	28	-	-	850	1914:1941	1914	638+224	98.6 : 98.6%	850	850
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	271	1965	1965	1965	13.8%	271	271
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	45	1965	1965	1965	2.3%	45	45
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	316	Inf	Inf	Inf	0.0%	316	316
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	14	15	29	-	-	636	1877:1965	1877	469+324	80.1 : 80.1%	636	636
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	838	1995	1995	1995	42.0%	838	838
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	252	1995	1995	1995	12.6%	252	252
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1090	Inf	Inf	Inf	0.0%	1090	1090
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	14	23	37	-	-	569	1896:1924	1896	451+308	74.9 : 74.9%	569	569
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	627	1995	1995	1995	31.4%	627	627
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	641	1995	1995	1995	32.1%	641	641
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1268	Inf	Inf	Inf	0.0%	1268	1268
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	14	11	25	-	-	311	1899:1899	1899	475+475	32.9 : 32.6%	311	311
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	14	11	25	-	-	543	1899:1899	1899	475+475	55.6 : 58.8%	543	543
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	30	55	25	-	-	264	2037	2037	1052	25.1%	264	264
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	30	55	25	-	-	122	1986	1986	1026	11.9%	122	122

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	30	55	25	-	-	223	1962	1962	1014	22.0%	223	223
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	29	34	3	-	-	235	1941	1941	971	24.2%	235	235
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	29	34	3	-	-	662	1902	1902	951	69.6%	662	662
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	29	34	3	-	-	525	1894:1932	1894	186+900	48.4 : 48.4%	525	525
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	34	35	9	-	-	774	1990	1990	1161	66.7%	774	774
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	34	35	9	-	-	526	1944	1944	1134	46.4%	526	526
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	34	35	9	-	-	656	1932:1919	1932	1064+101	56.3 : 56.3%	656	656
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	34	43	17	-	-	506	1933	1933	1128	44.9%	506	506
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	34	43	17	-	-	679	1925	1925	1123	60.5%	679	679
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	34	43	17	-	-	317	1894:1884	1894	1035+133	27.2 : 27.2%	317	317
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	34	31	5	-	-	255	1985	1985	1158	22.0%	255	255
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	34	31	5	-	-	482	1982	1982	1156	41.7%	482	482
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	34	31	5	-	-	66	1942:1932	1942	1030+142	5.6 : 5.6%	66	66

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**29.4**	**27.8**	**0.0**	**57.2**	**-**	**6308.9**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**98.6%**	**68.7**	**-**
Leckwith Interchange	**0**	**0**	**0**	**29.4**	**27.8**	**0.0**	**57.2**	**-**	**6308.9**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**98.6%**	**68.7**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	1.7	0.7	-	2.3	24.0	293.3	0.8	3.8	4.9	0.7	5.6	-	0.00	57.5%	2.9	-
2/2	-	-	-	2.3	1.4	-	3.8	29.7	404.6	0.9	5.0	6.7	1.4	8.2	-	0.00	74.7%	4.5	-
2/3	-	-	-	2.7	2.3	-	4.9	35.1	463.8	0.9	5.5	7.7	2.3	10.0	-	0.00	82.5%	5.8	-
3/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.5%	0.1	-
3/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	9.9%	0.1	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	4.4	11.9	-	16.2	68.8	784.3	0.9	6.6	10.3	11.9	22.2	-	0.00	98.6 : 98.6%	17.7	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	13.8%	0.1	-
6/2	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	-	0.0	0.0	0.0	-	0.00	2.3%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	3.6	2.0	-	5.6	31.6	571.9	0.9	4.5	5.8	2.0	7.8	-	0.00	80.1 : 80.1%	6.6	-
9/1	-	-	-	0.0	0.4	-	0.4	1.6	0.0	0.0	-	0.0	0.4	0.4	-	0.00	42.0%	0.4	-
9/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	12.6%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	3.2	1.5	-	4.6	29.3	500.6	0.9	4.0	5.1	1.5	6.5	-	0.00	74.9 : 74.9%	5.5	-
12/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	31.4%	0.2	-
12/2	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	32.1%	0.2	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.6	0.2	-	1.8	21.2	251.4	0.8	1.9	2.1	0.2	2.4	-	0.00	32.9 : 32.6%	2.3	-
14/3+14/4	-	-	-	3.0	0.7	-	3.6	24.1	470.6	0.9	3.3	4.0	0.7	4.7	-	0.00	55.6 : 58.8%	4.5	-
15/1	-	-	-	0.3	0.2	-	0.5	6.6	43.3	0.2	0.7	0.7	0.2	0.9	-	0.00	25.1%	0.6	-
15/2	-	-	-	0.2	0.1	-	0.3	7.7	59.2	0.5	0.7	1.0	0.1	1.1	-	0.00	11.9%	0.4	-
15/3	-	-	-	0.3	0.1	-	0.4	7.3	45.1	0.2	0.8	0.8	0.1	0.9	-	0.00	22.0%	0.5	-
16/1	-	-	-	0.1	0.2	-	0.2	3.4	10.2	0.0	0.2	0.2	0.2	0.3	-	0.00	24.2%	0.2	-
16/2	-	-	-	0.5	1.1	-	1.7	9.1	211.6	0.3	2.3	3.3	1.1	4.4	-	0.00	69.6%	2.1	-
16/3+16/4	-	-	-	0.0	0.5	-	0.5	3.5	242.9	0.5	0.2	11.6	0.5	12.0	-	0.00	48.4 : 48.4%	0.9	-
17/1	-	-	-	0.4	1.0	-	1.4	6.7	127.8	0.2	1.9	2.1	1.0	3.1	-	0.00	66.7%	1.7	-
17/2	-	-	-	2.0	0.4	-	2.4	16.7	462.4	0.9	6.4	7.7	0.4	8.1	-	0.00	46.4%	3.3	-
17/3+17/4	-	-	-	1.0	0.6	-	1.6	9.0	221.0	0.3	2.6	2.7	0.6	3.4	-	0.00	56.3 : 56.3%	2.1	-
18/1	-	-	-	0.0	0.4	-	0.4	3.2	354.8	0.7	0.0	5.9	0.4	6.3	-	0.00	44.9%	1.1	-
18/2	-	-	-	0.5	0.8	-	1.2	6.5	233.6	0.3	1.4	3.9	0.8	4.7	-	0.00	60.5%	1.7	-

18/3+18/4	-	-	-	1.5	0.2	-	1.7	19.3	444.1	1.4	3.7	6.1	0.2	6.3	-	0.00	27.2 : 27.2%	2.5	-
19/1	-	-	-	0.0	0.1	-	0.2	2.2	15.5	0.1	0.0	0.2	0.1	0.3	-	0.00	22.0%	0.2	-
19/2	-	-	-	0.0	0.4	-	0.4	2.8	90.2	0.2	0.0	1.1	0.4	1.5	-	0.00	41.7%	0.5	-
19/3+19/4	-	-	-	0.0	0.0	-	0.0	1.7	6.9	0.1	0.0	0.1	0.0	0.1	-	0.00	5.6 : 5.6%	0.0	-

C1	Stream: 1 PRC for Signalled Lanes (%):	12.3	Total Delay for Signalled Lanes (pcuHr):	11.10	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	-9.5	Total Delay for Signalled Lanes (pcuHr):	18.64	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	53.1	Total Delay for Signalled Lanes (pcuHr):	6.03	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	9.0	Total Delay for Signalled Lanes (pcuHr):	12.26	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	20.2	Total Delay for Signalled Lanes (pcuHr):	8.00	Cycle Time (s):	60
	PRC Over All Lanes (%):	-9.5	Total Delay Over All Lanes(pcuHr):	57.18		

Scenario 3: '2025 Do-Minimum - AM' (FG3: '2025 Do-Minimum - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**70.0%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**70.0%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	587	Inf	Inf	Inf	0.0%	587	587
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	603	Inf	Inf	Inf	0.0%	603	603
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	21	56	17	-	-	386	1930	1930	708	54.5%	386	386
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	21	56	17	-	-	326	1936	1936	710	45.9%	326	326
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	21	56	17	-	-	414	1936	1936	710	58.3%	414	414
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	619	1902	1902	1902	32.5%	619	619
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	519	1902	1902	1902	27.3%	519	519
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1138	Inf	Inf	Inf	0.0%	1138	1138
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	14	53	7	-	-	399	1905:1941	1905	476+485	39.1 : 43.9%	399	399
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	373	1965	1965	1965	19.0%	373	373
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	200	1965	1965	1965	10.2%	200	200
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	573	Inf	Inf	Inf	0.0%	573	573
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	14	55	9	-	-	237	1913:1965	1913	85+491	41.1 : 41.1%	237	237
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	375	1995	1995	1995	18.8%	375	375
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	292	1995	1995	1995	14.6%	292	292
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	667	Inf	Inf	Inf	0.0%	667	667
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	36	45	21	-	-	1068	1906:1924	1906	820+706	70.0 : 70.0%	1068	1068
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	371	1995	1995	1995	18.6%	371	371
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	393	1995	1995	1995	19.7%	393	393
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	764	Inf	Inf	Inf	0.0%	764	764
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	26	19	45	-	-	492	1899:1899	1899	731+731	33.7 : 33.7%	492	492
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	26	19	45	-	-	1010	1899:1899	1899	733+719	69.6 : 69.6%	1010	1010
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	27	23	50	-	-	558	2037	2037	951	58.7%	558	558
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	27	23	50	-	-	551	1982	1982	925	59.6%	551	551

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	27	23	50	-	-	290	1962	1962	916	31.7%	290	290
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	34	13	47	-	-	357	1941	1941	1132	31.5%	357	357
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	34	13	47	-	-	520	1915	1915	1117	46.5%	520	520
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	34	13	47	-	-	510	1894:1932	1894	997+271	40.2 : 40.2%	510	510
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	34	15	49	-	-	368	1990	1990	1161	31.7%	368	368
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	523	1968	1968	1148	45.6%	523	523
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	322	1932:1919	1932	1006+185	27.0 : 27.0%	322	322
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	12	27	39	-	-	242	1933	1933	419	57.8%	242	242
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	12	27	39	-	-	289	1931	1931	418	69.1%	289	289
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	12	27	39	-	-	252	1894:1884	1894	410+89	50.4 : 50.4%	252	252
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	22	51	13	-	-	341	1985	1985	761	44.8%	341	341
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	22	51	13	-	-	405	1978	1978	758	53.4%	405	405
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	22	51	13	-	-	341	1942:1932	1942	643+160	42.5 : 42.5%	341	341

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**26.6**	**13.2**	**0.0**	**39.7**	**-**	**6630.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**70.0%**	**51.9**	**-**
Leckwith Interchange	**0**	**0**	**0**	**26.6**	**13.2**	**0.0**	**39.7**	**-**	**6630.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**70.0%**	**51.9**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	1.6	0.6	-	2.2	20.6	302.4	0.8	3.9	5.0	0.6	5.6	-	0.00	54.5%	2.8	-
2/2	-	-	-	1.3	0.4	-	1.7	19.2	244.5	0.8	3.3	4.1	0.4	4.5	-	0.00	45.9%	2.2	-
2/3	-	-	-	1.8	0.7	-	2.5	21.4	331.2	0.8	4.1	5.5	0.7	6.2	-	0.00	58.3%	3.1	-
3/1	-	-	-	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	32.5%	0.2	-
3/2	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	27.3%	0.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	2.1	0.4	-	2.4	22.0	329.4	0.8	2.5	3.0	0.4	3.3	-	0.00	39.1 : 43.9%	3.0	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.0%	0.1	-
6/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.2%	0.1	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	1.2	0.3	-	1.6	23.9	194.6	0.8	2.4	2.8	0.3	3.2	-	0.00	41.1 : 41.1%	1.9	-
9/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	18.8%	0.1	-
9/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.6%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	1.8	1.2	-	3.0	10.0	553.1	0.5	3.3	5.1	1.2	6.3	-	0.00	70.0 : 70.0%	4.0	-
12/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	18.6%	0.1	-
12/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.7%	0.1	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.4	0.3	-	1.7	12.3	303.4	0.6	2.1	2.5	0.3	2.8	-	0.00	33.7 : 33.7%	2.2	-
14/3+14/4	-	-	-	3.5	1.1	-	4.6	16.4	749.2	0.7	4.4	6.4	1.1	7.5	-	0.00	69.6 : 69.6%	6.0	-
15/1	-	-	-	0.4	0.7	-	1.1	7.2	74.4	0.1	1.0	1.2	0.7	1.9	-	0.00	58.7%	1.2	-
15/2	-	-	-	2.1	0.7	-	2.9	18.7	482.3	0.9	4.7	7.9	0.7	8.6	-	0.00	59.6%	3.7	-
15/3	-	-	-	0.5	0.2	-	0.7	8.6	79.6	0.3	1.2	1.3	0.2	1.6	-	0.00	31.7%	0.8	-
16/1	-	-	-	0.3	0.2	-	0.5	5.2	173.7	0.5	1.5	2.9	0.2	3.1	-	0.00	31.5%	0.8	-
16/2	-	-	-	0.7	0.4	-	1.2	8.1	330.6	0.6	3.0	5.4	0.4	5.8	-	0.00	46.5%	1.8	-
16/3+16/4	-	-	-	0.6	0.3	-	1.0	7.0	522.8	1.0	2.3	7.8	0.3	8.2	-	0.00	40.2 : 40.2%	1.9	-
17/1	-	-	-	0.2	0.2	-	0.4	4.4	44.7	0.1	0.7	0.7	0.2	1.0	-	0.00	31.7%	0.5	-
17/2	-	-	-	0.6	0.4	-	1.0	7.0	171.4	0.3	2.3	2.9	0.4	3.3	-	0.00	45.6%	1.3	-
17/3+17/4	-	-	-	0.8	0.2	-	1.0	11.4	296.4	0.9	2.6	4.1	0.2	4.3	-	0.00	27.0 : 27.0%	1.6	-
18/1	-	-	-	0.3	0.7	-	1.0	14.8	179.1	0.7	1.3	3.0	0.7	3.7	-	0.00	57.8%	1.3	-
18/2	-	-	-	0.5	1.1	-	1.6	19.7	275.7	1.0	1.6	4.6	1.1	5.7	-	0.00	69.1%	2.1	-

18/3+18/4	-	-	-	1.4	0.5	-	1.9	27.5	316.2	1.3	3.4	6.1	0.5	6.6	-	0.00	50.4 : 50.4%	2.5	-
19/1	-	-	-	0.8	0.4	-	1.2	13.1	146.1	0.4	1.7	2.4	0.4	2.8	-	0.00	44.8%	1.5	-
19/2	-	-	-	1.6	0.6	-	2.2	19.4	353.7	0.9	4.3	5.9	0.6	6.5	-	0.00	53.4%	2.8	-
19/3+19/4	-	-	-	0.9	0.4	-	1.3	13.4	175.7	0.5	1.7	2.4	0.4	2.8	-	0.00	42.5 : 42.5%	1.6	-

C1	Stream: 1 PRC for Signalled Lanes (%):	97.6	Total Delay for Signalled Lanes (pcuHr):	4.06	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	93.3	Total Delay for Signalled Lanes (pcuHr):	5.11	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	29.4	Total Delay for Signalled Lanes (pcuHr):	10.98	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	51.1	Total Delay for Signalled Lanes (pcuHr):	11.07	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	28.6	Total Delay for Signalled Lanes (pcuHr):	7.49	Cycle Time (s):	60
	PRC Over All Lanes (%):	28.6	Total Delay Over All Lanes(pcuHr):	39.74		

Scenario 4: '2025 Do-Minimum - PM' (FG4: '2025 Do-Minimum - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**76.0%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**76.0%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	465	Inf	Inf	Inf	0.0%	465	465
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	683	Inf	Inf	Inf	0.0%	683	683
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	34	6	40	-	-	380	1932	1932	1127	33.7%	380	380
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	34	6	40	-	-	368	1936	1936	1129	32.6%	368	368
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	34	6	40	-	-	676	1936	1936	1129	59.9%	676	676
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	300	1902	1902	1902	15.8%	300	300
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	239	1902	1902	1902	12.6%	239	239
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	539	Inf	Inf	Inf	0.0%	539	539
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	20	55	15	-	-	911	1910:1941	1910	653+587	73.5 : 73.5%	911	911
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	300	1965	1965	1965	15.3%	300	300
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	39	1965	1965	1965	2.0%	39	39
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	339	Inf	Inf	Inf	0.0%	339	339
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	18	51	9	-	-	686	1887:1965	1887	598+305	76.0 : 76.0%	686	686
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	744	1995	1995	1995	37.3%	744	744
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	426	1995	1995	1995	21.4%	426	426
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1170	Inf	Inf	Inf	0.0%	1170	1170
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	18	53	11	-	-	616	1898:1924	1898	543+293	73.7 : 73.7%	616	616
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	652	1995	1995	1995	32.7%	652	652
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	713	1995	1995	1995	35.7%	713	713
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1365	Inf	Inf	Inf	0.0%	1365	1365
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	18	41	59	-	-	342	1899:1899	1899	601+601	28.4 : 28.4%	342	342
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	18	41	59	-	-	582	1899:1899	1899	416+601	57.2 : 57.2%	582	582
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	14	46	0	-	-	238	2037	2037	509	46.7%	238	238
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	14	46	0	-	-	183	1985	1985	496	36.9%	183	183

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	14	46	0	-	-	231	1962	1962	491	47.1%	231	231
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	28	21	49	-	-	262	1941	1941	938	27.9%	262	262
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	28	21	49	-	-	501	1902	1902	919	54.5%	501	501
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	28	21	49	-	-	774	1894:1932	1894	764+491	61.7 : 61.7%	774	774
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	30	15	45	-	-	627	1990	1990	1028	61.0%	627	627
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	748	1957	1957	1011	74.0%	748	748
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	734	1932:1919	1932	878+196	68.3 : 68.3%	734	734
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	30	17	47	-	-	520	1933	1933	999	52.1%	520	520
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	30	17	47	-	-	739	1926	1926	995	74.3%	739	739
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	30	17	47	-	-	366	1894:1884	1894	929+108	35.3 : 35.3%	366	366
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	30	5	35	-	-	294	1985	1985	1026	28.7%	294	294
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	30	5	35	-	-	512	1982	1982	1024	50.0%	512	512
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	30	5	35	-	-	70	1942:2015	1942	1003+0	7.0 : 0.0%	70	70

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**28.1**	**16.6**	**0.0**	**44.8**	**-**	**7023.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**76.0%**	**57.6**	**-**
Leckwith Interchange	**0**	**0**	**0**	**28.1**	**16.6**	**0.0**	**44.8**	**-**	**7023.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**76.0%**	**57.6**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	0.7	0.3	-	0.9	8.9	196.3	0.5	2.4	3.3	0.3	3.5	-	0.00	33.7%	1.3	-
2/2	-	-	-	0.7	0.2	-	0.9	8.8	184.0	0.5	2.4	3.1	0.2	3.3	-	0.00	32.6%	1.2	-
2/3	-	-	-	1.5	0.7	-	2.2	12.0	428.1	0.6	4.3	7.1	0.7	7.9	-	0.00	59.9%	3.0	-
3/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.8%	0.1	-
3/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	12.6%	0.1	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	4.2	1.4	-	5.6	22.1	775.2	0.9	4.9	6.9	1.4	8.3	-	0.00	73.5 : 73.5%	7.0	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.3%	0.1	-
6/2	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	-	0.0	0.0	0.0	-	0.00	2.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	3.4	1.6	-	4.9	25.8	578.9	0.8	4.9	6.7	1.6	8.2	-	0.00	76.0 : 76.0%	6.0	-
9/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	37.3%	0.3	-
9/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	21.4%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	2.9	1.4	-	4.3	25.1	505.6	0.8	4.3	5.7	1.4	7.1	-	0.00	73.7 : 73.7%	5.2	-
12/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	32.7%	0.2	-
12/2	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	35.7%	0.3	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.5	0.2	-	1.7	17.5	256.5	0.8	1.9	2.1	0.2	2.3	-	0.00	28.4 : 28.4%	2.1	-
14/3+14/4	-	-	-	2.7	0.7	-	3.4	20.8	469.1	0.8	3.7	4.8	0.7	5.4	-	0.00	57.2 : 57.2%	4.2	-
15/1	-	-	-	0.3	0.4	-	0.7	10.8	35.0	0.1	0.4	0.6	0.4	1.0	-	0.00	46.7%	0.8	-
15/2	-	-	-	0.6	0.3	-	0.9	18.4	108.2	0.6	1.4	1.7	0.3	2.0	-	0.00	36.9%	1.1	-
15/3	-	-	-	0.3	0.4	-	0.7	11.3	24.2	0.1	0.4	0.4	0.4	0.8	-	0.00	47.1%	0.8	-
16/1	-	-	-	0.3	0.2	-	0.5	7.4	153.8	0.6	1.4	2.6	0.2	2.8	-	0.00	27.9%	0.8	-
16/2	-	-	-	1.5	0.6	-	2.1	14.9	397.3	0.8	3.9	6.6	0.6	7.2	-	0.00	54.5%	2.8	-
16/3+16/4	-	-	-	1.2	0.8	-	2.0	9.1	743.7	1.0	2.6	8.4	0.8	9.2	-	0.00	61.7 : 61.7%	3.3	-
17/1	-	-	-	0.8	0.8	-	1.6	8.9	188.2	0.3	2.7	3.1	0.8	3.9	-	0.00	61.0%	1.9	-
17/2	-	-	-	1.4	1.4	-	2.8	13.3	343.9	0.5	4.6	5.7	1.4	7.1	-	0.00	74.0%	3.4	-
17/3+17/4	-	-	-	1.7	1.1	-	2.7	13.4	695.7	0.9	4.8	6.1	1.1	7.1	-	0.00	68.3 : 68.3%	4.0	-
18/1	-	-	-	0.3	0.5	-	0.8	5.9	42.4	0.1	0.7	0.7	0.5	1.2	-	0.00	52.1%	0.9	-
18/2	-	-	-	0.8	1.4	-	2.2	10.7	199.3	0.3	2.7	3.3	1.4	4.7	-	0.00	74.3%	2.6	-

18/3+18/4	-	-	-	1.1	0.3	-	1.4	13.4	408.1	1.1	3.1	6.1	0.3	6.4	-	0.00	35.3 : 35.3%	2.1	-
19/1	-	-	-	0.1	0.2	-	0.3	4.0	88.7	0.3	0.6	1.3	0.2	1.5	-	0.00	28.7%	0.5	-
19/2	-	-	-	0.4	0.5	-	0.9	6.1	178.5	0.3	1.5	2.9	0.5	3.4	-	0.00	50.0%	1.2	-
19/3+19/4	-	-	-	0.0	0.0	-	0.1	2.9	22.7	0.3	0.2	0.3	0.0	0.4	-	0.00	7.0 : 0.0%	0.1	-

C1	Stream: 1 PRC for Signalled Lanes (%):	18.5	Total Delay for Signalled Lanes (pcuHr):	11.97	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	22.5	Total Delay for Signalled Lanes (pcuHr):	10.15	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	57.3	Total Delay for Signalled Lanes (pcuHr):	6.27	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	50.4	Total Delay for Signalled Lanes (pcuHr):	6.46	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	21.2	Total Delay for Signalled Lanes (pcuHr):	8.71	Cycle Time (s):	60
	PRC Over All Lanes (%):	18.5	Total Delay Over All Lanes(pcuHr):	44.78		

Scenario 5: '2025 Do-Nothing - AM' (FG5: '2025 Do-Nothing - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**73.0%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**73.0%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	582	Inf	Inf	Inf	0.0%	582	582
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	635	Inf	Inf	Inf	0.0%	635	635
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	20	2	22	-	-	391	1930	1930	676	57.9%	391	391
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	20	2	22	-	-	355	1936	1936	678	52.4%	355	355
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	20	2	22	-	-	391	1936	1936	678	57.7%	391	391
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	620	1902	1902	1902	32.6%	620	620
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	531	1902	1902	1902	27.9%	531	531
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1151	Inf	Inf	Inf	0.0%	1151	1151
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	14	50	4	-	-	404	1906:1941	1906	476+485	40.3 : 43.7%	404	404
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	372	1965	1965	1965	18.9%	372	372
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	215	1965	1965	1965	10.9%	215	215
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	587	Inf	Inf	Inf	0.0%	587	587
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	14	55	9	-	-	243	1863:1965	1863	54+491	44.6 : 44.6%	243	243
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	357	1995	1995	1995	17.9%	357	357
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	340	1995	1995	1995	17.0%	340	340
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	697	Inf	Inf	Inf	0.0%	697	697
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	37	38	15	-	-	1143	1906:1924	1906	831+734	73.0 : 73.0%	1143	1143
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	383	1995	1995	1995	19.2%	383	383
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	402	1995	1995	1995	20.2%	402	402
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	785	Inf	Inf	Inf	0.0%	785	785
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	24	15	39	-	-	492	1899:1899	1899	699+699	35.2 : 35.2%	492	492
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	24	15	39	-	-	1018	1899:1899	1899	698+700	72.8 : 72.8%	1018	1018
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	28	28	56	-	-	562	2037	2037	985	57.1%	562	562
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	28	28	56	-	-	552	1982	1982	958	57.6%	552	552

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	28	28	56	-	-	320	1962	1962	948	33.7%	320	320
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	34	10	44	-	-	354	1941	1941	1132	31.3%	354	354
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	34	10	44	-	-	511	1916	1916	1118	45.7%	511	511
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	34	10	44	-	-	555	1894:1932	1894	1011+242	44.3 : 44.3%	555	555
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	34	15	49	-	-	347	1990	1990	1161	29.9%	347	347
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	571	1969	1969	1149	49.7%	571	571
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	319	1932:1919	1932	1005+187	26.8 : 26.8%	319	319
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	11	21	32	-	-	245	1933	1933	387	63.4%	245	245
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	11	21	32	-	-	269	1933	1933	387	69.6%	269	269
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	11	21	32	-	-	269	1894:1884	1894	379+51	62.6 : 62.6%	269	269
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	24	45	9	-	-	336	1985	1985	827	40.6%	336	336
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	24	45	9	-	-	443	1978	1978	824	53.8%	443	443
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	24	45	9	-	-	362	1942:1932	1942	677+198	41.3 : 41.3%	362	362

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**26.6**	**14.3**	**0.0**	**40.9**	**-**	**6560.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**73.0%**	**52.9**	**-**
Leckwith Interchange	**0**	**0**	**0**	**26.6**	**14.3**	**0.0**	**40.9**	**-**	**6560.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**73.0%**	**52.9**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	1.7	0.7	-	2.4	22.2	312.8	0.8	4.0	5.2	0.7	5.9	-	0.00	57.9%	3.0	-
2/2	-	-	-	1.5	0.5	-	2.1	21.1	278.1	0.8	3.6	4.6	0.5	5.2	-	0.00	52.4%	2.6	-
2/3	-	-	-	1.7	0.7	-	2.4	22.1	312.8	0.8	4.0	5.2	0.7	5.9	-	0.00	57.7%	3.0	-
3/1	-	-	-	0.0	0.2	-	0.2	1.4	160.5	0.3	-	2.7	0.2	2.9	-	0.00	32.6%	0.5	-
3/2	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	27.9%	0.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	2.1	0.4	-	2.5	22.1	336.7	0.8	2.5	2.9	0.4	3.3	-	0.00	40.3 : 43.7%	3.1	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	18.9%	0.1	-
6/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.9%	0.1	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	1.3	0.4	-	1.7	24.8	200.5	0.8	2.6	3.0	0.4	3.4	-	0.00	44.6 : 44.6%	2.0	-
9/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	17.9%	0.1	-
9/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	17.0%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	1.8	1.3	-	3.2	10.0	591.7	0.5	3.4	5.4	1.3	6.7	-	0.00	73.0 : 73.0%	4.3	-
12/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.2%	0.1	-
12/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	20.2%	0.1	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.6	0.3	-	1.9	13.7	328.0	0.7	2.3	2.7	0.3	3.0	-	0.00	35.2 : 35.2%	2.5	-
14/3+14/4	-	-	-	3.9	1.3	-	5.3	18.7	797.4	0.8	4.7	6.7	1.3	8.0	-	0.00	72.8 : 72.8%	6.7	-
15/1	-	-	-	1.0	0.7	-	1.6	10.4	498.4	0.9	2.7	8.2	0.7	8.8	-	0.00	57.1%	2.5	-
15/2	-	-	-	1.1	0.7	-	1.8	11.7	340.4	0.6	3.0	5.6	0.7	6.3	-	0.00	57.6%	2.4	-
15/3	-	-	-	0.4	0.3	-	0.7	7.7	209.7	0.7	1.6	3.5	0.3	3.7	-	0.00	33.7%	1.1	-
16/1	-	-	-	0.2	0.2	-	0.5	4.8	107.6	0.3	1.3	1.8	0.2	2.0	-	0.00	31.3%	0.7	-
16/2	-	-	-	0.3	0.4	-	0.7	4.9	161.1	0.3	1.1	2.7	0.4	3.1	-	0.00	45.7%	1.0	-
16/3+16/4	-	-	-	0.2	0.4	-	0.6	3.8	129.4	0.2	0.6	9.4	0.4	9.8	-	0.00	44.3 : 44.3%	0.8	-
17/1	-	-	-	0.2	0.2	-	0.4	3.8	38.4	0.1	0.6	0.6	0.2	0.9	-	0.00	29.9%	0.4	-
17/2	-	-	-	0.8	0.5	-	1.3	8.1	301.1	0.5	2.4	5.0	0.5	5.5	-	0.00	49.7%	1.8	-
17/3+17/4	-	-	-	1.0	0.2	-	1.2	13.2	244.3	0.8	2.7	3.2	0.2	3.4	-	0.00	26.8 : 26.8%	1.6	-
18/1	-	-	-	0.8	0.9	-	1.6	24.0	102.0	0.4	1.1	1.7	0.9	2.6	-	0.00	63.4%	1.8	-
18/2	-	-	-	0.6	1.1	-	1.7	22.6	73.9	0.3	0.8	1.2	1.1	2.4	-	0.00	69.6%	1.8	-

18/3+18/4	-	-	-	1.1	0.8	-	1.9	25.9	333.2	1.2	3.1	6.1	0.8	6.9	-	0.00	62.6 : 62.6%	2.5	-
19/1	-	-	-	0.7	0.3	-	1.0	10.7	135.3	0.4	1.3	2.3	0.3	2.6	-	0.00	40.6%	1.2	-
19/2	-	-	-	1.8	0.6	-	2.3	19.0	390.3	0.9	4.7	6.5	0.6	7.1	-	0.00	53.8%	3.0	-
19/3+19/4	-	-	-	0.8	0.4	-	1.1	11.4	176.8	0.5	1.5	2.4	0.4	2.7	-	0.00	41.3 : 41.3%	1.5	-

C1	Stream: 1 PRC for Signalled Lanes (%):	81.0	Total Delay for Signalled Lanes (pcuHr):	4.50	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	96.8	Total Delay for Signalled Lanes (pcuHr):	4.23	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	23.6	Total Delay for Signalled Lanes (pcuHr):	11.63	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	55.5	Total Delay for Signalled Lanes (pcuHr):	11.01	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	23.3	Total Delay for Signalled Lanes (pcuHr):	8.43	Cycle Time (s):	60
	PRC Over All Lanes (%):	23.3	Total Delay Over All Lanes(pcuHr):	40.87		

Scenario 6: '2025 Do-Nothing - PM' (FG6: '2025 Do-Nothing - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**77.4%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**77.4%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	400	Inf	Inf	Inf	0.0%	400	400
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	758	Inf	Inf	Inf	0.0%	758	758
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	32	11	43	-	-	380	1932	1932	1063	35.8%	380	380
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	32	11	43	-	-	393	1936	1936	1065	36.9%	393	393
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	32	11	43	-	-	677	1936	1936	1065	63.6%	677	677
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	320	1902	1902	1902	16.8%	320	320
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	224	1902	1902	1902	11.8%	224	224
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	544	Inf	Inf	Inf	0.0%	544	544
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	20	54	14	-	-	924	1910:1941	1910	653+622	72.5 : 72.5%	924	924
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	303	1965	1965	1965	15.4%	303	303
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	42	1965	1965	1965	2.1%	42	42
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	345	Inf	Inf	Inf	0.0%	345	345
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	18	51	9	-	-	700	1885:1965	1885	597+308	77.4 : 77.4%	700	700
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	795	1995	1995	1995	39.8%	795	795
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	448	1995	1995	1995	22.5%	448	448
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1243	Inf	Inf	Inf	0.0%	1243	1243
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	16	55	11	-	-	645	1894:1924	1894	463+371	77.4 : 77.4%	645	645
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	676	1995	1995	1995	33.9%	676	676
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	697	1995	1995	1995	34.9%	697	697
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1373	Inf	Inf	Inf	0.0%	1373	1373
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	17	43	0	-	-	342	1899:1899	1899	570+570	30.0 : 30.0%	342	342
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	17	43	0	-	-	602	1899:1899	1899	454+570	58.8 : 58.8%	602	602
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	16	49	5	-	-	267	2037	2037	577	46.3%	267	267
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	16	49	5	-	-	165	1984	1984	562	29.4%	165	165

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	16	49	5	-	-	251	1962	1962	556	45.2%	251	251
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	28	20	48	-	-	268	1941	1941	938	28.6%	268	268
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	28	20	48	-	-	533	1902	1902	919	58.0%	533	533
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	28	20	48	-	-	788	1894:1932	1894	784+420	65.4 : 65.4%	788	788
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	30	15	45	-	-	674	1990	1990	1028	65.6%	674	674
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	768	1957	1957	1011	76.0%	768	768
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	726	1932:1919	1932	868+213	67.2 : 67.2%	726	726
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	32	17	49	-	-	528	1933	1933	1063	49.7%	528	528
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	32	17	49	-	-	716	1927	1927	1060	67.6%	716	716
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	32	17	49	-	-	381	1894:1884	1894	988+109	34.7 : 34.7%	381	381
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	31	6	37	-	-	229	1985	1985	1059	21.6%	229	229
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	31	6	37	-	-	587	1982	1982	1057	55.5%	587	587
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	31	6	37	-	-	81	1942:2015	1942	1036+0	7.8 : 0.0%	81	81

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**28.9**	**17.3**	**0.0**	**46.2**	**-**	**6995.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**77.4%**	**59.0**	**-**
Leckwith Interchange	**0**	**0**	**0**	**28.9**	**17.3**	**0.0**	**46.2**	**-**	**6995.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**77.4%**	**59.0**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	0.8	0.3	-	1.1	10.2	209.0	0.6	2.6	3.5	0.3	3.8	-	0.00	35.8%	1.5	-
2/2	-	-	-	0.8	0.3	-	1.1	10.3	216.2	0.6	2.7	3.6	0.3	3.9	-	0.00	36.9%	1.5	-
2/3	-	-	-	1.8	0.9	-	2.6	14.0	462.6	0.7	4.7	7.7	0.9	8.6	-	0.00	63.6%	3.5	-
3/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.8%	0.1	-
3/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	11.8%	0.1	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	4.3	1.3	-	5.6	21.8	777.9	0.8	4.9	6.7	1.3	8.0	-	0.00	72.5 : 72.5%	7.0	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.4%	0.1	-
6/2	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	-	0.0	0.0	0.0	-	0.00	2.1%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	3.4	1.7	-	5.1	26.3	598.3	0.9	5.0	6.9	1.7	8.6	-	0.00	77.4 : 77.4%	6.2	-
9/1	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.0	-	0.0	0.3	0.3	-	0.00	39.8%	0.3	-
9/2	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.0	-	0.0	0.1	0.1	-	0.00	22.5%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	3.3	1.7	-	5.0	28.0	555.4	0.9	4.1	5.3	1.7	6.9	-	0.00	77.4 : 77.4%	6.0	-
12/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	33.9%	0.3	-
12/2	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	34.9%	0.3	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.5	0.2	-	1.8	18.4	262.2	0.8	1.9	2.2	0.2	2.4	-	0.00	30.0 : 30.0%	2.2	-
14/3+14/4	-	-	-	2.9	0.7	-	3.6	21.8	492.8	0.8	3.7	4.7	0.7	5.4	-	0.00	58.8 : 58.8%	4.5	-
15/1	-	-	-	0.1	0.4	-	0.5	7.1	38.4	0.1	0.1	0.6	0.4	1.1	-	0.00	46.3%	0.6	-
15/2	-	-	-	0.7	0.2	-	0.9	19.7	110.9	0.7	1.4	1.7	0.2	1.9	-	0.00	29.4%	1.1	-
15/3	-	-	-	0.1	0.4	-	0.5	7.2	16.5	0.1	0.1	0.3	0.4	0.7	-	0.00	45.2%	0.5	-
16/1	-	-	-	0.3	0.2	-	0.5	7.2	76.5	0.3	0.8	1.3	0.2	1.5	-	0.00	28.6%	0.7	-
16/2	-	-	-	1.3	0.7	-	2.0	13.4	421.3	0.8	2.9	7.0	0.7	7.7	-	0.00	58.0%	2.8	-
16/3+16/4	-	-	-	1.1	0.9	-	2.1	9.5	596.3	0.8	2.4	12.1	0.9	13.0	-	0.00	65.4 : 65.4%	3.2	-
17/1	-	-	-	0.9	0.9	-	1.8	9.7	205.7	0.3	3.0	3.4	0.9	4.4	-	0.00	65.6%	2.2	-
17/2	-	-	-	1.4	1.6	-	2.9	13.7	322.4	0.4	4.5	5.4	1.6	6.9	-	0.00	76.0%	3.5	-
17/3+17/4	-	-	-	1.8	1.0	-	2.8	13.8	721.7	1.0	5.0	6.7	1.0	7.7	-	0.00	67.2 : 67.2%	4.1	-
18/1	-	-	-	0.2	0.5	-	0.7	4.9	33.7	0.1	0.6	0.6	0.5	1.1	-	0.00	49.7%	0.8	-
18/2	-	-	-	0.7	1.0	-	1.7	8.6	168.5	0.2	2.5	2.8	1.0	3.8	-	0.00	67.6%	2.0	-

18/3+18/4	-	-	-	1.1	0.3	-	1.4	13.2	422.8	1.1	3.2	6.1	0.3	6.4	-	0.00	34.7 : 34.7%	2.2	-
19/1	-	-	-	0.0	0.1	-	0.2	2.7	43.6	0.2	0.3	0.6	0.1	0.7	-	0.00	21.6%	0.3	-
19/2	-	-	-	0.3	0.6	-	0.9	5.4	220.1	0.4	0.9	3.5	0.6	4.2	-	0.00	55.5%	1.3	-
19/3+19/4	-	-	-	0.0	0.0	-	0.1	2.5	22.4	0.3	0.2	0.3	0.0	0.3	-	0.00	7.8 : 0.0%	0.1	-

C1	Stream: 1 PRC for Signalled Lanes (%):	16.3	Total Delay for Signalled Lanes (pcuHr):	12.64	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	24.2	Total Delay for Signalled Lanes (pcuHr):	10.19	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	53.1	Total Delay for Signalled Lanes (pcuHr):	6.50	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	41.6	Total Delay for Signalled Lanes (pcuHr):	6.76	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	16.3	Total Delay for Signalled Lanes (pcuHr):	8.83	Cycle Time (s):	60
	PRC Over All Lanes (%):	16.3	Total Delay Over All Lanes(pcuHr):	46.20		

Scenario 7: '2025 Do-Something - AM' (FG7: '2025 Do-Something - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**73.3%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**73.3%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	597	Inf	Inf	Inf	0.0%	597	597
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	617	Inf	Inf	Inf	0.0%	617	617
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	21	57	18	-	-	391	1930	1930	708	55.3%	391	391
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	21	57	18	-	-	331	1936	1936	710	46.6%	331	331
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	21	57	18	-	-	414	1936	1936	710	58.3%	414	414
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	621	1902	1902	1902	32.6%	621	621
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	529	1902	1902	1902	27.8%	529	529
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1150	Inf	Inf	Inf	0.0%	1150	1150
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	14	55	9	-	-	404	1905:1941	1905	476+485	39.7 : 44.3%	404	404
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	384	1965	1965	1965	19.5%	384	384
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	202	1965	1965	1965	10.3%	202	202
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	586	Inf	Inf	Inf	0.0%	586	586
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	14	55	9	-	-	242	1905:1965	1905	97+491	41.1 : 41.1%	242	242
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	387	1995	1995	1995	19.4%	387	387
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	307	1995	1995	1995	15.4%	307	307
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	694	Inf	Inf	Inf	0.0%	694	694
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	37	46	23	-	-	1136	1906:1924	1906	831+735	72.6 : 72.6%	1136	1136
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	387	1995	1995	1995	19.4%	387	387
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	396	1995	1995	1995	19.8%	396	396
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	783	Inf	Inf	Inf	0.0%	783	783
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	26	19	45	-	-	492	1899:1899	1899	731+731	33.7 : 33.7%	492	492
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	26	19	45	-	-	1017	1899:1899	1899	734+705	70.7 : 70.7%	1017	1017
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	27	24	51	-	-	563	2037	2037	951	59.2%	563	563
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	27	24	51	-	-	564	1982	1982	925	61.0%	564	564

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	27	24	51	-	-	304	1962	1962	916	33.2%	304	304
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	34	15	49	-	-	368	1941	1941	1132	32.5%	368	368
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	34	15	49	-	-	526	1915	1915	1117	47.1%	526	526
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	34	15	49	-	-	523	1894:1932	1894	1011+242	41.7 : 41.7%	523	523
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	34	15	49	-	-	377	1990	1990	1161	32.5%	377	377
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	542	1968	1968	1148	47.2%	542	542
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	316	1932:1919	1932	1004+189	26.5 : 26.5%	316	316
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	11	29	40	-	-	248	1933	1933	387	64.1%	248	248
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	11	29	40	-	-	283	1931	1931	386	73.3%	283	283
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	11	29	40	-	-	252	1894:1884	1894	379+89	53.9 : 53.9%	252	252
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	22	51	13	-	-	351	1985	1985	761	46.1%	351	351
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	22	51	13	-	-	415	1979	1979	759	54.7%	415	415
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	22	51	13	-	-	370	1942:1932	1942	630+179	45.7 : 45.7%	370	370

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**27.5**	**14.2**	**0.0**	**41.7**	**-**	**6710.5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**73.3%**	**54.0**	**-**
Leckwith Interchange	**0**	**0**	**0**	**27.5**	**14.2**	**0.0**	**41.7**	**-**	**6710.5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**73.3%**	**54.0**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	1.6	0.6	-	2.3	20.8	306.3	0.8	3.9	5.1	0.6	5.7	-	0.00	55.3%	2.8	-
2/2	-	-	-	1.3	0.4	-	1.8	19.3	248.2	0.8	3.3	4.1	0.4	4.6	-	0.00	46.6%	2.2	-
2/3	-	-	-	1.8	0.7	-	2.5	21.4	331.2	0.8	4.1	5.5	0.7	6.2	-	0.00	58.3%	3.1	-
3/1	-	-	-	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	32.6%	0.2	-
3/2	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	27.8%	0.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	2.1	0.4	-	2.5	22.1	333.5	0.8	2.6	3.0	0.4	3.3	-	0.00	39.7 : 44.3%	3.1	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.5%	0.1	-
6/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.3%	0.1	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	1.2	0.3	-	1.6	23.7	198.3	0.8	2.4	2.8	0.3	3.2	-	0.00	41.1 : 41.1%	2.0	-
9/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.4%	0.1	-
9/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.4%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	1.8	1.3	-	3.1	9.9	588.1	0.5	3.4	5.4	1.3	6.7	-	0.00	72.6 : 72.6%	4.2	-
12/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.4%	0.1	-
12/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.8%	0.1	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.4	0.3	-	1.7	12.3	303.4	0.6	2.1	2.5	0.3	2.8	-	0.00	33.7 : 33.7%	2.2	-
14/3+14/4	-	-	-	3.5	1.2	-	4.7	16.6	754.5	0.7	4.5	6.5	1.2	7.7	-	0.00	70.7 : 70.7%	6.1	-
15/1	-	-	-	0.4	0.7	-	1.1	6.9	107.5	0.2	0.9	1.8	0.7	2.5	-	0.00	59.2%	1.3	-
15/2	-	-	-	2.3	0.8	-	3.1	20.0	507.2	0.9	4.9	8.3	0.8	9.1	-	0.00	61.0%	4.1	-
15/3	-	-	-	0.5	0.2	-	0.8	9.4	110.1	0.4	1.4	1.8	0.2	2.1	-	0.00	33.2%	1.0	-
16/1	-	-	-	0.3	0.2	-	0.6	5.7	184.0	0.5	1.8	3.1	0.2	3.3	-	0.00	32.5%	0.9	-
16/2	-	-	-	0.8	0.4	-	1.2	8.3	332.8	0.6	3.3	5.4	0.4	5.9	-	0.00	47.1%	1.8	-
16/3+16/4	-	-	-	0.8	0.4	-	1.1	7.7	535.0	1.0	7.8	7.8	0.4	8.2	-	0.00	41.7 : 41.7%	2.1	-
17/1	-	-	-	0.2	0.2	-	0.5	4.6	53.4	0.1	0.9	0.9	0.2	1.1	-	0.00	32.5%	0.6	-
17/2	-	-	-	0.6	0.4	-	1.0	6.8	146.4	0.3	2.3	2.4	0.4	2.9	-	0.00	47.2%	1.3	-
17/3+17/4	-	-	-	0.7	0.2	-	0.9	9.9	214.4	0.7	2.6	2.7	0.2	2.9	-	0.00	26.5 : 26.5%	1.3	-
18/1	-	-	-	0.4	0.9	-	1.3	19.1	197.1	0.8	1.8	3.3	0.9	4.2	-	0.00	64.1%	1.7	-
18/2	-	-	-	0.6	1.3	-	2.0	24.8	274.8	1.0	2.5	4.6	1.3	5.9	-	0.00	73.3%	2.5	-

18/3+18/4	-	-	-	1.6	0.6	-	2.1	30.5	316.2	1.3	3.4	6.1	0.6	6.7	-	0.00	53.9 : 53.9%	2.7	-
19/1	-	-	-	0.9	0.4	-	1.3	13.7	145.3	0.4	2.0	2.4	0.4	2.8	-	0.00	46.1%	1.6	-
19/2	-	-	-	1.6	0.6	-	2.2	18.7	354.4	0.9	4.4	5.9	0.6	6.5	-	0.00	54.7%	2.8	-
19/3+19/4	-	-	-	1.0	0.4	-	1.4	13.9	168.5	0.5	2.0	2.4	0.4	2.8	-	0.00	45.7 : 45.7%	1.7	-

C1	Stream: 1 PRC for Signalled Lanes (%):	90.6	Total Delay for Signalled Lanes (pcuHr):	3.96	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	91.1	Total Delay for Signalled Lanes (pcuHr):	5.38	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	27.3	Total Delay for Signalled Lanes (pcuHr):	11.30	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	47.6	Total Delay for Signalled Lanes (pcuHr):	11.48	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	22.8	Total Delay for Signalled Lanes (pcuHr):	8.53	Cycle Time (s):	60
	PRC Over All Lanes (%):	22.8	Total Delay Over All Lanes(pcuHr):	41.72		

Scenario 8: '2025 Do-Something - PM' (FG8: '2025 Do-Something - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**77.9%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**77.9%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	463	Inf	Inf	Inf	0.0%	463	463
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	694	Inf	Inf	Inf	0.0%	694	694
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	34	10	44	-	-	380	1932	1932	1127	33.7%	380	380
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	34	10	44	-	-	384	1936	1936	1129	34.0%	384	384
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	34	10	44	-	-	684	1936	1936	1129	60.6%	684	684
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	306	1902	1902	1902	16.1%	306	306
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	238	1902	1902	1902	12.5%	238	238
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	544	Inf	Inf	Inf	0.0%	544	544
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	20	53	13	-	-	923	1910:1941	1910	653+600	73.6 : 73.6%	923	923
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	303	1965	1965	1965	15.4%	303	303
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	41	1965	1965	1965	2.1%	41	41
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	344	Inf	Inf	Inf	0.0%	344	344
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	18	51	9	-	-	699	1886:1965	1886	597+301	77.9 : 77.9%	699	699
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	767	1995	1995	1995	38.4%	767	767
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	470	1995	1995	1995	23.6%	470	470
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1237	Inf	Inf	Inf	0.0%	1237	1237
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	18	53	11	-	-	643	1898:1924	1898	540+303	76.3 : 76.3%	643	643
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	650	1995	1995	1995	32.6%	650	650
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	723	1995	1995	1995	36.2%	723	723
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1373	Inf	Inf	Inf	0.0%	1373	1373
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	24	46	10	-	-	342	1899:1899	1899	699+699	24.5 : 24.5%	342	342
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	24	46	10	-	-	600	1899:1899	1899	498+717	49.4 : 49.4%	600	600
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	14	50	4	-	-	246	2037	2037	509	48.3%	246	246
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	14	50	4	-	-	185	1985	1985	496	37.3%	185	185

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	14	50	4	-	-	249	1962	1962	491	50.8%	249	249
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	28	19	47	-	-	267	1941	1941	938	28.5%	267	267
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	28	19	47	-	-	515	1902	1902	919	56.0%	515	515
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	28	19	47	-	-	802	1894:1932	1894	770+468	64.8 : 64.8%	802	802
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	30	15	45	-	-	653	1990	1990	1028	63.5%	653	653
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	765	1958	1958	1012	75.6%	765	765
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	745	1932:1919	1932	876+199	69.3 : 69.3%	745	745
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	30	17	47	-	-	509	1933	1933	999	51.0%	509	509
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	30	17	47	-	-	744	1927	1927	996	74.7%	744	744
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	30	17	47	-	-	372	1894:1884	1894	930+106	35.9 : 35.9%	372	372
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	24	16	40	-	-	292	1985	1985	827	35.3%	292	292
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	24	16	40	-	-	523	1982	1982	826	63.3%	523	523
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	24	16	40	-	-	80	1942:2015	1942	809+0	9.9 : 0.0%	80	80

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**29.3**	**17.9**	**0.0**	**47.2**	**-**	**7106.8**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**77.9%**	**60.2**	**-**
Leckwith Interchange	**0**	**0**	**0**	**29.3**	**17.9**	**0.0**	**47.2**	**-**	**7106.8**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**77.9%**	**60.2**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	0.7	0.3	-	0.9	8.9	196.3	0.5	2.4	3.3	0.3	3.5	-	0.00	33.7%	1.3	-
2/2	-	-	-	0.7	0.3	-	1.0	8.9	198.4	0.5	2.5	3.3	0.3	3.6	-	0.00	34.0%	1.3	-
2/3	-	-	-	1.5	0.8	-	2.3	12.1	433.2	0.6	4.4	7.2	0.8	8.0	-	0.00	60.6%	3.1	-
3/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.1%	0.1	-
3/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	12.5%	0.1	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	4.3	1.4	-	5.7	22.1	785.2	0.9	4.9	6.9	1.4	8.3	-	0.00	73.6 : 73.6%	7.1	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.4%	0.1	-
6/2	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	-	0.0	0.0	0.0	-	0.00	2.1%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	3.4	1.7	-	5.2	26.6	597.9	0.9	5.0	7.0	1.7	8.7	-	0.00	77.9 : 77.9%	6.3	-
9/1	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.0	-	0.0	0.3	0.3	-	0.00	38.4%	0.3	-
9/2	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.0	-	0.0	0.2	0.2	-	0.00	23.6%	0.2	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	3.1	1.6	-	4.7	26.0	534.2	0.8	4.5	6.0	1.6	7.5	-	0.00	76.3 : 76.3%	5.6	-
12/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	32.6%	0.2	-
12/2	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	36.2%	0.3	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.1	0.2	-	1.2	12.9	216.6	0.6	1.6	1.8	0.2	2.0	-	0.00	24.5 : 24.5%	1.6	-
14/3+14/4	-	-	-	2.0	0.5	-	2.5	15.1	417.7	0.7	3.2	4.2	0.5	4.7	-	0.00	49.4 : 49.4%	3.3	-
15/1	-	-	-	0.6	0.5	-	1.0	15.3	53.1	0.2	0.9	0.9	0.5	1.4	-	0.00	48.3%	1.1	-
15/2	-	-	-	0.8	0.3	-	1.1	22.2	119.1	0.6	1.7	1.9	0.3	2.2	-	0.00	37.3%	1.4	-
15/3	-	-	-	0.6	0.5	-	1.1	16.1	55.0	0.2	0.9	0.9	0.5	1.4	-	0.00	50.8%	1.2	-
16/1	-	-	-	0.4	0.2	-	0.6	7.7	98.0	0.4	0.9	1.6	0.2	1.8	-	0.00	28.5%	0.7	-
16/2	-	-	-	1.3	0.6	-	1.9	13.3	398.8	0.8	3.0	6.6	0.6	7.3	-	0.00	56.0%	2.6	-
16/3+16/4	-	-	-	1.3	0.9	-	2.2	10.0	637.4	0.8	2.7	11.6	0.9	12.5	-	0.00	64.8 : 64.8%	3.4	-
17/1	-	-	-	0.8	0.9	-	1.7	9.4	193.7	0.3	2.9	3.2	0.9	4.1	-	0.00	63.5%	2.1	-
17/2	-	-	-	1.4	1.5	-	2.9	13.7	333.8	0.4	4.6	5.6	1.5	7.1	-	0.00	75.6%	3.5	-
17/3+17/4	-	-	-	1.9	1.1	-	3.0	14.5	778.4	1.0	5.0	7.2	1.1	8.3	-	0.00	69.3 : 69.3%	4.4	-
18/1	-	-	-	0.3	0.5	-	0.8	5.7	41.1	0.1	0.7	0.7	0.5	1.2	-	0.00	51.0%	0.9	-
18/2	-	-	-	0.8	1.5	-	2.3	11.0	225.6	0.3	2.8	3.8	1.5	5.2	-	0.00	74.7%	2.7	-

18/3+18/4	-	-	-	1.1	0.3	-	1.4	13.4	415.0	1.1	3.1	6.1	0.3	6.4	-	0.00	35.9 : 35.9%	2.1	-
19/1	-	-	-	0.4	0.3	-	0.7	8.8	146.9	0.5	2.2	2.4	0.3	2.7	-	0.00	35.3%	1.0	-
19/2	-	-	-	0.7	0.9	-	1.6	10.8	190.5	0.4	2.9	3.2	0.9	4.0	-	0.00	63.3%	1.9	-
19/3+19/4	-	-	-	0.1	0.1	-	0.2	8.5	41.0	0.5	0.6	0.7	0.1	0.7	-	0.00	9.9 : 0.0%	0.3	-

C1	Stream: 1 PRC for Signalled Lanes (%):	15.6	Total Delay for Signalled Lanes (pcuHr):	12.76	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	22.2	Total Delay for Signalled Lanes (pcuHr):	10.36	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	42.1	Total Delay for Signalled Lanes (pcuHr):	6.22	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	48.6	Total Delay for Signalled Lanes (pcuHr):	7.49	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	18.0	Total Delay for Signalled Lanes (pcuHr):	9.12	Cycle Time (s):	60
	PRC Over All Lanes (%):	15.6	Total Delay Over All Lanes(pcuHr):	47.21		

Scenario 9: '2030 Do-Minimum - AM' (FG9: '2030 Do-Minimum - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**72.8%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**72.8%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	612	Inf	Inf	Inf	0.0%	612	612
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	627	Inf	Inf	Inf	0.0%	627	627
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	20	1	21	-	-	402	1930	1930	676	59.5%	402	402
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	20	1	21	-	-	347	1936	1936	678	51.2%	347	347
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	20	1	21	-	-	423	1936	1936	678	62.4%	423	423
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	644	1902	1902	1902	33.9%	644	644
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	542	1902	1902	1902	28.5%	542	542
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1186	Inf	Inf	Inf	0.0%	1186	1186
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	14	49	3	-	-	416	1905:1941	1905	476+485	41.2 : 45.3%	416	416
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	396	1965	1965	1965	20.2%	396	396
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	201	1965	1965	1965	10.2%	201	201
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	597	Inf	Inf	Inf	0.0%	597	597
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	14	55	9	-	-	247	1916:1965	1916	95+491	42.1 : 42.1%	247	247
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	389	1995	1995	1995	19.5%	389	389
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	305	1995	1995	1995	15.3%	305	305
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	694	Inf	Inf	Inf	0.0%	694	694
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	36	38	14	-	-	1113	1906:1924	1906	818+710	72.8 : 72.8%	1113	1113
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	390	1995	1995	1995	19.5%	390	390
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	406	1995	1995	1995	20.4%	406	406
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	796	Inf	Inf	Inf	0.0%	796	796
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	27	12	39	-	-	512	1899:1899	1899	747+747	34.3 : 34.3%	512	512
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	27	12	39	-	-	1052	1899:1899	1899	750+725	71.3 : 71.3%	1052	1052
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	28	27	55	-	-	583	2037	2037	985	59.2%	583	583
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	28	27	55	-	-	578	1982	1982	958	60.3%	578	578

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	28	27	55	-	-	296	1962	1962	948	31.2%	296	296
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	34	9	43	-	-	377	1941	1941	1132	33.3%	377	377
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	34	9	43	-	-	534	1914	1914	1117	47.8%	534	534
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	34	9	43	-	-	532	1894:1932	1894	1001+264	42.1 : 42.1%	532	532
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	34	15	49	-	-	381	1990	1990	1161	32.8%	381	381
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	550	1968	1968	1148	47.9%	550	550
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	331	1932:1919	1932	1005+187	27.8 : 27.8%	331	331
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	12	20	32	-	-	256	1933	1933	419	61.1%	256	256
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	12	20	32	-	-	300	1931	1931	418	71.7%	300	300
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	12	20	32	-	-	259	1894:1884	1894	410+98	50.9 : 50.9%	259	259
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	21	45	6	-	-	356	1985	1985	728	48.9%	356	356
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	21	45	6	-	-	419	1978	1978	725	57.8%	419	419
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	21	45	6	-	-	357	1942:1932	1942	611+163	46.1 : 46.1%	357	357

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**27.4**	**14.5**	**0.0**	**41.9**	**-**	**6849.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**72.8%**	**54.5**	**-**
Leckwith Interchange	**0**	**0**	**0**	**27.4**	**14.5**	**0.0**	**41.9**	**-**	**6849.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**72.8%**	**54.5**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	1.8	0.7	-	2.5	22.6	328.3	0.8	4.1	5.5	0.7	6.2	-	0.00	59.5%	3.1	-
2/2	-	-	-	1.5	0.5	-	2.0	20.9	271.8	0.8	3.6	4.5	0.5	5.1	-	0.00	51.2%	2.5	-
2/3	-	-	-	1.9	0.8	-	2.7	23.2	345.4	0.8	4.3	5.8	0.8	6.6	-	0.00	62.4%	3.4	-
3/1	-	-	-	0.0	0.3	-	0.3	1.4	192.9	0.3	-	3.2	0.3	3.5	-	0.00	33.9%	0.6	-
3/2	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	28.5%	0.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	2.2	0.4	-	2.6	22.2	346.7	0.8	2.6	3.1	0.4	3.4	-	0.00	41.2 : 45.3%	3.2	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	20.2%	0.1	-
6/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.2%	0.1	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	1.3	0.4	-	1.6	23.9	202.5	0.8	2.5	2.9	0.4	3.2	-	0.00	42.1 : 42.1%	2.0	-
9/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.5%	0.1	-
9/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.3%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	1.9	1.3	-	3.3	10.5	594.9	0.5	3.5	5.5	1.3	6.8	-	0.00	72.8 : 72.8%	4.4	-
12/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.5%	0.1	-
12/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	20.4%	0.1	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.4	0.3	-	1.7	11.7	307.2	0.6	2.1	2.6	0.3	2.8	-	0.00	34.3 : 34.3%	2.2	-
14/3+14/4	-	-	-	3.5	1.2	-	4.7	16.0	762.8	0.7	4.5	6.5	1.2	7.8	-	0.00	71.3 : 71.3%	6.1	-
15/1	-	-	-	1.3	0.7	-	2.0	12.3	528.2	0.9	3.8	8.7	0.7	9.4	-	0.00	59.2%	3.0	-
15/2	-	-	-	1.4	0.8	-	2.1	13.4	362.2	0.6	3.7	6.0	0.8	6.7	-	0.00	60.3%	2.8	-
15/3	-	-	-	0.5	0.2	-	0.7	8.7	199.2	0.7	1.9	3.3	0.2	3.5	-	0.00	31.2%	1.1	-
16/1	-	-	-	0.3	0.2	-	0.6	5.3	116.0	0.3	1.4	1.9	0.2	2.2	-	0.00	33.3%	0.8	-
16/2	-	-	-	0.3	0.5	-	0.8	5.2	193.4	0.4	1.2	3.2	0.5	3.7	-	0.00	47.8%	1.1	-
16/3+16/4	-	-	-	0.1	0.4	-	0.5	3.3	181.7	0.3	0.4	10.5	0.4	10.8	-	0.00	42.1 : 42.1%	0.8	-
17/1	-	-	-	0.2	0.2	-	0.4	3.9	47.6	0.1	0.5	0.8	0.2	1.0	-	0.00	32.8%	0.5	-
17/2	-	-	-	0.8	0.5	-	1.2	8.1	330.6	0.6	2.3	5.5	0.5	6.0	-	0.00	47.9%	1.8	-
17/3+17/4	-	-	-	1.1	0.2	-	1.3	14.0	259.2	0.8	2.8	3.5	0.2	3.6	-	0.00	27.8 : 27.8%	1.8	-
18/1	-	-	-	0.8	0.8	-	1.5	21.5	72.6	0.3	1.1	1.2	0.8	2.0	-	0.00	61.1%	1.7	-
18/2	-	-	-	0.6	1.2	-	1.9	22.6	94.4	0.3	1.1	1.3	1.2	2.5	-	0.00	71.7%	2.1	-

18/3+18/4	-	-	-	0.9	0.5	-	1.5	20.3	323.0	1.2	2.6	6.1	0.5	6.6	-	0.00	50.9 : 50.9%	2.1	-
19/1	-	-	-	0.9	0.5	-	1.4	14.2	201.0	0.6	1.9	3.4	0.5	3.8	-	0.00	48.9%	1.8	-
19/2	-	-	-	1.8	0.7	-	2.5	21.1	375.7	0.9	4.4	6.3	0.7	6.9	-	0.00	57.8%	3.1	-
19/3+19/4	-	-	-	1.0	0.4	-	1.4	14.4	211.8	0.6	1.8	2.9	0.4	3.4	-	0.00	46.1 : 46.1%	1.8	-

C1	Stream: 1 PRC for Signalled Lanes (%):	87.9	Total Delay for Signalled Lanes (pcuHr):	4.57	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	88.2	Total Delay for Signalled Lanes (pcuHr):	4.38	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	26.2	Total Delay for Signalled Lanes (pcuHr):	11.64	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	44.2	Total Delay for Signalled Lanes (pcuHr):	12.11	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	23.6	Total Delay for Signalled Lanes (pcuHr):	8.14	Cycle Time (s):	60
	PRC Over All Lanes (%):	23.6	Total Delay Over All Lanes(pcuHr):	41.94		

Scenario 10: '2030 Do-Minimum - PM' (FG10: '2030 Do-Minimum - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**78.1%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**78.1%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	482	Inf	Inf	Inf	0.0%	482	482
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	713	Inf	Inf	Inf	0.0%	713	713
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	35	11	46	-	-	396	1932	1932	1159	34.2%	396	396
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	35	11	46	-	-	408	1936	1936	1162	35.1%	408	408
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	35	11	46	-	-	679	1936	1936	1162	58.5%	679	679
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	311	1902	1902	1902	16.4%	311	311
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	251	1902	1902	1902	13.2%	251	251
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	562	Inf	Inf	Inf	0.0%	562	562
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	21	52	13	-	-	950	1910:1941	1910	670+611	74.2 : 74.2%	950	950
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	312	1965	1965	1965	15.9%	312	312
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	42	1965	1965	1965	2.1%	42	42
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	354	Inf	Inf	Inf	0.0%	354	354
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	18	51	9	-	-	715	1885:1965	1885	597+327	77.4 : 77.4%	715	715
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	775	1995	1995	1995	38.8%	775	775
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	443	1995	1995	1995	22.2%	443	443
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1218	Inf	Inf	Inf	0.0%	1218	1218
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	18	52	10	-	-	642	1899:1924	1899	548+274	78.1 : 78.1%	642	642
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	685	1995	1995	1995	34.3%	685	685
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	737	1995	1995	1995	36.9%	737	737
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1422	Inf	Inf	Inf	0.0%	1422	1422
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	20	47	7	-	-	356	1899:1899	1899	636+636	28.0 : 28.0%	356	356
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	20	47	7	-	-	605	1899:1899	1899	446+642	55.6 : 55.6%	605	605
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	13	52	5	-	-	248	2037	2037	475	52.2%	248	248
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	13	52	5	-	-	191	1985	1985	463	41.2%	191	191

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	13	52	5	-	-	240	1962	1962	458	52.4%	240	240
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	27	19	46	-	-	273	1941	1941	906	30.1%	273	273
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	27	19	46	-	-	521	1902	1902	888	58.7%	521	521
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	27	19	46	-	-	806	1894:1932	1894	746+474	66.1 : 66.1%	806	806
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	30	15	45	-	-	655	1990	1990	1028	63.7%	655	655
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	775	1957	1957	1011	76.6%	775	775
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	766	1932:1919	1932	876+199	71.2 : 71.2%	766	766
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	30	16	46	-	-	540	1933	1933	999	54.1%	540	540
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	30	16	46	-	-	758	1927	1927	996	76.1%	758	758
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	30	16	46	-	-	395	1894:1884	1894	931+105	38.2 : 38.2%	395	395
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	28	13	41	-	-	304	1985	1985	959	31.7%	304	304
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	28	13	41	-	-	535	1982	1982	958	55.8%	535	535
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	28	13	41	-	-	74	1942:2015	1942	939+0	7.9 : 0.0%	74	74

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**30.1**	**18.6**	**0.0**	**48.8**	**-**	**7249.9**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**78.1%**	**62.0**	**-**
Leckwith Interchange	**0**	**0**	**0**	**30.1**	**18.6**	**0.0**	**48.8**	**-**	**7249.9**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**78.1%**	**62.0**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	0.7	0.3	-	0.9	8.4	198.0	0.5	2.4	3.3	0.3	3.6	-	0.00	34.2%	1.3	-
2/2	-	-	-	0.7	0.3	-	1.0	8.5	204.0	0.5	2.5	3.4	0.3	3.7	-	0.00	35.1%	1.3	-
2/3	-	-	-	1.4	0.7	-	2.1	11.1	407.4	0.6	4.1	6.8	0.7	7.5	-	0.00	58.5%	2.8	-
3/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.4%	0.1	-
3/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	13.2%	0.1	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	4.2	1.4	-	5.6	21.4	792.4	0.8	5.0	7.0	1.4	8.5	-	0.00	74.2 : 74.2%	7.1	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.9%	0.1	-
6/2	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	-	0.0	0.0	0.0	-	0.00	2.1%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	3.5	1.7	-	5.2	26.2	614.0	0.9	5.0	6.9	1.7	8.6	-	0.00	77.4 : 77.4%	6.3	-
9/1	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.0	-	0.0	0.3	0.3	-	0.00	38.8%	0.3	-
9/2	-	-	-	0.0	0.1	-	0.1	1.2	0.0	0.0	-	0.0	0.1	0.1	-	0.00	22.2%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	3.1	1.8	-	4.8	27.2	556.4	0.9	4.6	6.3	1.8	8.0	-	0.00	78.1 : 78.1%	5.9	-
12/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	34.3%	0.3	-
12/2	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	36.9%	0.3	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.4	0.2	-	1.6	16.0	255.1	0.7	1.8	2.1	0.2	2.3	-	0.00	28.0 : 28.0%	2.0	-
14/3+14/4	-	-	-	2.6	0.6	-	3.2	18.9	467.5	0.8	3.7	4.8	0.6	5.4	-	0.00	55.6 : 55.6%	4.0	-
15/1	-	-	-	0.4	0.5	-	1.0	14.2	48.8	0.2	0.6	0.8	0.5	1.4	-	0.00	52.2%	1.1	-
15/2	-	-	-	0.8	0.3	-	1.2	22.3	118.9	0.6	1.5	1.8	0.3	2.2	-	0.00	41.2%	1.4	-
15/3	-	-	-	0.4	0.5	-	1.0	15.0	45.9	0.2	0.6	0.8	0.5	1.3	-	0.00	52.4%	1.1	-
16/1	-	-	-	0.4	0.2	-	0.7	8.6	81.1	0.3	1.1	1.4	0.2	1.6	-	0.00	30.1%	0.8	-
16/2	-	-	-	1.3	0.7	-	2.0	13.7	401.5	0.8	3.1	6.7	0.7	7.4	-	0.00	58.7%	2.7	-
16/3+16/4	-	-	-	1.6	1.0	-	2.5	11.3	642.6	0.8	3.1	11.5	1.0	12.5	-	0.00	66.1 : 66.1%	3.7	-
17/1	-	-	-	0.8	0.9	-	1.7	9.3	186.8	0.3	2.8	3.1	0.9	4.0	-	0.00	63.7%	2.0	-
17/2	-	-	-	1.4	1.6	-	3.1	14.2	360.6	0.5	4.8	6.0	1.6	7.6	-	0.00	76.6%	3.7	-
17/3+17/4	-	-	-	2.0	1.2	-	3.2	15.1	784.4	1.0	5.1	7.4	1.2	8.6	-	0.00	71.2 : 71.2%	4.6	-
18/1	-	-	-	0.4	0.6	-	1.0	6.5	54.4	0.1	0.9	0.9	0.6	1.5	-	0.00	54.1%	1.1	-
18/2	-	-	-	0.9	1.6	-	2.4	11.5	194.2	0.3	2.9	3.2	1.6	4.8	-	0.00	76.1%	2.8	-

18/3+18/4	-	-	-	1.1	0.3	-	1.4	13.0	468.6	1.2	3.3	6.1	0.3	6.4	-	0.00	38.2 : 38.2%	2.3	-
19/1	-	-	-	0.4	0.2	-	0.6	7.3	156.9	0.5	2.1	2.6	0.2	2.8	-	0.00	31.7%	0.9	-
19/2	-	-	-	0.6	0.6	-	1.2	8.0	178.9	0.3	2.6	3.0	0.6	3.6	-	0.00	55.8%	1.5	-
19/3+19/4	-	-	-	0.1	0.0	-	0.1	6.5	31.5	0.4	0.5	0.5	0.0	0.6	-	0.00	7.9 : 0.0%	0.2	-

C1	Stream: 1 PRC for Signalled Lanes (%):	16.3	Total Delay for Signalled Lanes (pcuHr):	13.16	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	21.3	Total Delay for Signalled Lanes (pcuHr):	10.81	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	61.2	Total Delay for Signalled Lanes (pcuHr):	6.70	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	54.0	Total Delay for Signalled Lanes (pcuHr):	7.14	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	15.2	Total Delay for Signalled Lanes (pcuHr):	9.67	Cycle Time (s):	60
	PRC Over All Lanes (%):	15.2	Total Delay Over All Lanes(pcuHr):	48.77		

Scenario 11: '2030 Do-Nothing - AM' (FG11: '2030 Do-Nothing - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**78.4%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**78.4%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	655	Inf	Inf	Inf	0.0%	655	655
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	611	Inf	Inf	Inf	0.0%	611	611
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	21	52	13	-	-	463	1931	1931	708	65.4%	463	463
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	21	52	13	-	-	301	1936	1936	710	42.4%	301	301
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	21	52	13	-	-	419	1936	1936	710	59.0%	419	419
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	646	1902	1902	1902	34.0%	646	646
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	553	1902	1902	1902	29.1%	553	553
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1199	Inf	Inf	Inf	0.0%	1199	1199
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	16	50	6	-	-	421	1912:1941	1912	542+185	58.0 : 58.0%	421	421
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	332	1965	1965	1965	16.9%	332	332
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	279	1965	1965	1965	14.2%	279	279
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	611	Inf	Inf	Inf	0.0%	611	611
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	14	55	9	-	-	253	1862:1965	1862	54+491	46.4 : 46.4%	253	253
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	330	1995	1995	1995	16.5%	330	330
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	394	1995	1995	1995	19.7%	394	394
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	724	Inf	Inf	Inf	0.0%	724	724
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	37	39	16	-	-	1188	1907:1924	1907	869+647	78.4 : 78.4%	1188	1188
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	389	1995	1995	1995	19.5%	389	389
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	428	1995	1995	1995	21.5%	428	428
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	817	Inf	Inf	Inf	0.0%	817	817
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	26	15	41	-	-	512	1899:1899	1899	731+731	35.0 : 35.0%	512	512
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	26	15	41	-	-	1060	1899:1899	1899	737+678	74.9 : 74.9%	1060	1060
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	27	19	46	-	-	588	2037	2037	951	61.9%	588	588
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	27	19	46	-	-	459	1986	1986	927	49.5%	459	459

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	27	19	46	-	-	445	1962	1962	916	48.6%	445	445
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	32	12	44	-	-	311	1941	1941	1068	29.1%	311	311
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	32	12	44	-	-	547	1920	1920	1056	51.8%	547	547
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	32	12	44	-	-	618	1894:1932	1894	847+523	45.1 : 45.1%	618	618
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	34	15	49	-	-	319	1990	1990	1161	27.5%	319	319
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	624	1971	1971	1150	54.3%	624	624
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	343	1932:1919	1932	1010+180	28.8 : 28.8%	343	343
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	11	22	33	-	-	244	1933	1933	387	63.1%	244	244
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	11	22	33	-	-	291	1933	1933	387	75.3%	291	291
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	11	22	33	-	-	280	1894:1884	1894	379+124	55.7 : 55.7%	280	280
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	22	47	9	-	-	399	1985	1985	761	52.4%	399	399
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	22	47	9	-	-	391	1979	1979	759	51.5%	391	391
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	22	47	9	-	-	396	1942:1932	1942	491+418	43.6 : 43.6%	396	396

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**28.5**	**16.1**	**0.0**	**44.6**	**-**	**6960.2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**78.4%**	**57.3**	**-**
Leckwith Interchange	**0**	**0**	**0**	**28.5**	**16.1**	**0.0**	**44.6**	**-**	**6960.2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**78.4%**	**57.3**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	2.0	0.9	-	3.0	23.1	378.1	0.8	4.6	6.3	0.9	7.2	-	0.00	65.4%	3.7	-
2/2	-	-	-	1.2	0.4	-	1.6	18.6	220.7	0.7	3.0	3.7	0.4	4.0	-	0.00	42.4%	2.0	-
2/3	-	-	-	1.8	0.7	-	2.5	21.5	335.2	0.8	4.2	5.6	0.7	6.3	-	0.00	59.0%	3.1	-
3/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	34.0%	0.3	-
3/2	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	29.1%	0.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	2.1	0.7	-	2.8	23.8	347.1	0.8	3.6	4.4	0.7	5.1	-	0.00	58.0 : 58.0%	3.4	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.9%	0.1	-
6/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.2%	0.1	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	1.3	0.4	-	1.8	25.1	208.8	0.8	2.7	3.2	0.4	3.6	-	0.00	46.4 : 46.4%	2.1	-
9/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.5%	0.1	-
9/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.7%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	2.0	1.8	-	3.8	11.4	670.6	0.6	3.8	6.6	1.8	8.4	-	0.00	78.4 : 78.4%	5.0	-
12/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.5%	0.1	-
12/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	21.5%	0.1	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.5	0.3	-	1.8	12.4	324.3	0.6	2.2	2.7	0.3	3.0	-	0.00	35.0 : 35.0%	2.4	-
14/3+14/4	-	-	-	3.7	1.5	-	5.2	17.6	804.2	0.8	4.8	7.1	1.5	8.5	-	0.00	74.9 : 74.9%	6.7	-
15/1	-	-	-	0.3	0.8	-	1.1	6.9	52.1	0.1	0.9	0.9	0.8	1.7	-	0.00	61.9%	1.2	-
15/2	-	-	-	1.6	0.5	-	2.1	16.5	347.4	0.8	3.7	5.5	0.5	6.0	-	0.00	49.5%	2.7	-
15/3	-	-	-	1.3	0.5	-	1.8	14.4	276.9	0.6	3.1	4.6	0.5	5.1	-	0.00	48.6%	2.3	-
16/1	-	-	-	0.5	0.2	-	0.7	7.8	252.8	0.8	2.4	4.1	0.2	4.3	-	0.00	29.1%	1.1	-
16/2	-	-	-	0.8	0.5	-	1.3	8.7	301.7	0.6	3.6	4.9	0.5	5.5	-	0.00	51.8%	1.9	-
16/3+16/4	-	-	-	1.0	0.4	-	1.4	8.3	569.2	0.9	7.8	7.8	0.4	8.2	-	0.00	45.1 : 45.1%	2.5	-
17/1	-	-	-	0.1	0.2	-	0.3	3.5	30.7	0.1	0.5	0.5	0.2	0.7	-	0.00	27.5%	0.4	-
17/2	-	-	-	1.4	0.6	-	2.0	11.7	465.4	0.7	4.2	7.8	0.6	8.3	-	0.00	54.3%	2.9	-
17/3+17/4	-	-	-	0.5	0.2	-	0.7	7.1	106.9	0.3	0.9	0.9	0.2	1.1	-	0.00	28.8 : 28.8%	0.9	-
18/1	-	-	-	0.1	0.8	-	1.0	14.3	32.6	0.1	0.2	0.5	0.8	1.4	-	0.00	63.1%	1.0	-
18/2	-	-	-	0.3	1.5	-	1.8	22.5	68.7	0.2	0.4	1.1	1.5	2.6	-	0.00	75.3%	1.9	-

18/3+18/4	-	-	-	1.2	0.6	-	1.8	23.2	375.2	1.3	2.6	6.1	0.6	6.7	-	0.00	55.7 : 55.7%	2.5	-
19/1	-	-	-	0.9	0.5	-	1.5	13.3	212.2	0.5	1.7	3.5	0.5	4.1	-	0.00	52.4%	1.9	-
19/2	-	-	-	1.7	0.5	-	2.2	20.1	348.5	0.9	4.3	5.8	0.5	6.3	-	0.00	51.5%	2.8	-
19/3+19/4	-	-	-	1.1	0.4	-	1.5	13.4	230.9	0.6	1.7	2.4	0.4	2.8	-	0.00	43.6 : 43.6%	1.9	-

C1	Stream: 1 PRC for Signalled Lanes (%):	65.8	Total Delay for Signalled Lanes (pcuHr):	4.77	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	55.3	Total Delay for Signalled Lanes (pcuHr):	6.21	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	20.2	Total Delay for Signalled Lanes (pcuHr):	12.09	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	37.6	Total Delay for Signalled Lanes (pcuHr):	12.05	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	14.8	Total Delay for Signalled Lanes (pcuHr):	8.34	Cycle Time (s):	60
	PRC Over All Lanes (%):	14.8	Total Delay Over All Lanes(pcuHr):	44.59		

Scenario 12: '2030 Do-Nothing - PM' (FG12: '2030 Do-Nothing - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**78.6%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**78.6%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	406	Inf	Inf	Inf	0.0%	406	406
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	800	Inf	Inf	Inf	0.0%	800	800
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	33	13	46	-	-	396	1932	1932	1095	36.2%	396	396
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	33	13	46	-	-	424	1936	1936	1097	38.6%	424	424
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	33	13	46	-	-	690	1936	1936	1097	62.9%	690	690
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	330	1902	1902	1902	17.4%	330	330
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	237	1902	1902	1902	12.5%	237	237
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	567	Inf	Inf	Inf	0.0%	567	567
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	19	56	15	-	-	962	1909:1941	1909	636+610	77.2 : 77.2%	962	962
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	312	1965	1965	1965	15.9%	312	312
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	47	1965	1965	1965	2.4%	47	47
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	359	Inf	Inf	Inf	0.0%	359	359
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	18	51	9	-	-	729	1883:1965	1883	596+337	78.2 : 78.2%	729	729
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	790	1995	1995	1995	39.6%	790	790
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	502	1995	1995	1995	25.2%	502	502
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1292	Inf	Inf	Inf	0.0%	1292	1292
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	16	56	12	-	-	671	1895:1924	1895	483+372	78.5 : 78.5%	671	671
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	703	1995	1995	1995	35.2%	703	703
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	727	1995	1995	1995	36.4%	727	727
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1430	Inf	Inf	Inf	0.0%	1430	1430
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	18	46	4	-	-	356	1899:1899	1899	601+601	29.6 : 29.6%	356	356
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	18	46	4	-	-	626	1899:1899	1899	477+601	58.0 : 58.0%	626	626
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	15	52	7	-	-	277	2037	2037	543	51.0%	277	277
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	15	52	7	-	-	172	1985	1985	529	32.5%	172	172

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	15	52	7	-	-	261	1962	1962	523	49.9%	261	261
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	29	21	50	-	-	278	1941	1941	971	28.6%	278	278
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	29	21	50	-	-	555	1902	1902	951	58.4%	555	555
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	29	21	50	-	-	820	1894:1932	1894	803+437	66.1 : 66.1%	820	820
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	30	15	45	-	-	701	1990	1990	1028	68.2%	701	701
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	795	1957	1957	1011	78.6%	795	795
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	760	1932:1919	1932	867+215	70.3 : 70.3%	760	760
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	32	18	50	-	-	546	1933	1933	1063	51.4%	546	546
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	32	18	50	-	-	733	1927	1927	1060	69.2%	733	733
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	32	18	50	-	-	414	1894:1884	1894	990+106	37.8 : 37.8%	414	414
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	30	10	40	-	-	228	1985	1985	1026	22.2%	228	228
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	30	10	40	-	-	622	1982	1982	1024	60.7%	622	622
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	30	10	40	-	-	84	1942:2015	1942	1003+0	8.4 : 0.0%	84	84

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**30.4**	**19.0**	**0.0**	**49.4**	**-**	**7495.8**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**78.6%**	**63.1**	**-**
Leckwith Interchange	**0**	**0**	**0**	**30.4**	**19.0**	**0.0**	**49.4**	**-**	**7495.8**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**78.6%**	**63.1**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	0.8	0.3	-	1.1	9.7	211.2	0.5	2.6	3.5	0.3	3.8	-	0.00	36.2%	1.4	-
2/2	-	-	-	0.9	0.3	-	1.2	9.9	233.2	0.6	2.8	3.9	0.3	4.2	-	0.00	38.6%	1.6	-
2/3	-	-	-	1.7	0.8	-	2.5	13.2	460.0	0.7	4.6	7.7	0.8	8.5	-	0.00	62.9%	3.4	-
3/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	17.4%	0.1	-
3/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	12.5%	0.1	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	4.8	1.7	-	6.4	24.0	841.9	0.9	5.2	7.2	1.7	8.9	-	0.00	77.2 : 77.2%	8.0	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.9%	0.1	-
6/2	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	-	0.0	0.0	0.0	-	0.00	2.4%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	3.6	1.8	-	5.4	26.4	625.4	0.9	5.0	7.0	1.8	8.7	-	0.00	78.2 : 78.2%	6.5	-
9/1	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.0	-	0.0	0.3	0.3	-	0.00	39.6%	0.3	-
9/2	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.0	-	0.0	0.2	0.2	-	0.00	25.2%	0.2	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	3.5	1.8	-	5.3	28.4	578.1	0.9	4.3	5.6	1.8	7.4	-	0.00	78.5 : 78.5%	6.4	-
12/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	35.2%	0.3	-
12/2	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	36.4%	0.3	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.5	0.2	-	1.7	17.6	267.0	0.8	1.9	2.2	0.2	2.4	-	0.00	29.6 : 29.6%	2.2	-
14/3+14/4	-	-	-	2.9	0.7	-	3.6	20.8	512.4	0.8	3.8	4.8	0.7	5.5	-	0.00	58.0 : 58.0%	4.6	-
15/1	-	-	-	0.2	0.5	-	0.7	9.5	71.6	0.3	0.3	1.2	0.5	1.7	-	0.00	51.0%	0.9	-
15/2	-	-	-	0.8	0.2	-	1.0	21.4	117.2	0.7	1.5	1.8	0.2	2.1	-	0.00	32.5%	1.2	-
15/3	-	-	-	0.2	0.5	-	0.7	9.7	40.0	0.2	0.3	0.7	0.5	1.2	-	0.00	49.9%	0.8	-
16/1	-	-	-	0.3	0.2	-	0.5	7.0	69.3	0.2	0.9	1.2	0.2	1.4	-	0.00	28.6%	0.7	-
16/2	-	-	-	1.2	0.7	-	1.9	12.4	424.2	0.8	2.9	7.1	0.7	7.8	-	0.00	58.4%	2.7	-
16/3+16/4	-	-	-	1.3	1.0	-	2.2	9.8	624.3	0.8	2.8	12.1	1.0	13.1	-	0.00	66.1 : 66.1%	3.4	-
17/1	-	-	-	1.0	1.1	-	2.0	10.4	230.7	0.3	3.1	3.8	1.1	4.9	-	0.00	68.2%	2.5	-
17/2	-	-	-	1.4	1.8	-	3.2	14.4	347.8	0.4	4.3	5.8	1.8	7.6	-	0.00	78.6%	3.8	-
17/3+17/4	-	-	-	1.7	1.2	-	2.9	13.7	781.4	1.0	5.0	7.3	1.2	8.4	-	0.00	70.3 : 70.3%	4.3	-
18/1	-	-	-	0.2	0.5	-	0.7	4.9	31.3	0.1	0.5	0.5	0.5	1.0	-	0.00	51.4%	0.8	-
18/2	-	-	-	0.7	1.1	-	1.8	8.7	197.9	0.3	2.4	3.3	1.1	4.4	-	0.00	69.2%	2.1	-

18/3+18/4	-	-	-	1.4	0.3	-	1.7	14.6	477.3	1.2	3.6	6.1	0.3	6.4	-	0.00	37.8 : 37.8%	2.6	-
19/1	-	-	-	0.1	0.1	-	0.2	3.3	76.8	0.3	0.6	1.1	0.1	1.3	-	0.00	22.2%	0.4	-
19/2	-	-	-	0.4	0.8	-	1.2	6.7	240.6	0.4	2.0	3.9	0.8	4.7	-	0.00	60.7%	1.6	-
19/3+19/4	-	-	-	0.0	0.0	-	0.1	3.5	36.2	0.4	0.4	0.6	0.0	0.6	-	0.00	8.4 : 0.0%	0.1	-

C1	Stream: 1 PRC for Signalled Lanes (%):	14.5	Total Delay for Signalled Lanes (pcuHr):	13.46	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	16.6	Total Delay for Signalled Lanes (pcuHr):	11.10	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	48.2	Total Delay for Signalled Lanes (pcuHr):	6.81	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	43.1	Total Delay for Signalled Lanes (pcuHr):	7.21	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	14.6	Total Delay for Signalled Lanes (pcuHr):	9.49	Cycle Time (s):	60
	PRC Over All Lanes (%):	14.5	Total Delay Over All Lanes(pcuHr):	49.40		

Scenario 13: '2030 Do-Something - AM' (FG13: '2030 Do-Something - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**75.7%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**75.7%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	608	Inf	Inf	Inf	0.0%	608	608
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	655	Inf	Inf	Inf	0.0%	655	655
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	20	58	18	-	-	418	1931	1931	676	61.8%	418	418
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	20	58	18	-	-	364	1936	1936	678	53.7%	364	364
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	20	58	18	-	-	400	1936	1936	678	59.0%	400	400
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	633	1902	1902	1902	33.3%	633	633
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	565	1902	1902	1902	29.7%	565	565
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1198	Inf	Inf	Inf	0.0%	1198	1198
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	14	54	8	-	-	421	1905:1941	1905	476+485	41.4 : 46.2%	421	421
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	389	1965	1965	1965	19.8%	389	389
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	221	1965	1965	1965	11.2%	221	221
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	610	Inf	Inf	Inf	0.0%	610	610
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	14	55	9	-	-	252	1863:1965	1863	52+491	46.4 : 46.4%	252	252
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	368	1995	1995	1995	18.4%	368	368
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	354	1995	1995	1995	17.7%	354	354
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	722	Inf	Inf	Inf	0.0%	722	722
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	37	45	22	-	-	1181	1906:1924	1906	835+725	75.7 : 75.7%	1181	1181
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	390	1995	1995	1995	19.5%	390	390
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	425	1995	1995	1995	21.3%	425	425
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	815	Inf	Inf	Inf	0.0%	815	815
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	26	20	46	-	-	512	1899:1899	1899	731+731	35.0 : 35.0%	512	512
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	26	20	46	-	-	1060	1899:1899	1899	733+722	72.9 : 72.9%	1060	1060
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	28	24	52	-	-	578	2037	2037	985	58.7%	578	578
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	28	24	52	-	-	572	1983	1983	958	59.7%	572	572

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	28	24	52	-	-	340	1962	1962	948	35.9%	340	340
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	34	14	48	-	-	370	1941	1941	1132	32.7%	370	370
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	34	14	48	-	-	525	1916	1916	1118	47.0%	525	525
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	34	14	48	-	-	579	1894:1932	1894	1007+250	46.1 : 46.1%	579	579
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	34	15	49	-	-	357	1990	1990	1161	30.8%	357	357
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	589	1970	1970	1149	51.3%	589	589
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	34	15	49	-	-	339	1932:1919	1932	1008+183	28.5 : 28.5%	339	339
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	11	28	39	-	-	248	1933	1933	387	64.1%	248	248
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	11	28	39	-	-	287	1933	1933	387	74.2%	287	287
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	11	28	39	-	-	280	1894:1884	1894	379+76	61.5 : 61.5%	280	280
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	22	52	14	-	-	352	1985	1985	761	46.3%	352	352
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	22	52	14	-	-	443	1979	1979	759	58.4%	443	443
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	22	52	14	-	-	386	1942:1932	1942	607+215	47.0 : 47.0%	386	386

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**28.6**	**15.6**	**0.0**	**44.2**	**-**	**7158.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**75.7%**	**57.3**	**-**
Leckwith Interchange	**0**	**0**	**0**	**28.6**	**15.6**	**0.0**	**44.2**	**-**	**7158.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**75.7%**	**57.3**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	1.9	0.8	-	2.7	23.1	341.4	0.8	4.3	5.7	0.8	6.5	-	0.00	61.8%	3.3	-
2/2	-	-	-	1.6	0.6	-	2.2	21.3	291.2	0.8	3.7	4.9	0.6	5.4	-	0.00	53.7%	2.7	-
2/3	-	-	-	1.8	0.7	-	2.5	22.4	326.7	0.8	4.1	5.4	0.7	6.2	-	0.00	59.0%	3.1	-
3/1	-	-	-	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	33.3%	0.2	-
3/2	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	29.7%	0.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	2.2	0.4	-	2.6	22.3	350.8	0.8	2.7	3.1	0.4	3.5	-	0.00	41.4 : 46.2%	3.2	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.8%	0.1	-
6/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	11.2%	0.1	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	1.3	0.4	-	1.8	25.1	208.0	0.8	2.7	3.2	0.4	3.6	-	0.00	46.4 : 46.4%	2.1	-
9/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	18.4%	0.1	-
9/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	17.7%	0.1	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	1.9	1.5	-	3.5	10.6	611.6	0.5	3.5	5.6	1.5	7.2	-	0.00	75.7 : 75.7%	4.6	-
12/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.5%	0.1	-
12/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	21.3%	0.1	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.5	0.3	-	1.8	12.4	324.3	0.6	2.2	2.7	0.3	3.0	-	0.00	35.0 : 35.0%	2.4	-
14/3+14/4	-	-	-	3.7	1.3	-	5.0	17.1	795.0	0.8	4.6	6.7	1.3	8.0	-	0.00	72.9 : 72.9%	6.5	-
15/1	-	-	-	0.3	0.7	-	1.0	6.5	53.9	0.1	0.9	0.9	0.7	1.6	-	0.00	58.7%	1.1	-
15/2	-	-	-	2.2	0.7	-	2.9	18.5	494.8	0.9	4.8	8.1	0.7	8.8	-	0.00	59.7%	3.8	-
15/3	-	-	-	0.7	0.3	-	0.9	9.9	119.2	0.4	1.7	2.0	0.3	2.3	-	0.00	35.9%	1.2	-
16/1	-	-	-	0.3	0.2	-	0.5	4.9	184.5	0.5	1.3	3.1	0.2	3.3	-	0.00	32.7%	0.8	-
16/2	-	-	-	0.6	0.4	-	1.0	7.2	348.5	0.7	2.2	5.7	0.4	6.1	-	0.00	47.0%	1.7	-
16/3+16/4	-	-	-	0.7	0.4	-	1.1	7.0	521.2	0.9	2.2	7.8	0.4	8.3	-	0.00	46.1 : 46.1%	2.1	-
17/1	-	-	-	0.2	0.2	-	0.4	3.8	39.0	0.1	0.6	0.6	0.2	0.9	-	0.00	30.8%	0.4	-
17/2	-	-	-	0.8	0.5	-	1.3	8.1	204.4	0.3	2.8	3.4	0.5	3.9	-	0.00	51.3%	1.7	-
17/3+17/4	-	-	-	0.8	0.2	-	1.0	10.6	309.4	0.9	2.7	4.3	0.2	4.5	-	0.00	28.5 : 28.5%	1.6	-
18/1	-	-	-	0.4	0.9	-	1.3	18.5	196.9	0.8	1.4	3.3	0.9	4.2	-	0.00	64.1%	1.6	-
18/2	-	-	-	0.5	1.4	-	1.9	23.4	275.7	1.0	1.8	4.6	1.4	6.0	-	0.00	74.2%	2.4	-

18/3+18/4	-	-	-	1.7	0.8	-	2.5	31.7	375.2	1.3	3.9	6.1	0.8	6.9	-	0.00	61.5 : 61.5%	3.2	-
19/1	-	-	-	0.8	0.4	-	1.3	12.8	167.2	0.5	1.6	2.8	0.4	3.2	-	0.00	46.3%	1.6	-
19/2	-	-	-	1.8	0.7	-	2.5	20.6	401.1	0.9	4.8	6.7	0.7	7.4	-	0.00	58.4%	3.3	-
19/3+19/4	-	-	-	1.0	0.4	-	1.5	13.6	218.7	0.6	1.8	2.9	0.4	3.3	-	0.00	47.0 : 47.0%	1.9	-

C1	Stream: 1 PRC for Signalled Lanes (%):	75.6	Total Delay for Signalled Lanes (pcuHr):	4.45	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	91.6	Total Delay for Signalled Lanes (pcuHr):	5.28	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	23.5	Total Delay for Signalled Lanes (pcuHr):	12.05	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	45.5	Total Delay for Signalled Lanes (pcuHr):	12.25	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	18.9	Total Delay for Signalled Lanes (pcuHr):	9.07	Cycle Time (s):	60
	PRC Over All Lanes (%):	18.9	Total Delay Over All Lanes(pcuHr):	44.23		

Scenario 14: '2030 Do-Something - PM' (FG14: '2030 Do-Something - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**79.3%**	-	-
Leckwith Interchange	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**79.3%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	484	Inf	Inf	Inf	0.0%	484	484
1/2	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	721	Inf	Inf	Inf	0.0%	721	721
2/1	B4267 (NE) Left Ahead	U	2:2	N/A	C2:F		1	35	11	46	-	-	396	1932	1932	1159	34.2%	396	396
2/2	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	35	11	46	-	-	415	1936	1936	1162	35.7%	415	415
2/3	B4267 (NE) Ahead	U	2:2	N/A	C2:F		1	35	11	46	-	-	696	1936	1936	1162	59.9%	696	696
3/1	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	316	1902	1902	1902	16.6%	316	316
3/2	Hadfield Rd - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	251	1902	1902	1902	13.2%	251	251
4/1	Hadfield Rd - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	567	Inf	Inf	Inf	0.0%	567	567
5/1+5/2	Hadfield Rd U-Turn Left	U	1:2	N/A	C1:F		1	19	54	13	-	-	961	1910:1941	1910	636+597	78.0 : 78.0%	961	961
6/1	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	310	1965	1965	1965	15.8%	310	310
6/2	A4232 SB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	49	1965	1965	1965	2.5%	49	49
7/1	A4232 SB On-Slip (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	359	Inf	Inf	Inf	0.0%	359	359
8/1+8/2	A4232 NB Off-Slip Left Ahead	U	1:1	N/A	C1:B		1	18	51	9	-	-	728	1884:1965	1884	597+322	79.3 : 79.3%	728	728
9/1	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	795	1995	1995	1995	39.8%	795	795
9/2	B4267 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	490	1995	1995	1995	24.6%	490	490
10/1	B4267 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1285	Inf	Inf	Inf	0.0%	1285	1285
11/1+11/2	B4267 (SW) Left Ahead	U	2:3	N/A	C2:J		1	19	52	11	-	-	669	1899:1924	1899	565+298	77.5 : 77.5%	669	669
12/1	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	691	1995	1995	1995	34.6%	691	691
12/2	A4232 NB On-Slip Ahead	U	N/A	N/A	-		-	-	-	-	-	-	738	1995	1995	1995	37.0%	738	738
13/1	A4232 - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	1429	Inf	Inf	Inf	0.0%	1429	1429
14/2+14/1	A4232 SB Off-Slip Left	U	2:1	N/A	C2:B		1	19	47	6	-	-	356	1899:1899	1899	620+620	28.7 : 28.7%	356	356
14/3+14/4	A4232 SB Off-Slip Ahead	U	2:1	N/A	C2:B		1	19	47	6	-	-	624	1899:1899	1899	434+624	59.0 : 59.0%	624	624
15/1	ISL (E) Ahead	U	2:2	N/A	C2:E		1	13	52	5	-	-	256	2037	2037	475	53.9%	256	256
15/2	ISL (E) Ahead Right	U	2:2	N/A	C2:E		1	13	52	5	-	-	193	1985	1985	463	41.7%	193	193

15/3	ISL (E) Right	U	2:2	N/A	C2:E		1	13	52	5	-	-	259	1962	1962	458	56.6%	259	259
16/1	ISL (SE) Left	U	1:2	N/A	C1:E		1	29	19	48	-	-	278	1941	1941	971	28.6%	278	278
16/2	ISL (SE) Left Right	U	1:2	N/A	C1:E		1	29	19	48	-	-	547	1902	1902	951	57.5%	547	547
16/3+16/4	ISL (SE) Right	U	1:2	N/A	C1:E		1	29	19	48	-	-	823	1894:1932	1894	794+467	65.2 : 65.2%	823	823
17/1	ISL (SW) Ahead	U	1:1	N/A	C1:A		1	30	15	45	-	-	691	1990	1990	1028	67.2%	691	691
17/2	ISL (SW) Ahead Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	789	1957	1957	1011	78.0%	789	789
17/3+17/4	ISL (SW) Right	U	1:1	N/A	C1:A		1	30	15	45	-	-	770	1932:1919	1932	878+197	71.6 : 71.6%	770	770
18/1	ISL (W) Ahead	U	2:3	N/A	C2:I		1	29	17	46	-	-	536	1933	1933	966	55.5%	536	536
18/2	ISL (W) Ahead Right	U	2:3	N/A	C2:I		1	29	17	46	-	-	761	1927	1927	964	79.0%	761	761
18/3+18/4	ISL (W) Right	U	2:3	N/A	C2:I		1	29	17	46	-	-	396	1894:1884	1894	902+101	39.5 : 39.5%	396	396
19/1	ISL (N) Ahead	U	2:1	N/A	C2:A		1	29	12	41	-	-	306	1985	1985	993	30.8%	306	306
19/2	ISL (N) Ahead Right	U	2:1	N/A	C2:A		1	29	12	41	-	-	543	1982	1982	991	54.8%	543	543
19/3+19/4	ISL (N) Right	U	2:1	N/A	C2:A		1	29	12	41	-	-	84	1942:2015	1942	971+0	8.7 : 0.0%	84	84

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Leckwith Interchange (B4267 Leckwith Road/Hadfield Road/A4232 Signal-Controlled Gyratory)	**0**	**0**	**0**	**31.0**	**19.9**	**0.0**	**50.9**	**-**	**7559.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**79.3%**	**64.8**	**-**
Leckwith Interchange	**0**	**0**	**0**	**31.0**	**19.9**	**0.0**	**50.9**	**-**	**7559.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**79.3%**	**64.8**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
1/2	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1	-	-	-	0.7	0.3	-	0.9	8.4	198.0	0.5	2.4	3.3	0.3	3.6	-	0.00	34.2%	1.3	-
2/2	-	-	-	0.7	0.3	-	1.0	8.5	207.5	0.5	2.5	3.5	0.3	3.7	-	0.00	35.7%	1.4	-
2/3	-	-	-	1.4	0.7	-	2.2	11.4	429.2	0.6	4.3	7.2	0.7	7.9	-	0.00	59.9%	3.0	-
3/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.6%	0.1	-
3/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	13.2%	0.1	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1+5/2	-	-	-	4.7	1.7	-	6.5	24.3	849.4	0.9	5.2	7.4	1.7	9.2	-	0.00	78.0 : 78.0%	8.0	-
6/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.8%	0.1	-
6/2	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	-	0.0	0.0	0.0	-	0.00	2.5%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1+8/2	-	-	-	3.6	1.9	-	5.5	27.1	625.4	0.9	5.1	7.1	1.9	9.0	-	0.00	79.3 : 79.3%	6.6	-
9/1	-	-	-	0.0	0.3	-	0.3	1.5	0.0	0.0	-	0.0	0.3	0.3	-	0.00	39.8%	0.3	-
9/2	-	-	-	0.0	0.2	-	0.2	1.2	0.0	0.0	-	0.0	0.2	0.2	-	0.00	24.6%	0.2	-
10/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
11/1+11/2	-	-	-	3.1	1.7	-	4.8	25.7	567.9	0.8	4.6	6.3	1.7	8.0	-	0.00	77.5 : 77.5%	5.8	-
12/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	34.6%	0.3	-
12/2	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	37.0%	0.3	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/2+14/1	-	-	-	1.5	0.2	-	1.7	16.8	261.1	0.7	1.9	2.2	0.2	2.4	-	0.00	28.7 : 28.7%	2.1	-
14/3+14/4	-	-	-	2.8	0.7	-	3.5	20.2	496.8	0.8	3.9	5.0	0.7	5.7	-	0.00	59.0 : 59.0%	4.4	-
15/1	-	-	-	0.4	0.6	-	1.0	13.9	45.9	0.2	0.6	0.8	0.6	1.3	-	0.00	53.9%	1.1	-
15/2	-	-	-	0.9	0.4	-	1.3	23.4	123.7	0.6	1.7	1.9	0.4	2.3	-	0.00	41.7%	1.5	-
15/3	-	-	-	0.5	0.6	-	1.1	15.3	45.9	0.2	0.6	0.8	0.6	1.4	-	0.00	56.6%	1.2	-
16/1	-	-	-	0.4	0.2	-	0.6	7.6	77.6	0.3	1.0	1.3	0.2	1.5	-	0.00	28.6%	0.7	-
16/2	-	-	-	1.2	0.7	-	1.9	12.6	421.1	0.8	3.2	7.0	0.7	7.7	-	0.00	57.5%	2.7	-
16/3+16/4	-	-	-	1.3	0.9	-	2.3	10.0	634.2	0.8	3.0	11.6	0.9	12.5	-	0.00	65.2 : 65.2%	3.4	-
17/1	-	-	-	0.9	1.0	-	1.9	10.0	212.2	0.3	3.0	3.5	1.0	4.5	-	0.00	67.2%	2.3	-
17/2	-	-	-	1.4	1.7	-	3.1	14.3	366.2	0.5	4.6	6.1	1.7	7.9	-	0.00	78.0%	3.8	-
17/3+17/4	-	-	-	1.9	1.3	-	3.2	14.9	839.2	1.1	5.4	7.9	1.3	9.2	-	0.00	71.6 : 71.6%	4.7	-
18/1	-	-	-	0.4	0.6	-	1.0	7.0	57.3	0.1	1.0	1.0	0.6	1.6	-	0.00	55.5%	1.2	-
18/2	-	-	-	0.9	1.8	-	2.8	13.0	258.5	0.3	2.9	4.3	1.8	6.2	-	0.00	79.0%	3.2	-

18/3+18/4	-	-	-	1.2	0.3	-	1.5	14.1	463.1	1.2	3.4	6.1	0.3	6.5	-	0.00	39.5 : 39.5%	2.4	-
19/1	-	-	-	0.3	0.2	-	0.6	6.7	155.4	0.5	2.0	2.5	0.2	2.8	-	0.00	30.8%	0.9	-
19/2	-	-	-	0.5	0.6	-	1.1	7.5	183.6	0.3	2.6	3.0	0.6	3.6	-	0.00	54.8%	1.5	-
19/3+19/4	-	-	-	0.1	0.0	-	0.2	6.5	40.0	0.5	0.6	0.7	0.0	0.7	-	0.00	8.7 : 0.0%	0.2	-

C1	Stream: 1 PRC for Signalled Lanes (%):	13.5	Total Delay for Signalled Lanes (pcuHr):	13.73	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	15.5	Total Delay for Signalled Lanes (pcuHr):	11.28	Cycle Time (s):	60
C2	Stream: 1 PRC for Signalled Lanes (%):	52.5	Total Delay for Signalled Lanes (pcuHr):	7.02	Cycle Time (s):	60
C2	Stream: 2 PRC for Signalled Lanes (%):	50.2	Total Delay for Signalled Lanes (pcuHr):	7.44	Cycle Time (s):	60
C2	Stream: 3 PRC for Signalled Lanes (%):	13.9	Total Delay for Signalled Lanes (pcuHr):	10.12	Cycle Time (s):	60
	PRC Over All Lanes (%):	13.5	Total Delay Over All Lanes(pcuHr):	50.93		

Appendix K:

Model Output Report: Junction 8 – B4267 Leckwith Road/Penarth Road

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

Filename: B4267_Pen-y-Turnpike Road.j9
Path: F:\projects\Development Planning\Cardiff Office Work\Leckwith Quay, Cardiff\Modelling\Junction Models
Report generation date: 20/02/2020 15:18:55

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	2019 Base					
Stream B-AC	212.1	1170.39	1.49	1.1	17.57	0.52
Stream C-AB	0.2	6.07	0.18	95.9	433.14	1.19

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

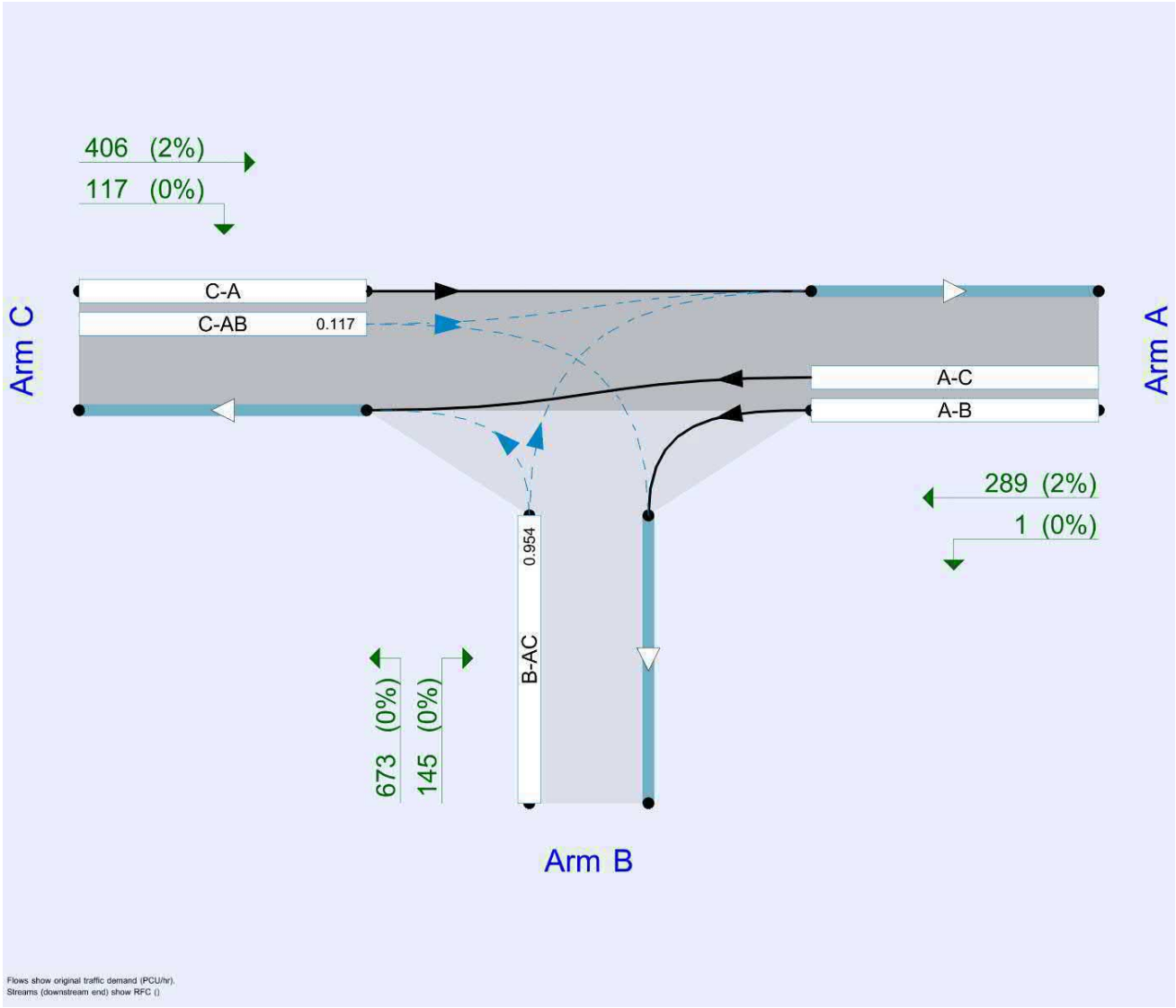
File summary

File Description

Title	B4267 Leckwith Road/Pen-y-Turnpike Road
Location	Leckwith, Cardiff
Site number	8
Date	20/02/2020
Version	
Status	
Identifier	
Client	Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Jobnumber	60608933
Enumerator	EU\Matthew.Davies
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20 00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2019 Base	AM	ONE HOUR	07:15	08:45	15	✓
D2	2019 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2025 Do-Minimum	AM	ONE HOUR	07:15	08:45	15	✓
D4	2025 Do-Minimum	PM	ONE HOUR	16:15	17:45	15	✓
D5	2025 Do-Nothing	AM	ONE HOUR	07:15	08:45	15	✓
D6	2025 Do-Nothing	PM	ONE HOUR	16:15	17:45	15	✓
D7	2025 Do-Something	AM	ONE HOUR	07:15	08:45	15	✓
D8	2025 Do-Something	PM	ONE HOUR	16:15	17:45	15	✓
D9	2030 Do-Minimum	AM	ONE HOUR	07:15	08:45	15	✓
D10	2030 Do-Minimum	PM	ONE HOUR	16:15	17:45	15	✓
D11	2030 Do-Nothing	AM	ONE HOUR	07:15	08:45	15	✓
D12	2030 Do-Nothing	PM	ONE HOUR	16:15	17:45	15	✓
D13	2030 Do-Something	AM	ONE HOUR	07:15	08:45	15	✓
D14	2030 Do-Something	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

ID	Include in report	Use specific Demand Set(s)	Specific Demand Set(s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	D1,D2	100.000	100.000

2019 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		587.43	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B4267 (Southeast)		Major
B	Pen-y-Turnpike Road		Minor
C	B4267 (Northwest)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.10		✓	3.85	200.0	✓	17.30

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.66	100	135

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	617	0.102	0.258	0.162	0.369
B-C	756	0.105	0.266	-	-
C-B	814	0.286	0.286	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

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)	Run automatically
D1	2019 Base	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	290	100.000
B		ONE HOUR	✓	818	100.000
C		ONE HOUR	✓	523	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	289
	B	145	0	673
	C	406	117	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	1.49	1170.39	212.1	F	751	1126
C-AB	0.18	6.07	0.2	A	107	161
C-A					373	559
A-B					0 92	1
A-C					265	398

2019 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		225.58	F

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)	Run automatically
D2	2019 Base	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	465	100.000
B		ONE HOUR	✓	201	100.000
C		ONE HOUR	✓	1004	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	90	375
	B	17	0	184
	C	283	721	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.52	17.57	1.1	C	184	277
C-AB	1.19	433.14	95.9	F	791	1186
C-A					131	196
A-B					83	124
A-C					344	516

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware co.uk

Filename: B4267_Pen-y-Turnpike Road (Calibrated).j9
Path: F:\projects\Development Planning\Cardiff Office Work\Leckwith Quay, Cardiff\Modelling\Junction Models
Report generation date: 20/02/2020 15:17:48

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	2019 Base					
Stream B-AC	15.0	62.87	0.97	0.4	6.13	0.27
Stream C-B	0.2	4.84	0.15	14.9	70.53	0.97
	2025 Do-Minimum					
Stream B-AC	37.8	132.50	1.05	0.5	7.25	0.32
Stream C-B	0.2	4.97	0.16	36.7	146.18	1.06
	2025 Do-Nothing					
Stream B-AC	40.8	141.53	1.06	0.5	7.49	0.34
Stream C-B	0.2	5.05	0.18	39.0	154.32	1.07
	2025 Do-Something					
Stream B-AC	40.2	139.64	1.06	0.5	7.47	0.34
Stream C-B	0.2	5.04	0.17	38.9	153.85	1.07
	2030 Do-Minimum					
Stream B-AC	58.4	192.18	1.11	0.6	8.91	0.38
Stream C-B	0.2	5.04	0.17	55.1	207.30	1.11
	2030 Do-Nothing					
Stream B-AC	62.0	203.14	1.11	0.7	9.55	0.41
Stream C-B	0.2	5.12	0.18	58.4	218.76	1.12
	2030 Do-Something					
Stream B-AC	61.7	202.28	1.11	0.7	9.48	0.40
Stream C-B	0.2	5.11	0.18	57.9	217.01	1.12

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

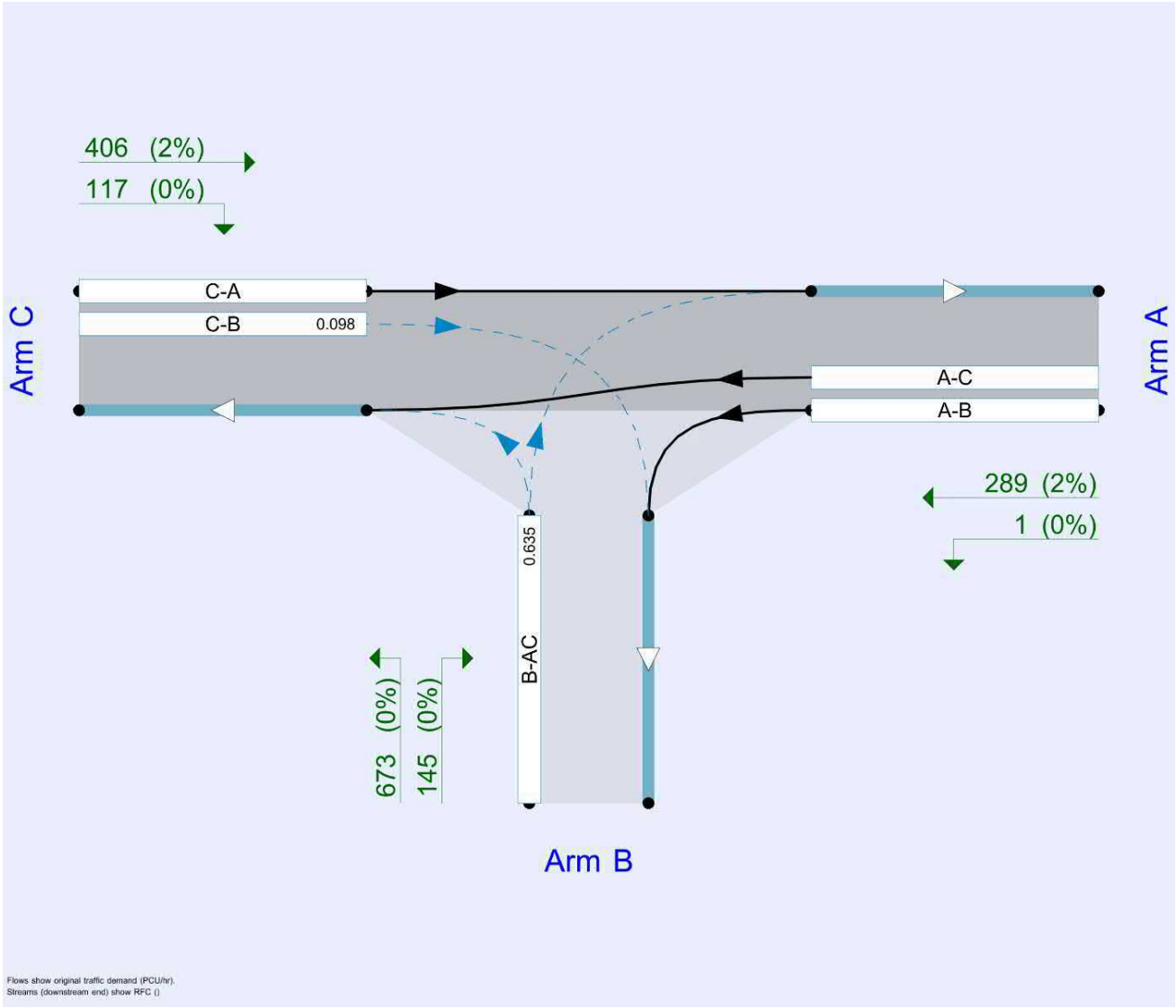
File summary

File Description

Title	B4267 Leckwith Road/Pen-y-Turnpike Road
Location	Leckwith, Cardiff
Site number	8
Date	20/02/2020
Version	
Status	
Identifier	
Client	Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Jobnumber	60608933
Enumerator	EU\Matthew.Davies
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20 00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2019 Base	AM	ONE HOUR	07:15	08:45	15	✓
D2	2019 Base	PM	ONE HOUR	16:15	17:45	15	✓
D3	2025 Do-Minimum	AM	ONE HOUR	07:15	08:45	15	✓
D4	2025 Do-Minimum	PM	ONE HOUR	16:15	17:45	15	✓
D5	2025 Do-Nothing	AM	ONE HOUR	07:15	08:45	15	✓
D6	2025 Do-Nothing	PM	ONE HOUR	16:15	17:45	15	✓
D7	2025 Do-Something	AM	ONE HOUR	07:15	08:45	15	✓
D8	2025 Do-Something	PM	ONE HOUR	16:15	17:45	15	✓
D9	2030 Do-Minimum	AM	ONE HOUR	07:15	08:45	15	✓
D10	2030 Do-Minimum	PM	ONE HOUR	16:15	17:45	15	✓
D11	2030 Do-Nothing	AM	ONE HOUR	07:15	08:45	15	✓
D12	2030 Do-Nothing	PM	ONE HOUR	16:15	17:45	15	✓
D13	2030 Do-Something	AM	ONE HOUR	07:15	08:45	15	✓
D14	2030 Do-Something	PM	ONE HOUR	16:15	17:45	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2019 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		31.88	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B4267 (Southeast)		Major
B	Pen-y-Turnpike Road		Minor
C	B4267 (Northwest)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.10		✓	3.85	200.0		-

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.66	100	135

Slope / Intercept / Capacity

Stream Intercept Adjustments

Stream intercept adjustment	Use adjustment	Reason	Direct intercept adjustment (PCU/hr)
B-AC	✓		325
C-B	✓		150

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	617	0.102	0.258	0.162	0.369
B-C	756	0.105	0.266	-	-
C-B	814	0.286	0.286	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

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)	Run automatically
D1	2019 Base	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	290	100.000
B		ONE HOUR	✓	818	100.000
C		ONE HOUR	✓	523	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	289
	B	145	0	673
	C	406	117	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.97	62.87	15.0	F	751	1126
C-A					373	559
C-B	0.15	4.84	0.2	A	107	161
A-B					0 92	1
A-C					265	398

2019 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		31.19	D

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)	Run automatically
D2	2019 Base	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	465	100.000
B		ONE HOUR	✓	201	100.000
C		ONE HOUR	✓	1004	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	90	375
	B	17	0	184
	C	283	721	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.27	6.13	0.4	A	184	277
C-A					260	390
C-B	0.97	70.53	14.9	F	662	992
A-B					83	124
A-C					344	516

2025 Do-Minimum, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		66.43	F

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)	Run automatically
D3	2025 Do-Minimum	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	312	100.000
B		ONE HOUR	✓	879	100.000
C		ONE HOUR	✓	572	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	311
	B	155	0	724
	C	444	128	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	1.05	132.50	37.8	F	807	1210
C-A					407	611
C-B	0.16	4.97	0.2	A	117	176
A-B					0 92	1
A-C					285	428

2025 Do-Minimum, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		63.78	F

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)	Run automatically
D4	2025 Do-Minimum	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	504	100.000
B		ONE HOUR	✓	217	100.000
C		ONE HOUR	✓	1080	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	97	407
	B	18	0	199
	C	305	775	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.32	7.25	0.5	A	199	299
C-A					280	420
C-B	1.06	146.18	36.7	F	711	1067
A-B					89	134
A-C					373	560

2025 Do-Nothing, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		70.25	F

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)	Run automatically
D5	2025 Do-Nothing	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	316	100.000
B		ONE HOUR	✓	883	100.000
C		ONE HOUR	✓	590	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	315
	B	155	0	728
	C	452	138	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	1.06	141.53	40.8	F	810	1215
C-A					415	622
C-B	0.18	5.05	0.2	A	127	190
A-B					0 92	1
A-C					289	434

2025 Do-Nothing, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		66.72	F

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)	Run automatically
D6	2025 Do-Nothing	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	512	100.000
B		ONE HOUR	✓	227	100.000
C		ONE HOUR	✓	1086	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	97	415
	B	18	0	209
	C	308	778	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.34	7.49	0.5	A	208	312
C-A					283	424
C-B	1.07	154.32	39.0	F	714	1071
A-B					89	134
A-C					381	571

2025 Do-Something, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		69.39	F

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)	Run automatically
D7	2025 Do-Something	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	315	100.000
B		ONE HOUR	✓	882	100.000
C		ONE HOUR	✓	588	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	314
	B	155	0	727
	C	451	137	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	1.06	139.64	40.2	F	809	1214
C-A					414	621
C-B	0.17	5.04	0.2	A	126	189
A-B					0 92	1
A-C					288	432

2025 Do-Something, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		66.58	F

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)	Run automatically
D8	2025 Do-Something	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	511	100.000
B		ONE HOUR	✓	226	100.000
C		ONE HOUR	✓	1086	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	97	414
	B	18	0	208
	C	308	778	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.34	7.47	0.5	A	207	311
C-A					283	424
C-B	1.07	153.85	38.9	F	714	1071
A-B					89	134
A-C					380	570

2030 Do-Minimum, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		96.25	F

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)	Run automatically
D9	2030 Do-Minimum	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	325	100.000
B		ONE HOUR	✓	916	100.000
C		ONE HOUR	✓	595	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	324
	B	162	0	754
	C	462	133	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	1.11	192.18	58.4	F	841	1261
C-A					424	636
C-B	0.17	5.04	0.2	A	122	183
A-B					0 92	1
A-C					297	446

2030 Do-Minimum, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		90.34	F

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)	Run automatically
D10	2030 Do-Minimum	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	524	100.000
B		ONE HOUR	✓	226	100.000
C		ONE HOUR	✓	1124	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	101	423
	B	19	0	207
	C	317	807	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.38	8.91	0.6	A	207	311
C-A					291	436
C-B	1.11	207.30	55.1	F	741	1111
A-B					93	139
A-C					388	582

2030 Do-Nothing, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		100.76	F

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)	Run automatically
D11	2030 Do-Nothing	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	329	100.000
B		ONE HOUR	✓	920	100.000
C		ONE HOUR	✓	613	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	328
	B	162	0	758
	C	470	143	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	1.11	203.14	62.0	F	844	1266
C-A					431	647
C-B	0.18	5.12	0.2	A	131	197
A-B					0 92	1
A-C					301	451

2030 Do-Nothing, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		94.61	F

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)	Run automatically
D12	2030 Do-Nothing	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	532	100.000
B		ONE HOUR	✓	236	100.000
C		ONE HOUR	✓	1131	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	101	431
	B	19	0	217
	C	320	811	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.41	9.55	0.7	A	217	325
C-A					294	440
C-B	1.12	218.76	58.4	F	744	1116
A-B					93	139
A-C					395	593

2030 Do-Something, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		100.50	F

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)	Run automatically
D13	2030 Do-Something	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	328	100.000
B		ONE HOUR	✓	920	100.000
C		ONE HOUR	✓	611	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	1	327
	B	162	0	758
	C	469	142	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	1.11	202.28	61.7	F	844	1266
C-A					430	646
C-B	0.18	5.11	0.2	A	130	195
A-B					0 92	1
A-C					300	450

2030 Do-Something, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
8	B4267 Leckwith Road/Pen-y-Turnpike Road	T-Junction	Two-way		93.83	F

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)	Run automatically
D14	2030 Do-Something	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	532	100.000
B		ONE HOUR	✓	235	100.000
C		ONE HOUR	✓	1130	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	101	431
	B	19	0	216
	C	320	810	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	1
	B	0	0	1
	C	2	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.40	9.48	0.7	A	216	323
C-A					294	440
C-B	1.12	217.01	57.9	F	743	1115
A-B					93	139
A-C					395	593

Appendix L:

Analysis of Traffic Survey Footage: Junction 10 – Merrie Harrier

Analysis of Traffic Survey Footage: Junction 10 - Merrie Harrier

AM Peak Hour

No	Start Time	End Time	Cycle Time	Stages Called	Stage 3 (Andrew Road) Called?	Stage 5 (Crossing) Called?
1	07:30 28	07 32:07	00 01:39	1,2,4,6	N	N
2	07:32 07	07 33:55	00 01:48	1,2,4,6	N	N
3	07:33 55	07 35:48	00 01:53	1,2,4,5,6	N	Y
4	07:35:48	07 37:41	00 01:53	1 2 4 5 6	N	Y
5	07:37:41	07 39:34	00 01:53	1,2,4,6	N	N
6	07:39 34	07:41:18	00 01:44	1,2,4,5,6	N	Y
7	07:41:18	07:42:55	00 01:37	1,2,4,5,6	N	Y
8	07:42 55	07:44:43	00 01:48	1,2,4,6	N	N
9	07:44:43	07:46:35	00 01:52	1 2 4 6	N	N
10	07:46 35	07:48:26	00 01:51	1,2,4,5,6	N	Y
11	07:48 26	07 50:10	00 01:44	1,2,4,5,6	N	Y
12	07:50:10	07 52:08	00 01:58	1,2,4,6	N	Y
13	07:52 08	07 53:54	00 01:46	1,2,4,5,6	N	Y
14	07:53 54	07 55:43	00 01:49	1 2 4 5 6	N	Y
15	07:55:43	07 57:36	00 01:53	1,2,4,5,6	N	Y
16	07:57 36	07 59:24	00 01:48	1,2,4,6	N	N
17	07:59 24	08 01:23	00 01:59	1,2,4,5,6	N	Y
18	08:01 23	08 03:14	00 01:51	1,2,4,5,6	N	Y
19	08:03:14	08 05:24	00 02:10	1 2 3 4 5 6	Y	Y
20	08:05 24	08 07:22	00 01:58	1,2,4,6	N	N
21	08:07 22	08 09:09	00 01:47	1,2,4,5,6	N	Y
22	08:09 09	08:10:57	00 01:48	1,2,4,6	N	N
23	08:10 57	08:12:37	00 01:40	1,2,4,5,6	N	y
24	08:12 37	08:14:37	00 02:00	1 2 4 6	N	N
25	08:14 37	08:16:24	00 01:47	1,2,4,5,6	N	Y
26	08:16 24	08:18:14	00 01:50	1,2,4,5,6	N	Y
27	08:18:14	08 20:08	00 01:54	1,2,4,5,6	N	Y
28	08:20 08	08 22:16	00 02:08	1,2,4,6	N	N
29	08:22:16	08 23:53	00 01:37	1 2 4 6	N	N
30	08:23 53	08 25:30	00 01:37	1,2,4,6	N	N
31	08:25 30	08 27:00	00 01:30	1,2,4,5,6	N	Y
32	08:27 00	08 28:52	00 01:52	1,2,4,6	N	N

Average Cycle Time **00 01 50**

Stage	No. of Time Called	Proportion of Cycles
3	1	3%
5	19	59%

AM Peak Hour

No	Start Time	End Time	Cycle Time	Stages Called	Stage 3 (Andrew Road) Called?	Stage 5 (Crossing) Called?
1	16:31:40	16 33:45	00 02:05	1,2,4,5,6	N	Y
2	16:33:45	16 35:40	00 01:55	1,2,4,5,6	N	Y
3	16:35:40	16 37:54	00 02:14	1,2,4,6	N	N
4	16:37 54	16 39:47	00 01:53	1,2,4,6	N	N
5	16:39:47	16:42:05	00 02:18	1 2 4 6	N	N
6	16:42 05	16:44:24	00 02:19	1,2,4,5,6	N	Y
7	16:44 24	16:46:15	00 01:51	1,2,4,6	N	N
8	16:46:15	16:48:25	00 02:10	1,2,4,6	N	N
9	16:48 25	16 50:45	00 02:20	1,2,4,6	N	N
10	16:50:45	16 52:44	00 01:59	1 2 4 6	N	N
11	16:52:44	16 54:42	00 01:58	1,2,4,5,6	N	Y
12	16:54:42	16 56:50	00 02:08	1,2,4,6	N	N
13	16:56 50	16 58:58	00 02:08	1,2,4,5,6	N	Y
14	16:58 58	17 01:12	00 02:14	1,2,4,6	N	N
15	17:01:12	17 03:00	00 01:48	1 2 4 5 6	N	Y
16	17:03 00	17 04:38	00 01:38	1,2,4,6	N	Y
17	17:04 38	17 06:20	00 01:42	1,2,4,5,6	N	Y
18	17:06 20	17 08:05	00 01:45	1,2,4,6	N	N
19	17:08 05	17:10:15	00 02:10	1,2,4,5,6	N	Y
20	17:10:15	17:11:45	00 01:30	1 2 4 5 6	N	Y
21	17:11:45	17:13:43	00 01:58	1,2,4,6	N	N
22	17:13:43	17:15:49	00 02:06	1,2,4,5,6	N	Y
23	17:15:49	17:18:07	00 02:18	1,2,4,6	N	N
24	17:18 07	17 20:26	00 02:19	1,2,4,5,6	N	Y
25	17:20 26	17 22:42	00 02:16	1 2 4 6	N	Y
26	17:22:42	17 25:02	00 02:20	1,2,4,6	N	N
27	17:25 02	17 27:15	00 02:13	1,2,4,5,6	N	Y
28	17:27:15	17 29:10	00 01:55	1,2,4,6	N	N

Average Cycle Time **00 02 03**

Stage	No. of Time Called	Proportion of Cycles
3	0	0%
5	14	50%

Appendix M:

Model Output Report: Junction 10 – Merrie Harrier

AECOM LinSig Results

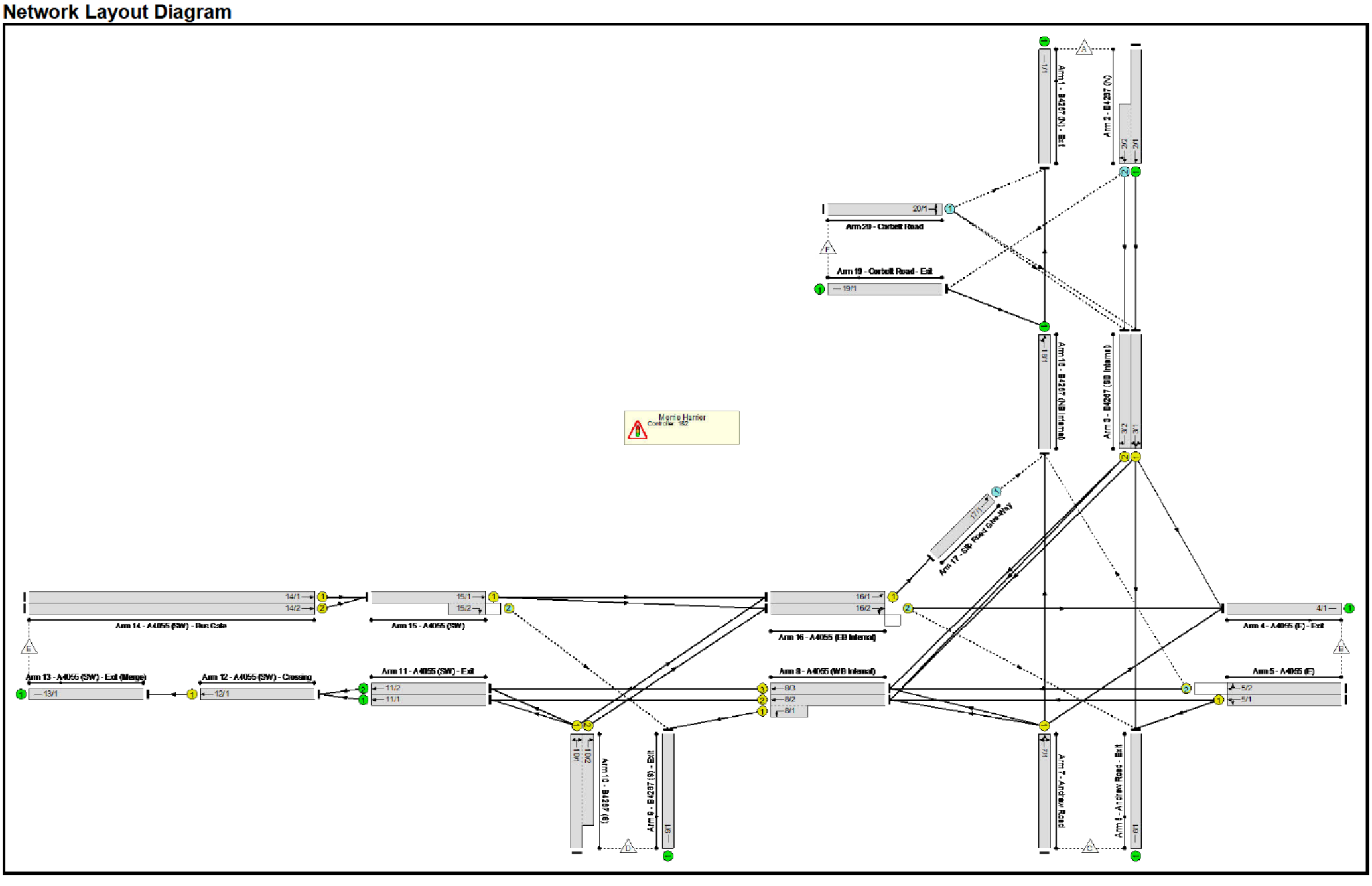
Project and User Details

Project:	**Leckwith Quays, Cardiff**
Title:	**Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)**
Location:	Leckwith, Cardiff
Client:	Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Additional detail:	Network comprising a three-arm signal-controlled junction, four-arm signal controlled junction and a three-arm priority T-junction.
File name:	Merrie Harrier.lsg3x
Author:	Matthew Davies
Company:	AECOM
Address:	1 Callaghan Square, Cardiff, CF10 5BT
Linsig Version:	3, 2, 39, 0

Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2019 Base - AM	2019 Base - AM	AM	07:30 - 08:30	330/120	-4.1	47.75
2	2019 Base - PM	2019 Base - PM	PM	16:30 - 17:30	240/120	-3.3	58.51
3	2025 Do-Minimum - AM	2025 Do-Minimum - AM	AM	07:30 - 08:30	330/120	-15.8	125.81
4	2025 Do-Minimum - PM	2025 Do-Minimum - PM	PM	16:30 - 17:30	240/120	-26.1	139.64
5	2025 Do-Nothing - AM	2025 Do-Nothing - AM	AM	07:30 - 08:30	330/120	-16.6	133.99
6	2025 Do-Nothing - PM	2025 Do-Nothing - PM	PM	16:30 - 17:30	240/120	-26.6	143.40
7	2025 Do-Something - AM	2025 Do-Something - AM	AM	07:30 - 08:30	330/120	-16.6	133.99
8	2025 Do-Something - PM	2025 Do-Something - PM	PM	16:30 - 17:30	240/120	-26.6	143.40
9	2030 Do-Minimum - AM	2030 Do-Minimum - AM	AM	07:30 - 08:30	330/120	-20.7	179.60
10	2030 Do-Minimum - PM	2030 Do-Minimum - PM	PM	16:30 - 17:30	240/120	-33.5	183.57
11	2030 Do-Nothing - AM	2030 Do-Nothing - AM	AM	07:30 - 08:30	330/120	-20.9	187.60
12	2030 Do-Nothing - PM	2030 Do-Nothing - PM	PM	16:30 - 17:30	240/120	-34.0	191.14
13	2030 Do-Something - AM	2030 Do-Something - AM	AM	07:30 - 08:30	330/120	-20.9	187.23
14	2030 Do-Something - PM	2030 Do-Something - PM	PM	16:30 - 17:30	240/120	-34.0	191.02

Network Layout Diagram



Lane Input Data

Junction: Merrie Harrier

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 (B4267 (N) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
2/1 (B4267 (N))	U		2	3	60.0	Geom	-	3.00	0.00	Y	Arm 3 Ahead	Inf
2/2 (B4267 (N))	O		2	3	7.8	Geom	-	3.00	0.00	Y	Arm 3 Ahead Arm 19 Right	Inf 7.50
3/1 (B4267 (SB Internal))	U	K	2	3	1.7	Geom	-	3.00	0.00	Y	Arm 4 Left Arm 6 Ahead Arm 8 Right	12.50 Inf 12.50
3/2 (B4267 (SB Internal))	U	H	2	3	1.7	Geom	-	3.00	0.00	N	Arm 8 Right	12.50
4/1 (A4055 (E) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (A4055 (E))	U	G	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Left Arm 8 Ahead	5.00 Inf
5/2 (A4055 (E))	O	G	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 8 Ahead Arm 18 Right	Inf 12.50
6/1 (Andrew Road - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Andrew Road)	U	I	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Right Arm 8 Left Arm 18 Ahead	7.50 5.00 Inf
8/1 (A4055 (WB Internal))	U	C E	2	3	4.9	Geom	-	3.00	0.00	Y	Arm 9 Left	15.00
8/2 (A4055 (WB Internal))	U	C	2	3	13.0	Geom	-	3.00	0.00	Y	Arm 11 Ahead	Inf
8/3 (A4055 (WB Internal))	U	C	2	3	13.4	Geom	-	3.00	0.00	N	Arm 11 Ahead	Inf
9/1 (B4267 (S) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (B4267 (S))	U	J	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 11 Left Arm 16 Right	12.50 12.50
10/2 (B4267 (S))	U	J	2	3	13.9	Geom	-	3.00	0.00	Y	Arm 16 Right	12.50
11/1 (A4055 (SW) - Exit)	U		2	3	8.9	Geom	-	3.50	0.00	Y	Arm 12 Ahead	Inf
11/2 (A4055 (SW) - Exit)	U		2	3	8.9	Geom	-	3.50	0.00	N	Arm 12 Ahead	Inf
12/1 (A4055 (SW) - Crossing)	U	D	2	3	7.0	Geom	-	3.50	0.00	Y	Arm 13 Ahead	Inf
13/1 (A4055 (SW) - Exit (Merge))	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1 (A4055 (SW) - Bus Gate)	U	B	2	3	57.4	Geom	-	3.20	0.00	Y	Arm 15 Ahead	Inf
14/2 (A4055 (SW) - Bus Gate)	U	A	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 15 Ahead	Inf
15/1 (A4055 (SW))	U	D	2	3	11.7	Geom	-	3.00	0.00	Y	Arm 16 Ahead	Inf
15/2 (A4055 (SW))	O	D L	2	3	4.9	Geom	-	3.00	0.00	Y	Arm 9 Right	12.50
16/1 (A4055 (EB Internal))	U	B F	2	3	10.6	Geom	-	3.30	0.00	Y	Arm 17 Left	Inf
16/2 (A4055 (EB Internal))	O	B	2	3	6.1	Geom	-	3.30	0.00	Y	Arm 4 Ahead Arm 6 Right	Inf 10.00
17/1 (Slip Road Give-Way)	O		2	3	4.3	Geom	-	3.30	0.00	Y	Arm 18 Left	40.00
18/1 (B4267 (NB Internal))	U		2	3	3.0	Geom	-	4.00	0.00	Y	Arm 1 Ahead Arm 19 Left	Inf 10.00
19/1 (Corbett Road - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
20/1 (Corbett Road)	O		2	3	60.0	Geom	-	2.00	0.00	Y	Arm 1 Left Arm 3 Right	7.50 5.00

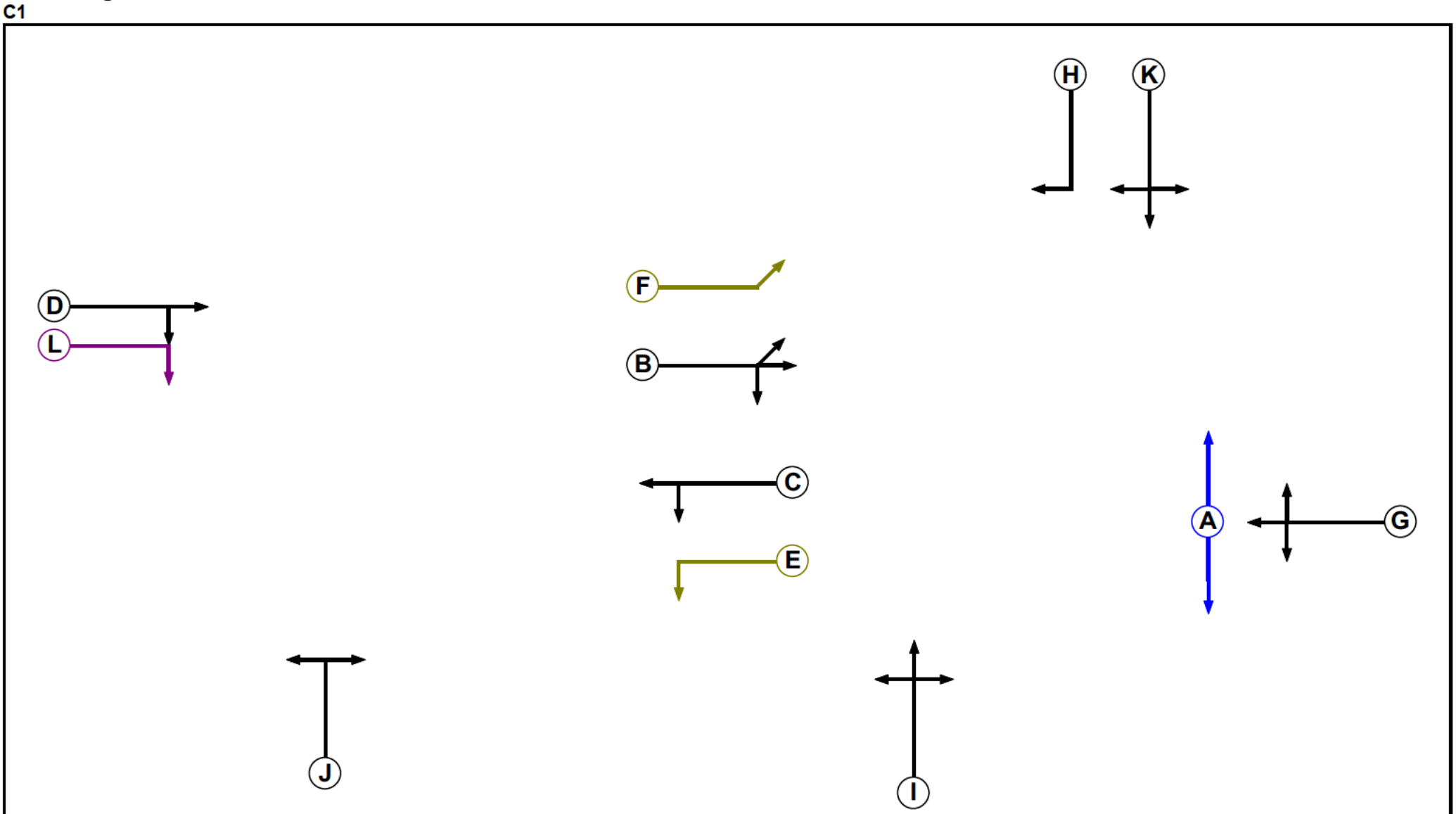
Give-Way Lane Input Data

Junction: Merrie Harrier

Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
2/2 (B4267 (N))	19/1 (Right)	1439	0	18/1	1.09	All	-	-	-	-	-
5/2 (A4055 (E))	18/1 (Right)	1439	0	16/2	1.09	All	4.30	-	0.50	4	2.00
15/2 (A4055 (SW))	9/1 (Right)	1439	0	8/1	1.09	All	2.00	-	0.50	2	2.00
				8/2	1.09	All					
				8/3	1.09	All					
16/2 (A4055 (EB Internal))	6/1 (Right)	1439	0	5/1	1.09	All	2.00	2.00	0.50	2	2.00
				5/2	1.09	All					
17/1 (Slip Road Give-Way)	18/1 (Left)	1439	0	5/2	1.09	To 18/1 (Right)	-	-	-	-	-
				7/1	1.09	To 4/1 (Right) To 18/1 (Ahead)					
20/1 (Corbett Road)	1/1 (Left)	1439	0	18/1	1.09	To 1/1 (Ahead)	-	-	-	-	-
	3/1 (Right)	1439	0	2/1	1.09	All					
				2/2	1.09	All					
	3/2 (Right)	1439	0	2/1	1.09	All					
				2/2	1.09	All					

Phase Diagram

C1



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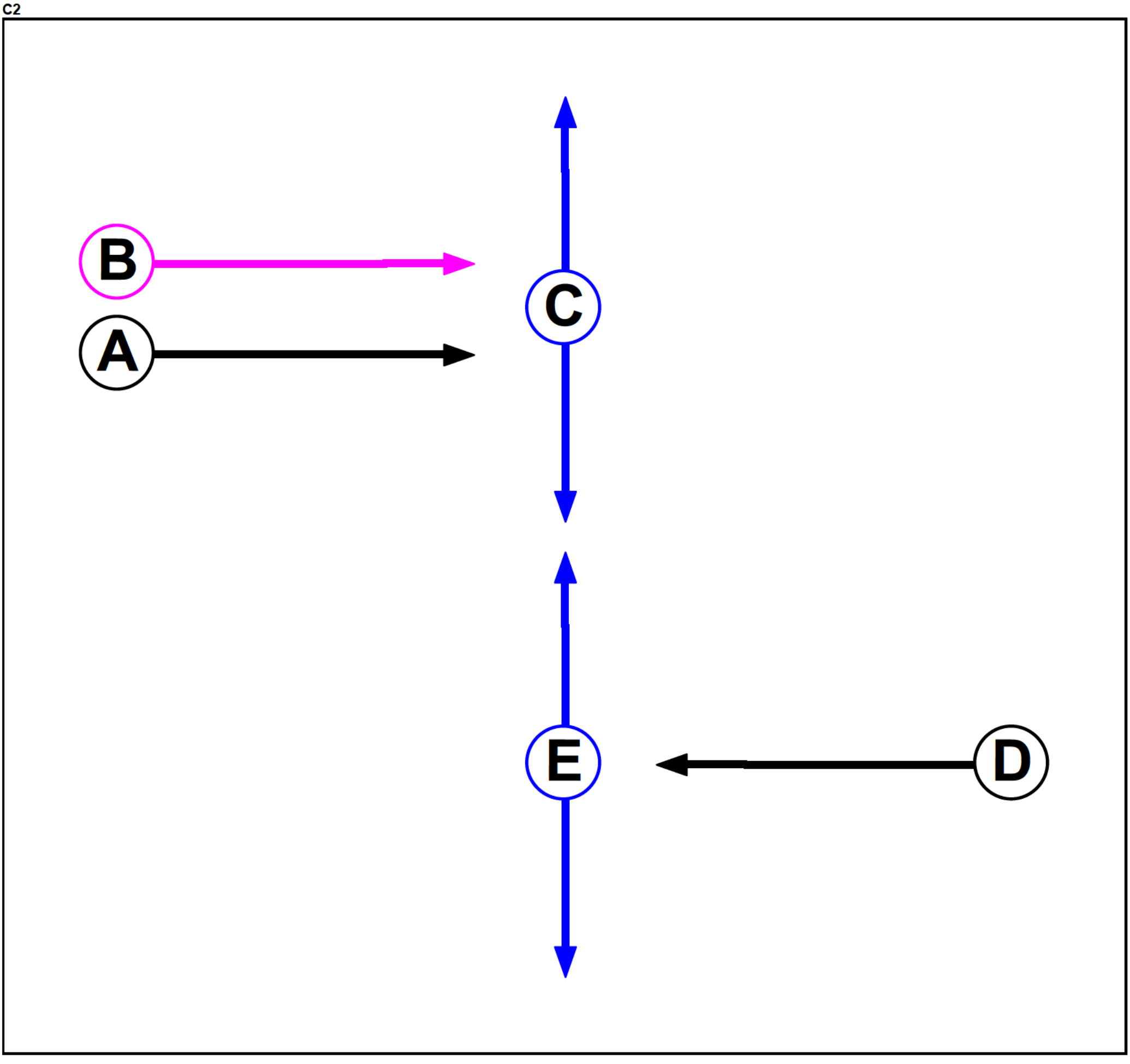


Phase Input Data

C1

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Pedestrian		9	9
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Filter	C	4	0
F	Filter	B	4	0
G	Traffic		7	7
H	Traffic		7	7
I	Traffic		7	7
J	Traffic		7	7
K	Traffic		7	7
L	Ind. Arrow	D	5	5

C2

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Bus	1		7	7
C	Pedestrian	1		7	7
D	Traffic	2		7	7
E	Pedestrian	2		5	5

Phase Intergreens Matrix

C1

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L
A		0	-	-	-	-	0	-	0	-	0	-
B	10		-	-	-	-	-	7	7	-	7	-
C	-	-		-	-	-	-	-	-	6	-	5
D	-	-	-		-	-	-	-	-	6	-	-
E	-	-	-	-		-	-	-	-	-	-	5
F	-	-	-	-	-		-	-	-	-	-	-
G	6	-	-	-	-	-		5	5	-	5	-
H	-	5	-	-	-	-	5		5	-	-	-
I	8	5	-	-	-	-	5	5		-	5	-
J	-	-	5	5	-	-	-	-	-		-	5
K	7	5	-	-	-	-	5	-	5	-		-
L	-	-	5	-	5	-	-	-	-	5	-	

C2

Terminating Phase \ Starting Phase	A	B	C	D	E
A		5	5	-	-
B	5		5	-	-
C	0	0		-	-
D	-	-	-		5
E	-	-	-	0	

Phase Delays

C1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	B	Losing	8	8
1	4	B	Losing	8	8
1	5	C	Losing	5	5
2	3	B	Losing	8	8
4	6	C	Losing	7	7

C2

Stage Stream: 1

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

Stage Stream: 2

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

Phases in Stage

C1

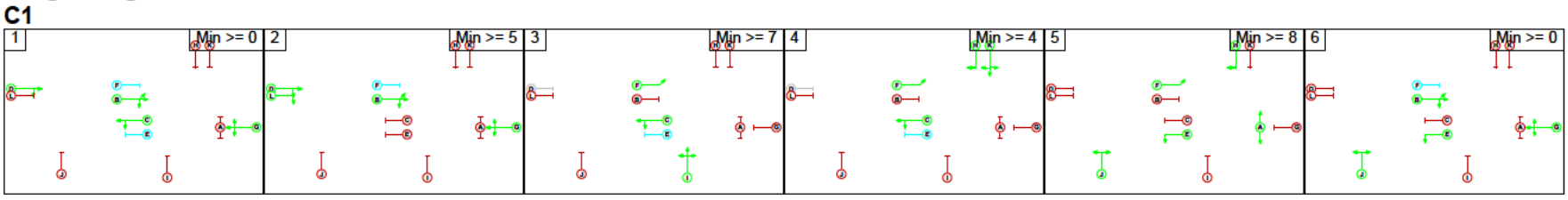
Stage No.	Phases in Stage
1	B C D G
2	B D G L
3	C F I
4	C F H K
5	A E F H J
6	B E G J

C2

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
1	3	C
2	1	D
2	2	E

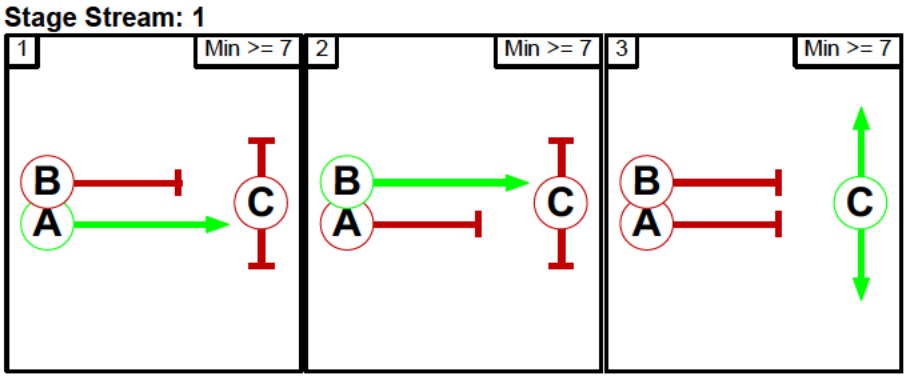
Stage Diagram

C1

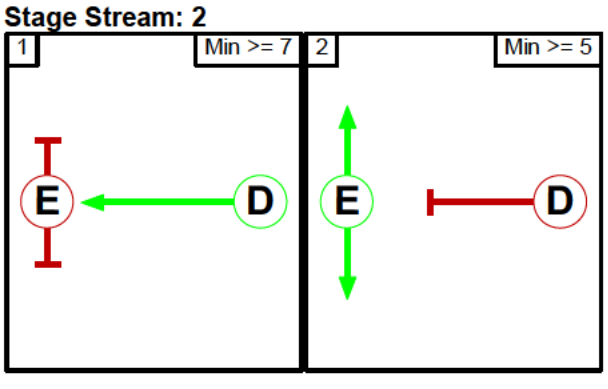


C2

Stage Stream: 1



Stage Stream: 2



Network Control Plans

Plan	Controller	Sequence Name	Sequence
AM	C1	AM Peak Hour	1,2,4,5,6,1,2,4,6,1,2,4,6
	C2	Stage Sequence No. 1	Stream 1: 1,2,3 Stream 2: 1,2
PM	C1	PM Peak Hour	1,2,4,5,6,1,2,4,6
	C2	Stage Sequence No. 1	Stream 1: 1,2,3 Stream 2: 1,2

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2019 Base - AM'	07:30	08:30	01:00	
2: '2019 Base - PM'	16:30	17:30	01:00	
3: '2025 Do-Minimum - AM'	07:30	08:30	01:00	
4: '2025 Do-Minimum - PM'	16:30	17:30	01:00	
5: '2025 Do-Nothing - AM'	07:30	08:30	01:00	
6: '2025 Do-Nothing - PM'	16:30	17:30	01:00	
7: '2025 Do-Something - AM'	07:30	08:30	01:00	
8: '2025 Do-Something - PM'	16:30	17:30	01:00	
9: '2030 Do-Minimum - AM'	07:30	08:30	01:00	
10: '2030 Do-Minimum - PM'	16:30	17:30	01:00	
11: '2030 Do-Nothing - AM'	07:30	08:30	01:00	
12: '2030 Do-Nothing - PM'	16:30	17:30	01:00	
13: '2030 Do-Something - AM'	07:30	08:30	01:00	
14: '2030 Do-Something - PM'	16:30	17:30	01:00	

Traffic Flows, Desired

FG1: '2019 Base - AM'

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	73	4	189	83	0	349
	B	163	0	0	275	334	0	772
	C	0	0	0	0	0	0	0
	D	372	441	0	0	59	0	872
	E	158	440	0	97	0	0	695
	F	2	1	0	3	0	0	6
	Tot.	695	955	4	564	476	0	2694

FG2: '2019 Base - PM'

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	176	3	241	136	1	557
	B	70	0	0	468	481	0	1019
	C	0	0	0	0	0	0	0
	D	128	291	0	0	104	1	524
	E	88	499	0	108	0	0	695
	F	1	0	0	0	0	0	1
	Tot.	287	966	3	817	721	2	2796

FG3: '2025 Do-Minimum - AM'

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	79	4	204	89	0	376
	B	177	0	0	298	367	0	842
	C	0	0	0	0	0	0	0
	D	399	473	0	0	63	0	935
	E	169	477	0	103	0	0	749
	F	2	1	0	3	0	0	6
	Tot.	747	1030	4	608	519	0	2908

FG4: '2025 Do-Minimum - PM'

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	191	3	259	146	1	600
	B	75	0	0	503	520	0	1098
	C	0	0	0	0	0	0	0
	D	138	314	0	0	111	1	564
	E	94	542	0	115	0	0	751
	F	1	0	0	0	0	0	1
	Tot.	308	1047	3	877	777	2	3014

FG5: '2025 Do-Nothing - AM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	80	4	208	89	0	381
	B	178	0	0	298	367	0	843
	C	0	0	0	0	0	0	0
	D	400	473	0	0	63	0	936
	E	169	477	0	103	0	0	749
	F	2	1	0	3	0	0	6
	Tot.	749	1031	4	612	519	0	2915

FG6: '2025 Do-Nothing - PM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	192	3	260	146	1	602
	B	76	0	0	503	520	0	1099
	C	0	0	0	0	0	0	0
	D	142	314	0	0	111	1	568
	E	94	542	0	115	0	0	751
	F	1	0	0	0	0	0	1
	Tot.	313	1048	3	878	777	2	3021

FG7: '2025 Do-Something - AM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	80	4	208	89	0	381
	B	178	0	0	298	367	0	843
	C	0	0	0	0	0	0	0
	D	400	473	0	0	63	0	936
	E	169	477	0	103	0	0	749
	F	2	1	0	3	0	0	6
	Tot.	749	1031	4	612	519	0	2915

FG8: '2025 Do-Something - PM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	192	3	260	146	1	602
	B	76	0	0	503	520	0	1099
	C	0	0	0	0	0	0	0
	D	142	314	0	0	111	1	568
	E	94	542	0	115	0	0	751
	F	1	0	0	0	0	0	1
	Tot.	313	1048	3	878	777	2	3021

FG9: '2030 Do-Minimum - AM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	82	4	213	93	0	392
	B	185	0	0	310	382	0	877
	C	0	0	0	0	0	0	0
	D	415	493	0	0	66	0	974
	E	176	497	0	108	0	0	781
	F	2	1	0	3	0	0	6
	Tot.	778	1073	4	634	541	0	3030

FG10: '2030 Do-Minimum - PM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	199	3	269	152	1	624
	B	78	0	0	524	542	0	1144
	C	0	0	0	0	0	0	0
	D	144	327	0	0	116	1	588
	E	98	564	0	120	0	0	782
	F	1	0	0	0	0	0	1
	Tot.	321	1090	3	913	810	2	3139

FG11: '2030 Do-Nothing - AM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	83	4	217	93	0	397
	B	185	0	0	310	382	0	877
	C	0	0	0	0	0	0	0
	D	417	493	0	0	66	0	976
	E	176	497	0	108	0	0	781
	F	2	1	0	3	0	0	6
	Tot.	780	1074	4	638	541	0	3037

FG12: '2030 Do-Nothing - PM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	199	3	271	152	1	626
	B	79	0	0	524	542	0	1145
	C	0	0	0	0	0	0	0
	D	148	327	0	0	116	1	592
	E	98	564	0	120	0	0	782
	F	1	0	0	0	0	0	1
	Tot.	326	1090	3	915	810	2	3146

FG13: '2030 Do-Something - AM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	83	4	216	93	0	396
	B	185	0	0	310	382	0	877
	C	0	0	0	0	0	0	0
	D	417	493	0	0	66	0	976
	E	176	497	0	108	0	0	781
	F	2	1	0	3	0	0	6
	Tot.	780	1074	4	637	541	0	3036

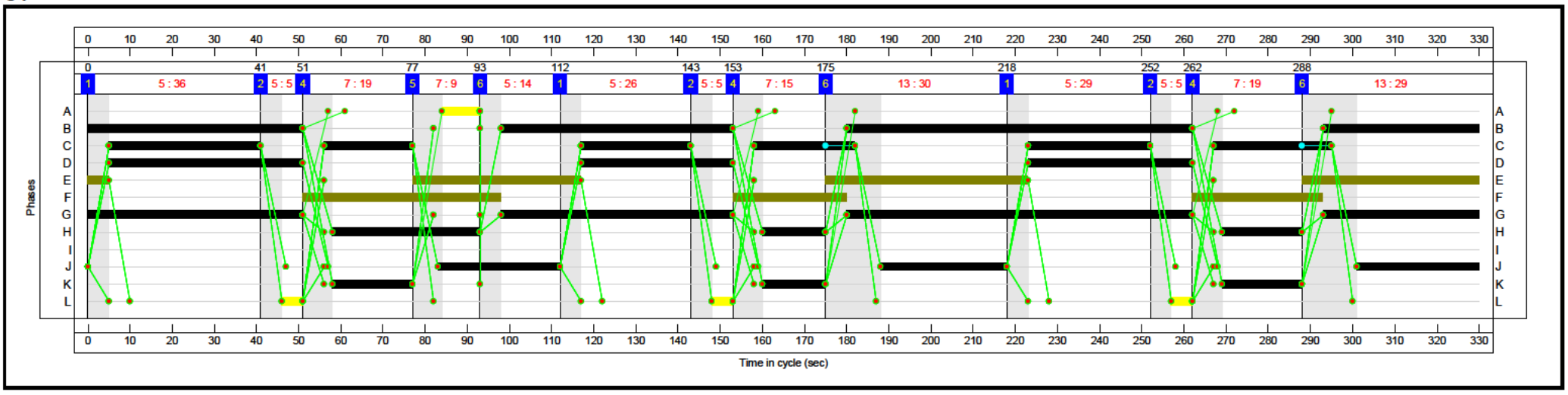
FG14: '2030 Do-Something - PM'
Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	199	3	271	152	1	626
	B	79	0	0	524	542	0	1145
	C	0	0	0	0	0	0	0
	D	147	327	0	0	116	1	591
	E	98	564	0	120	0	0	782
	F	1	0	0	0	0	0	1
	Tot.	325	1090	3	915	810	2	3145

Signal Timings Diagram

Scenario 1: '2019 Base - AM' (FG1: '2019 Base - AM', Plan 1: 'AM')

C1



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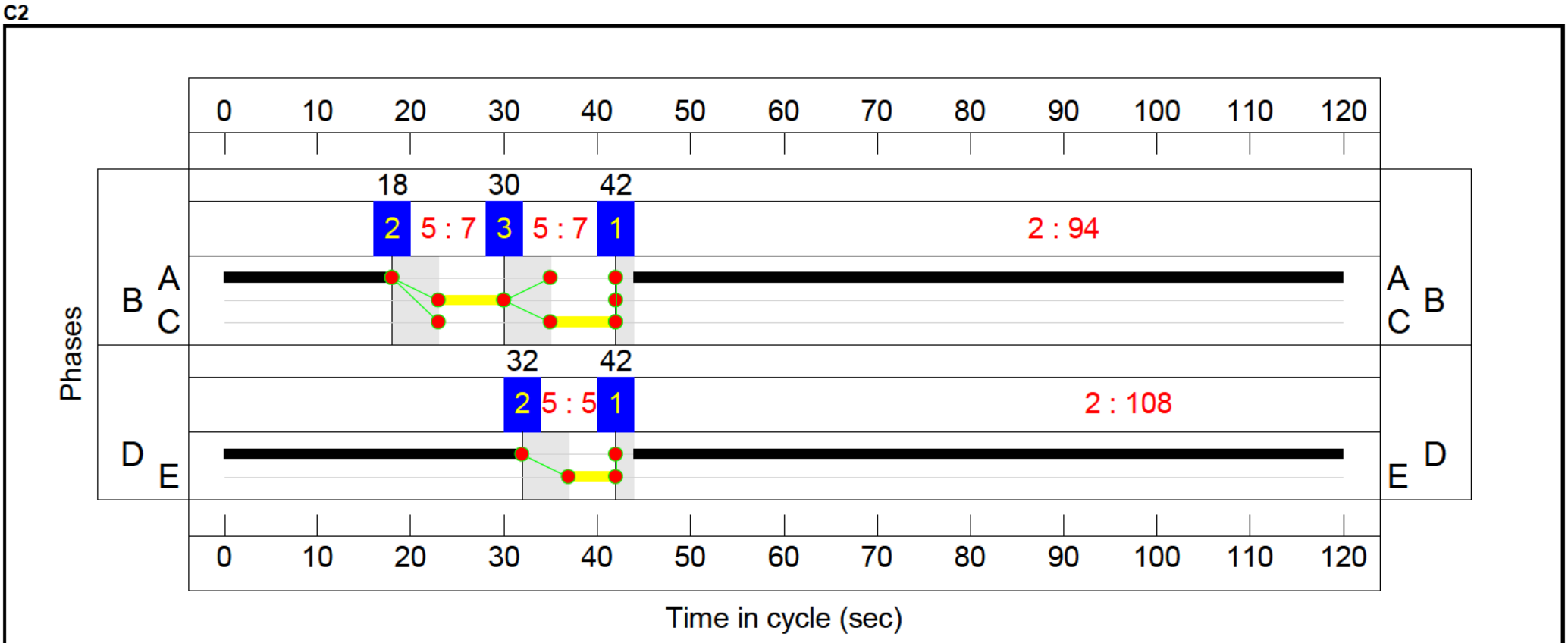
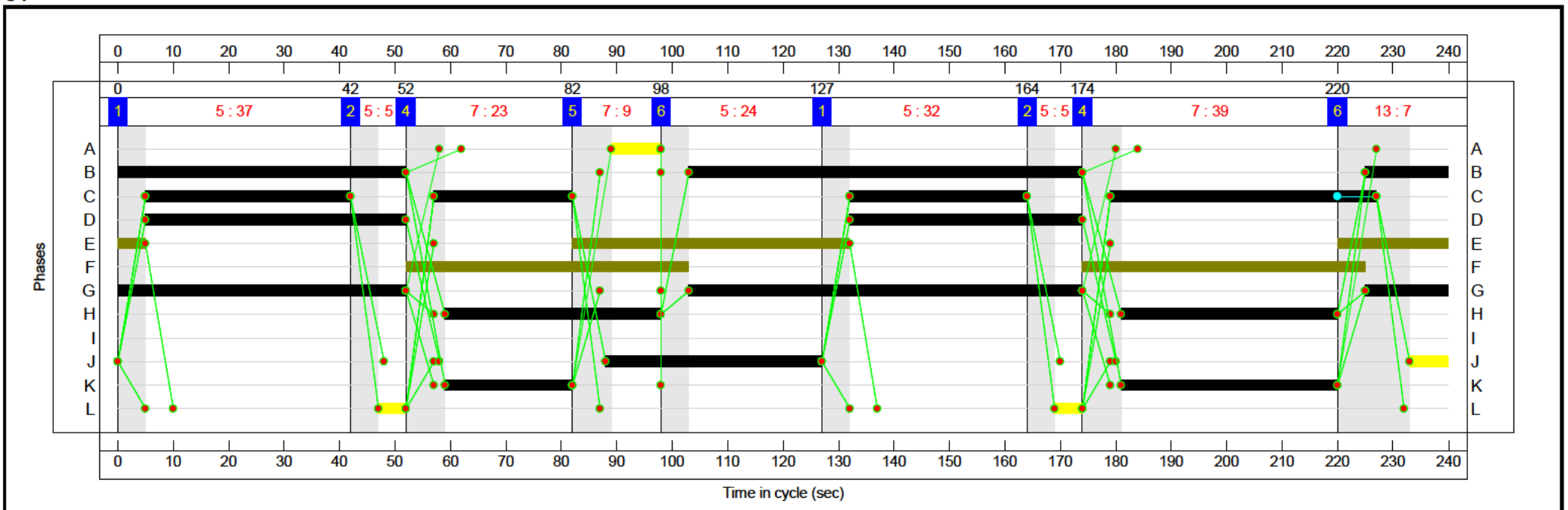


Scenario 2: '2019 Base - PM' (FG2: '2019 Base - PM', Plan 2: 'PM')

C1



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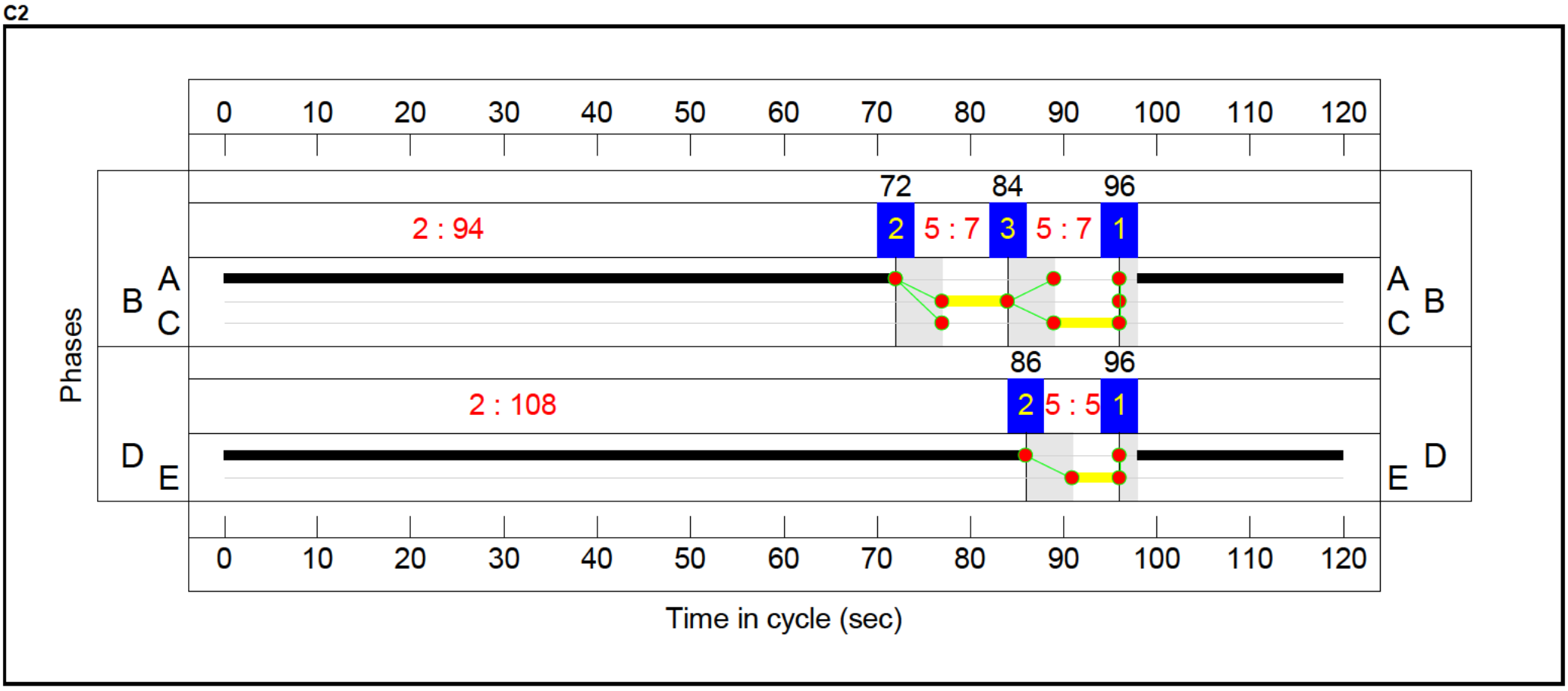
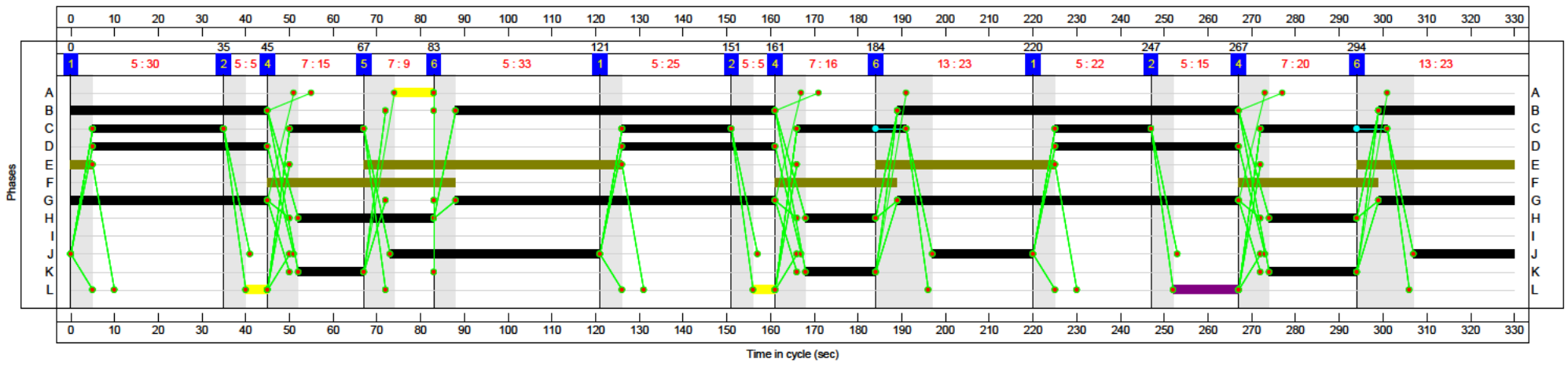


Scenario 3: '2025 Do-Minimum - AM' (FG3: '2025 Do-Minimum - AM', Plan 1: 'AM')

C1



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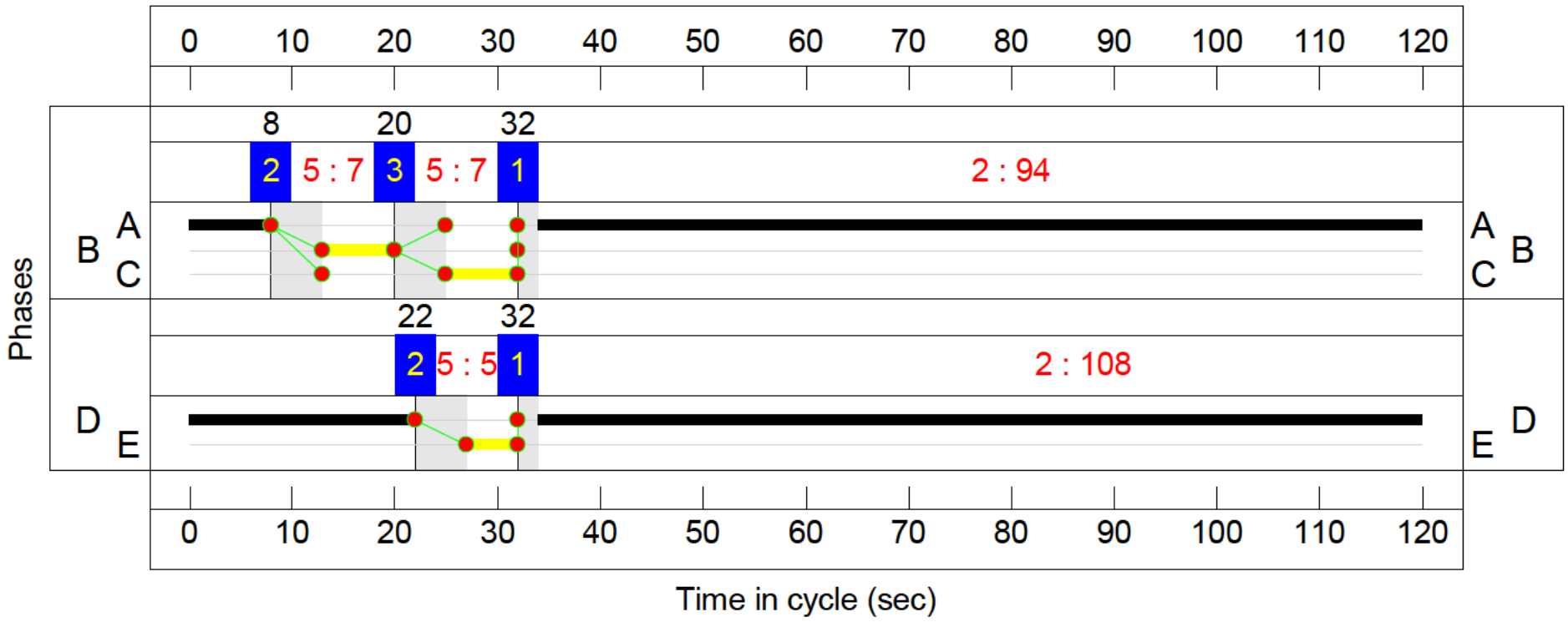
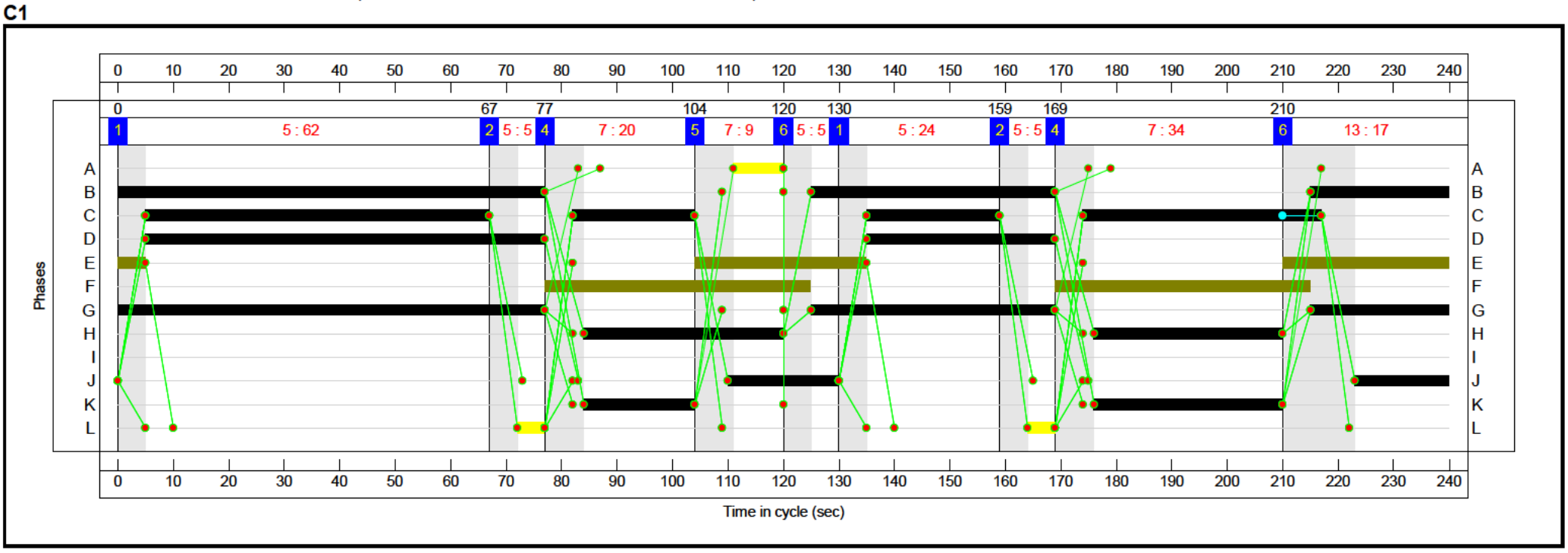


Scenario 4: '2025 Do-Minimum - PM' (FG4: '2025 Do-Minimum - PM', Plan 2: 'PM')
C1



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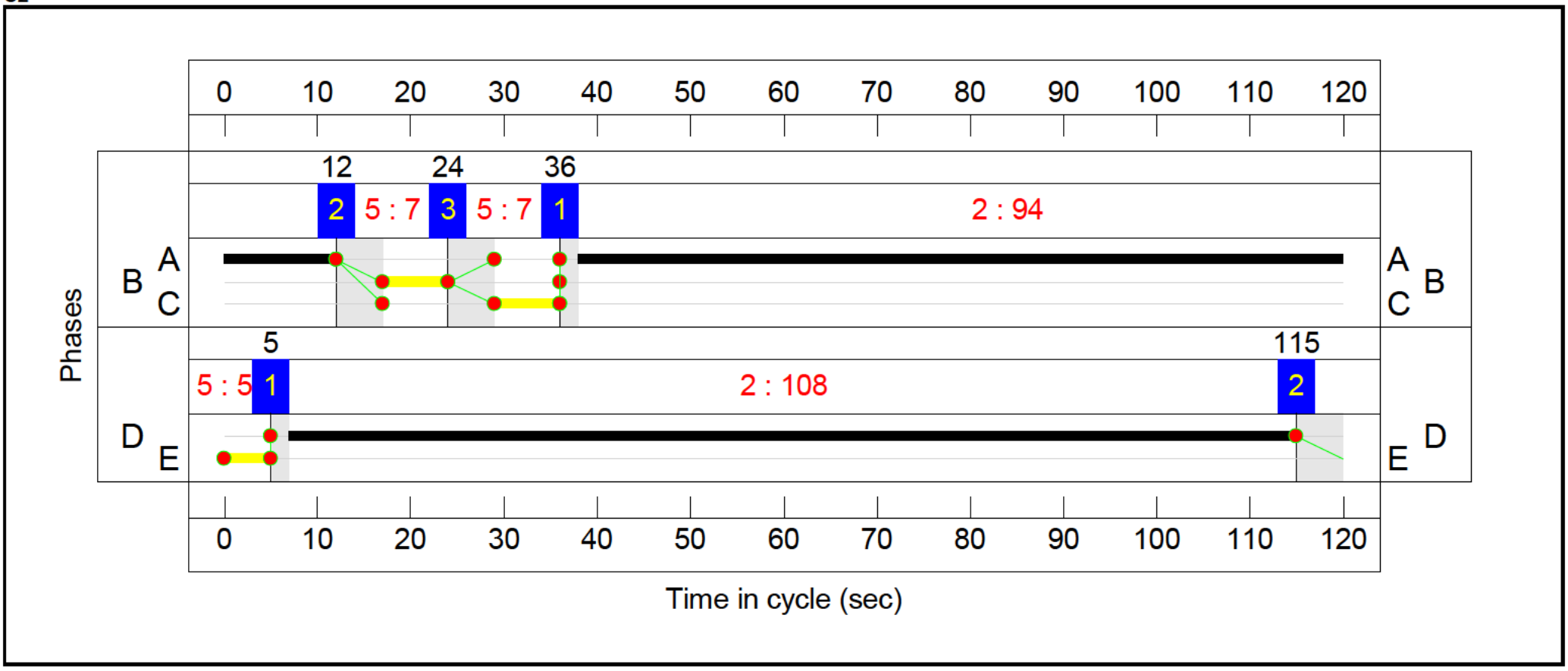
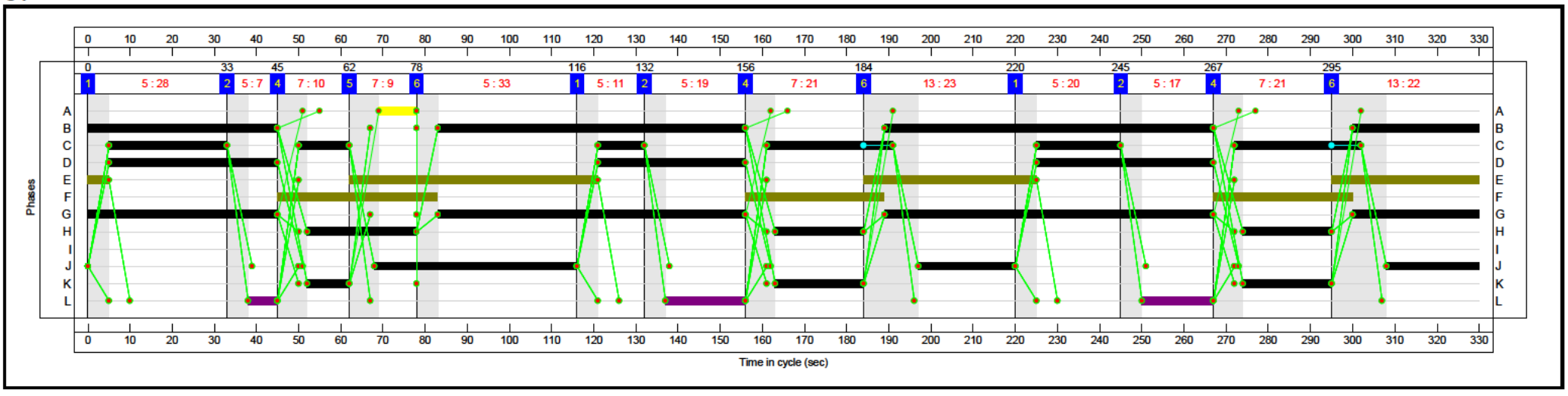


Scenario 5: '2025 Do-Nothing - AM' (FG5: '2025 Do-Nothing - AM', Plan 1: 'AM')
C1



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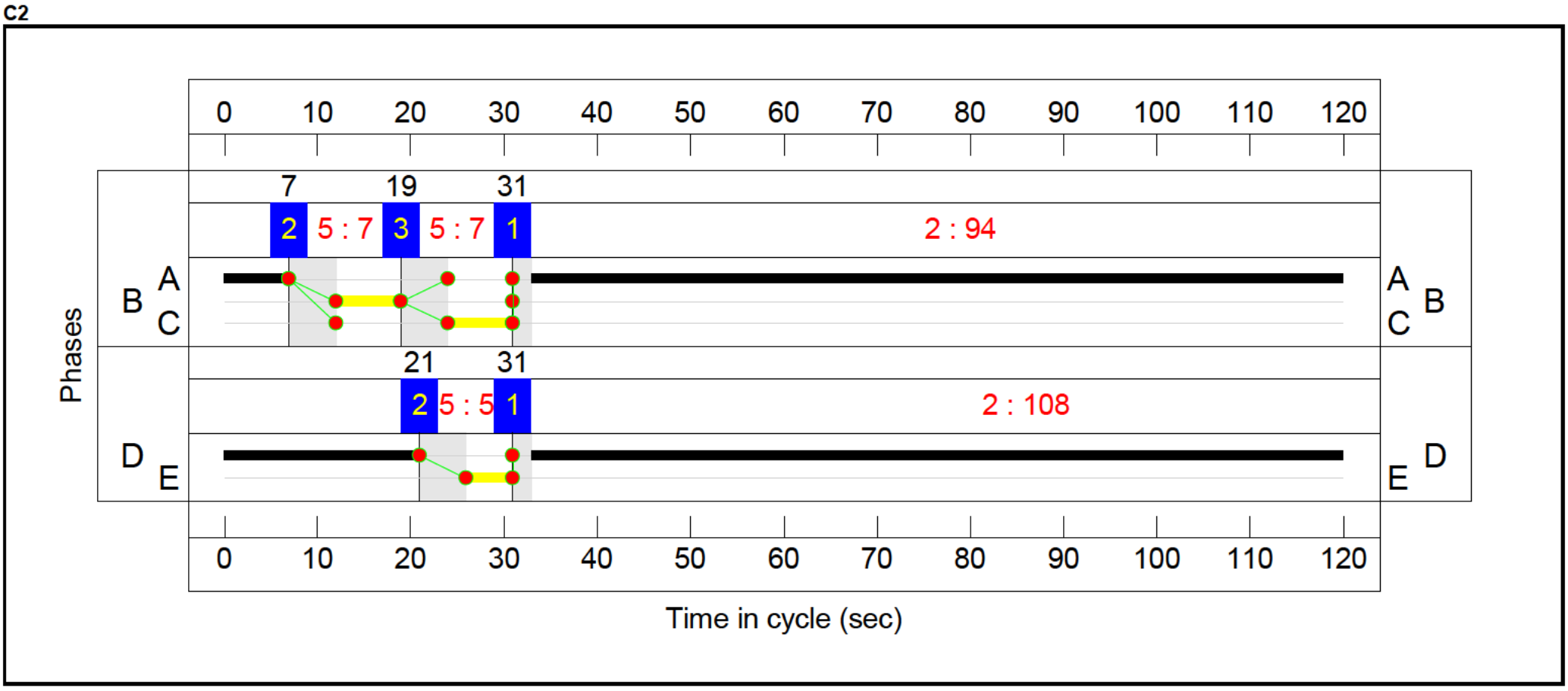
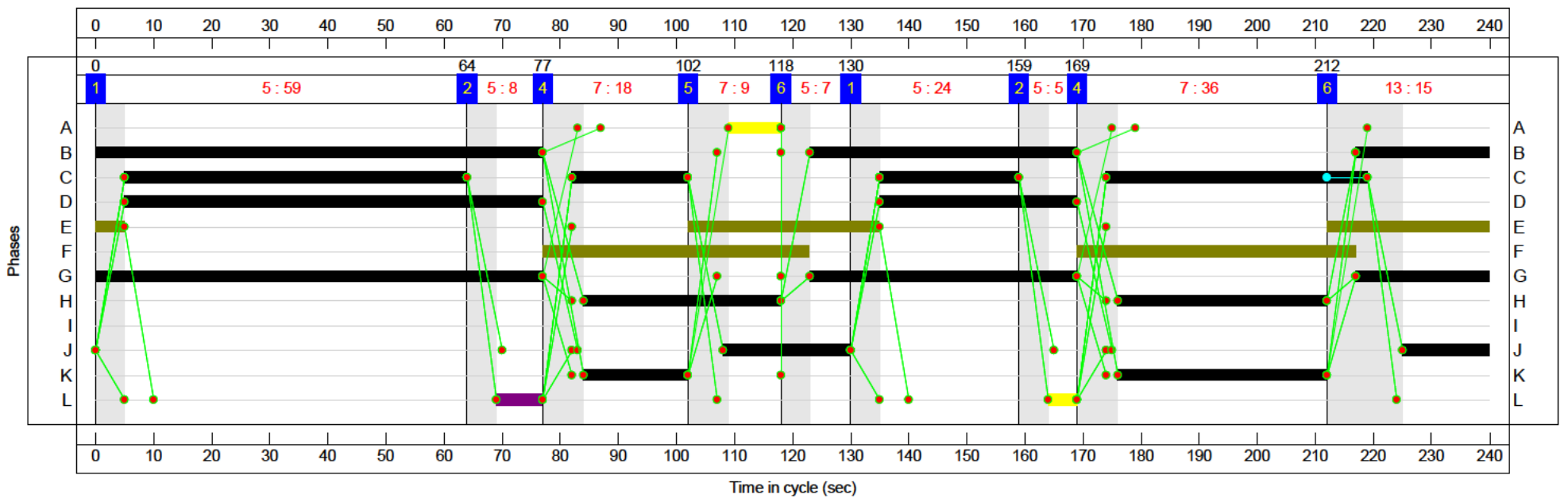


Scenario 6: '2025 Do-Nothing - PM' (FG6: '2025 Do-Nothing - PM', Plan 2: 'PM')

C1



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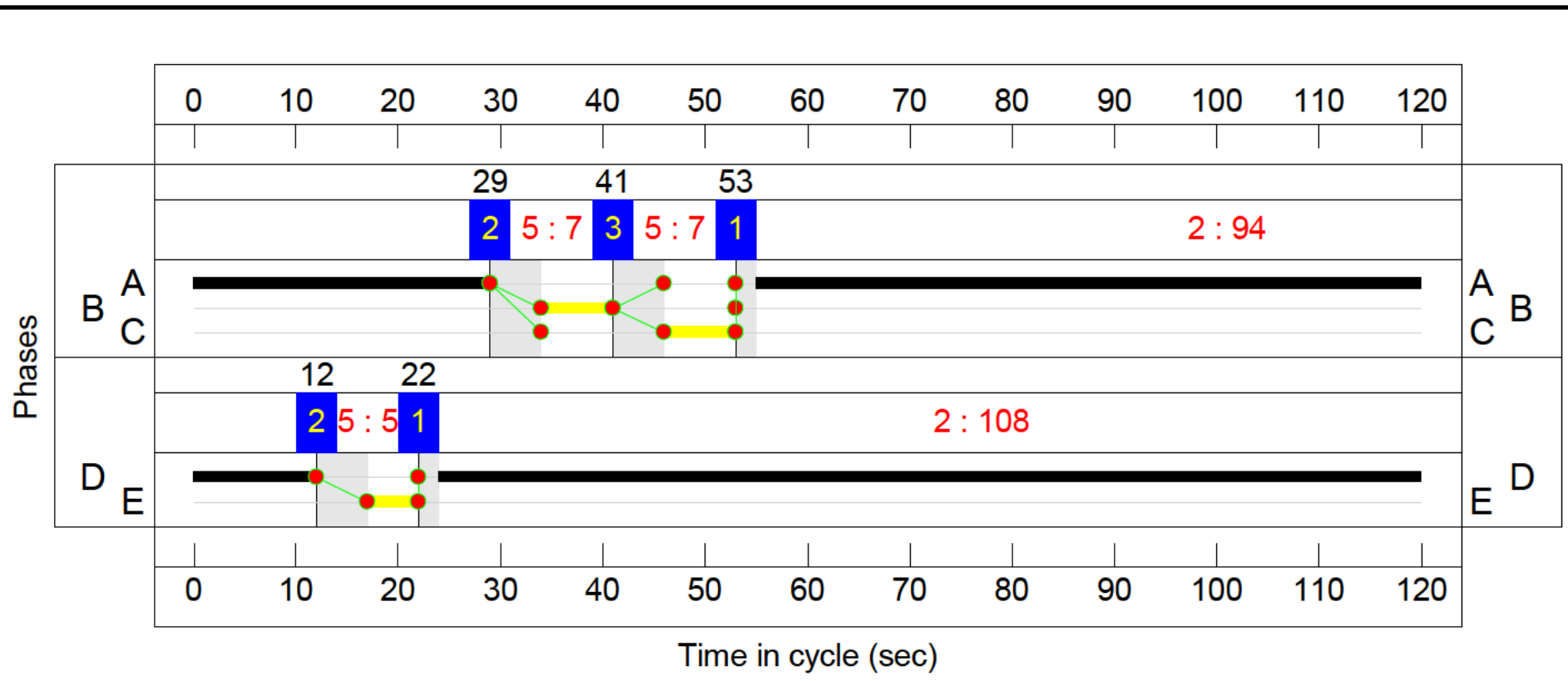
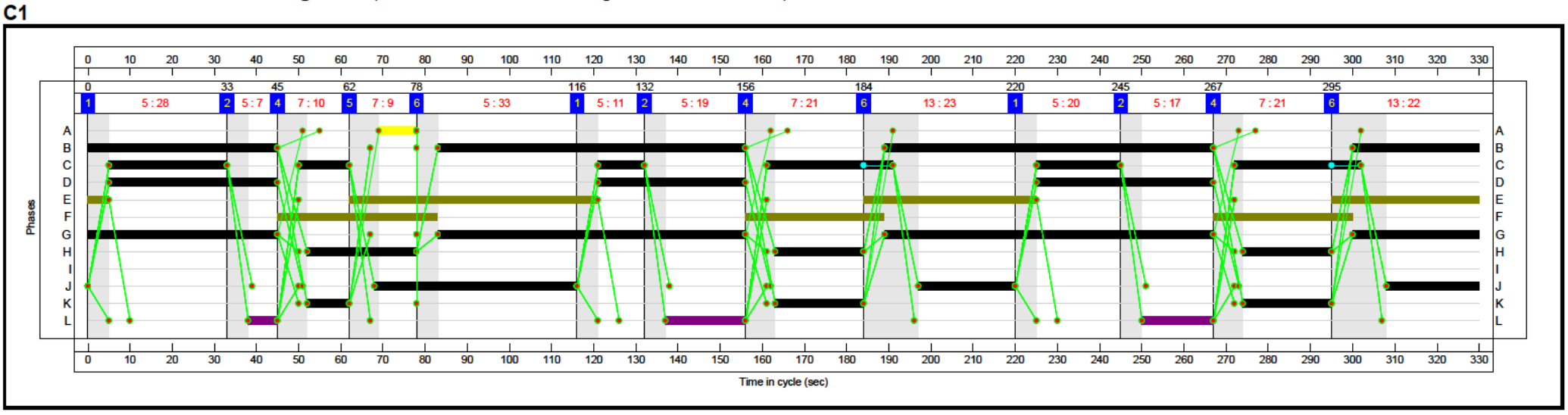


Scenario 7: '2025 Do-Something - AM' (FG7: '2025 Do-Something - AM', Plan 1: 'AM')
C1



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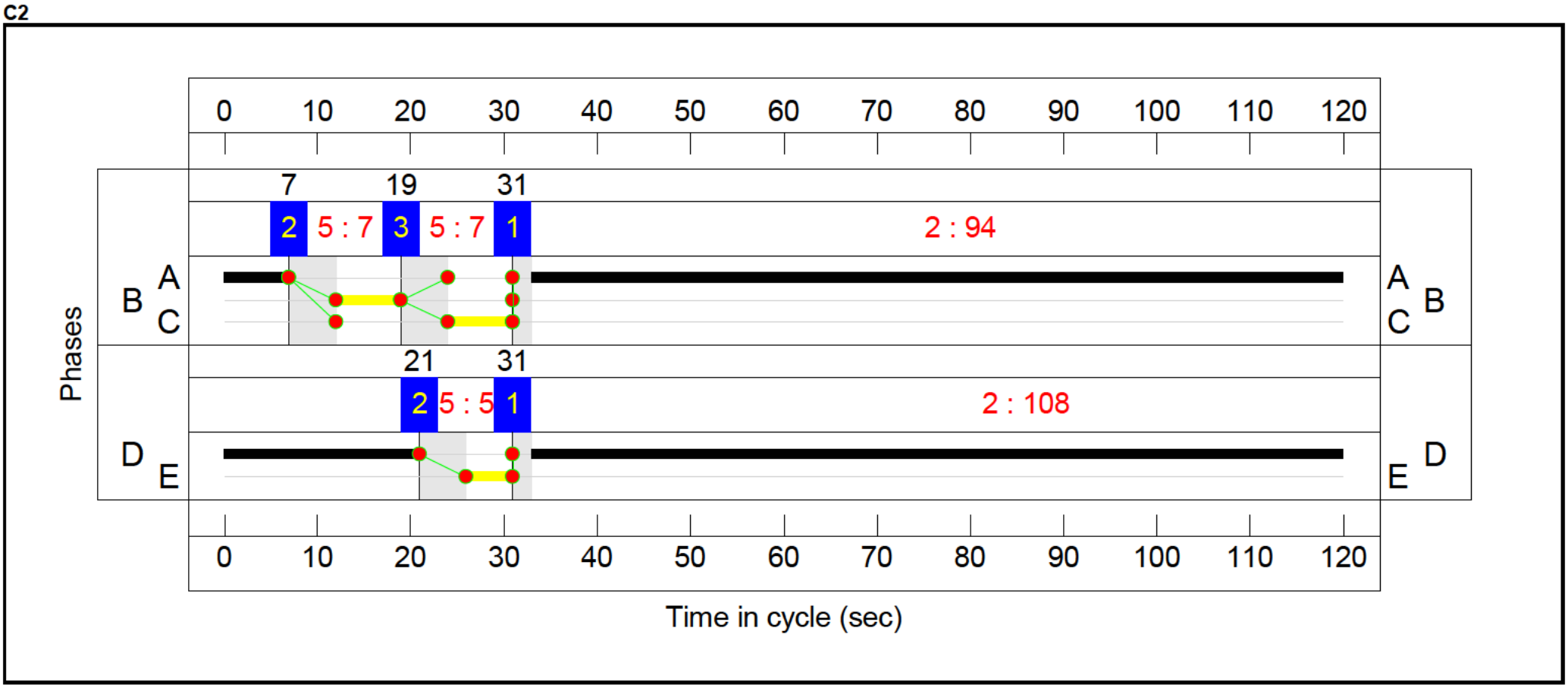
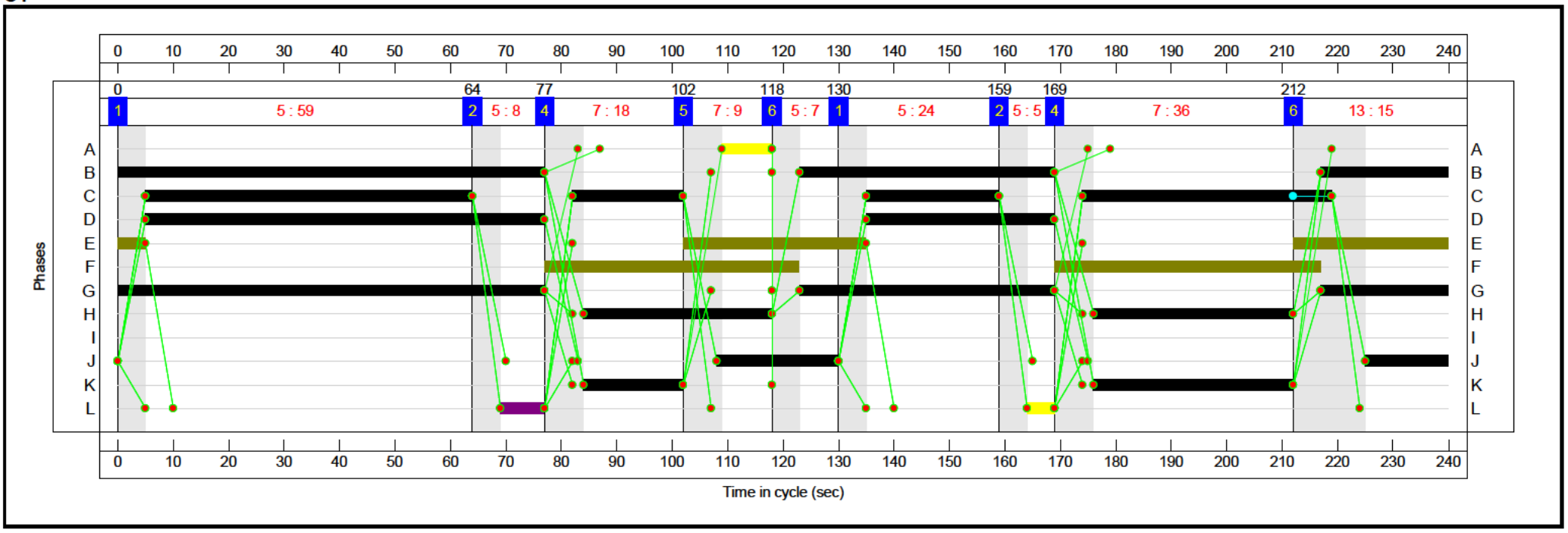
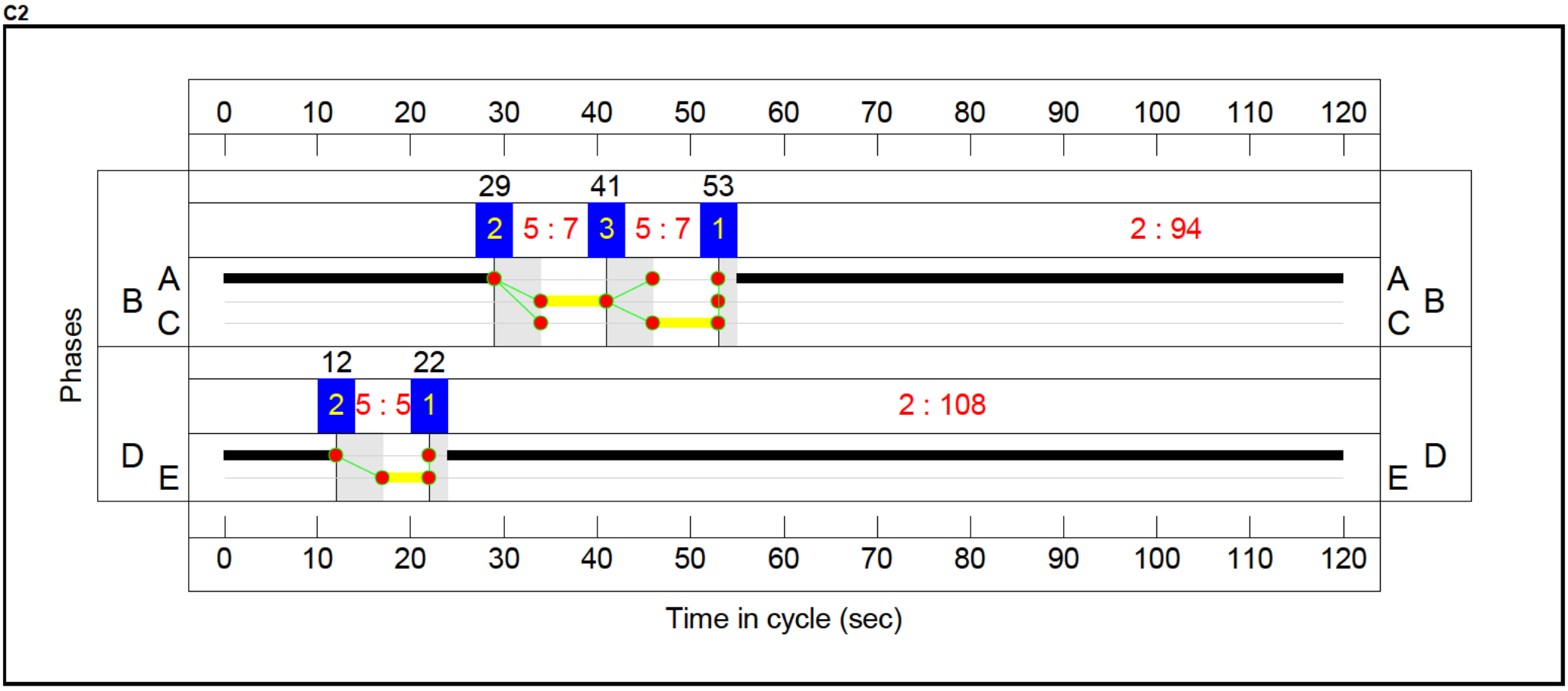


Scenario 8: '2025 Do-Something - PM' (FG8: '2025 Do-Something - PM', Plan 2: 'PM')
C1

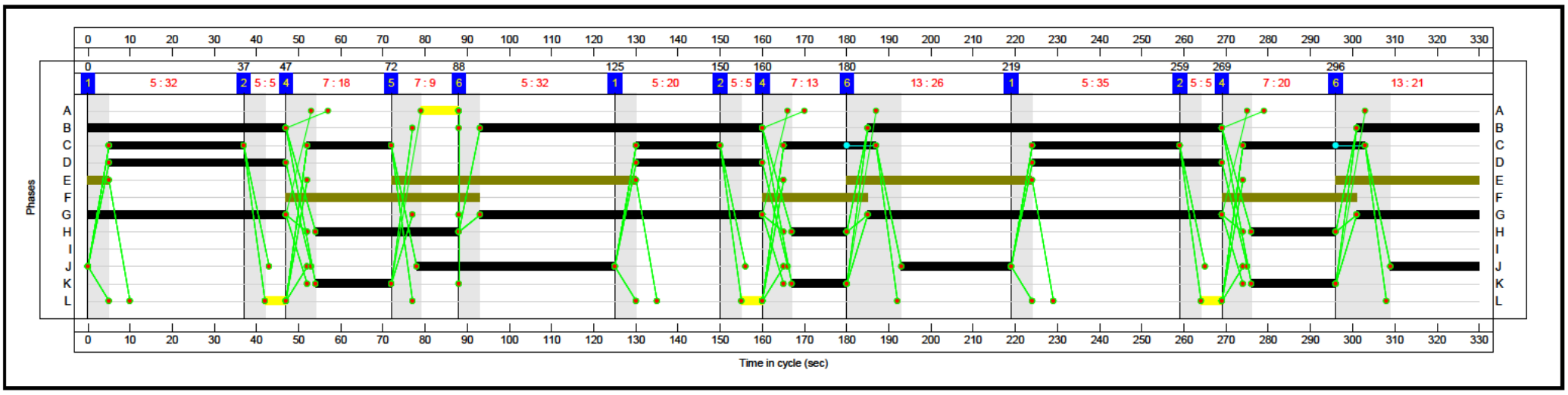


C2

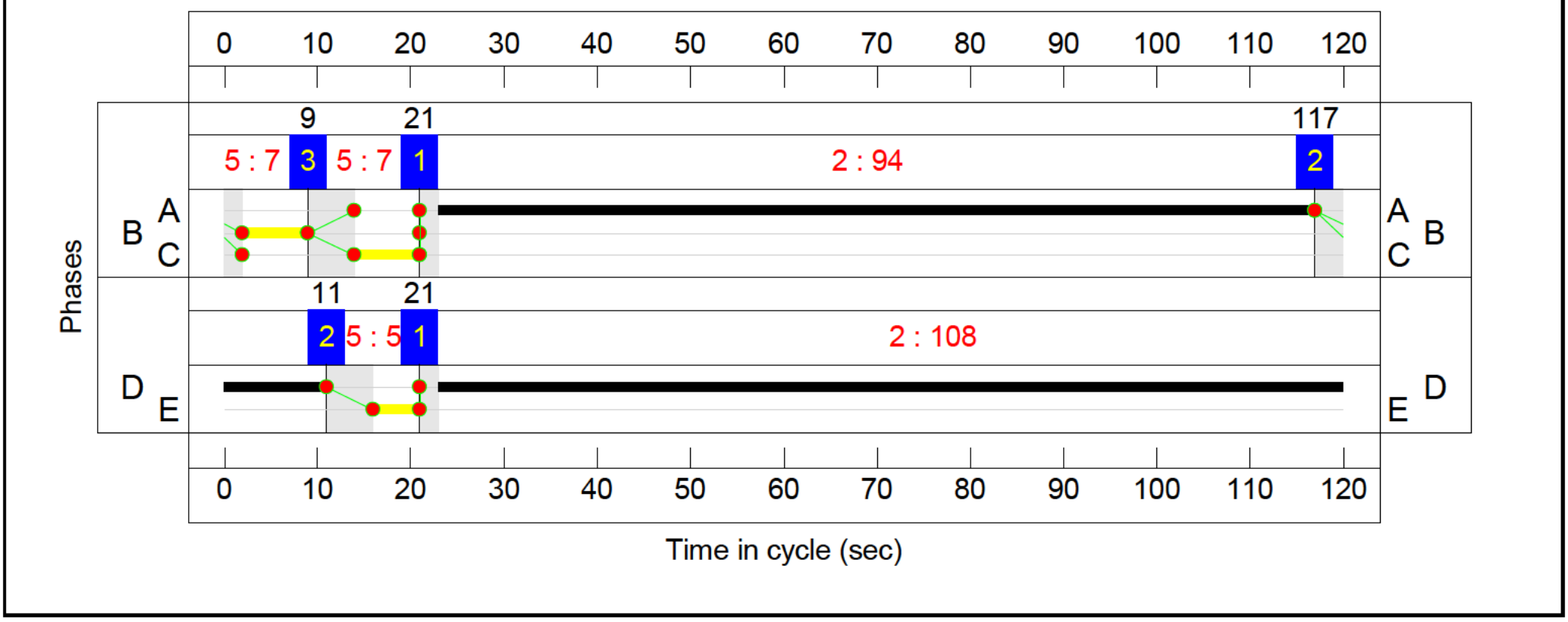


Scenario 9: '2030 Do-Minimum - AM' (FG9: '2030 Do-Minimum - AM', Plan 1: 'AM')

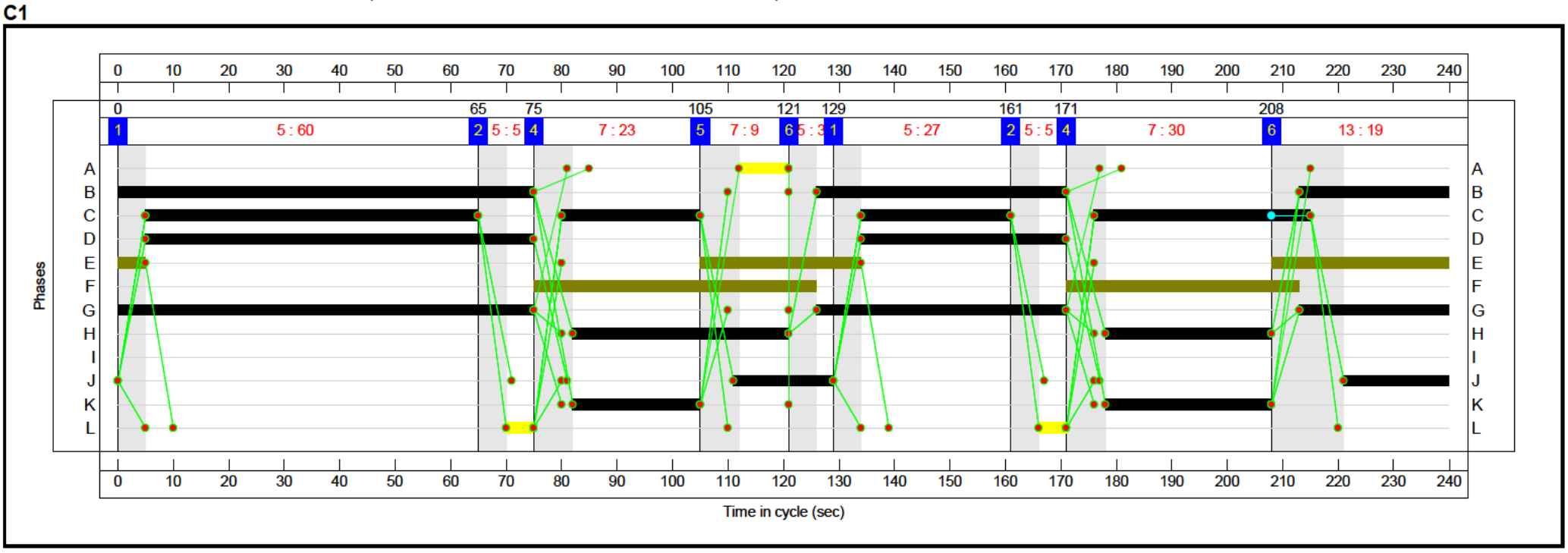
C1



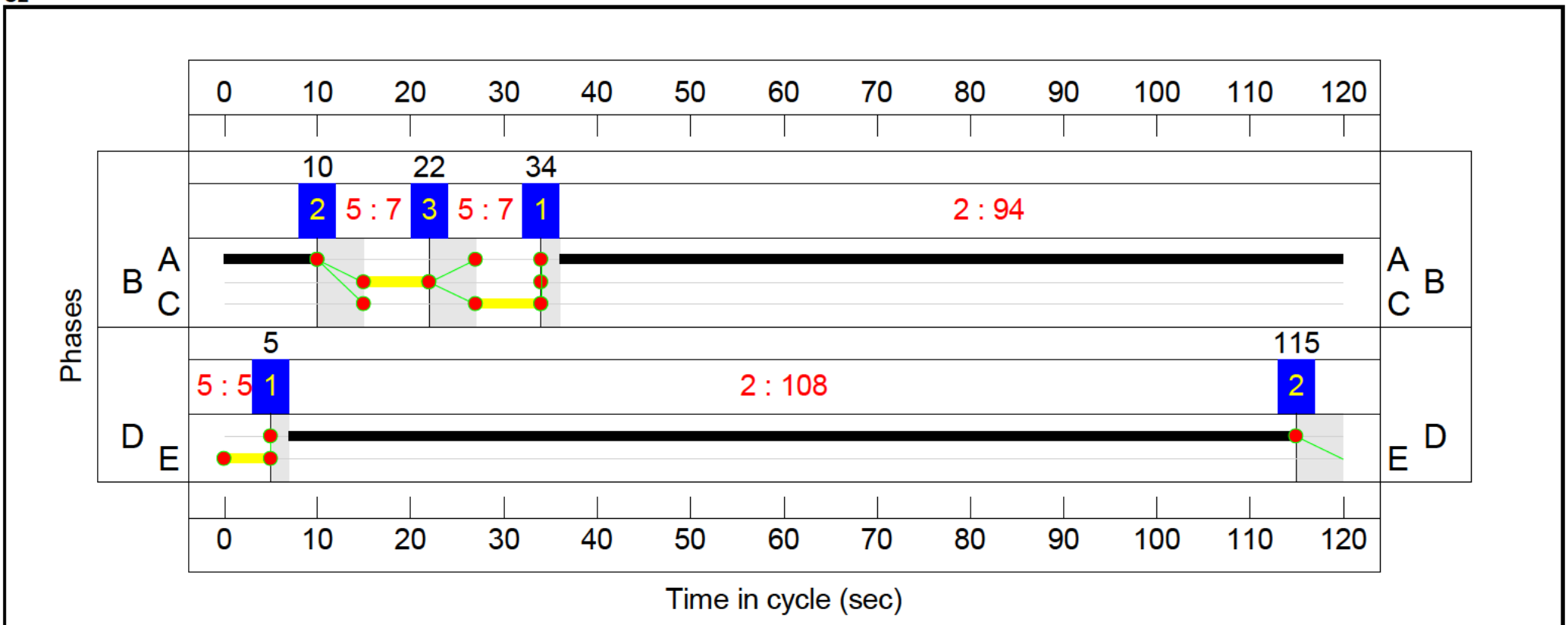
C2



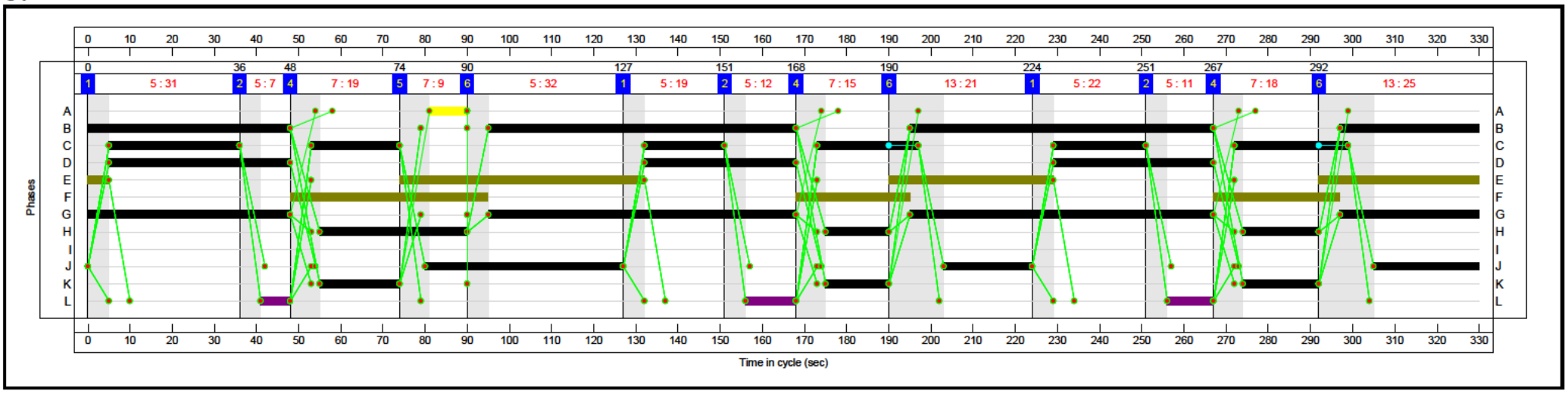
Scenario 10: '2030 Do-Minimum - PM' (FG10: '2030 Do-Minimum - PM', Plan 2: 'PM')
C1



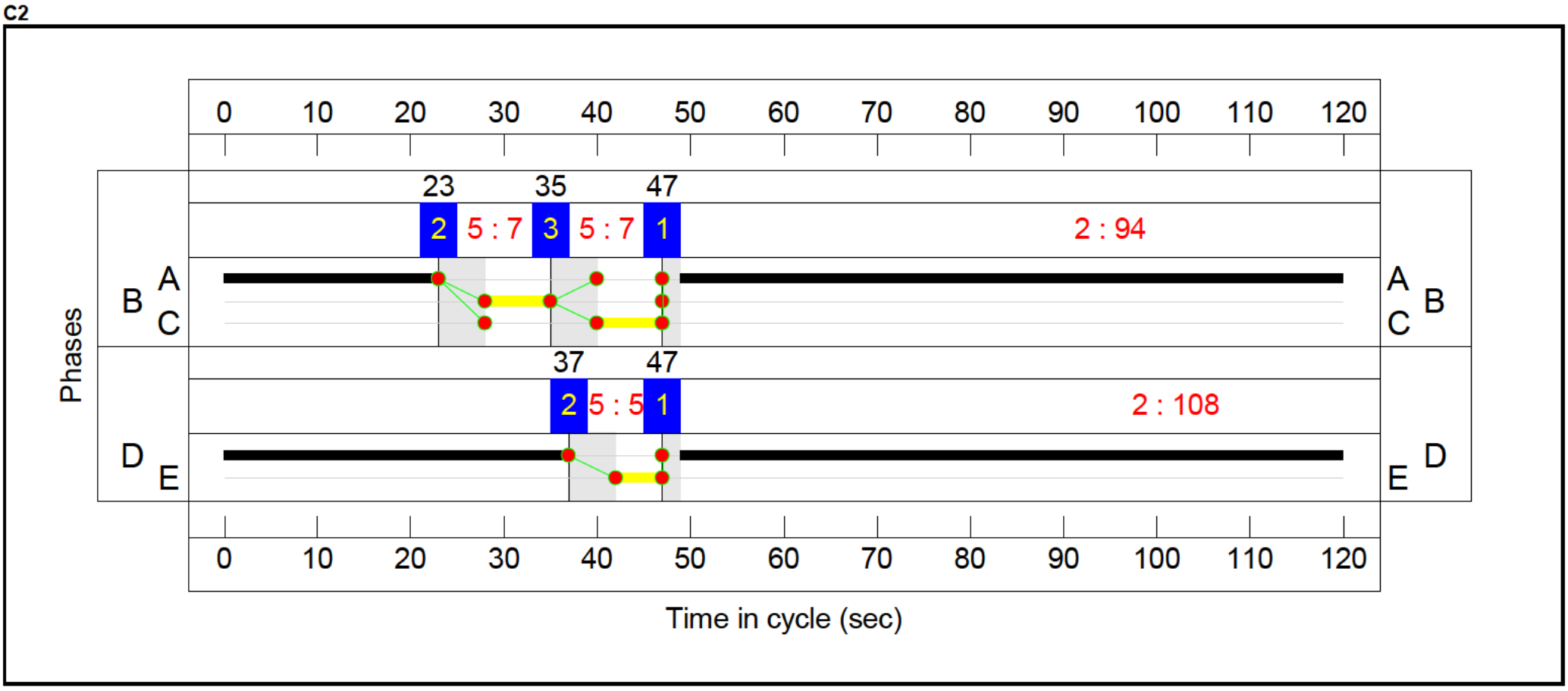
C2



Scenario 11: '2030 Do-Nothing - AM' (FG11: '2030 Do-Nothing - AM', Plan 1: 'AM')
C1

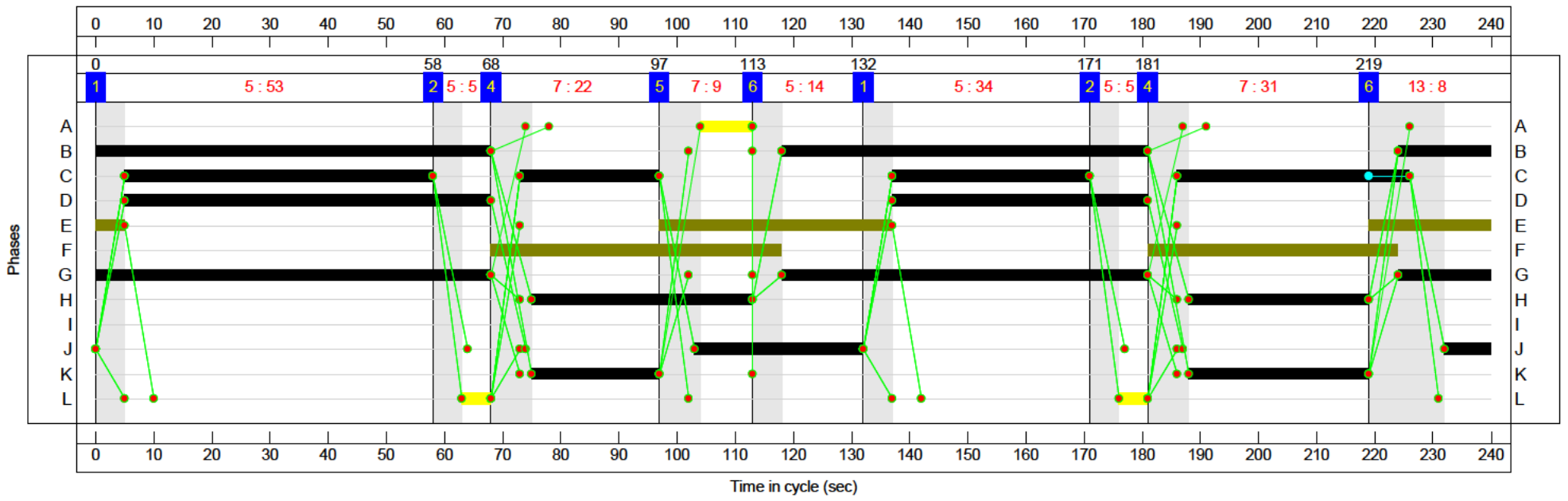


C2

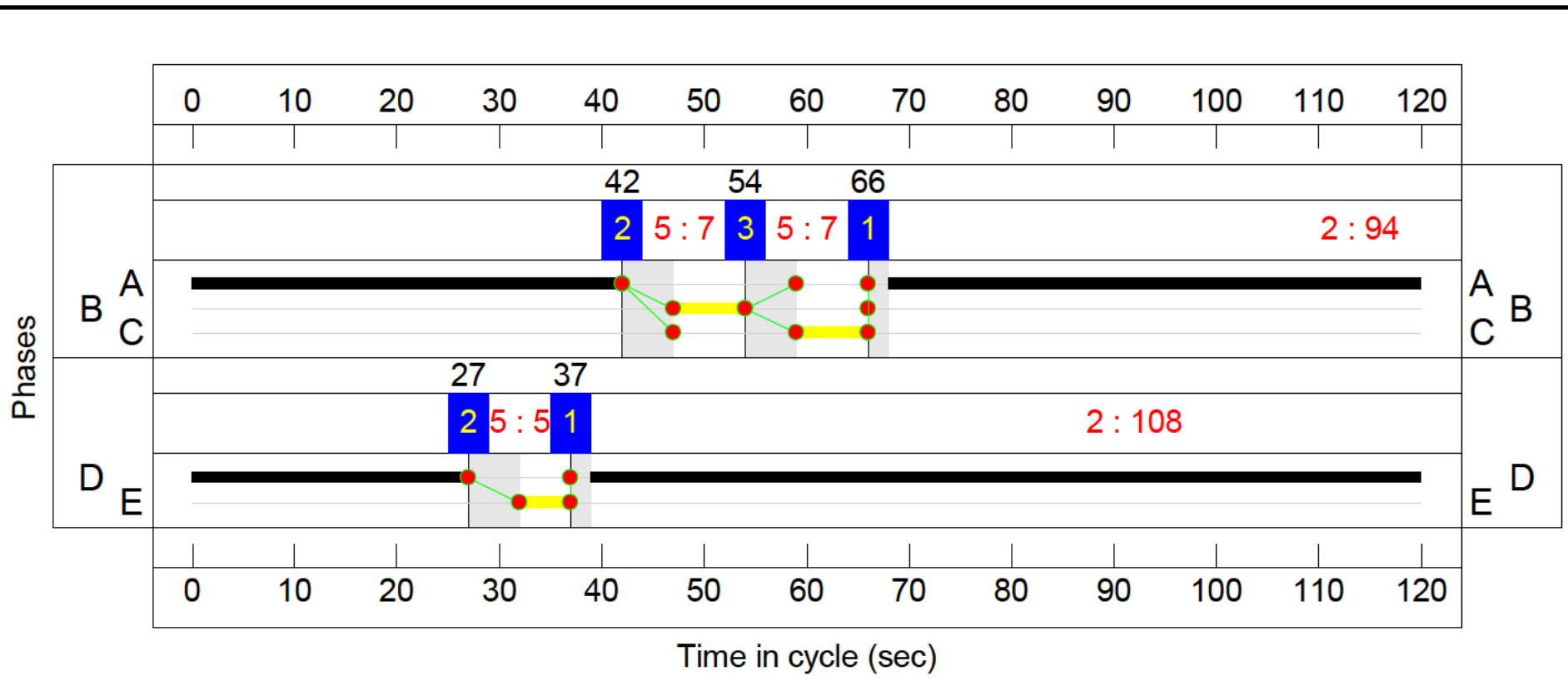


Scenario 12: '2030 Do-Nothing - PM' (FG12: '2030 Do-Nothing - PM', Plan 2: 'PM')

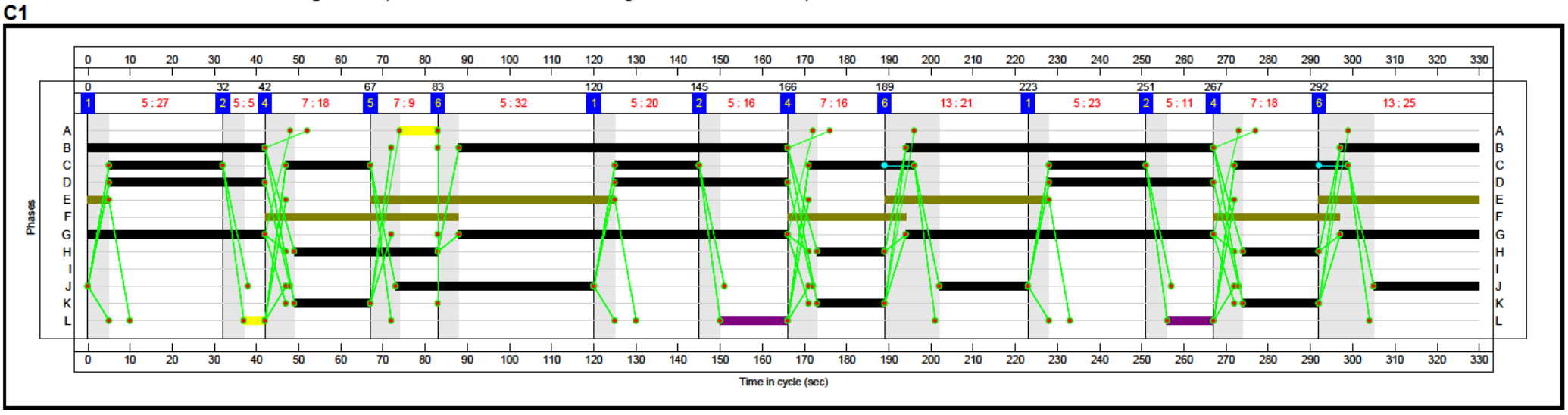
C1



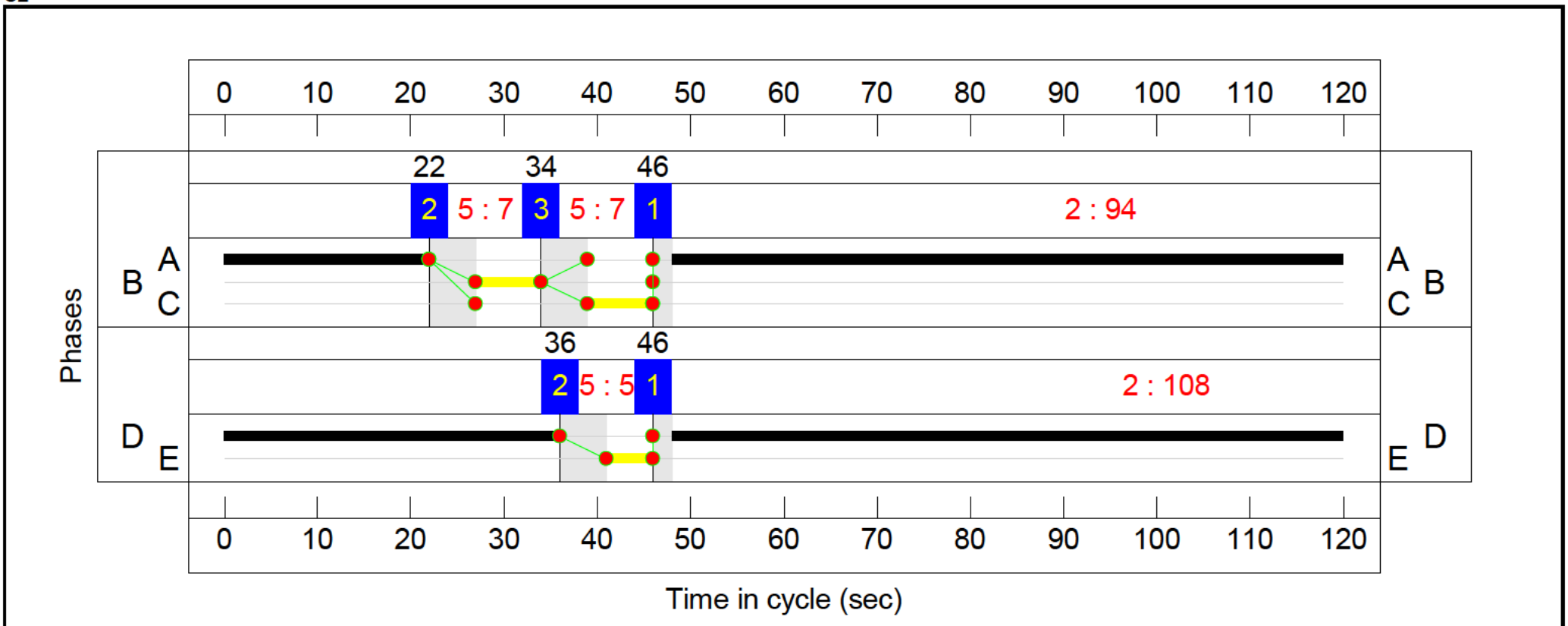
C2



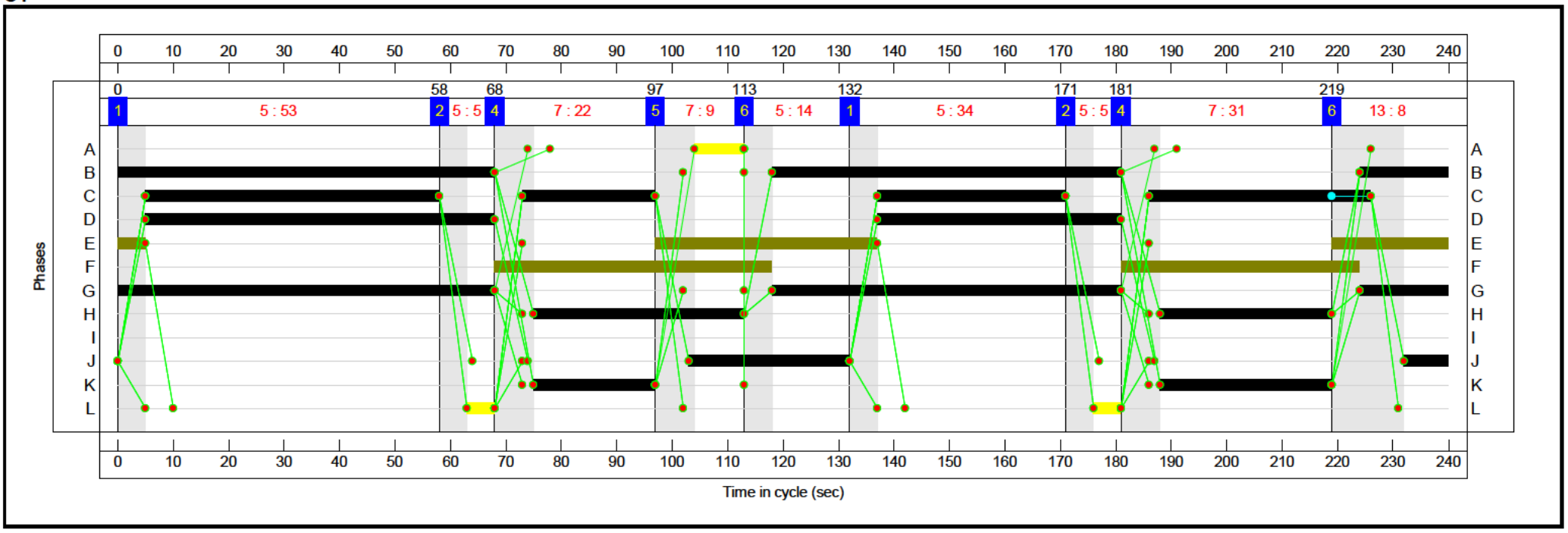
Scenario 13: '2030 Do-Something - AM' (FG13: '2030 Do-Something - AM', Plan 1: 'AM')
C1



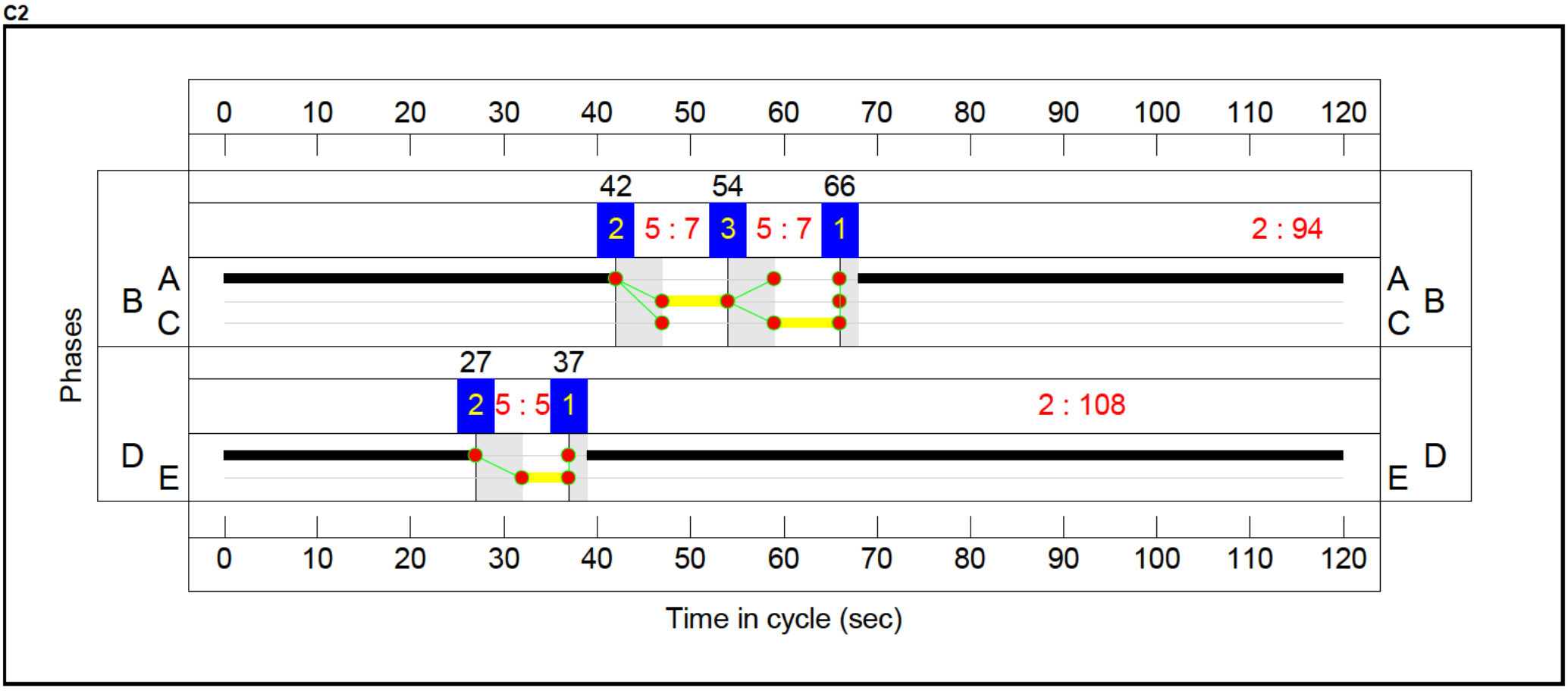
C2



Scenario 14: '2030 Do-Something - PM' (FG14: '2030 Do-Something - PM', Plan 2: 'PM')
C1



C2


0 10 20 30 40 50 60 70 80 90 100 110 120
42 54 66
2 5 : 7 3 5 : 7 1
2 : 94
B A C
A C B
27 37
2 5 : 5 1
2 : 108
D E
D E
Phases
Time in cycle (sec)

Network Results

Scenario 1: '2019 Base - AM' (FG1: '2019 Base - AM', Plan 1: 'AM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**93.7%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**93.7%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	695	Inf	Inf	Inf	0.0%	695	695
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	349	1915:1915	1915	1460+455	18.2 : 18.2%	349	349
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		3	53	58(160,269)	77(175,288)	-	-	270	1713	1713	291	92.9%	270	270
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		3	69	58(160,269)	93(175,288)	-	-	83	1835	1835	400	20.7%	83	83
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	955	Inf	Inf	Inf	0.0%	955	955
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		3	225	98(180,293)	153(262,51)	-	-	609	1915	1915	1323	46.0%	609	609
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		3	225	98(180,293)	153(262,51)	-	-	163	1710	1710	236	69.2%	163	163
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	4	Inf	Inf	Inf	0.0%	4	4
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	6	164:299	5(56,117,158,223,267):288(56,77,158,175,267)	41(77,143,182,252,295)	135	-	801	1915:1741	1915	543+759	61.5 : 61.5%	801	801
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		6	164	5(56,117,158,223,267)	41(77,143,182,252,295)	-	-	83	2055	2055	1059	7.8%	83	83
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	564	Inf	Inf	Inf	0.0%	564	564
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		3	88	83(188,301)	112(218,0)	-	-	872	1710:1710	1710	460+471	93.7 : 93.7%	872	872
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	334	1965	1965	1965	17.0%	334	334
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	142	2105	2105	2105	6.7%	142	142
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	44	32	-	-	476	1965	1965	1785	26.7%	476	476
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	476	Inf	Inf	Inf	0.0%	476	476
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	23	30	-	-	18	1935	1935	129	14.0%	18	18

14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	44	18	-	-	677	1935	1935	1532	44.2%	677	677
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	3	121	5(117,223)	51(153,262)	15	-	695	1915:1710	1915	638+104	93.7 : 93.7%	695	695
16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	3	330	51(153,262)	153(262,51)	105	-	530	1945	1945	1945	27.2%	530	530
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		3	225	98(180,293)	153(262,51)	-	-	881	1945	1945	1344	65.6%	881	881
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	530	1875	1875	1308	40.5%	530	530
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	693	2015	2015	2015	34.4%	693	693
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	0	Inf	Inf	Inf	0.0%	0	0
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	6	1433	1433	725	0.8%	6	6

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**699**	**63**	**34**	**24.9**	**21.7**	**1.2**	**47.8**	**-**	**3777.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**93.7%**	**54.7**	**-**
Merrie Harrier	**699**	**63**	**34**	**24.9**	**21.7**	**1.2**	**47.8**	**-**	**3777.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**93.7%**	**54.7**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	0	0	0	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	18.2 : 18.2%	0.1	-
3/1	-	-	-	3.4	4.5	-	7.9	105.7	265.1	1.0	7.3	8.8	4.5	13.3	-	0.00	92.9%	8.4	-
3/2	-	-	-	0.8	0.1	-	1.0	41.9	67.7	0.8	2.2	2.4	0.1	2.5	-	0.00	20.7%	1.1	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	1.4	0.4	-	1.8	10.7	273.1	0.4	7.4	11.3	0.4	11.8	-	0.00	46.0%	2.3	-
5/2	130	0	33	0.3	1.1	0.9	2.3	51.2	208.4	1.3	2.0	2.3	1.1	3.4	-	0.00	69.2%	2.7	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	1.5	0.8	-	2.3	10.2	586.5	0.7	8.1	15.5	0.8	16.3	-	0.00	61.5 : 61.5%	3.3	-
8/3	-	-	-	0.1	0.0	-	0.1	4.3	7.1	0.1	0.6	0.6	0.0	0.6	-	0.00	7.8%	0.1	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	9.4	6.1	-	15.5	64.0	844.3	1.0	9.8	13.5	6.1	19.6	-	0.00	93.7 : 93.7%	17.1	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	17.0%	0.1	-
11/2	-	-	-	0.0	0.0	-	0.0	0.9	0.0	0.0	-	0.0	0.0	0.0	-	0.00	6.7%	0.0	-
12/1	-	-	-	0.1	0.2	-	0.3	2.0	55.5	0.1	1.2	1.9	0.2	2.0	-	0.00	26.7%	0.4	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.3	0.1	-	0.3	69.0	16.9	0.9	0.5	0.6	0.1	0.6	-	0.00	14.0%	0.4	-
14/2	-	-	-	0.8	0.4	-	1.1	6.1	214.4	0.3	4.3	7.1	0.4	7.5	-	0.00	44.2%	1.5	-
15/1+15/2	80	16	2	6.2	5.9	0.2	12.3	63.9	766.2	1.1	12.7	20.4	5.9	26.4	-	0.00	93.7 : 93.7%	13.7	-
16/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	0.0	0.0	0.2	0.2	-	0.00	27.2%	0.2	-
16/2	0	0	0	0.7	0.9	0.0	1.7	6.9	215.7	0.2	3.9	16.3	0.9	17.3	-	0.00	65.6%	2.1	-
17/1	482	48	0	0.0	0.3	-	0.4	2.4	255.0	0.5	-	7.7	0.3	8.0	-	0.00	40.5%	0.8	-
18/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	34.4%	0.3	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	6	0	0	0.0	0.0	-	0.0	4.9	1.4	0.2	-	0.0	0.0	0.0	-	0.00	0.8%	0.0	-

C1	PRC for Signalled Lanes (%):	-4.1	Total Delay for Signalled Lanes (pcuHr):	45.12	Cycle Time (s):	330
C2	Stream: 1 PRC for Signalled Lanes (%):	103.6	Total Delay for Signalled Lanes (pcuHr):	1.49	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	237.5	Total Delay for Signalled Lanes (pcuHr):	0.27	Cycle Time (s):	120
	PRC Over All Lanes (%):	-4.1	Total Delay Over All Lanes(pcuHr):	47.75		

Scenario 2: '2019 Base - PM' (FG2: '2019 Base - PM', Plan 2: 'PM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**92.9%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**92.9%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	287	Inf	Inf	Inf	0.0%	287	287
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	557	1915:1912	1915	1443+471	29.1 : 29.1%	557	557
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		2	62	59(181)	82(220)	-	-	420	1711	1711	456	92.1%	420	420
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		2	78	59(181)	98(220)	-	-	136	1835	1835	612	22.2%	136	136
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	966	Inf	Inf	Inf	0.0%	966	966
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		2	138	103(225)	174(52)	-	-	836	1915	1915	1117	74.8%	836	836
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		2	138	103(225)	174(52)	-	-	183	1831	1831	197	92.8%	183	183
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	3	Inf	Inf	Inf	0.0%	3	3
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	4	142:217	5(57,132,179):220(57,82,179)	42(82,164,227)	75	-	1077	1915:1741	1915	499+962	73.7 : 73.7%	1077	1077
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		4	142	5(57,132,179)	42(82,164,227)	-	-	249	2055	2055	1250	19.9%	249	249
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	817	Inf	Inf	Inf	0.0%	817	817
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		2	46	88(233)	127(0)	-	-	524	1710:1710	1710	251+314	92.8 : 92.8%	524	524
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	369	1965	1965	1965	18.8%	369	369
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	352	2105	2105	2105	16.7%	352	352
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	98	86	-	-	721	1965	1965	1785	40.4%	721	721
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	721	Inf	Inf	Inf	0.0%	721	721
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	77	84	-	-	12	1935	1935	129	9.3%	12	12
14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	98	72	-	-	683	1935	1935	1532	44.6%	683	683
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	2	89	5(132)	52(174)	10	-	695	1915:1710	1915	632+116	92.9 : 92.9%	695	695

16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	2	240	52(174)	174(52)	102	-	217	1945	1945	1945	11.2%	217	217
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		2	138	103(225)	174(52)	-	-	790	1945	1945	1135	69.6%	790	790
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	217	1875	1875	1383	15.7%	217	217
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	287	2014	2014	2014	14.3%	287	287
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	2	Inf	Inf	Inf	0.0%	2	2
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	1	1513	1513	1127	0.1%	1	1

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**251**	**124**	**22**	**32.4**	**25.0**	**1.1**	**58.5**	**-**	**4317.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**92.9%**	**66.4**	**-**
Merrie Harrier	**251**	**124**	**22**	**32.4**	**25.0**	**1.1**	**58.5**	**-**	**4317.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**92.9%**	**66.4**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	1	0	0	0.0	0.2	-	0.2	1.3	0.0	0.0	-	0.0	0.2	0.2	-	0.00	29.1 : 29.1%	0.2	-
3/1	-	-	-	5.3	4.6	-	9.9	85.2	407.8	1.0	11.7	15.8	4.6	20.4	-	0.00	92.1%	10.7	-
3/2	-	-	-	1.1	0.1	-	1.2	32.6	97.5	0.7	3.0	3.3	0.1	3.5	-	0.00	22.2%	1.4	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	4.3	1.5	-	5.8	24.8	613.1	0.7	11.1	20.4	1.5	21.9	-	0.00	74.8%	6.9	-
5/2	51	0	19	0.6	4.1	0.6	5.3	104.9	272.2	1.5	2.4	3.2	4.1	7.2	-	0.00	92.8%	5.8	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	1.3	1.4	-	2.7	8.9	916.1	0.9	13.4	27.9	1.4	29.3	-	0.00	73.7 : 73.7%	4.3	-
8/3	-	-	-	0.2	0.1	-	0.3	4.4	52.7	0.2	1.0	2.4	0.1	2.6	-	0.00	19.9%	0.4	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	10.5	5.1	-	15.6	107.4	519.0	1.0	12.2	15.8	5.1	20.9	-	0.00	92.8 : 92.8%	16.6	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	18.8%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.7%	0.1	-
12/1	-	-	-	0.2	0.3	-	0.5	2.5	102.1	0.1	1.8	3.4	0.3	3.7	-	0.00	40.4%	0.7	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.2	0.1	-	0.2	68.1	11.2	0.9	0.4	0.4	0.1	0.4	-	0.00	9.3%	0.2	-
14/2	-	-	-	0.8	0.4	-	1.2	6.1	216.3	0.3	4.4	7.2	0.4	7.6	-	0.00	44.6%	1.6	-
15/1+15/2	16	89	3	6.8	5.5	0.5	12.7	66.0	824.8	1.2	14.0	22.5	5.5	27.9	-	0.00	92.9 : 92.9%	14.2	-
16/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	0.0	0.0	0.1	0.1	-	0.00	11.2%	0.1	-
16/2	0	0	0	1.2	1.1	0.0	2.3	10.7	284.3	0.4	4.0	16.4	1.1	17.6	-	0.00	69.6%	2.9	-
17/1	182	35	0	0.0	0.1	-	0.1	1.5	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.7%	0.1	-
18/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.3%	0.1	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	1	0	0	0.0	0.0	-	0.0	1.6	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.1%	0.0	-

C1	PRC for Signalled Lanes (%):	-3.3	Total Delay for Signalled Lanes (pcuHr):	56.02	Cycle Time (s):	240		
C2	Stream: 1 PRC for Signalled Lanes (%):	101.9	Total Delay for Signalled Lanes (pcuHr):	1.39	Cycle Time (s):	120		
C2	Stream: 2 PRC for Signalled Lanes (%):	122.8	Total Delay for Signalled Lanes (pcuHr):	0.50	Cycle Time (s):	120		
	PRC Over All Lanes (%):	-3.3	Total Delay Over All Lanes(pcuHr):	58.51				

Scenario 3: '2025 Do-Minimum - AM' (FG3: '2025 Do-Minimum - AM', Plan 1: 'AM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**104.2%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**104.2%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	747	Inf	Inf	Inf	0.0%	719	719
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	376	1915:1915	1915	1462+453	19.6 : 19.6%	376	376
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		3	51	52(168,274)	67(184,294)	-	-	291	1712	1712	280	103.9%	291	280
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		3	67	52(168,274)	83(184,294)	-	-	89	1835	1835	389	22.9%	89	89
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1030	Inf	Inf	Inf	0.0%	991	991
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		3	227	88(189,299)	161(267,45)	-	-	590	1915	1915	1335	44.2%	590	590
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		3	227	88(189,299)	161(267,45)	-	-	252	1766	1766	242	104.2%	252	252
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	4	Inf	Inf	Inf	0.0%	4	4
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	6	148:289	5(50,126,166,225,272):294(50,67,166,184,272)	35(67,151,191,247,301)	141	-	797	1915:1741	1915	455+788	64.1 : 63.1%	789	789
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		6	148	5(50,126,166,225,272)	35(67,151,191,247,301)	-	-	164	2055	2055	959	16.8%	161	161
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	608	Inf	Inf	Inf	0.0%	596	596
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		3	94	73(197,307)	121(220,0)	-	-	935	1710:1710	1710	445+456	103.8 : 103.8%	935	901
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	292	1965	1965	1965	14.9%	292	292
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	227	2105	2105	2105	10.5%	222	222
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	34	22	-	-	519	1965	1965	1785	28.8%	514	514
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	519	Inf	Inf	Inf	0.0%	514	514
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	13	20	-	-	18	1935	1935	129	14.0%	18	18

14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	34	8	-	-	731	1935	1935	1532	47.7%	731	731
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	3	117	5(126,225)	45(161,267)	25	-	749	1915:1710	1915	620+99	104.2 : 104.2%	749	719
16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	3	330	45(161,267)	161(267,45)	103	-	568	1945	1945	1945	28.1%	547	547
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		3	227	88(189,299)	161(267,45)	-	-	950	1945	1945	1356	67.4%	914	914
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	568	1875	1875	1304	41.9%	547	547
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	745	2015	2015	2015	35.6%	717	717
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	0	Inf	Inf	Inf	0.0%	0	0
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	6	1433	1433	700	0.9%	6	6

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**682**	**89**	**51**	**47.5**	**76.0**	**2.3**	**125.8**	**-**	**4955.2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**104.2%**	**134.9**	**-**
Merrie Harrier	**682**	**89**	**51**	**47.5**	**76.0**	**2.3**	**125.8**	**-**	**4955.2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**104.2%**	**134.9**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	0	0	0	0.0	0.1	-	0.1	1.2	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.6 : 19.6%	0.1	-
3/1	-	-	-	6.1	11.7	-	17.7	219.4	291.0	1.0	10.4	12.3	11.7	23.9	-	0.00	103.9%	18.3	-
3/2	-	-	-	0.9	0.1	-	1.0	41.9	73.4	0.8	2.2	2.3	0.1	2.4	-	0.00	22.9%	1.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	1.2	0.4	-	1.6	10.0	255.7	0.4	6.6	9.8	0.4	10.2	-	0.00	44.2%	2.1	-
5/2	124	0	46	1.7	10.9	2.2	14.7	210.6	456.7	1.8	4.6	8.1	10.9	19.0	-	0.00	104.2%	15.6	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	1.5	0.9	-	2.3	10.7	556.6	0.7	14.8	18.0	0.9	18.9	-	0.00	64.1 : 63.1%	3.4	-
8/3	-	-	-	0.3	0.1	-	0.4	8.0	42.7	0.3	1.3	1.3	0.1	1.4	-	0.00	16.8%	0.4	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	18.8	25.9	-	44.7	172.1	1423.3	1.5	17.6	33.8	25.9	59.7	-	0.00	103.8 : 103.8%	47.3	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.9%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.5%	0.1	-
12/1	-	-	-	0.1	0.2	-	0.3	2.1	59.9	0.1	1.3	2.0	0.2	2.2	-	0.00	28.8%	0.4	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.3	0.1	-	0.3	69.0	16.9	0.9	0.5	0.6	0.1	0.6	-	0.00	14.0%	0.4	-
14/2	-	-	-	0.9	0.5	-	1.3	6.4	243.7	0.3	4.7	8.1	0.5	8.6	-	0.00	47.7%	1.8	-
15/1+15/2	62	32	5	14.7	23.2	0.2	38.0	182.7	1024.2	1.4	21.7	31.9	23.2	55.1	-	0.00	104.2 : 104.2%	39.9	-
16/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	0.0	0.0	0.2	0.2	-	0.00	28.1%	0.2	-
16/2	0	0	0	1.2	1.0	0.0	2.2	8.7	276.2	0.3	5.2	20.6	1.0	21.6	-	0.00	67.4%	2.7	-
17/1	490	57	0	0.0	0.4	-	0.4	2.4	233.7	0.4	-	7.7	0.4	8.0	-	0.00	41.9%	0.8	-
18/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	35.6%	0.3	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	6	0	0	0.0	0.0	-	0.0	4.7	1.3	0.2	-	0.0	0.0	0.0	-	0.00	0.9%	0.0	-

C1	PRC for Signalled Lanes (%):	-15.8	Total Delay for Signalled Lanes (pcuHr):	122.94	Cycle Time (s):	330
C2	Stream: 1 PRC for Signalled Lanes (%):	88.6	Total Delay for Signalled Lanes (pcuHr):	1.65	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	212.7	Total Delay for Signalled Lanes (pcuHr):	0.30	Cycle Time (s):	120
	PRC Over All Lanes (%):	-15.8	Total Delay Over All Lanes(pcuHr):	125.81		

Scenario 4: '2025 Do-Minimum - PM' (FG4: '2025 Do-Minimum - PM', Plan 2: 'PM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**113.5%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**113.5%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	308	Inf	Inf	Inf	0.0%	293	293
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	600	1915:1912	1915	1445+469	31.3 : 31.3%	600	600
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		2	54	84(176)	104(210)	-	-	453	1711	1711	399	113.5%	453	399
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		2	70	84(176)	120(210)	-	-	146	1835	1835	551	26.5%	146	146
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1047	Inf	Inf	Inf	0.0%	988	988
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		2	146	125(215)	169(77)	-	-	796	1915	1915	1181	67.4%	796	796
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		2	146	125(215)	169(77)	-	-	302	1860	1860	275	109.6%	302	275
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	3	Inf	Inf	Inf	0.0%	3	3
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	4	151:217	5(82,135,174):210(82,104,174)	67(104,159,217)	66	-	1055	1915:1741	1915	450+1171	65.1 : 62.4%	1024	1024
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		4	151	5(82,135,174)	67(104,159,217)	-	-	373	2055	2055	1327	26.6%	353	353
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	877	Inf	Inf	Inf	0.0%	846	846
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		2	37	110(223)	130(0)	-	-	564	1710:1710	1710	221+278	113.0 : 113.0%	564	512
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	293	1965	1965	1965	14.9%	293	293
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	484	2105	2105	2105	21.7%	457	457
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	7	115	-	-	777	1965	1965	1785	42.0%	750	750
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	777	Inf	Inf	Inf	0.0%	750	750
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	17	24	-	-	12	1935	1935	129	9.3%	12	12
14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	38	12	-	-	739	1935	1935	1532	48.2%	739	739
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	2	106	5(135)	77(169)	10	-	751	1915:1710	1915	746+135	85.3 : 85.3%	751	751

16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	2	240	77(169)	169(77)	94	-	233	1945	1945	1945	11.5%	224	224
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		2	146	125(215)	169(77)	-	-	856	1945	1945	1199	68.4%	820	820
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	233	1875	1875	1381	16.3%	224	224
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	308	2014	2014	2014	14.5%	293	293
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	2	Inf	Inf	Inf	0.0%	2	2
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	1	1513	1513	1121	0.1%	1	1

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**310**	**82**	**18**	**46.4**	**92.2**	**1.1**	**139.6**	**-**	**4787.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**113.5%**	**148.4**	**-**
Merrie Harrier	**310**	**82**	**18**	**46.4**	**92.2**	**1.1**	**139.6**	**-**	**4787.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**113.5%**	**148.4**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	1	0	0	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	31.3 : 31.3%	0.2	-
3/1	-	-	-	13.2	30.6	-	43.8	348.2	453.0	1.0	19.3	24.0	30.6	54.6	-	0.00	113.5%	44.6	-
3/2	-	-	-	1.5	0.2	-	1.6	40.2	110.1	0.8	4.5	4.9	0.2	5.1	-	0.00	26.5%	1.8	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	3.3	1.0	-	4.4	19.7	520.7	0.7	9.9	17.7	1.0	18.7	-	0.00	67.4%	5.3	-
5/2	54	0	15	5.7	17.6	0.8	24.0	286.6	577.5	1.9	10.6	17.6	17.6	35.2	-	0.00	109.6%	25.1	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	0.9	0.9	-	1.8	6.2	757.3	0.7	13.9	22.5	0.9	23.4	-	0.00	65.1 : 62.4%	3.1	-
8/3	-	-	-	0.5	0.2	-	0.7	7.4	237.0	0.7	3.6	11.0	0.2	11.2	-	0.00	26.6%	1.2	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	12.9	36.3	-	49.2	314.2	672.5	1.2	13.2	18.4	36.3	54.7	-	0.00	113.0 : 113.0%	50.4	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.9%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	21.7%	0.1	-
12/1	-	-	-	0.2	0.4	-	0.5	2.6	106.3	0.1	1.9	3.5	0.4	3.9	-	0.00	42.0%	0.7	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.2	0.1	-	0.2	68.1	11.2	0.9	0.4	0.4	0.1	0.4	-	0.00	9.3%	0.2	-
14/2	-	-	-	0.9	0.5	-	1.3	6.5	246.3	0.3	4.7	8.2	0.5	8.7	-	0.00	48.2%	1.8	-
15/1+15/2	65	47	3	6.1	2.8	0.3	9.2	44.0	790.7	1.1	14.3	24.4	2.8	27.1	-	0.00	85.3 : 85.3%	10.6	-
16/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	0.0	0.0	0.1	0.1	-	0.00	11.5%	0.1	-
16/2	0	0	0	1.1	1.1	0.0	2.1	9.4	304.7	0.4	4.0	17.9	1.1	19.0	-	0.00	68.4%	2.7	-
17/1	190	35	0	0.0	0.1	-	0.1	1.6	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.3%	0.1	-
18/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.5%	0.1	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	1	0	0	0.0	0.0	-	0.0	1.6	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.1%	0.0	-

C1	PRC for Signalled Lanes (%):	-26.1	Total Delay for Signalled Lanes (pcuHr):	136.92	Cycle Time (s):	240
C2	Stream: 1 PRC for Signalled Lanes (%):	86.6	Total Delay for Signalled Lanes (pcuHr):	1.56	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	114.1	Total Delay for Signalled Lanes (pcuHr):	0.53	Cycle Time (s):	120
	PRC Over All Lanes (%):	-26.1	Total Delay Over All Lanes(pcuHr):	139.64		

Scenario 5: '2025 Do-Nothing - AM' (FG5: '2025 Do-Nothing - AM', Plan 1: 'AM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**105.0%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**105.0%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	749	Inf	Inf	Inf	0.0%	715	715
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	381	1915:1915	1915	1468+447	19.9 : 19.9%	381	381
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		3	52	52(163,274)	62(184,295)	-	-	296	1712	1712	285	103.7%	296	285
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		3	68	52(163,274)	78(184,295)	-	-	89	1835	1835	395	22.5%	89	89
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1031	Inf	Inf	Inf	0.0%	987	987
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		3	226	83(189,300)	156(267,45)	-	-	590	1915	1915	1329	44.4%	590	590
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		3	226	83(189,300)	156(267,45)	-	-	253	1766	1766	242	104.6%	253	253
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	4	Inf	Inf	Inf	0.0%	4	4
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	6	131:271	5(50,121,161,225,272):295(50,62,161,184,272)	33(62,132,191,245,302)	140	-	801	1915:1741	1915	420+732	69.6 : 68.5%	793	793
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		6	131	5(50,121,161,225,272)	33(62,132,191,245,302)	-	-	164	2055	2055	853	18.8%	161	161
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	612	Inf	Inf	Inf	0.0%	600	600
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		3	93	68(197,308)	116(220,0)	-	-	936	1710:1710	1710	441+451	105.0 : 105.0%	936	892
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	292	1965	1965	1965	14.9%	292	292
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	227	2105	2105	2105	10.5%	221	221
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	33	21	-	-	519	1965	1965	1785	28.7%	513	513
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	519	Inf	Inf	Inf	0.0%	513	513
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	12	19	-	-	18	1935	1935	129	14.0%	18	18

14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	33	7	-	-	731	1935	1935	1532	47.7%	731	731
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	3	117	5(121,225)	45(156,267)	43	-	749	1915:1710	1915	620+99	104.2 : 104.2%	749	719
16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	3	330	45(156,267)	156(267,45)	104	-	569	1945	1945	1945	27.9%	543	543
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		3	226	83(189,300)	156(267,45)	-	-	950	1945	1945	1350	67.3%	908	908
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	569	1875	1875	1304	41.7%	543	543
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	747	2015	2015	2015	35.4%	713	713
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	0	Inf	Inf	Inf	0.0%	0	0
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	6	1433	1433	700	0.9%	6	6

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**657**	**111**	**51**	**51.0**	**80.6**	**2.4**	**134.0**	**-**	**5177.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**105.0%**	**143.5**	**-**
Merrie Harrier	**657**	**111**	**51**	**51.0**	**80.6**	**2.4**	**134.0**	**-**	**5177.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**105.0%**	**143.5**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	0	0	0	0.0	0.1	-	0.1	1.2	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.9 : 19.9%	0.1	-
3/1	-	-	-	6.6	11.7	-	18.3	222.7	296.0	1.0	11.8	13.8	11.7	25.4	-	0.00	103.7%	18.9	-
3/2	-	-	-	0.9	0.1	-	1.0	41.5	73.1	0.8	2.2	2.3	0.1	2.4	-	0.00	22.5%	1.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	1.2	0.4	-	1.6	9.9	259.2	0.4	5.7	8.7	0.4	9.1	-	0.00	44.4%	2.1	-
5/2	124	0	46	1.8	11.2	2.2	15.2	216.9	460.0	1.8	4.8	10.5	11.2	21.7	-	0.00	104.6%	16.1	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	1.8	1.1	-	2.9	13.1	606.9	0.8	5.7	11.7	1.1	12.8	-	0.00	69.6 : 68.5%	4.0	-
8/3	-	-	-	0.4	0.1	-	0.5	11.4	54.3	0.3	1.3	1.3	0.1	1.4	-	0.00	18.8%	0.6	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	21.5	29.9	-	51.4	197.8	1581.9	1.7	21.1	35.7	29.9	65.6	-	0.00	105.0 : 105.0%	54.3	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.9%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.5%	0.1	-
12/1	-	-	-	0.1	0.2	-	0.3	2.1	59.8	0.1	1.3	2.0	0.2	2.2	-	0.00	28.7%	0.4	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.3	0.1	-	0.3	69.0	16.9	0.9	0.5	0.6	0.1	0.6	-	0.00	14.0%	0.4	-
14/2	-	-	-	0.9	0.5	-	1.3	6.4	243.7	0.3	4.7	8.1	0.5	8.6	-	0.00	47.7%	1.8	-
15/1+15/2	40	54	5	14.4	23.2	0.1	37.7	181.1	1015.6	1.4	21.7	31.9	23.2	55.1	-	0.00	104.2 : 104.2%	39.5	-
16/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	0.0	0.0	0.2	0.2	-	0.00	27.9%	0.2	-
16/2	0	0	0	1.2	1.0	0.0	2.2	8.7	276.1	0.3	5.2	20.6	1.0	21.6	-	0.00	67.3%	2.7	-
17/1	486	57	0	0.0	0.4	-	0.4	2.4	232.8	0.4	-	8.0	0.4	8.4	-	0.00	41.7%	0.8	-
18/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	35.4%	0.3	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	6	0	0	0.0	0.0	-	0.0	4.7	1.2	0.2	-	0.0	0.0	0.0	-	0.00	0.9%	0.0	-

C1	PRC for Signalled Lanes (%):	-16.6	Total Delay for Signalled Lanes (pcuHr):	131.12	Cycle Time (s):	330
C2	Stream: 1 PRC for Signalled Lanes (%):	88.6	Total Delay for Signalled Lanes (pcuHr):	1.65	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	213.3	Total Delay for Signalled Lanes (pcuHr):	0.30	Cycle Time (s):	120
	PRC Over All Lanes (%):	-16.6	Total Delay Over All Lanes(pcuHr):	133.99		

Scenario 6: '2025 Do-Nothing - PM' (FG6: '2025 Do-Nothing - PM', Plan 2: 'PM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**114.0%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**114.0%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	313	Inf	Inf	Inf	0.0%	293	293
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	602	1915:1912	1915	1447+467	31.4 : 31.4%	602	602
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		2	54	84(176)	102(212)	-	-	455	1711	1711	399	114.0%	455	399
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		2	70	84(176)	118(212)	-	-	146	1835	1835	551	26.5%	146	146
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1048	Inf	Inf	Inf	0.0%	988	988
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		2	146	123(217)	169(77)	-	-	795	1915	1915	1181	67.3%	795	795
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		2	146	123(217)	169(77)	-	-	304	1859	1859	275	110.5%	304	275
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	3	Inf	Inf	Inf	0.0%	3	3
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	4	148:214	5(82,135,174):212(82,102,174)	64(102,159,219)	66	-	1055	1915:1741	1915	440+1149	66.4 : 63.6%	1023	1023
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		4	148	5(82,135,174)	64(102,159,219)	-	-	374	2055	2055	1302	27.1%	352	352
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	878	Inf	Inf	Inf	0.0%	846	846
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		2	37	108(225)	130(0)	-	-	568	1710:1710	1710	225+278	113.0 : 113.0%	568	510
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	292	1965	1965	1965	14.9%	292	292
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	485	2105	2105	2105	21.5%	454	454
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	24	12	-	-	777	1965	1965	1785	41.8%	746	746
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	777	Inf	Inf	Inf	0.0%	746	746
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	34	41	-	-	12	1935	1935	129	9.3%	12	12
14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	55	29	-	-	739	1935	1935	1532	48.2%	739	739
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	2	106	5(135)	77(169)	13	-	751	1915:1710	1915	746+135	85.3 : 85.3%	751	751

16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	2	240	77(169)	169(77)	94	-	237	1945	1945	1945	11.5%	224	224
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		2	146	123(217)	169(77)	-	-	856	1945	1945	1199	68.4%	820	820
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	237	1875	1875	1380	16.3%	224	224
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	313	2014	2014	2014	14.6%	293	293
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	2	Inf	Inf	Inf	0.0%	2	2
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	1	1513	1513	1120	0.1%	1	1

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**310**	**83**	**18**	**47.9**	**94.3**	**1.1**	**143.4**	**-**	**4818.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**114.0%**	**152.2**	**-**
Merrie Harrier	**310**	**83**	**18**	**47.9**	**94.3**	**1.1**	**143.4**	**-**	**4818.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**114.0%**	**152.2**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	1	0	0	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	31.4 : 31.4%	0.2	-
3/1	-	-	-	14.0	31.5	-	45.5	359.8	455.0	1.0	20.6	25.6	31.5	57.1	-	0.00	114.0%	46.3	-
3/2	-	-	-	1.4	0.2	-	1.6	39.7	110.1	0.8	4.4	4.9	0.2	5.0	-	0.00	26.5%	1.8	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	3.3	1.0	-	4.4	19.7	516.7	0.7	9.9	17.7	1.0	18.7	-	0.00	67.3%	5.3	-
5/2	54	0	15	6.1	18.6	0.8	25.4	301.0	579.1	1.9	11.1	17.9	18.6	36.4	-	0.00	110.5%	26.5	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	0.8	0.9	-	1.7	6.1	747.8	0.7	12.8	22.5	0.9	23.4	-	0.00	66.4 : 63.6%	3.1	-
8/3	-	-	-	0.6	0.2	-	0.8	8.0	247.7	0.7	3.7	11.6	0.2	11.8	-	0.00	27.1%	1.2	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	13.3	36.6	-	49.9	316.3	696.1	1.2	13.6	19.4	36.6	56.0	-	0.00	113.0 : 113.0%	51.2	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.9%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	21.5%	0.1	-
12/1	-	-	-	0.2	0.4	-	0.5	2.5	105.6	0.1	1.9	3.5	0.4	3.9	-	0.00	41.8%	0.7	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.2	0.1	-	0.2	68.1	11.2	0.9	0.4	0.4	0.1	0.4	-	0.00	9.3%	0.2	-
14/2	-	-	-	0.9	0.5	-	1.3	6.5	246.3	0.3	4.7	8.2	0.5	8.7	-	0.00	48.2%	1.8	-
15/1+15/2	65	47	3	6.1	2.8	0.3	9.2	44.0	789.8	1.1	14.3	24.4	2.8	27.1	-	0.00	85.3 : 85.3%	10.6	-
16/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	0.0	0.0	0.1	0.1	-	0.00	11.5%	0.1	-
16/2	0	0	0	1.1	1.1	0.0	2.2	9.5	313.3	0.4	4.0	18.5	1.1	19.6	-	0.00	68.4%	2.7	-
17/1	189	35	0	0.0	0.1	-	0.1	1.6	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.3%	0.1	-
18/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.6%	0.1	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	1	0	0	0.0	0.0	-	0.0	1.6	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.1%	0.0	-

C1	PRC for Signalled Lanes (%):	-26.6	Total Delay for Signalled Lanes (pcuHr):	140.67	Cycle Time (s):	240
C2	Stream: 1 PRC for Signalled Lanes (%):	86.6	Total Delay for Signalled Lanes (pcuHr):	1.56	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	115.5	Total Delay for Signalled Lanes (pcuHr):	0.53	Cycle Time (s):	120
	PRC Over All Lanes (%):	-26.6	Total Delay Over All Lanes(pcuHr):	143.40		

Scenario 7: '2025 Do-Something - AM' (FG7: '2025 Do-Something - AM', Plan 1: 'AM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**105.0%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**105.0%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	749	Inf	Inf	Inf	0.0%	715	715
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	381	1915:1915	1915	1468+447	19.9 : 19.9%	381	381
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		3	52	52(163,274)	62(184,295)	-	-	296	1712	1712	285	103.7%	296	285
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		3	68	52(163,274)	78(184,295)	-	-	89	1835	1835	395	22.5%	89	89
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1031	Inf	Inf	Inf	0.0%	987	987
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		3	226	83(189,300)	156(267,45)	-	-	590	1915	1915	1329	44.4%	590	590
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		3	226	83(189,300)	156(267,45)	-	-	253	1766	1766	242	104.6%	253	253
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	4	Inf	Inf	Inf	0.0%	4	4
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	6	131:271	5(50,121,161,225,272):295(50,62,161,184,272)	33(62,132,191,245,302)	140	-	801	1915:1741	1915	420+732	69.6 : 68.5%	793	793
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		6	131	5(50,121,161,225,272)	33(62,132,191,245,302)	-	-	164	2055	2055	853	18.8%	161	161
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	612	Inf	Inf	Inf	0.0%	600	600
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		3	93	68(197,308)	116(220,0)	-	-	936	1710:1710	1710	441+451	105.0 : 105.0%	936	892
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	292	1965	1965	1965	14.9%	292	292
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	227	2105	2105	2105	10.5%	221	221
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	33	21	-	-	519	1965	1965	1785	28.7%	513	513
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	519	Inf	Inf	Inf	0.0%	513	513
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	12	19	-	-	18	1935	1935	129	14.0%	18	18

14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	33	7	-	-	731	1935	1935	1532	47.7%	731	731
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	3	117	5(121,225)	45(156,267)	43	-	749	1915:1710	1915	620+99	104.2 : 104.2%	749	719
16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	3	330	45(156,267)	156(267,45)	104	-	569	1945	1945	1945	27.9%	543	543
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		3	226	83(189,300)	156(267,45)	-	-	950	1945	1945	1350	67.3%	908	908
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	569	1875	1875	1304	41.7%	543	543
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	747	2015	2015	2015	35.4%	713	713
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	0	Inf	Inf	Inf	0.0%	0	0
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	6	1433	1433	700	0.9%	6	6

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**657**	**111**	**51**	**51.0**	**80.6**	**2.4**	**134.0**	**-**	**5177.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**105.0%**	**143.5**	**-**
Merrie Harrier	**657**	**111**	**51**	**51.0**	**80.6**	**2.4**	**134.0**	**-**	**5177.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**105.0%**	**143.5**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	0	0	0	0.0	0.1	-	0.1	1.2	0.0	0.0	-	0.0	0.1	0.1	-	0.00	19.9 : 19.9%	0.1	-
3/1	-	-	-	6.6	11.7	-	18.3	222.7	296.0	1.0	11.8	13.8	11.7	25.4	-	0.00	103.7%	18.9	-
3/2	-	-	-	0.9	0.1	-	1.0	41.5	73.1	0.8	2.2	2.3	0.1	2.4	-	0.00	22.5%	1.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	1.2	0.4	-	1.6	9.9	259.2	0.4	5.7	8.7	0.4	9.1	-	0.00	44.4%	2.1	-
5/2	124	0	46	1.8	11.2	2.2	15.2	216.9	460.0	1.8	4.8	10.5	11.2	21.7	-	0.00	104.6%	16.1	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	1.8	1.1	-	2.9	13.1	606.9	0.8	5.7	11.7	1.1	12.8	-	0.00	69.6 : 68.5%	4.0	-
8/3	-	-	-	0.4	0.1	-	0.5	11.4	54.3	0.3	1.3	1.3	0.1	1.4	-	0.00	18.8%	0.6	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	21.5	29.9	-	51.4	197.8	1581.9	1.7	21.1	35.7	29.9	65.6	-	0.00	105.0 : 105.0%	54.3	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.9%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.5%	0.1	-
12/1	-	-	-	0.1	0.2	-	0.3	2.1	59.8	0.1	1.3	2.0	0.2	2.2	-	0.00	28.7%	0.4	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.3	0.1	-	0.3	69.0	16.9	0.9	0.5	0.6	0.1	0.6	-	0.00	14.0%	0.4	-
14/2	-	-	-	0.9	0.5	-	1.3	6.4	243.7	0.3	4.7	8.1	0.5	8.6	-	0.00	47.7%	1.8	-
15/1+15/2	40	54	5	14.4	23.2	0.1	37.7	181.1	1015.6	1.4	21.7	31.9	23.2	55.1	-	0.00	104.2 : 104.2%	39.5	-
16/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	0.0	0.0	0.2	0.2	-	0.00	27.9%	0.2	-
16/2	0	0	0	1.2	1.0	0.0	2.2	8.7	276.1	0.3	5.2	20.6	1.0	21.6	-	0.00	67.3%	2.7	-
17/1	486	57	0	0.0	0.4	-	0.4	2.4	232.8	0.4	-	8.0	0.4	8.4	-	0.00	41.7%	0.8	-
18/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	35.4%	0.3	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	6	0	0	0.0	0.0	-	0.0	4.7	1.2	0.2	-	0.0	0.0	0.0	-	0.00	0.9%	0.0	-

C1	PRC for Signalled Lanes (%):	-16.6	Total Delay for Signalled Lanes (pcuHr):	131.12	Cycle Time (s):	330
C2	Stream: 1 PRC for Signalled Lanes (%):	88.6	Total Delay for Signalled Lanes (pcuHr):	1.65	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	213.3	Total Delay for Signalled Lanes (pcuHr):	0.30	Cycle Time (s):	120
	PRC Over All Lanes (%):	-16.6	Total Delay Over All Lanes(pcuHr):	133.99		

Scenario 8: '2025 Do-Something - PM' (FG8: '2025 Do-Something - PM', Plan 2: 'PM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**114.0%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**114.0%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	313	Inf	Inf	Inf	0.0%	293	293
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	602	1915:1912	1915	1447+467	31.4 : 31.4%	602	602
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		2	54	84(176)	102(212)	-	-	455	1711	1711	399	114.0%	455	399
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		2	70	84(176)	118(212)	-	-	146	1835	1835	551	26.5%	146	146
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1048	Inf	Inf	Inf	0.0%	988	988
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		2	146	123(217)	169(77)	-	-	795	1915	1915	1181	67.3%	795	795
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		2	146	123(217)	169(77)	-	-	304	1859	1859	275	110.5%	304	275
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	3	Inf	Inf	Inf	0.0%	3	3
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	4	148:214	5(82,135,174):212(82,102,174)	64(102,159,219)	66	-	1055	1915:1741	1915	440+1149	66.4 : 63.6%	1023	1023
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		4	148	5(82,135,174)	64(102,159,219)	-	-	374	2055	2055	1302	27.1%	352	352
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	878	Inf	Inf	Inf	0.0%	846	846
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		2	37	108(225)	130(0)	-	-	568	1710:1710	1710	225+278	113.0 : 113.0%	568	510
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	292	1965	1965	1965	14.9%	292	292
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	485	2105	2105	2105	21.5%	454	454
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	24	12	-	-	777	1965	1965	1785	41.8%	746	746
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	777	Inf	Inf	Inf	0.0%	746	746
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	34	41	-	-	12	1935	1935	129	9.3%	12	12
14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	55	29	-	-	739	1935	1935	1532	48.2%	739	739
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	2	106	5(135)	77(169)	13	-	751	1915:1710	1915	746+135	85.3 : 85.3%	751	751

16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	2	240	77(169)	169(77)	94	-	237	1945	1945	1945	11.5%	224	224
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		2	146	123(217)	169(77)	-	-	856	1945	1945	1199	68.4%	820	820
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	237	1875	1875	1380	16.3%	224	224
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	313	2014	2014	2014	14.6%	293	293
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	2	Inf	Inf	Inf	0.0%	2	2
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	1	1513	1513	1120	0.1%	1	1

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**310**	**83**	**18**	**47.9**	**94.3**	**1.1**	**143.4**	**-**	**4818.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**114.0%**	**152.2**	**-**
Merrie Harrier	**310**	**83**	**18**	**47.9**	**94.3**	**1.1**	**143.4**	**-**	**4818.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**114.0%**	**152.2**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	1	0	0	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	31.4 : 31.4%	0.2	-
3/1	-	-	-	14.0	31.5	-	45.5	359.8	455.0	1.0	20.6	25.6	31.5	57.1	-	0.00	114.0%	46.3	-
3/2	-	-	-	1.4	0.2	-	1.6	39.7	110.1	0.8	4.4	4.9	0.2	5.0	-	0.00	26.5%	1.8	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	3.3	1.0	-	4.4	19.7	516.7	0.7	9.9	17.7	1.0	18.7	-	0.00	67.3%	5.3	-
5/2	54	0	15	6.1	18.6	0.8	25.4	301.0	579.1	1.9	11.1	17.9	18.6	36.4	-	0.00	110.5%	26.5	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	0.8	0.9	-	1.7	6.1	747.8	0.7	12.8	22.5	0.9	23.4	-	0.00	66.4 : 63.6%	3.1	-
8/3	-	-	-	0.6	0.2	-	0.8	8.0	247.7	0.7	3.7	11.6	0.2	11.8	-	0.00	27.1%	1.2	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	13.3	36.6	-	49.9	316.3	696.1	1.2	13.6	19.4	36.6	56.0	-	0.00	113.0 : 113.0%	51.2	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.9%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	21.5%	0.1	-
12/1	-	-	-	0.2	0.4	-	0.5	2.5	105.6	0.1	1.9	3.5	0.4	3.9	-	0.00	41.8%	0.7	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.2	0.1	-	0.2	68.1	11.2	0.9	0.4	0.4	0.1	0.4	-	0.00	9.3%	0.2	-
14/2	-	-	-	0.9	0.5	-	1.3	6.5	246.3	0.3	4.7	8.2	0.5	8.7	-	0.00	48.2%	1.8	-
15/1+15/2	65	47	3	6.1	2.8	0.3	9.2	44.0	789.8	1.1	14.3	24.4	2.8	27.1	-	0.00	85.3 : 85.3%	10.6	-
16/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	0.0	0.0	0.1	0.1	-	0.00	11.5%	0.1	-
16/2	0	0	0	1.1	1.1	0.0	2.2	9.5	313.3	0.4	4.0	18.5	1.1	19.6	-	0.00	68.4%	2.7	-
17/1	189	35	0	0.0	0.1	-	0.1	1.6	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.3%	0.1	-
18/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.6%	0.1	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	1	0	0	0.0	0.0	-	0.0	1.6	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.1%	0.0	-

C1	PRC for Signalled Lanes (%):	-26.6	Total Delay for Signalled Lanes (pcuHr):	140.67	Cycle Time (s):	240
C2	Stream: 1 PRC for Signalled Lanes (%):	86.6	Total Delay for Signalled Lanes (pcuHr):	1.56	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	115.5	Total Delay for Signalled Lanes (pcuHr):	0.53	Cycle Time (s):	120
	PRC Over All Lanes (%):	-26.6	Total Delay Over All Lanes(pcuHr):	143.40		

Scenario 9: '2030 Do-Minimum - AM' (FG9: '2030 Do-Minimum - AM', Plan 1: 'AM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**108.6%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**108.6%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	778	Inf	Inf	Inf	0.0%	721	721
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	392	1915:1915	1915	1461+454	20.5 : 20.5%	392	392
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		3	51	54(167,276)	72(180,296)	-	-	303	1712	1712	280	108.2%	303	280
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		3	67	54(167,276)	88(180,296)	-	-	93	1835	1835	389	23.9%	93	93
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1073	Inf	Inf	Inf	0.0%	993	993
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		3	227	93(185,301)	160(269,47)	-	-	618	1915	1915	1335	46.3%	618	618
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		3	227	93(185,301)	160(269,47)	-	-	259	1764	1764	239	108.3%	259	239
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	4	Inf	Inf	Inf	0.0%	4	4
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	6	158:299	5(52,130,165,224,274):296(52,72,165,180,274)	37(72,150,187,259,303)	141	-	834	1915:1741	1915	478+817	64.4 : 62.4%	818	818
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		6	158	5(52,130,165,224,274)	37(72,150,187,259,303)	-	-	167	2055	2055	1021	15.8%	161	161
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	634	Inf	Inf	Inf	0.0%	609	609
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		3	94	78(193,309)	125(219,0)	-	-	974	1710:1710	1710	447+458	107.5 : 107.5%	974	906
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	308	1965	1965	1965	15.7%	308	308
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	233	2105	2105	2105	10.6%	223	223
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	23	11	-	-	541	1965	1965	1785	29.7%	531	531
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	541	Inf	Inf	Inf	0.0%	531	531
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	2	9	-	-	18	1935	1935	129	14.0%	18	18

14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	23	117	-	-	763	1935	1935	1532	49.8%	763	763
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	3	117	5(130,224)	47(160,269)	15	-	781	1915:1710	1915	620+99	108.6 : 108.6%	781	719
16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	3	330	47(160,269)	160(269,47)	103	-	591	1945	1945	1945	28.2%	548	548
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		3	227	93(185,301)	160(269,47)	-	-	990	1945	1945	1356	67.6%	916	916
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	591	1875	1875	1304	42.0%	548	548
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	776	2015	2015	2015	35.7%	719	719
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	0	Inf	Inf	Inf	0.0%	0	0
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	6	1433	1433	690	0.9%	6	6

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**679**	**94**	**51**	**65.5**	**111.6**	**2.6**	**179.6**	**-**	**5465.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**108.6%**	**189.6**	**-**
Merrie Harrier	**679**	**94**	**51**	**65.5**	**111.6**	**2.6**	**179.6**	**-**	**5465.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**108.6%**	**189.6**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	0	0	0	0.0	0.1	-	0.1	1.2	0.0	0.0	-	0.0	0.1	0.1	-	0.00	20.5 : 20.5%	0.1	-
3/1	-	-	-	9.2	16.1	-	25.3	300.8	303.0	1.0	14.4	16.4	16.1	32.5	-	0.00	108.2%	25.9	-
3/2	-	-	-	0.9	0.2	-	1.1	42.3	76.9	0.8	2.4	2.6	0.2	2.7	-	0.00	23.9%	1.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	1.4	0.4	-	1.8	10.5	273.4	0.4	7.4	11.3	0.4	11.8	-	0.00	46.3%	2.3	-
5/2	124	0	47	3.6	14.4	2.4	20.4	283.5	498.2	1.9	6.7	12.9	14.4	27.3	-	0.00	108.3%	21.3	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	1.5	0.9	-	2.4	10.4	579.8	0.7	15.6	19.6	0.9	20.4	-	0.00	64.4 : 62.4%	3.4	-
8/3	-	-	-	0.2	0.1	-	0.3	7.5	39.7	0.2	1.2	1.2	0.1	1.3	-	0.00	15.8%	0.4	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	23.7	40.2	-	63.8	236.0	1778.0	1.8	22.6	39.8	40.2	79.9	-	0.00	107.5 : 107.5%	67.1	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.7%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.6%	0.1	-
12/1	-	-	-	0.1	0.2	-	0.3	2.1	66.3	0.1	1.3	2.2	0.2	2.4	-	0.00	29.7%	0.4	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.3	0.1	-	0.3	69.0	16.9	0.9	0.5	0.6	0.1	0.6	-	0.00	14.0%	0.4	-
14/2	-	-	-	0.9	0.5	-	1.4	6.6	260.7	0.3	4.9	8.7	0.5	9.2	-	0.00	49.8%	1.9	-
15/1+15/2	58	37	5	22.5	36.4	0.2	59.0	272.2	1058.3	1.4	31.1	42.4	36.4	78.7	-	0.00	108.6 : 108.6%	61.0	-
16/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	0.0	0.0	0.2	0.2	-	0.00	28.2%	0.2	-
16/2	0	0	0	1.2	1.0	0.0	2.2	8.7	275.2	0.3	5.2	20.6	1.0	21.6	-	0.00	67.6%	2.7	-
17/1	491	57	0	0.0	0.4	-	0.4	2.4	237.7	0.4	-	7.6	0.4	8.0	-	0.00	42.0%	0.8	-
18/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	35.7%	0.3	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	6	0	0	0.0	0.0	-	0.0	4.7	1.3	0.2	-	0.0	0.0	0.0	-	0.00	0.9%	0.0	-

C1	PRC for Signalled Lanes (%):	-20.7	Total Delay for Signalled Lanes (pcuHr):	176.60	Cycle Time (s):	330
C2	Stream: 1 PRC for Signalled Lanes (%):	80.7	Total Delay for Signalled Lanes (pcuHr):	1.75	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	202.7	Total Delay for Signalled Lanes (pcuHr):	0.31	Cycle Time (s):	120
	PRC Over All Lanes (%):	-20.7	Total Delay Over All Lanes(pcuHr):	179.60		

Scenario 10: '2030 Do-Minimum - PM' (FG10: '2030 Do-Minimum - PM', Plan 2: 'PM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**120.1%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**120.1%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	321	Inf	Inf	Inf	0.0%	287	287
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	624	1915:1913	1915	1445+469	32.6 : 32.6%	624	624
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		2	53	82(178)	105(208)	-	-	471	1711	1711	392	120.1%	471	392
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		2	69	82(178)	121(208)	-	-	152	1835	1835	543	28.0%	152	152
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1090	Inf	Inf	Inf	0.0%	1008	1008
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		2	147	126(213)	171(75)	-	-	850	1915	1915	1189	71.5%	850	850
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		2	147	126(213)	171(75)	-	-	294	1856	1856	246	119.6%	294	246
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	3	Inf	Inf	Inf	0.0%	2	2
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	4	151:217	5(80,134,176):208(80,105,176)	65(105,161,215)	66	-	1119	1915:1741	1915	468+1137	69.7 : 65.8%	1074	1074
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		4	151	5(80,134,176)	65(105,161,215)	-	-	368	2055	2055	1327	25.1%	333	333
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	913	Inf	Inf	Inf	0.0%	868	868
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		2	37	111(221)	129(0)	-	-	588	1710:1710	1710	222+278	117.7 : 117.7%	588	500
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	326	1965	1965	1965	16.6%	326	326
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	484	2105	2105	2105	20.5%	431	431
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	7	115	-	-	810	1965	1965	1785	42.4%	757	757
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	810	Inf	Inf	Inf	0.0%	757	757
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	15	22	-	-	12	1935	1935	129	9.3%	12	12
14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	36	10	-	-	770	1935	1935	1532	50.3%	770	770
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	2	107	5(134)	75(171)	10	-	782	1915:1710	1915	752+136	88.0 : 88.0%	782	782

16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	2	240	75(171)	171(75)	93	-	243	1945	1945	1945	11.4%	221	221
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		2	147	126(213)	171(75)	-	-	891	1945	1945	1208	69.7%	842	842
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	243	1875	1875	1385	16.0%	221	221
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	321	2014	2014	2014	14.2%	286	286
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	2	Inf	Inf	Inf	0.0%	2	2
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	1	1513	1513	1128	0.1%	1	1

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**305**	**85**	**19**	**57.1**	**125.1**	**1.3**	**183.6**	**-**	**5133.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**120.1%**	**193.0**	**-**
Merrie Harrier	**305**	**85**	**19**	**57.1**	**125.1**	**1.3**	**183.6**	**-**	**5133.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**120.1%**	**193.0**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	1	0	0	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	32.6 : 32.6%	0.2	-
3/1	-	-	-	16.7	42.2	-	58.9	450.1	471.0	1.0	22.4	26.7	42.2	69.0	-	0.00	120.1%	59.8	-
3/2	-	-	-	1.5	0.2	-	1.7	40.7	116.5	0.8	4.7	5.2	0.2	5.4	-	0.00	28.0%	1.9	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	3.7	1.2	-	4.9	20.9	573.8	0.7	11.3	21.0	1.2	22.3	-	0.00	71.5%	6.0	-
5/2	49	0	16	8.1	26.8	0.8	35.7	437.3	539.9	1.8	13.1	18.5	26.8	45.3	-	0.00	119.6%	36.7	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	1.2	1.0	-	2.2	7.4	901.8	0.8	15.0	24.8	1.0	25.8	-	0.00	69.7 : 65.8%	3.8	-
8/3	-	-	-	0.4	0.2	-	0.6	6.6	155.8	0.5	3.5	5.8	0.2	6.0	-	0.00	25.1%	0.9	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	16.9	47.3	-	64.1	392.6	835.3	1.4	18.3	22.2	47.3	69.5	-	0.00	117.7 : 117.7%	65.7	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.6%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	20.5%	0.1	-
12/1	-	-	-	0.2	0.4	-	0.5	2.6	107.3	0.1	1.9	3.6	0.4	3.9	-	0.00	42.4%	0.7	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.2	0.1	-	0.2	68.1	11.2	0.9	0.4	0.4	0.1	0.4	-	0.00	9.3%	0.2	-
14/2	-	-	-	0.9	0.5	-	1.4	6.7	263.1	0.3	4.9	8.8	0.5	9.3	-	0.00	50.3%	1.9	-
15/1+15/2	67	50	3	6.4	3.4	0.5	10.3	47.3	859.7	1.1	14.5	25.4	3.4	28.8	-	0.00	88.0 : 88.0%	11.9	-
16/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	0.0	0.0	0.1	0.1	-	0.00	11.4%	0.1	-
16/2	0	0	0	1.0	1.1	0.0	2.2	9.3	297.7	0.4	4.0	17.4	1.1	18.6	-	0.00	69.7%	2.7	-
17/1	186	35	0	0.0	0.1	-	0.1	1.5	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.0%	0.1	-
18/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.2%	0.1	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	1	0	0	0.0	0.0	-	0.0	1.6	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.1%	0.0	-

C1	PRC for Signalled Lanes (%):	-33.5	Total Delay for Signalled Lanes (pcuHr):	180.72	Cycle Time (s):	240
C2	Stream: 1 PRC for Signalled Lanes (%):	79.1	Total Delay for Signalled Lanes (pcuHr):	1.66	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	112.1	Total Delay for Signalled Lanes (pcuHr):	0.54	Cycle Time (s):	120
	PRC Over All Lanes (%):	-33.5	Total Delay Over All Lanes(pcuHr):	183.57		

Scenario 11: '2030 Do-Nothing - AM' (FG11: '2030 Do-Nothing - AM', Plan 1: 'AM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**108.8%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**108.8%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	780	Inf	Inf	Inf	0.0%	718	718
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	397	1915:1915	1915	1466+449	20.7 : 20.7%	397	397
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		3	52	55(175,274)	74(190,292)	-	-	308	1712	1712	285	107.9%	308	285
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		3	68	55(175,274)	90(190,292)	-	-	93	1835	1835	395	23.6%	93	93
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1074	Inf	Inf	Inf	0.0%	989	989
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		3	226	95(195,297)	168(267,48)	-	-	618	1915	1915	1329	46.5%	618	618
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		3	226	95(195,297)	168(267,48)	-	-	259	1764	1764	239	108.2%	259	239
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	4	Inf	Inf	Inf	0.0%	4	4
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	6	144:284	5(53,132,173,229,272):292(53,74,173,190,272)	36(74,151,197,251,299)	140	-	838	1915:1741	1915	448+772	68.7 : 66.6%	822	822
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		6	144	5(53,132,173,229,272)	36(74,151,197,251,299)	-	-	167	2055	2055	934	17.3%	161	161
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	638	Inf	Inf	Inf	0.0%	613	613
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		3	93	80(203,305)	127(224,0)	-	-	976	1710:1710	1710	444+453	108.8 : 108.8%	976	897
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	308	1965	1965	1965	15.7%	308	308
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	233	2105	2105	2105	10.5%	222	222
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	49	37	-	-	541	1965	1965	1785	29.7%	530	530
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	541	Inf	Inf	Inf	0.0%	530	530
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	28	35	-	-	18	1935	1935	129	14.0%	18	18

14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	49	23	-	-	763	1935	1935	1532	49.8%	763	763
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	3	117	5(132,229)	48(168,267)	30	-	781	1915:1710	1915	620+99	108.6 : 108.6%	781	719
16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	3	330	48(168,267)	168(267,48)	104	-	593	1945	1945	1945	28.0%	545	545
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		3	226	95(195,297)	168(267,48)	-	-	990	1945	1945	1350	67.5%	911	911
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	593	1875	1875	1304	41.8%	545	545
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	778	2015	2015	2015	35.5%	716	716
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	0	Inf	Inf	Inf	0.0%	0	0
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	6	1433	1433	689	0.9%	6	6

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**665**	**105**	**51**	**68.7**	**116.4**	**2.5**	**187.6**	**-**	**5503.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**108.8%**	**197.7**	**-**
Merrie Harrier	**665**	**105**	**51**	**68.7**	**116.4**	**2.5**	**187.6**	**-**	**5503.7**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**108.8%**	**197.7**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	0	0	0	0.0	0.1	-	0.1	1.2	0.0	0.0	-	0.0	0.1	0.1	-	0.00	20.7 : 20.7%	0.1	-
3/1	-	-	-	9.1	16.1	-	25.2	294.2	308.0	1.0	13.4	15.2	16.1	31.3	-	0.00	107.9%	25.7	-
3/2	-	-	-	0.9	0.2	-	1.1	41.7	76.4	0.8	2.3	2.5	0.2	2.6	-	0.00	23.6%	1.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	1.4	0.4	-	1.8	10.7	275.3	0.4	7.6	11.5	0.4	11.9	-	0.00	46.5%	2.3	-
5/2	124	0	47	3.6	14.4	2.4	20.3	282.8	498.4	1.9	7.0	12.4	14.4	26.7	-	0.00	108.2%	21.3	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	1.7	1.0	-	2.7	12.0	617.0	0.8	15.8	19.9	1.0	21.0	-	0.00	68.7 : 66.6%	3.9	-
8/3	-	-	-	0.2	0.1	-	0.3	7.7	40.9	0.3	1.2	1.2	0.1	1.3	-	0.00	17.3%	0.4	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	27.4	44.9	-	72.2	266.3	1774.3	1.8	27.6	41.7	44.9	86.6	-	0.00	108.8 : 108.8%	75.5	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.7%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.5%	0.1	-
12/1	-	-	-	0.1	0.2	-	0.3	2.1	66.3	0.1	1.3	2.2	0.2	2.4	-	0.00	29.7%	0.4	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.3	0.1	-	0.3	69.0	16.9	0.9	0.5	0.6	0.1	0.6	-	0.00	14.0%	0.4	-
14/2	-	-	-	0.9	0.5	-	1.4	6.6	260.7	0.3	4.9	8.7	0.5	9.2	-	0.00	49.8%	1.9	-
15/1+15/2	47	48	5	21.9	36.4	0.2	58.5	269.5	1055.9	1.4	28.8	38.6	36.4	75.0	-	0.00	108.6 : 108.6%	60.4	-
16/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	0.0	0.0	0.2	0.2	-	0.00	28.0%	0.2	-
16/2	0	0	0	1.2	1.0	0.0	2.2	8.7	275.1	0.3	5.2	20.6	1.0	21.6	-	0.00	67.5%	2.7	-
17/1	488	57	0	0.0	0.4	-	0.4	2.4	237.3	0.4	-	8.0	0.4	8.4	-	0.00	41.8%	0.8	-
18/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	35.5%	0.3	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	6	0	0	0.0	0.0	-	0.0	4.7	1.3	0.2	-	0.0	0.0	0.0	-	0.00	0.9%	0.0	-

C1	PRC for Signalled Lanes (%):	-20.9	Total Delay for Signalled Lanes (pcuHr):	184.60	Cycle Time (s):	330
C2	Stream: 1 PRC for Signalled Lanes (%):	80.7	Total Delay for Signalled Lanes (pcuHr):	1.75	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	203.1	Total Delay for Signalled Lanes (pcuHr):	0.31	Cycle Time (s):	120
	PRC Over All Lanes (%):	-20.9	Total Delay Over All Lanes(pcuHr):	187.60		

Scenario 12: '2030 Do-Nothing - PM' (FG12: '2030 Do-Nothing - PM', Plan 2: 'PM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**120.6%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**120.6%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	326	Inf	Inf	Inf	0.0%	291	291
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	626	1915:1913	1915	1447+468	32.7 : 32.7%	626	626
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		2	53	75(188)	97(219)	-	-	473	1711	1711	392	120.6%	473	392
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		2	69	75(188)	113(219)	-	-	152	1835	1835	543	28.0%	152	152
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1090	Inf	Inf	Inf	0.0%	1007	1007
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		2	147	118(224)	181(68)	-	-	850	1915	1915	1189	71.5%	850	850
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		2	147	118(224)	181(68)	-	-	295	1855	1855	246	120.1%	295	246
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	3	Inf	Inf	Inf	0.0%	2	2
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	4	151:217	5(73,137,186):219(73,97,186)	58(97,171,226)	66	-	1121	1915:1741	1915	451+1101	72.2 : 68.0%	1075	1075
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		4	151	5(73,137,186)	58(97,171,226)	-	-	368	2055	2055	1327	25.0%	332	332
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	915	Inf	Inf	Inf	0.0%	869	869
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		2	37	103(232)	132(0)	-	-	592	1710:1710	1710	225+278	117.7 : 117.7%	592	503
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	326	1965	1965	1965	16.6%	326	326
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	484	2105	2105	2105	20.4%	430	430
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	39	27	-	-	810	1965	1965	1785	42.4%	756	756
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	810	Inf	Inf	Inf	0.0%	756	756
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	47	54	-	-	12	1935	1935	129	9.3%	12	12
14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	68	42	-	-	770	1935	1935	1532	50.3%	770	770
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	2	107	5(137)	68(181)	10	-	782	1915:1710	1915	752+136	88.0 : 88.0%	782	782

16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	2	240	68(181)	181(68)	93	-	247	1945	1945	1945	11.5%	225	225
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		2	147	118(224)	181(68)	-	-	891	1945	1945	1208	69.7%	842	842
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	247	1875	1875	1385	16.2%	225	225
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	326	2014	2014	2014	14.4%	290	290
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	2	Inf	Inf	Inf	0.0%	2	2
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	1	1513	1513	1123	0.1%	1	1

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**305**	**88**	**19**	**62.7**	**127.1**	**1.3**	**191.1**	**-**	**5148.8**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**120.6%**	**200.6**	**-**
Merrie Harrier	**305**	**88**	**19**	**62.7**	**127.1**	**1.3**	**191.1**	**-**	**5148.8**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**120.6%**	**200.6**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	1	0	0	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	32.7 : 32.7%	0.2	-
3/1	-	-	-	17.5	43.2	-	60.7	461.9	473.0	1.0	24.6	29.0	43.2	72.2	-	0.00	120.6%	61.6	-
3/2	-	-	-	1.4	0.2	-	1.6	37.6	115.9	0.8	3.9	4.3	0.2	4.5	-	0.00	28.0%	1.8	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	3.7	1.2	-	4.9	20.9	577.3	0.7	11.1	20.8	1.2	22.0	-	0.00	71.5%	6.0	-
5/2	50	0	16	8.9	27.4	0.9	37.2	453.7	540.6	1.8	14.8	18.7	27.4	46.1	-	0.00	120.1%	38.2	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	0.6	1.1	-	1.7	5.7	781.8	0.7	9.1	25.0	1.1	26.1	-	0.00	72.2 : 68.0%	3.1	-
8/3	-	-	-	0.3	0.2	-	0.5	5.3	152.1	0.5	2.5	5.8	0.2	6.0	-	0.00	25.0%	0.8	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	21.5	47.6	-	69.1	420.2	913.0	1.5	21.1	28.7	47.6	76.3	-	0.00	117.7 : 117.7%	70.8	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.6%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	20.4%	0.1	-
12/1	-	-	-	0.2	0.4	-	0.5	2.6	107.2	0.1	1.9	3.6	0.4	3.9	-	0.00	42.4%	0.7	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.2	0.1	-	0.2	68.1	11.2	0.9	0.4	0.4	0.1	0.4	-	0.00	9.3%	0.2	-
14/2	-	-	-	0.9	0.5	-	1.4	6.7	263.1	0.3	4.9	8.8	0.5	9.3	-	0.00	50.3%	1.9	-
15/1+15/2	64	53	3	6.3	3.4	0.5	10.2	47.1	860.1	1.1	13.4	23.4	3.4	26.9	-	0.00	88.0 : 88.0%	11.8	-
16/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	0.0	0.0	0.1	0.1	-	0.00	11.5%	0.1	-
16/2	0	0	0	1.2	1.1	0.0	2.3	9.9	353.6	0.4	4.0	21.1	1.1	22.3	-	0.00	69.7%	3.0	-
17/1	189	35	0	0.0	0.1	-	0.1	1.6	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.2%	0.1	-
18/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.4%	0.1	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	1	0	0	0.0	0.0	-	0.0	1.6	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.1%	0.0	-

C1	PRC for Signalled Lanes (%):	-34.0	Total Delay for Signalled Lanes (pcuHr):	188.29	Cycle Time (s):	240
C2	Stream: 1 PRC for Signalled Lanes (%):	79.1	Total Delay for Signalled Lanes (pcuHr):	1.66	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	112.4	Total Delay for Signalled Lanes (pcuHr):	0.54	Cycle Time (s):	120
	PRC Over All Lanes (%):	-34.0	Total Delay Over All Lanes(pcuHr):	191.14		

Scenario 13: '2030 Do-Something - AM' (FG13: '2030 Do-Something - AM', Plan 1: 'AM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**108.8%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**108.8%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	780	Inf	Inf	Inf	0.0%	718	718
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	396	1915:1915	1915	1465+450	20.7 : 20.7%	396	396
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		3	52	49(173,274)	67(189,292)	-	-	307	1712	1712	285	107.6%	307	285
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		3	68	49(173,274)	83(189,292)	-	-	93	1835	1835	395	23.6%	93	93
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1074	Inf	Inf	Inf	0.0%	989	989
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		3	226	88(194,297)	166(267,42)	-	-	618	1915	1915	1329	46.5%	618	618
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		3	226	88(194,297)	166(267,42)	-	-	259	1764	1764	239	108.2%	259	239
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	4	Inf	Inf	Inf	0.0%	4	4
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	6	142:282	5(47,125,171,228,272):292(47,67,171,189,272)	32(67,145,196,251,299)	140	-	837	1915:1741	1915	445+764	69.2 : 67.2%	822	822
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		6	142	5(47,125,171,228,272)	32(67,145,196,251,299)	-	-	167	2055	2055	922	17.5%	161	161
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	637	Inf	Inf	Inf	0.0%	613	613
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		3	93	73(202,305)	120(223,0)	-	-	976	1710:1710	1710	444+453	108.8 : 108.8%	976	897
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	308	1965	1965	1965	15.7%	308	308
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	233	2105	2105	2105	10.5%	222	222
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	48	36	-	-	541	1965	1965	1785	29.7%	530	530
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	541	Inf	Inf	Inf	0.0%	530	530
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	27	34	-	-	18	1935	1935	129	14.0%	18	18

14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	48	22	-	-	763	1935	1935	1532	49.8%	763	763
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	3	117	5(125,228)	42(166,267)	32	-	781	1915:1710	1915	620+99	108.6 : 108.6%	781	719
16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	3	330	42(166,267)	166(267,42)	104	-	593	1945	1945	1945	28.0%	545	545
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		3	226	88(194,297)	166(267,42)	-	-	990	1945	1945	1350	67.5%	911	911
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	593	1875	1875	1304	41.8%	545	545
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	778	2015	2015	2015	35.5%	716	716
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	0	Inf	Inf	Inf	0.0%	0	0
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	6	1433	1433	690	0.9%	6	6

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**663**	**107**	**51**	**68.7**	**116.0**	**2.6**	**187.2**	**-**	**5506.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**108.8%**	**197.3**	**-**
Merrie Harrier	**663**	**107**	**51**	**68.7**	**116.0**	**2.6**	**187.2**	**-**	**5506.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**108.8%**	**197.3**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	0	0	0	0.0	0.1	-	0.1	1.2	0.0	0.0	-	0.0	0.1	0.1	-	0.00	20.7 : 20.7%	0.1	-
3/1	-	-	-	8.9	15.7	-	24.6	288.9	307.0	1.0	13.3	15.1	15.7	30.8	-	0.00	107.6%	25.2	-
3/2	-	-	-	0.9	0.2	-	1.1	41.7	76.4	0.8	2.2	2.4	0.2	2.6	-	0.00	23.6%	1.2	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	1.4	0.4	-	1.8	10.6	275.3	0.4	7.4	11.3	0.4	11.8	-	0.00	46.5%	2.3	-
5/2	124	0	47	3.7	14.4	2.4	20.5	284.6	498.3	1.9	7.1	12.6	14.4	26.9	-	0.00	108.2%	21.4	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	1.7	1.1	-	2.8	12.1	618.5	0.8	15.6	19.6	1.1	20.6	-	0.00	69.2 : 67.2%	3.9	-
8/3	-	-	-	0.2	0.1	-	0.4	7.8	41.3	0.3	1.2	1.2	0.1	1.3	-	0.00	17.5%	0.4	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	28.4	44.9	-	73.3	270.2	1774.3	1.8	29.5	41.7	44.9	86.6	-	0.00	108.8 : 108.8%	76.5	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	15.7%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	10.5%	0.1	-
12/1	-	-	-	0.1	0.2	-	0.3	2.1	66.3	0.1	1.3	2.2	0.2	2.4	-	0.00	29.7%	0.4	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.3	0.1	-	0.3	69.0	16.9	0.9	0.5	0.6	0.1	0.6	-	0.00	14.0%	0.4	-
14/2	-	-	-	0.9	0.5	-	1.4	6.6	260.7	0.3	4.9	8.7	0.5	9.2	-	0.00	49.8%	1.9	-
15/1+15/2	44	51	5	20.9	36.4	0.2	57.4	264.8	1057.5	1.4	27.9	38.4	36.4	74.7	-	0.00	108.6 : 108.6%	59.4	-
16/1	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.0	0.0	0.0	0.2	0.2	-	0.00	28.0%	0.2	-
16/2	0	0	0	1.2	1.0	0.0	2.2	8.7	275.1	0.3	5.2	20.6	1.0	21.6	-	0.00	67.5%	2.7	-
17/1	488	57	0	0.0	0.4	-	0.4	2.4	237.3	0.4	-	8.0	0.4	8.4	-	0.00	41.8%	0.8	-
18/1	-	-	-	0.0	0.3	-	0.3	1.4	0.0	0.0	-	0.0	0.3	0.3	-	0.00	35.5%	0.3	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	6	0	0	0.0	0.0	-	0.0	4.7	1.3	0.2	-	0.0	0.0	0.0	-	0.00	0.9%	0.0	-

C1	PRC for Signalled Lanes (%):	-20.9	Total Delay for Signalled Lanes (pcuHr):	184.24	Cycle Time (s):	330
C2	Stream: 1 PRC for Signalled Lanes (%):	80.7	Total Delay for Signalled Lanes (pcuHr):	1.75	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	203.1	Total Delay for Signalled Lanes (pcuHr):	0.31	Cycle Time (s):	120
	PRC Over All Lanes (%):	-20.9	Total Delay Over All Lanes(pcuHr):	187.23		

Scenario 14: '2030 Do-Something - PM' (FG14: '2030 Do-Something - PM', Plan 2: 'PM')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**120.6%**	-	-
Merrie Harrier	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**120.6%**	-	-
1/1	B4267 (N) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	325	Inf	Inf	Inf	0.0%	290	290
2/1+2/2	B4267 (N) Ahead Right	U+O	N/A	N/A	-		-	-	-	-	-	-	626	1915:1913	1915	1447+468	32.7 : 32.7%	626	626
3/1	B4267 (SB Internal) Left Ahead Right	U	N/A	N/A	C1:K		2	53	75(188)	97(219)	-	-	473	1711	1711	392	120.6%	473	392
3/2	B4267 (SB Internal) Right	U	N/A	N/A	C1:H		2	69	75(188)	113(219)	-	-	152	1835	1835	543	28.0%	152	152
4/1	A4055 (E) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1090	Inf	Inf	Inf	0.0%	1007	1007
5/1	A4055 (E) Left Ahead	U	N/A	N/A	C1:G		2	147	118(224)	181(68)	-	-	850	1915	1915	1189	71.5%	850	850
5/2	A4055 (E) Ahead Right	O	N/A	N/A	C1:G		2	147	118(224)	181(68)	-	-	295	1855	1855	246	120.1%	295	246
6/1	Andrew Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	3	Inf	Inf	Inf	0.0%	2	2
7/1	Andrew Road Right Left Ahead	U	N/A	N/A	C1:I		0	0	X	X	-	-	0	1915	1915	0	0.0%	0	0
8/2+8/1	A4055 (WB Internal) Left Ahead	U	N/A	N/A	C1:C	C1:E	4	151:217	5(73,137,186):219(73,97,186)	58(97,171,226)	66	-	1121	1915:1741	1915	451+1101	72.2 : 68.0%	1075	1075
8/3	A4055 (WB Internal) Ahead	U	N/A	N/A	C1:C		4	151	5(73,137,186)	58(97,171,226)	-	-	368	2055	2055	1327	25.0%	332	332
9/1	B4267 (S) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	915	Inf	Inf	Inf	0.0%	869	869
10/1+10/2	B4267 (S) Left Right	U	N/A	N/A	C1:J		2	37	103(232)	132(0)	-	-	591	1710:1710	1710	224+278	117.7 : 117.7%	591	502
11/1	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	326	1965	1965	1965	16.6%	326	326
11/2	A4055 (SW) - Exit Ahead	U	N/A	N/A	-		-	-	-	-	-	-	484	2105	2105	2105	20.4%	430	430
12/1	A4055 (SW) - Crossing Ahead	U	2:2	N/A	C2:D		1	108	39	27	-	-	810	1965	1965	1785	42.4%	756	756
13/1	A4055 (SW) - Exit (Merge)	U	N/A	N/A	-		-	-	-	-	-	-	810	Inf	Inf	Inf	0.0%	756	756
14/1	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:B		1	7	47	54	-	-	12	1935	1935	129	9.3%	12	12
14/2	A4055 (SW) - Bus Gate Ahead	U	2:1	N/A	C2:A		1	94	68	42	-	-	770	1935	1935	1532	50.3%	770	770
15/1+15/2	A4055 (SW) Right Ahead	U+O	N/A	N/A	C1:D	C1:L	2	107	5(137)	68(181)	10	-	782	1915:1710	1915	752+136	88.0 : 88.0%	782	782

16/1	A4055 (EB Internal) Left	U	N/A	N/A	C1:B	C1:F	2	240	68(181)	181(68)	93	-	246	1945	1945	1945	11.5%	224	224
16/2	A4055 (EB Internal) Ahead Right	O	N/A	N/A	C1:B		2	147	118(224)	181(68)	-	-	891	1945	1945	1208	69.7%	842	842
17/1	Slip Road Give-Way Left	O	N/A	N/A	-		-	-	-	-	-	-	246	1875	1875	1385	16.2%	224	224
18/1	B4267 (NB Internal) Ahead Left	U	N/A	N/A	-		-	-	-	-	-	-	325	2014	2014	2014	14.4%	290	290
19/1	Corbett Road - Exit	U	N/A	N/A	-		-	-	-	-	-	-	2	Inf	Inf	Inf	0.0%	2	2
20/1	Corbett Road Left Right	O	N/A	N/A	-		-	-	-	-	-	-	1	1513	1513	1124	0.1%	1	1

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: Merrie Harrier (B4267 Leckwith Road/A4055 Barry Road/Andrew Road/B4267 Redlands Road/A4055 Cardiff Road/Corbett Road)	**304**	**88**	**19**	**62.6**	**127.0**	**1.3**	**191.0**	**-**	**5147.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**120.6%**	**200.4**	**-**
Merrie Harrier	**304**	**88**	**19**	**62.6**	**127.0**	**1.3**	**191.0**	**-**	**5147.3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**120.6%**	**200.4**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	1	0	0	0.0	0.2	-	0.2	1.4	0.0	0.0	-	0.0	0.2	0.2	-	0.00	32.7 : 32.7%	0.2	-
3/1	-	-	-	17.5	43.2	-	60.7	461.9	473.0	1.0	24.6	29.0	43.2	72.2	-	0.00	120.6%	61.6	-
3/2	-	-	-	1.4	0.2	-	1.6	37.6	115.9	0.8	3.9	4.3	0.2	4.5	-	0.00	28.0%	1.8	-
4/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
5/1	-	-	-	3.7	1.2	-	4.9	20.9	577.3	0.7	11.1	20.8	1.2	22.0	-	0.00	71.5%	6.0	-
5/2	50	0	16	8.9	27.4	0.9	37.2	453.7	540.6	1.8	14.8	18.7	27.4	46.1	-	0.00	120.1%	38.2	-
6/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/2+8/1	-	-	-	0.6	1.1	-	1.7	5.7	781.8	0.7	9.1	25.0	1.1	26.1	-	0.00	72.2 : 68.0%	3.1	-
8/3	-	-	-	0.3	0.2	-	0.5	5.3	152.1	0.5	2.5	5.8	0.2	6.0	-	0.00	25.0%	0.8	-
9/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
10/1+10/2	-	-	-	21.5	47.5	-	69.0	420.1	911.4	1.5	21.1	28.7	47.5	76.2	-	0.00	117.7 : 117.7%	70.6	-
11/1	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.6%	0.1	-
11/2	-	-	-	0.0	0.1	-	0.1	1.1	0.0	0.0	-	0.0	0.1	0.1	-	0.00	20.4%	0.1	-
12/1	-	-	-	0.2	0.4	-	0.5	2.6	107.2	0.1	1.9	3.6	0.4	3.9	-	0.00	42.4%	0.7	-
13/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
14/1	-	-	-	0.2	0.1	-	0.2	68.1	11.2	0.9	0.4	0.4	0.1	0.4	-	0.00	9.3%	0.2	-
14/2	-	-	-	0.9	0.5	-	1.4	6.7	263.1	0.3	4.9	8.8	0.5	9.3	-	0.00	50.3%	1.9	-
15/1+15/2	64	53	3	6.3	3.4	0.5	10.2	47.1	860.1	1.1	13.4	23.4	3.4	26.9	-	0.00	88.0 : 88.0%	11.8	-
16/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	0.0	0.0	0.1	0.1	-	0.00	11.5%	0.1	-
16/2	0	0	0	1.2	1.1	0.0	2.3	9.9	353.6	0.4	4.0	21.1	1.1	22.3	-	0.00	69.7%	3.0	-
17/1	188	35	0	0.0	0.1	-	0.1	1.6	0.0	0.0	-	0.0	0.1	0.1	-	0.00	16.2%	0.1	-
18/1	-	-	-	0.0	0.1	-	0.1	1.0	0.0	0.0	-	0.0	0.1	0.1	-	0.00	14.4%	0.1	-
19/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
20/1	1	0	0	0.0	0.0	-	0.0	1.6	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.1%	0.0	-

C1	PRC for Signalled Lanes (%):	-34.0	Total Delay for Signalled Lanes (pcuHr):	188.17	Cycle Time (s):	240
C2	Stream: 1 PRC for Signalled Lanes (%):	79.1	Total Delay for Signalled Lanes (pcuHr):	1.66	Cycle Time (s):	120
C2	Stream: 2 PRC for Signalled Lanes (%):	112.4	Total Delay for Signalled Lanes (pcuHr):	0.54	Cycle Time (s):	120
	PRC Over All Lanes (%):	-34.0	Total Delay Over All Lanes(pcuHr):	191.02		

Appendix N:

Model Output Report: Site Access (Initial Design – Option 1)

AECOM LinSig Results

Project and User Details

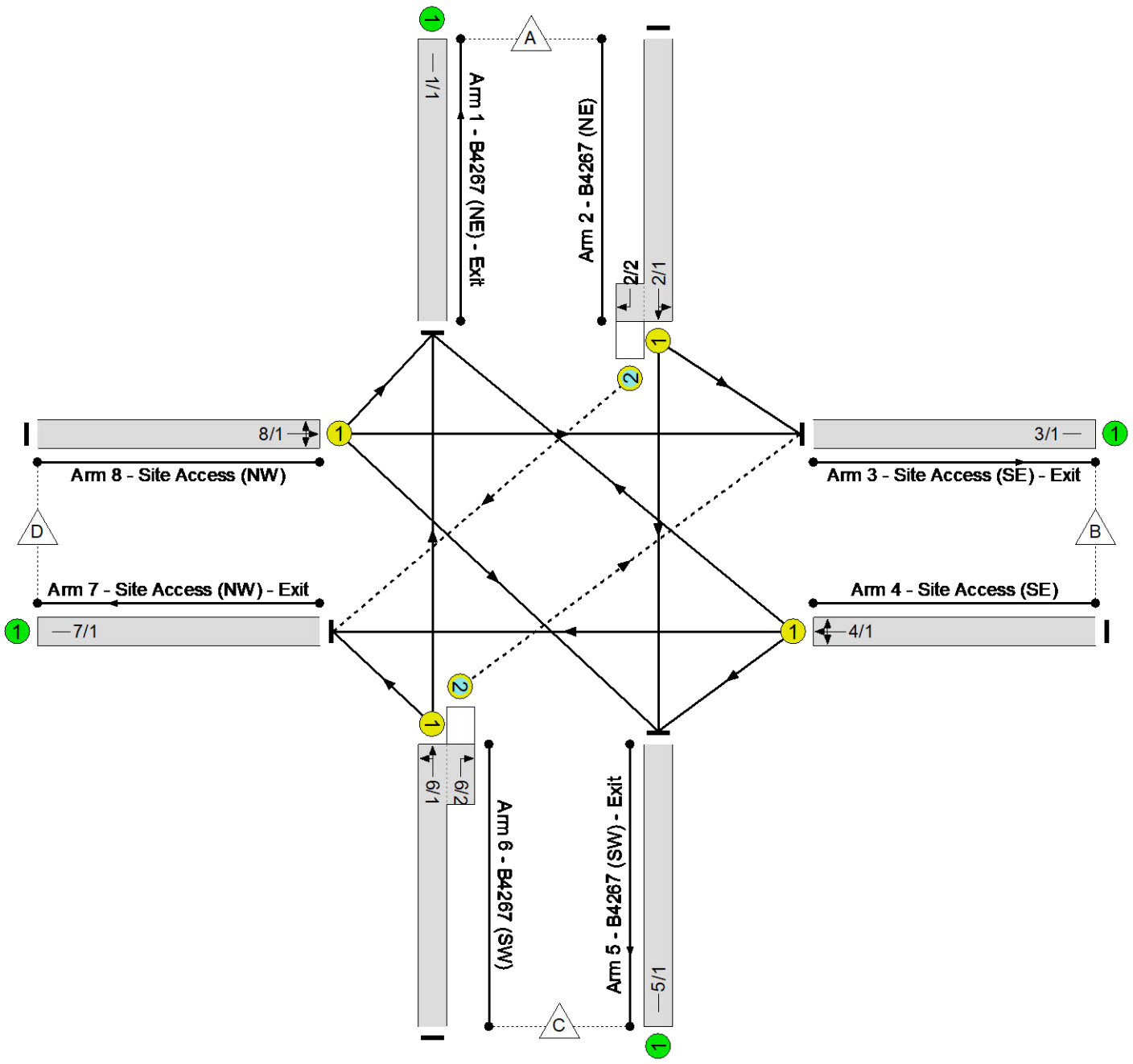
Project:	**Leckwith Quays, Cardiff**
Title:	**B4267 Leckwith Road / Site Access (Option 1)**
Location:	Leckwith, Cardiff
Client:	Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Additional detail:	Model based on WSP's 'Highway General Arrangment Option 1' Drawing No. 70053561-XX-XX-101 Rev P03 dated 11/02/2020.
File name:	B4267 Leckwith Road_Site Access (Option 1).lsg3x
Author:	Matthew Davies
Company:	AECOM
Address:	1 Callaghan Square, Cardiff, CF10 5BT
Linsig Version:	3, 2, 39, 0

Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2025 Do-Nothing - AM (Crossings Every Cycle)	2025 Do-Nothing - AM	Crossings Every Cycle	07:30 - 08:30	120	-7.2	24.63
2	2025 Do-Nothing - PM (Crossings Every Cycle)	2025 Do Nothing - PM	Crossings Every Cycle	16:30 - 17:30	120	-28.9	111.56
3	2025 Do-Nothing - AM (Crossings Every Other Cycle)	2025 Do-Nothing - AM	Crossings Every Other Cycle	07:30 - 08:30	240	11.0	13.02
4	2025 Do-Nothing - PM (Crossings Every Other Cycle)	2025 Do Nothing - PM	Crossings Every Other Cycle	16:30 - 17:30	240	-8.7	23.57
5	2025 Do-Something - AM (Crossings Every Cycle)	2025 Do-Something - AM	Crossings Every Cycle	07:30 - 08:30	120	-7.2	24.31
6	2025 Do-Something - PM (Crossings Every Cycle)	2025 Do-Something - PM	Crossings Every Cycle	16:30 - 17:30	120	-28.0	106.75
7	2025 Do-Something - AM (Crossings Every Other Cycle)	2025 Do-Something - AM	Crossings Every Other Cycle	07:30 - 08:30	240	11.0	12.73
8	2025 Do-Something - PM (Crossings Every Other Cycle)	2025 Do-Something - PM	Crossings Every Other Cycle	16:30 - 17:30	240	-8.0	21.97
9	2030 Do-Nothing - AM (Crossings Every Cycle)	2030 Do-Nothing - AM	Crossings Every Cycle	07:30 - 08:30	120	-11.8	35.14
10	2030 Do-Nothing - PM (Crossings Every Cycle)	2030 Do-Nothing - PM	Crossings Every Cycle	16:30 - 17:30	120	-33.9	138.08
11	2030 Do-Nothing - AM (Crossings Every Other Cycle)	2030 Do-Nothing - AM	Crossings Every Other Cycle	07:30 - 08:30	240	6.4	14.34
12	2030 Do-Nothing - PM (Crossings Every Other Cycle)	2030 Do-Nothing - PM	Crossings Every Other Cycle	16:30 - 17:30	240	-13.0	38.97
13	2030 Do-Something - AM (Crossings Every Cycle)	2030 Do-Something - AM	Crossings Every Cycle	07:30 - 08:30	120	-11.7	34.45
14	2030 Do-Something - PM (Crossings Every Cycle)	2030 Do-Something - PM	Crossings Every Cycle	16:30 - 17:30	120	-33.1	133.76
15	2030 Do-Something - AM (Crossings Every Other Cycle)	2030 Do-Something - AM	Crossings Every Other Cycle	07:30 - 08:30	240	6.5	13.98
16	2030 Do-Something - PM (Crossings Every Other Cycle)	2030 Do-Something - PM	Crossings Every Other Cycle	16:30 - 17:30	240	-12.3	35.35

Network Layout Diagram

B4267 Leckwith Road / Site Access (Option 1)



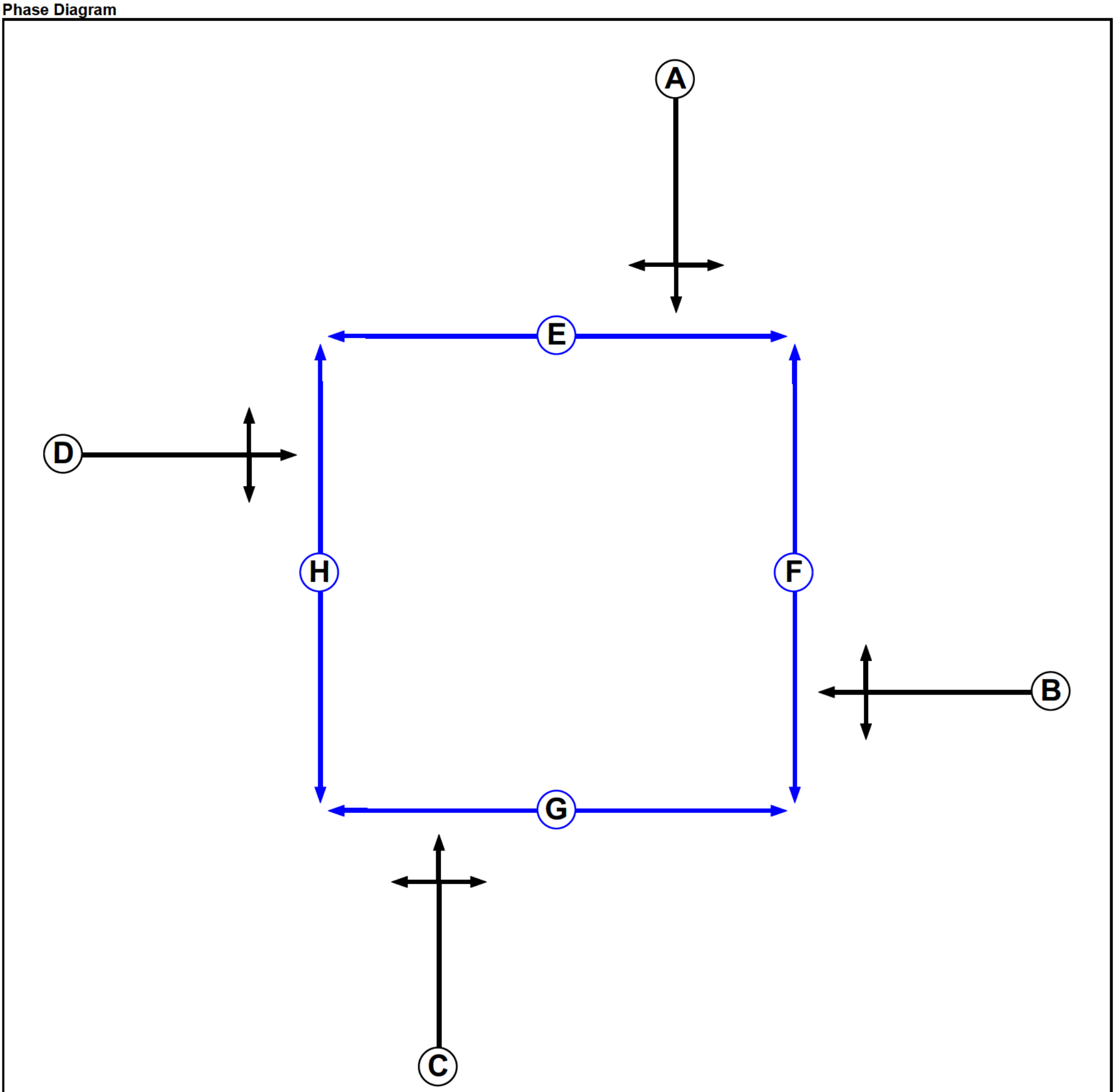
Lane Input Data

Junction: B4267 Leckwith Road / Site Access (Option 1)												
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 (B4267 (NE) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
2/1 (B4267 (NE))	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 3 Left Arm 5 Ahead	10.00 Inf
2/2 (B4267 (NE))	O	A	2	3	2.0	Geom	-	3.25	0.00	Y	Arm 7 Right	10.00
3/1 (Site Access (SE) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (Site Access (SE))	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 1 Right Arm 5 Left Arm 7 Ahead	10.00 10.00 Inf
5/1 (B4267 (SW) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (B4267 (SW))	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 1 Ahead Arm 7 Left	Inf 10.00
6/2 (B4267 (SW))	O	C	2	3	3.2	Geom	-	3.25	0.00	Y	Arm 3 Right	10.00
7/1 (Site Access (NW) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Site Access (NW))	U	D	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 1 Left Arm 3 Ahead Arm 5 Right	10.00 Inf 10.00

Give-Way Lane Input Data

Junction: B4267 Leckwith Road / Site Access (Option 1)											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
2/2 (B4267 (NE))	7/1 (Right)	1439	0	6/1	1.09	All	2.00	-	0.50	2	2.00
6/2 (B4267 (SW))	3/1 (Right)	1439	0	2/1	1.09	All	2.00	-	0.50	2	2.00

Phase Diagram



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	Pedestrian		7	7
F	Pedestrian		5	5
G	Pedestrian		7	7
H	Pedestrian		5	5

Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		6	-	5	5	8	9	9
	B	6		5	6	10	5	8	10
	C	-	5		5	9	9	5	8
	D	6	6	5		8	10	9	5
	E	14	14	14	14		-	-	-
	F	10	10	10	10	-		-	-
	G	14	14	14	14	-	-		-
	H	10	10	10	10	-	-	-	

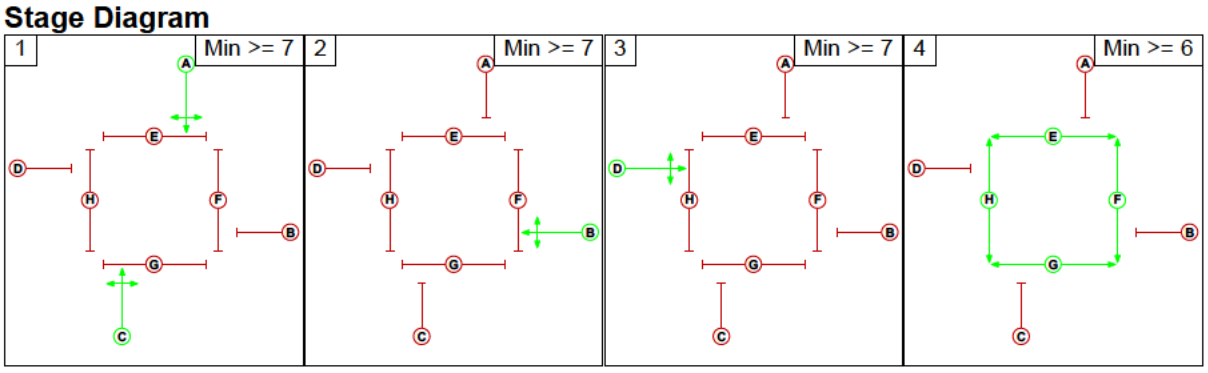
Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	C	Losing	1	1

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	B
3	D
4	E F G H

Stage Diagram



Network Control Plans

Plan	Controller	Sequence Name	Sequence
Crossings Every Cycle	C1	Peds Every Cycle	1,2,3,4
Crossings Every Other Cycle	C1	Peds Every Other Cycle	1,2,3,4,1,2,3

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2025 Do-Nothing - AM'	07:30	08:30	01:00	
2: '2025 Do Nothing - PM'	16:30	17:30	01:00	
3: '2025 Do-Something - AM'	07:30	08:30	01:00	
4: '2025 Do-Something - PM'	16:30	17:30	01:00	
5: '2030 Do-Nothing - AM'	07:30	08:30	01:00	
6: '2030 Do-Nothing - PM'	16:30	17:30	01:00	
7: '2030 Do-Something - AM'	07:30	08:30	01:00	
8: '2030 Do-Something - PM'	16:30	17:30	01:00	

Traffic Flows, Desired

FG1: '2025 Do-Nothing - AM'

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	21	659	25	705
	B	51	0	12	0	63
	C	1047	5	0	3	1055
	D	39	0	10	0	49
	Tot.	1137	26	681	28	1872

FG2: '2025 Do Nothing - PM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	50	1146	31	1227
B	20	0	5	0	25
C	589	12	0	8	609
D	31	0	6	0	37
Tot.	640	62	1157	39	1898

FG3: '2025 Do-Something - AM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	19	659	24	702
B	46	0	11	0	57
C	1047	5	0	3	1055
D	37	0	10	0	47
Tot.	1130	24	680	27	1861

FG4: '2025 Do-Something - PM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	45	1146	28	1219
B	18	0	4	0	22
C	589	12	0	8	609
D	31	0	6	0	37
Tot.	638	57	1156	36	1887

FG5: '2030 Do-Nothing - AM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	21	686	25	732
B	51	0	12	0	63
C	1091	5	0	4	1100
D	40	0	11	0	51
Tot.	1182	26	709	29	1946

FG6: '2030 Do-Nothing - PM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	50	1194	31	1275
B	20	0	5	0	25
C	614	12	0	9	635
D	32	0	6	0	38
Tot.	666	62	1205	40	1973

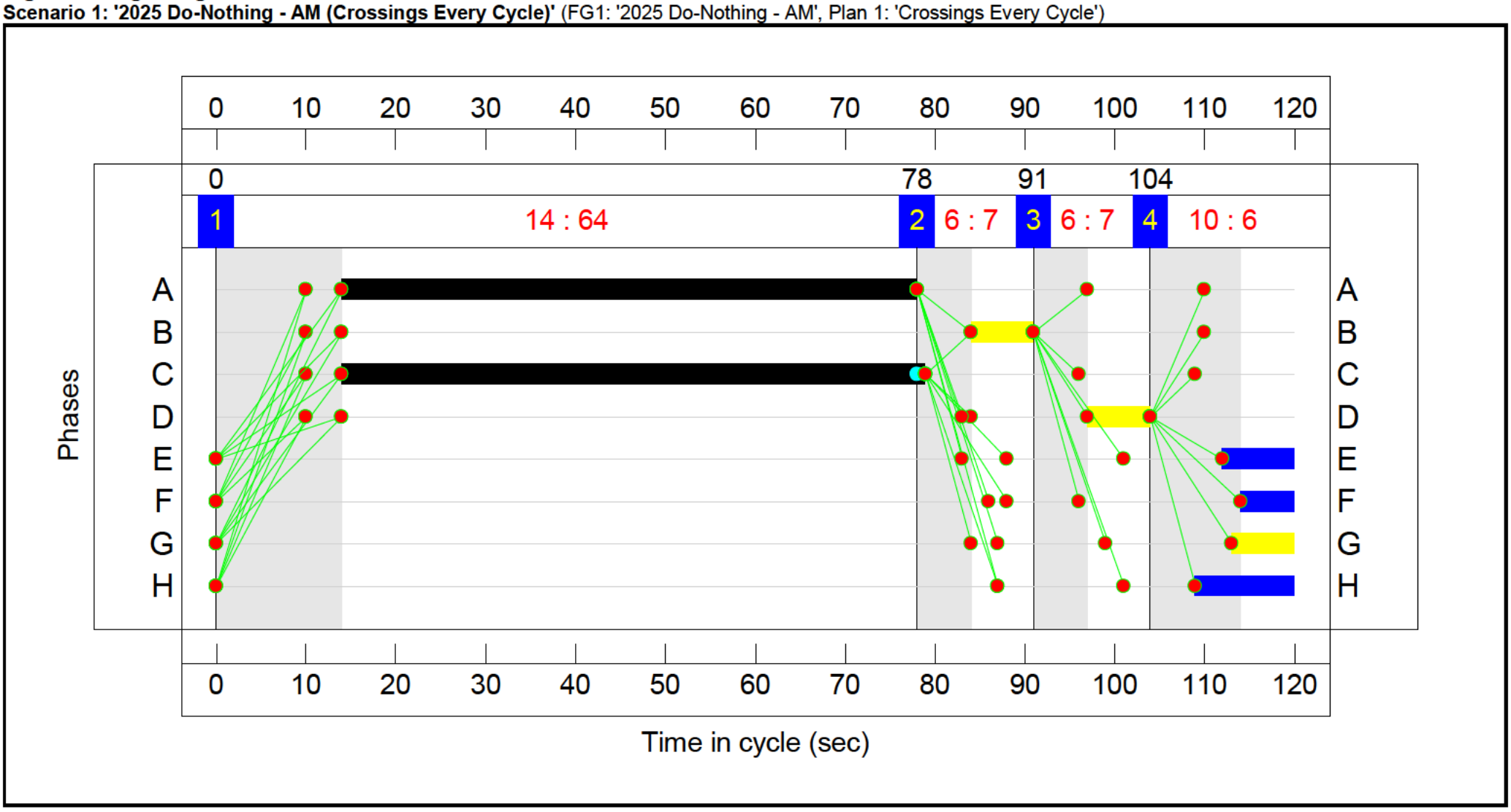
FG7: '2030 Do-Something - AM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	19	686	25	730
B	46	0	11	0	57
C	1091	5	0	3	1099
D	37	0	10	0	47
Tot.	1174	24	707	28	1933

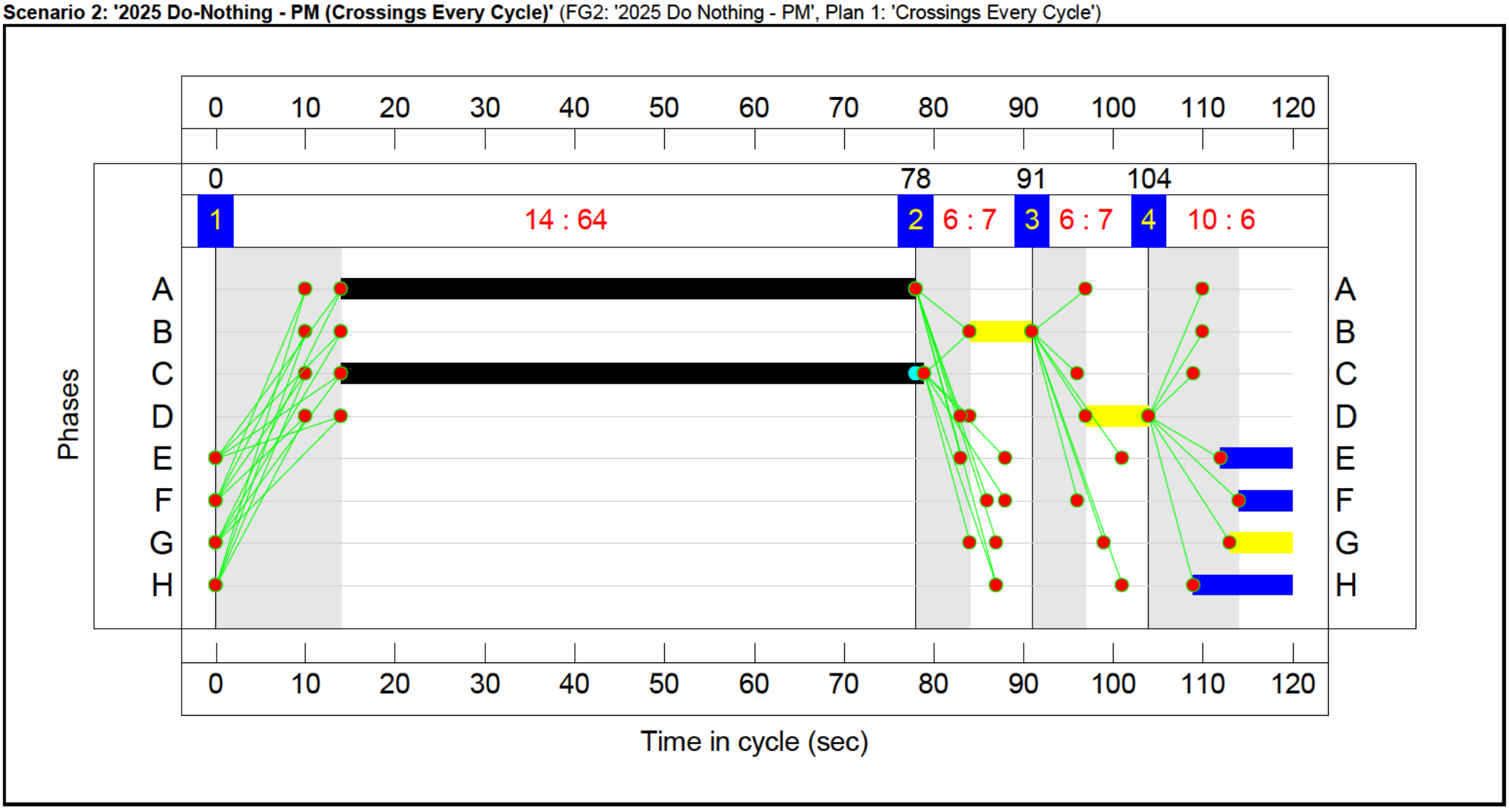
FG8: '2030 Do-Something - PM'
Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	45	1194	29	1268
	B	18	0	4	0	22
	C	614	11	0	8	633
	D	31	0	6	0	37
	Tot.	663	56	1204	37	1960

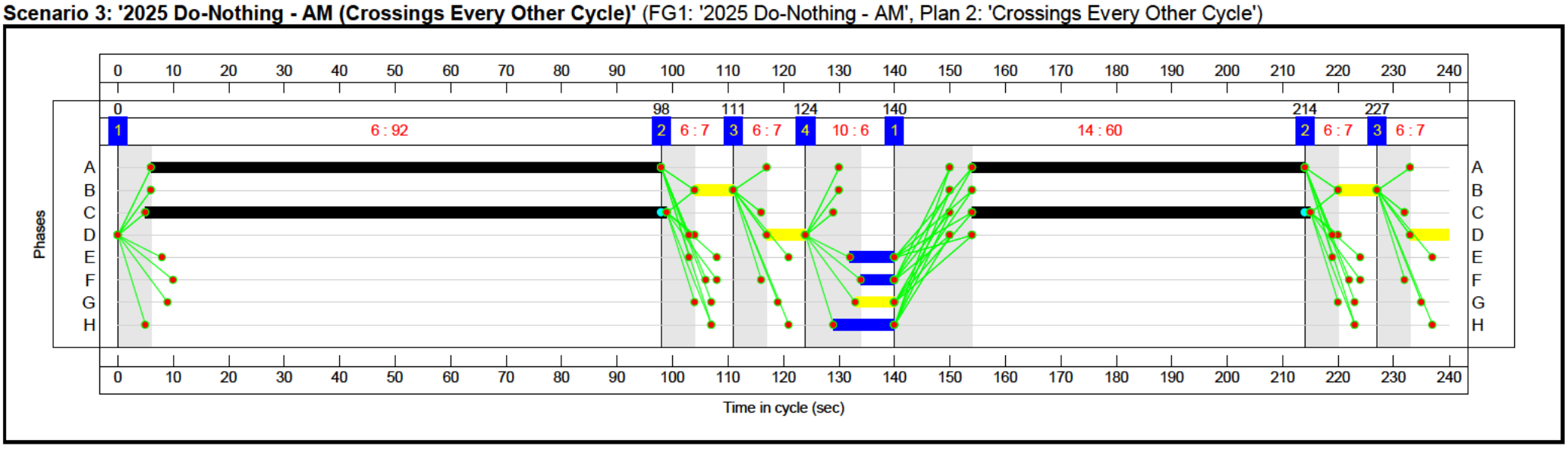
Signal Timings Diagram
Scenario 1: '2025 Do-Nothing - AM (Crossings Every Cycle)' (FG1: '2025 Do-Nothing - AM', Plan 1: 'Crossings Every Cycle')



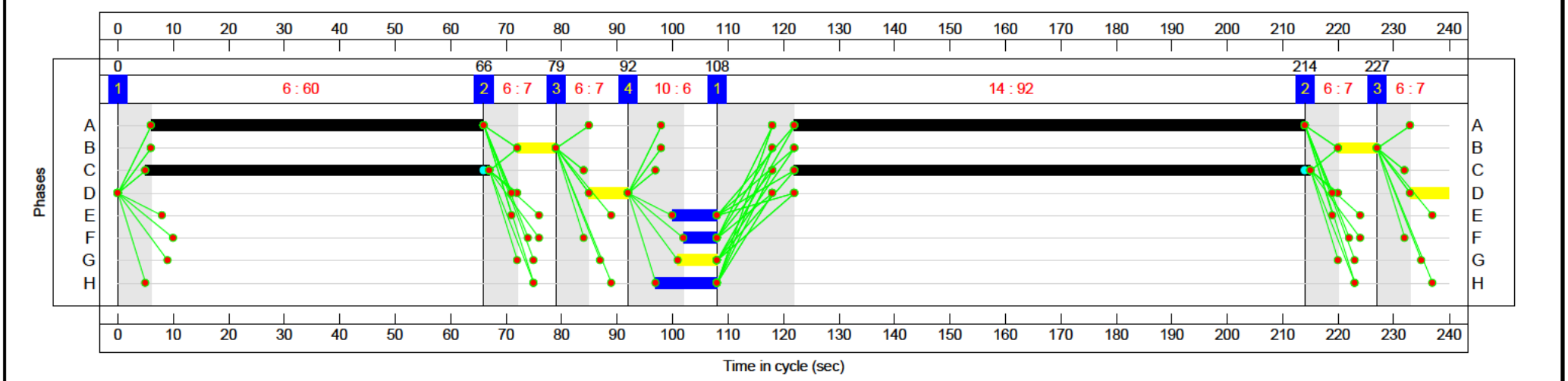
Scenario 2: '2025 Do-Nothing - PM (Crossings Every Cycle)' (FG2: '2025 Do Nothing - PM', Plan 1: 'Crossings Every Cycle')



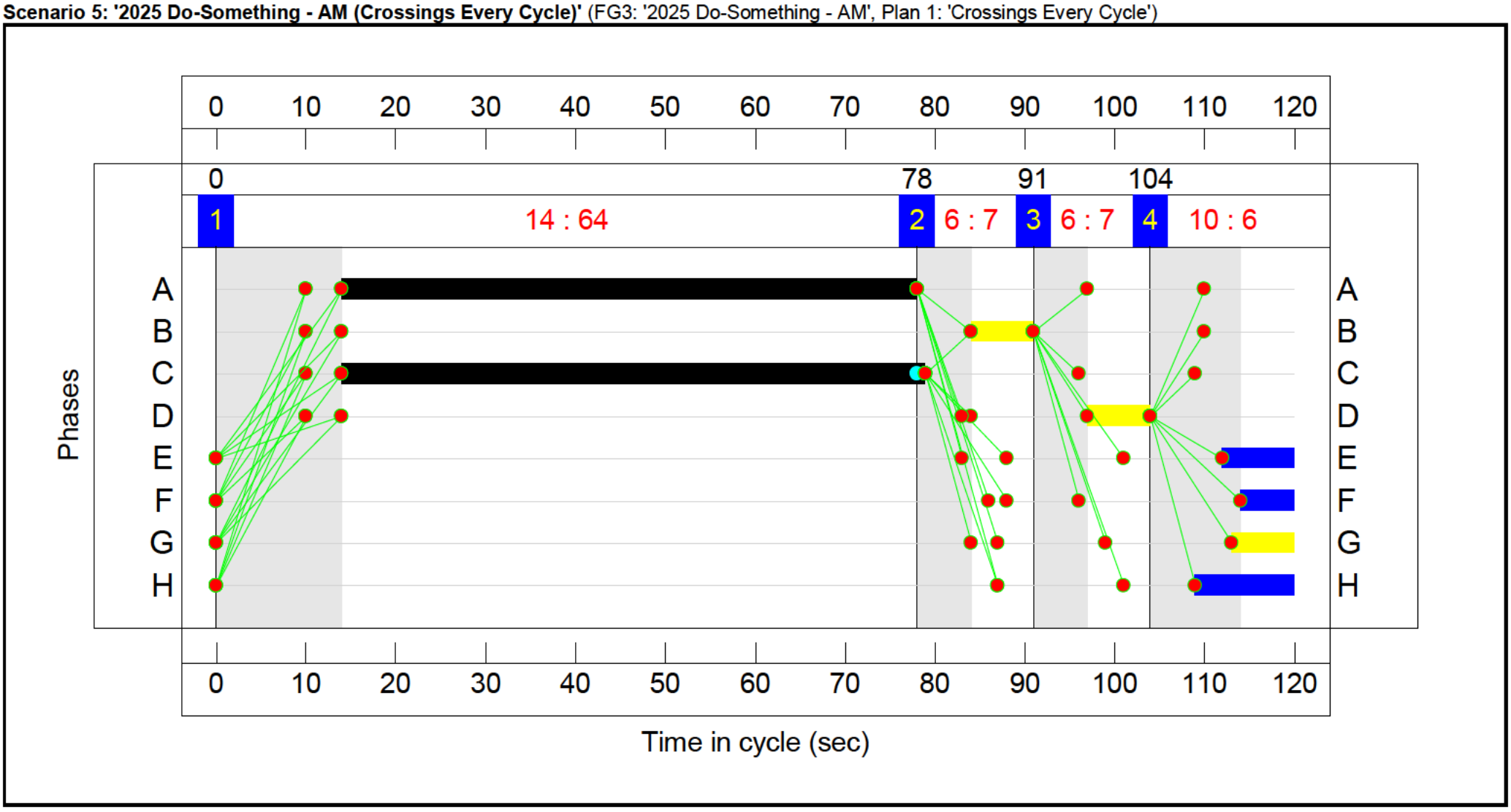
Scenario 3: '2025 Do-Nothing - AM (Crossings Every Other Cycle)' (FG1: '2025 Do-Nothing - AM', Plan 2: 'Crossings Every Other Cycle')



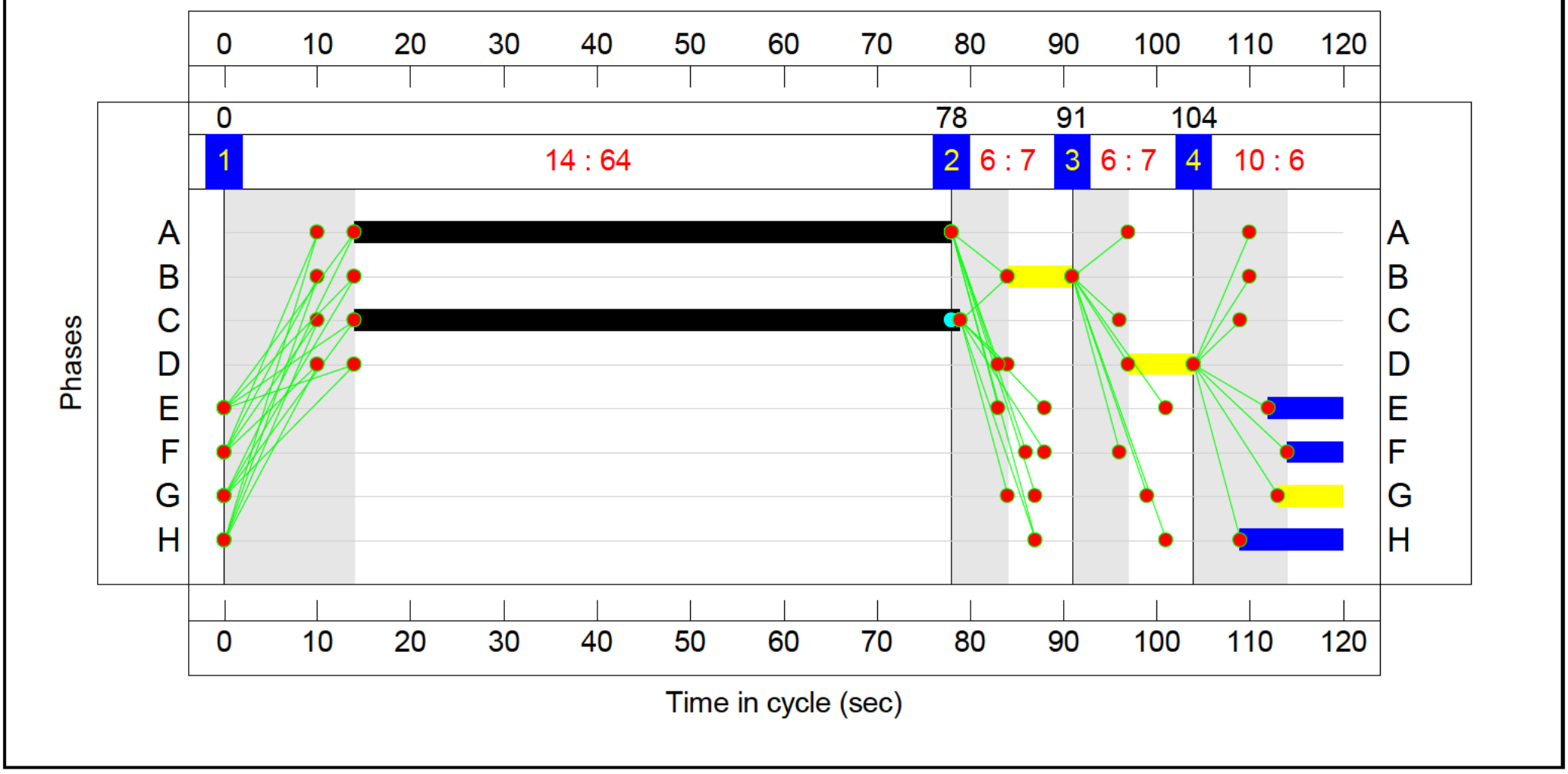
Scenario 4: '2025 Do-Nothing - PM (Crossings Every Other Cycle)' (FG2: '2025 Do Nothing - PM', Plan 2: 'Crossings Every Other Cycle')



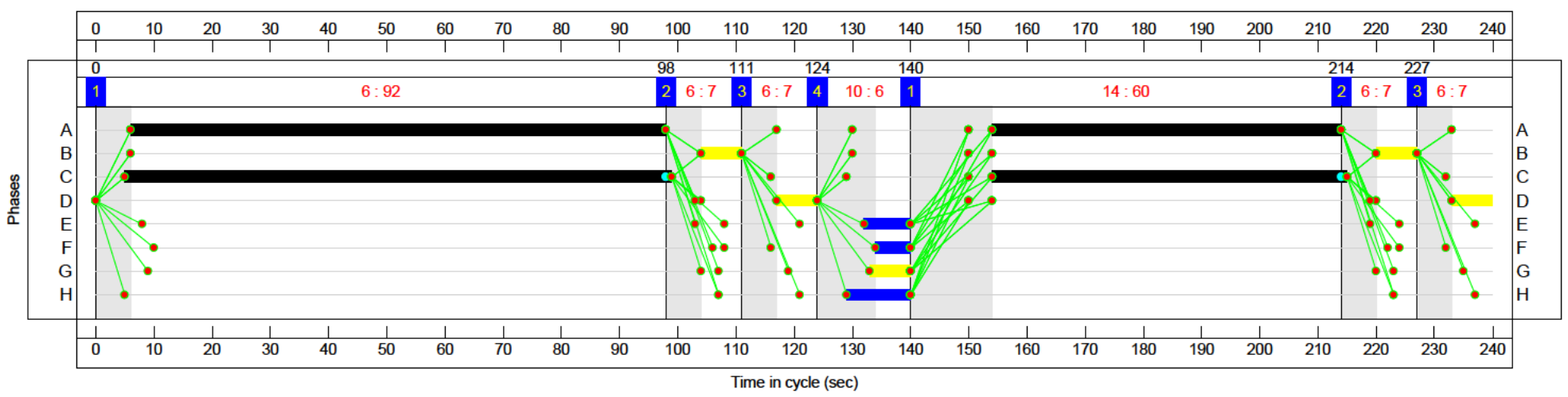
Scenario 5: '2025 Do-Something - AM (Crossings Every Cycle)' (FG3: '2025 Do-Something - AM', Plan 1: 'Crossings Every Cycle')



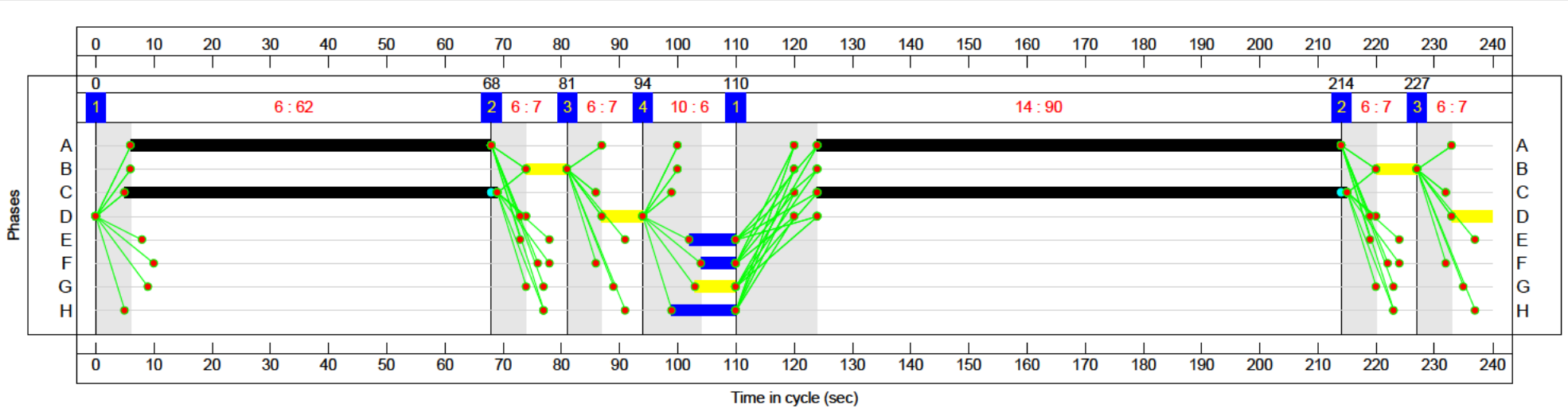
Scenario 6: '2025 Do-Something - PM (Crossings Every Cycle)' (FG4: '2025 Do-Something - PM', Plan 1: 'Crossings Every Cycle')



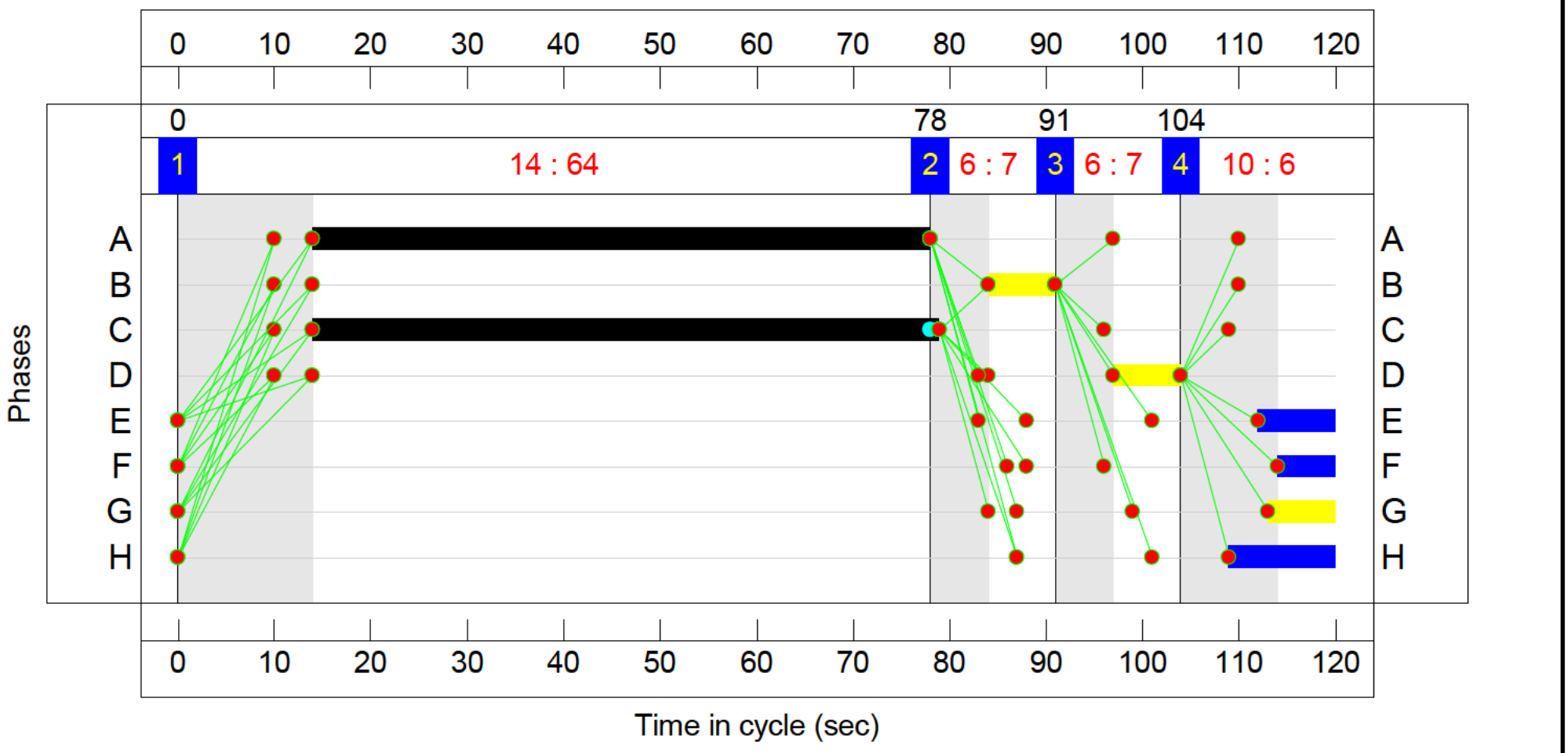
Scenario 7: '2025 Do-Something - AM (Crossings Every Other Cycle)' (FG3: '2025 Do-Something - AM', Plan 2: 'Crossings Every Other Cycle')



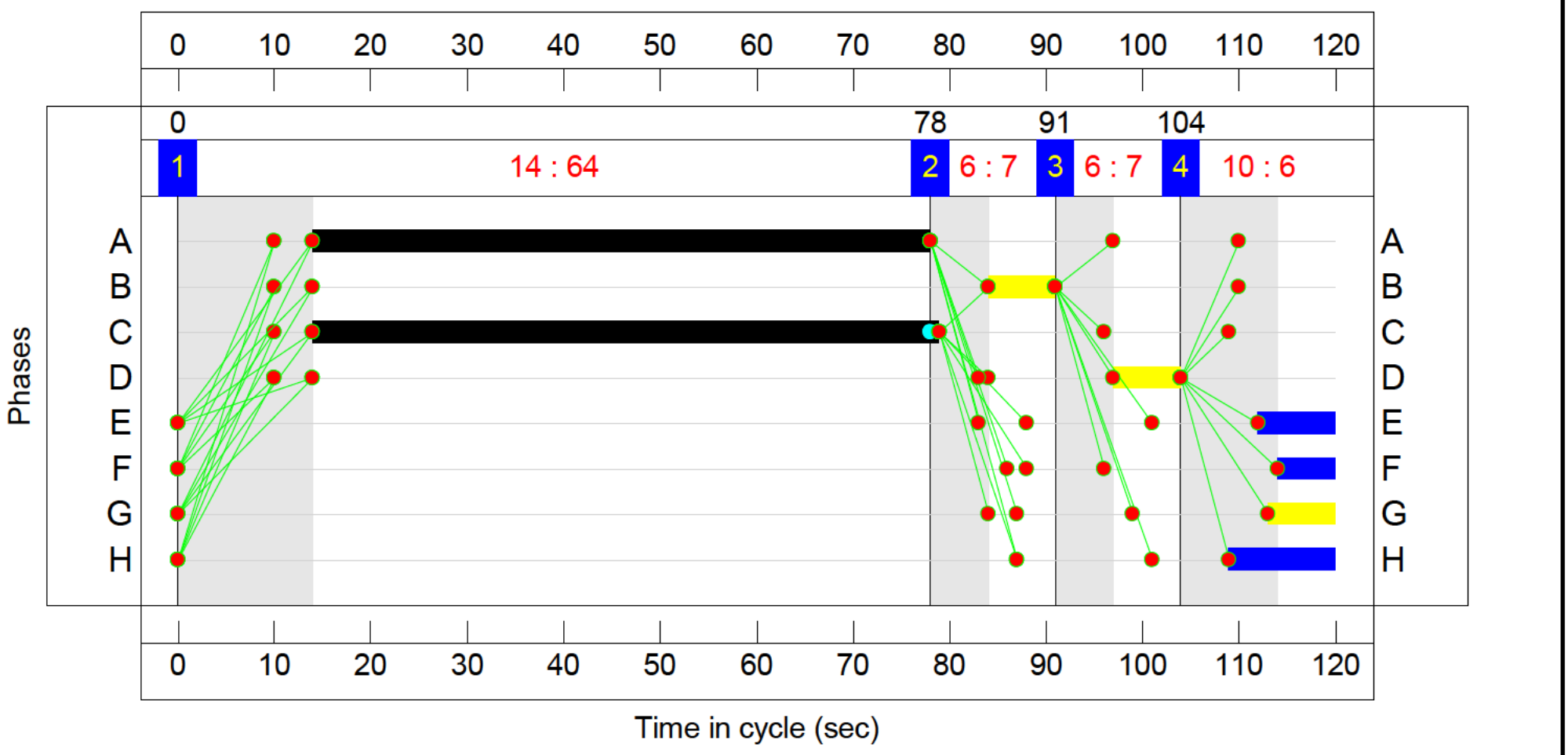
Scenario 8: '2025 Do-Something - PM (Crossings Every Other Cycle)' (FG4: '2025 Do-Something - PM', Plan 2: 'Crossings Every Other Cycle')



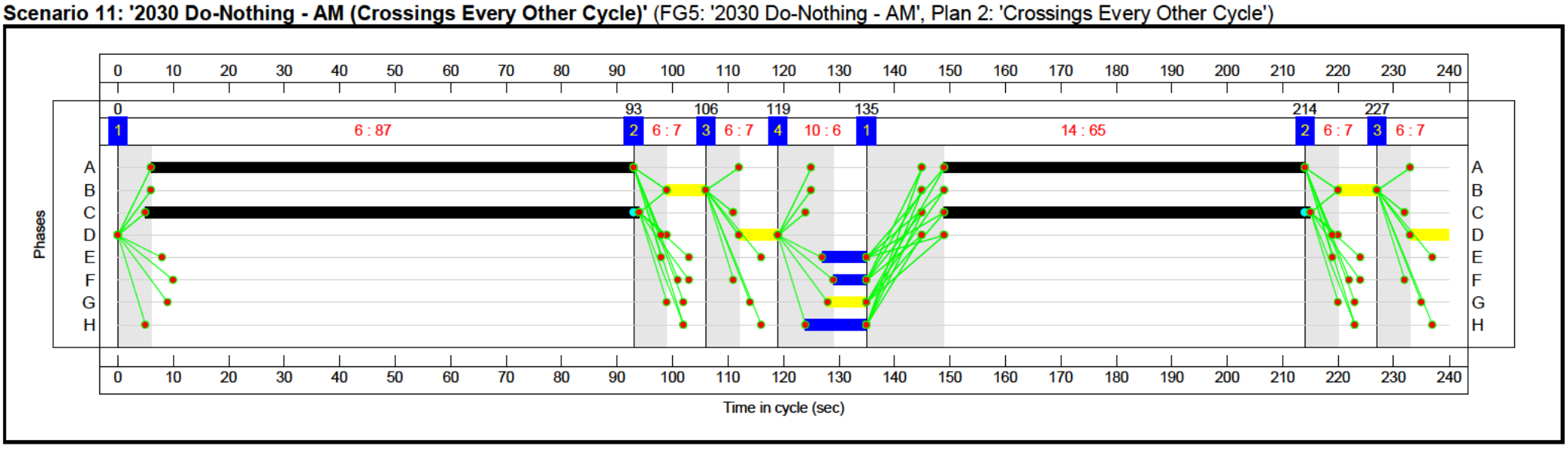
Scenario 9: '2030 Do-Nothing - AM (Crossings Every Cycle)' (FG5: '2030 Do-Nothing - AM', Plan 1: 'Crossings Every Cycle')



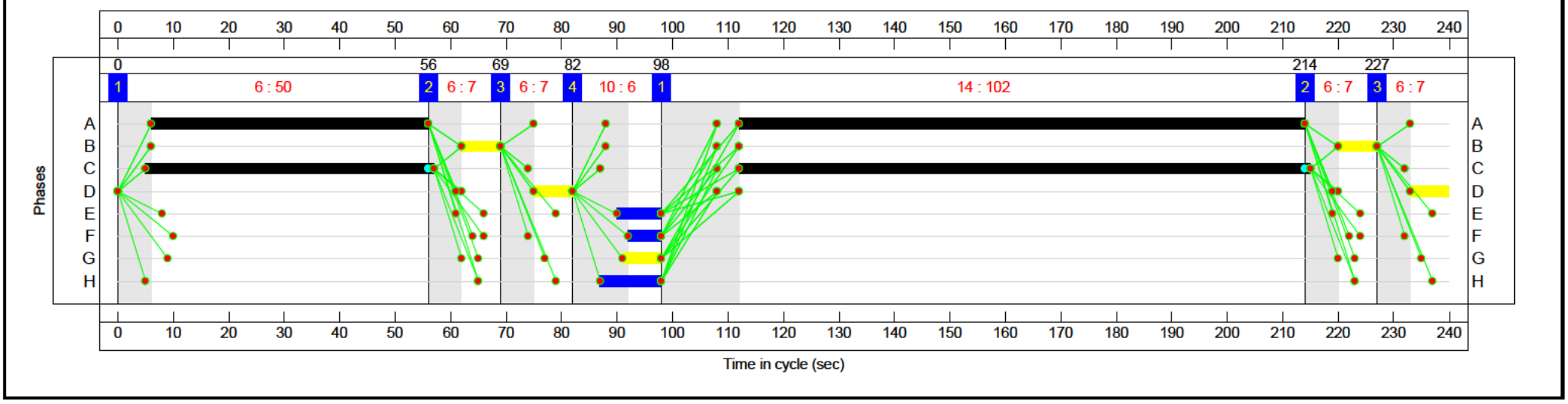
Scenario 10: '2030 Do-Nothing - PM (Crossings Every Cycle)' (FG6: '2030 Do-Nothing - PM', Plan 1: 'Crossings Every Cycle')



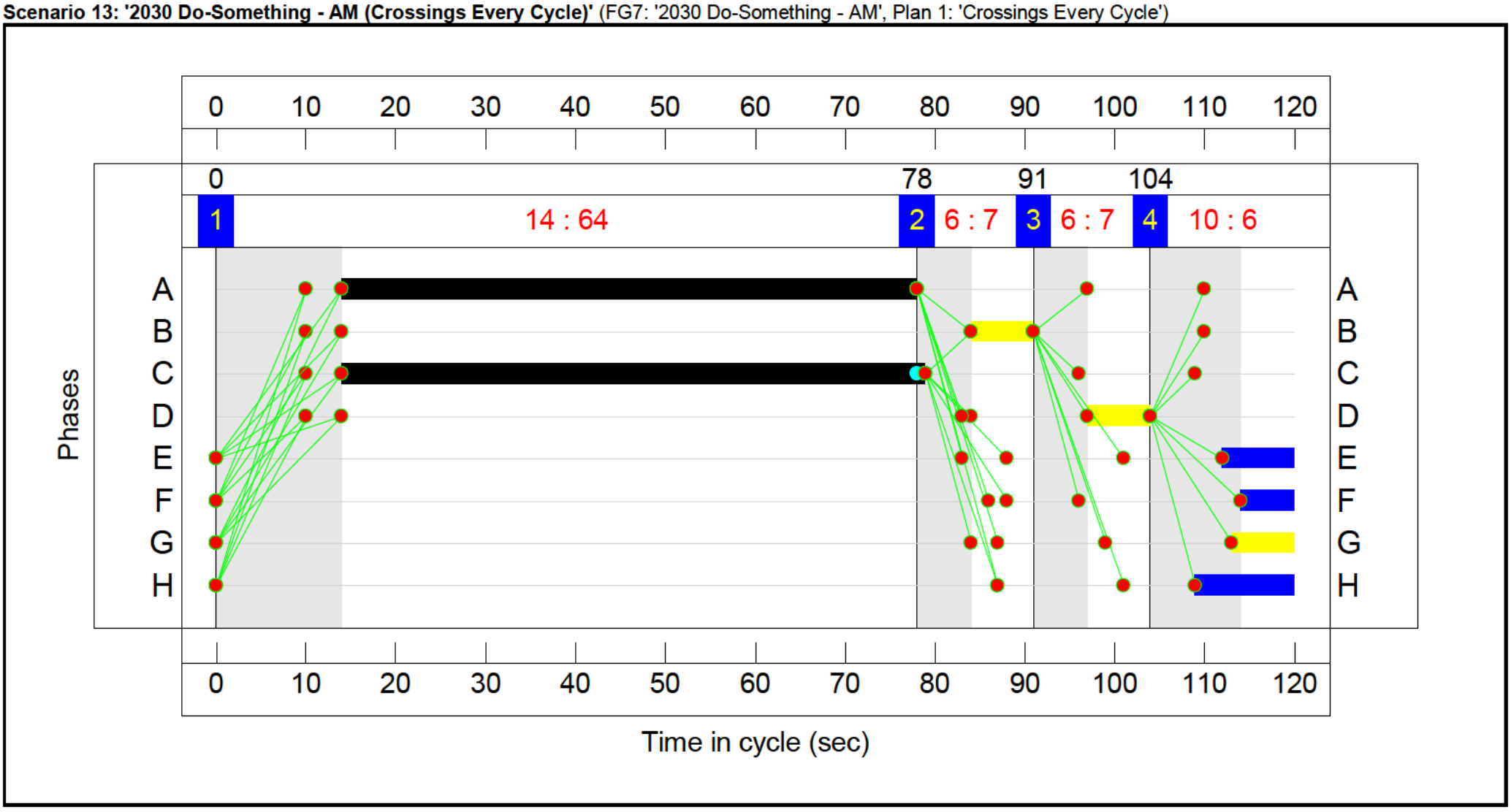
Scenario 11: '2030 Do-Nothing - AM (Crossings Every Other Cycle)' (FG5: '2030 Do-Nothing - AM', Plan 2: 'Crossings Every Other Cycle')



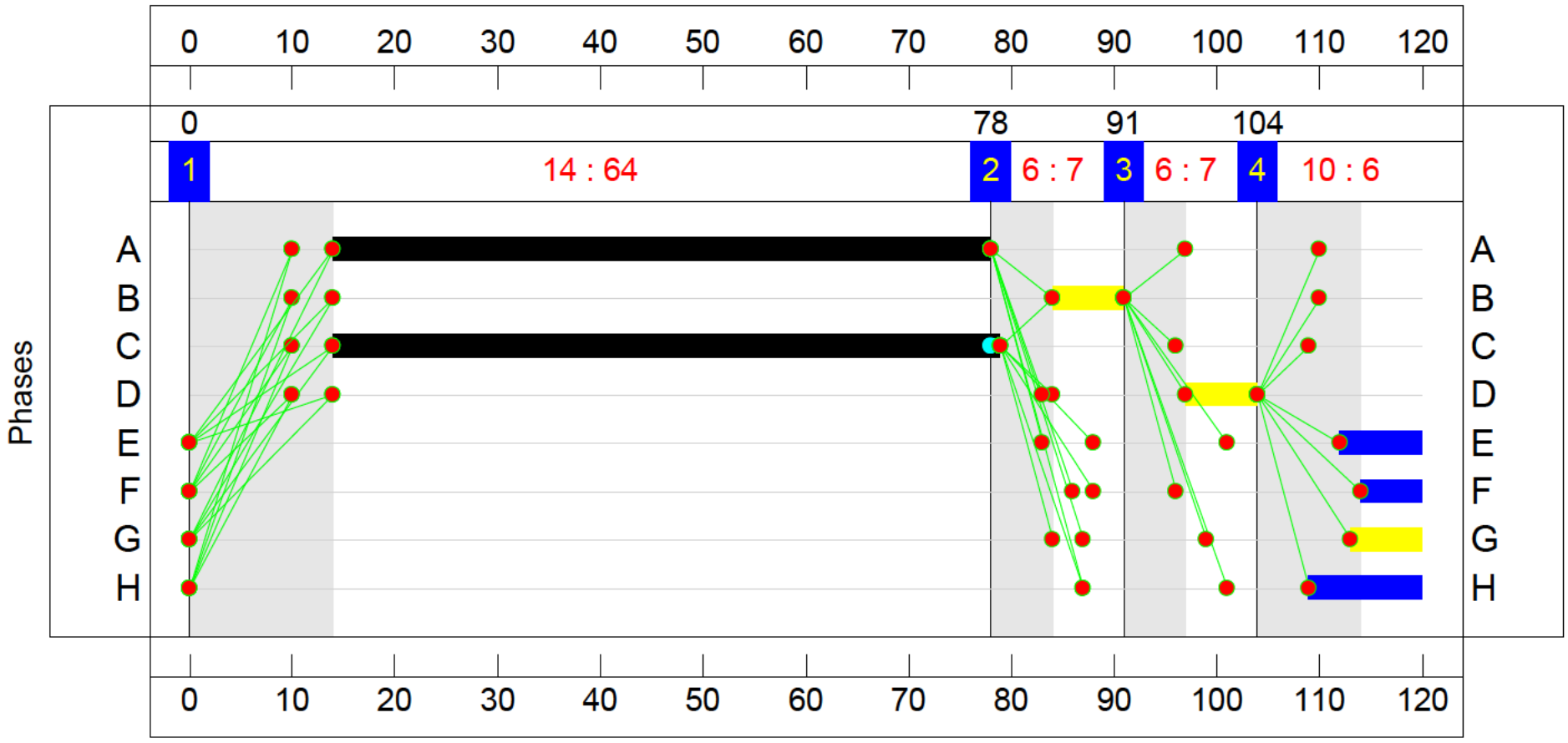
Scenario 12: '2030 Do-Nothing - PM (Crossings Every Other Cycle)' (FG6: '2030 Do-Nothing - PM', Plan 2: 'Crossings Every Other Cycle')



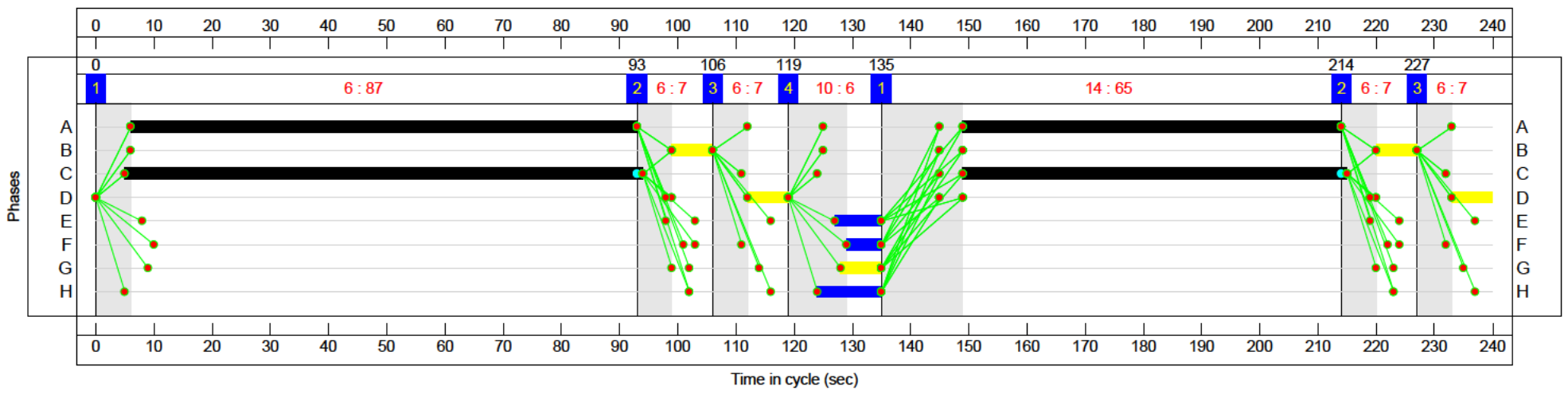
Scenario 13: '2030 Do-Something - AM (Crossings Every Cycle)' (FG7: '2030 Do-Something - AM', Plan 1: 'Crossings Every Cycle')



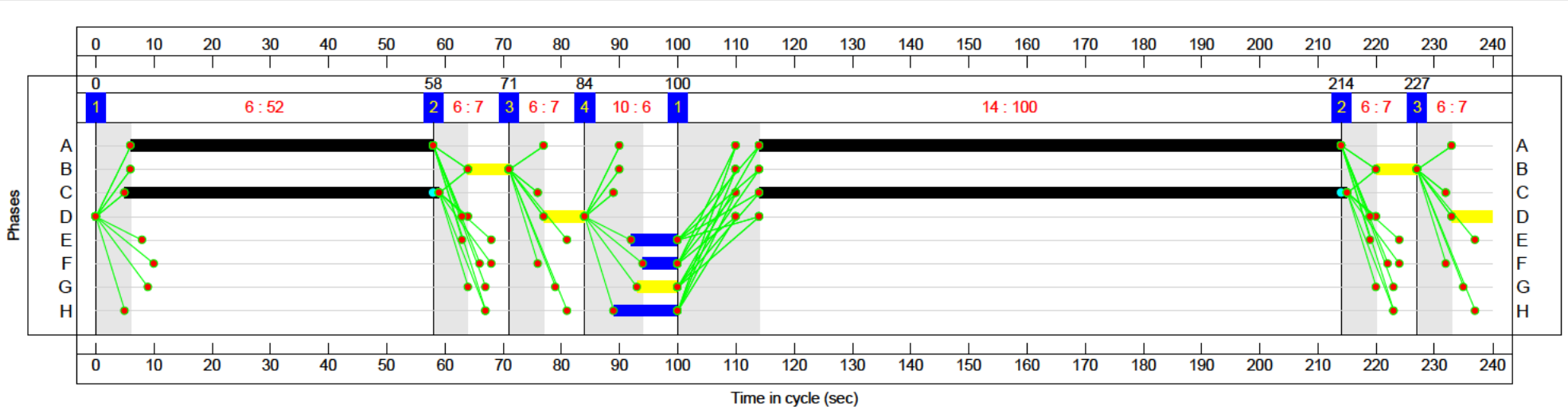
Scenario 14: '2030 Do-Something - PM (Crossings Every Cycle)' (FG8: '2030 Do-Something - PM', Plan 1: 'Crossings Every Cycle')



Scenario 15: '2030 Do-Something - AM (Crossings Every Other Cycle)' (FG7: '2030 Do-Something - AM', Plan 2: 'Crossings Every Other Cycle')



Scenario 16: '2030 Do-Something - PM (Crossings Every Other Cycle)' (FG8: '2030 Do-Something - PM', Plan 2: 'Crossings Every Other Cycle')



Network Results

Scenario 1: '2025 Do-Nothing - AM (Crossings Every Cycle)' (FG1: '2025 Do-Nothing - AM', Plan 1: 'Crossings Every Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**96.5%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**96.5%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1137	Inf	Inf	Inf	0.0%	1137	1137
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	64	14	78	-	-	705	1971:1687	1971	1021+38	66.6 : 66.6%	705	705
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	26	Inf	Inf	Inf	0.0%	26	26
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		1	7	84	91	-	-	63	1709	1709	114	55.3%	63	63
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	681	Inf	Inf	Inf	0.0%	681	681
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	65	14	79	-	-	1055	1979:1687	1979	1088+5	96.5 : 96.5%	1055	1055
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	28	Inf	Inf	Inf	0.0%	28	28
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		1	7	97	104	-	-	49	1752	1752	117	42.0%	49	49

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**17**	**0**	**13**	**13.1**	**11.2**	**0.3**	**24.6**	**-**	**2565.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**96.5%**	**29.3**	**-**
B4267 Leckwith Road / Site Access (Option 1)	**17**	**0**	**13**	**13.1**	**11.2**	**0.3**	**24.6**	**-**	**2565.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**96.5%**	**29.3**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	12	0	13	3.9	1.0	0.3	5.2	26.3	533.7	0.8	10.3	16.8	1.0	17.8	-	0.00	66.6 : 66.6%	6.1	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	1.0	0.6	-	1.6	88.8	60.9	1.0	1.9	2.0	0.6	2.6	-	0.00	55.3%	1.7	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	7.6	9.2	0.0	16.8	57.4	1923.5	1.8	15.2	33.5	9.2	42.8	-	0.00	96.5 : 96.5%	20.4	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.7	0.4	-	1.1	80.1	47.0	1.0	1.5	1.6	0.4	1.9	-	0.00	42.0%	1.2	-

C1 PRC for Signalled Lanes (%): -7.2 Total Delay for Signalled Lanes (pcuHr): 24.63 Cycle Time (s): 120
PRC Over All Lanes (%): -7.2 Total Delay Over All Lanes(pcuHr): 24.63

Scenario 2: '2025 Do-Nothing - PM (Crossings Every Cycle)' (FG2: '2025 Do Nothing - PM', Plan 1: 'Crossings Every Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**116.0%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**116.0%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	640	Inf	Inf	Inf	0.0%	640	640
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	64	14	78	-	-	1227	1968:1687	1968	1031+27	116.0 : 116.0%	1227	1058
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	62	Inf	Inf	Inf	0.0%	55	55
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		1	7	84	91	-	-	25	1709	1709	114	21.9%	25	25
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1157	Inf	Inf	Inf	0.0%	999	999
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	65	14	79	-	-	609	1976:1687	1976	1074+22	55.6 : 55.6%	609	609
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	39	Inf	Inf	Inf	0.0%	35	35
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		1	7	97	104	-	-	37	1752	1752	117	31.7%	37	37

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**27**	**0**	**12**	**22.3**	**89.1**	**0.2**	**111.6**	-	**2048.3**	-	-	-	-	-	-	-	**116.0%**	**115.3**	-
B4267 Leckwith Road / Site Access (Option 1)	**27**	**0**	**12**	**22.3**	**89.1**	**0.2**	**111.6**	-	**2048.3**	-	-	-	-	-	-	-	**116.0%**	**115.3**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	27	0	0	18.4	88.1	0.0	106.6	312.7	1298.8	1.1	23.7	47.2	88.1	135.3	-	0.00	116.0 : 116.0%	108.9	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.4	0.1	-	0.5	73.3	23.5	0.9	0.8	0.8	0.1	0.9	-	0.00	21.9%	0.6	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	0	0	12	2.9	0.6	0.1	3.7	21.9	690.8	1.1	8.7	13.0	0.6	13.6	-	0.00	55.6 : 55.6%	5.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.5	0.2	-	0.8	75.9	35.2	1.0	1.1	1.2	0.2	1.4	-	0.00	31.7%	0.8	-

C1 PRC for Signalled Lanes (%): -28.9 Total Delay for Signalled Lanes (pcuHr): 111.56 Cycle Time (s): 120
PRC Over All Lanes (%): -28.9 Total Delay Over All Lanes(pcuHr): 111.56

Scenario 3: '2025 Do-Nothing - AM (Crossings Every Other Cycle)' (FG1: '2025 Do-Nothing - AM', Plan 2: 'Crossings Every Other Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**81.1%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**81.1%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1137	Inf	Inf	Inf	0.0%	1137	1137
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	**N/A**	**N/A**	A		2	152	6(154)	98(214)	-	-	705	1971:1687	1971	1210+44	56.2 : 56.2%	705	705
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	26	Inf	Inf	Inf	0.0%	26	26
4/1	Site Access (SE) Right Left Ahead	U	**N/A**	**N/A**	B		2	14	104(220)	111(227)	-	-	63	1709	1709	114	55.3%	63	63
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	681	Inf	Inf	Inf	0.0%	681	681
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	**N/A**	**N/A**	C		2	155	5(154)	99(215)	-	-	1055	1979:1687	1979	1295+6	81.1 : 81.1%	1055	1055
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	28	Inf	Inf	Inf	0.0%	28	28
8/1	Site Access (NW) Left Ahead Right	U	**N/A**	**N/A**	D		2	14	117(233)	124(0)	-	-	49	1752	1752	117	42.0%	49	49

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**19**	**0**	**11**	**9.1**	**3.7**	**0.2**	**13.0**	-	**1973.5**	-	-	-	-	-	-	-	**81.1%**	**16.6**	-
B4267 Leckwith Road / Site Access (Option 1)	**19**	**0**	**11**	**9.1**	**3.7**	**0.2**	**13.0**	-	**1973.5**	-	-	-	-	-	-	-	**81.1%**	**16.6**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	14	0	11	2.6	0.6	0.2	3.4	17.2	416.2	0.6	10.3	16.8	0.6	17.4	-	0.00	56.2 : 56.2%	4.1	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	1.0	0.6	-	1.6	88.9	60.9	1.0	2.0	2.1	0.6	2.7	-	0.00	55.3%	1.7	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	4.9	2.1	0.0	7.0	23.9	1449.4	1.4	15.2	33.5	2.1	35.7	-	0.00	81.1 : 81.1%	9.7	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.7	0.4	-	1.1	80.1	47.0	1.0	1.6	1.6	0.4	2.0	-	0.00	42.0%	1.2	-

C1 PRC for Signalled Lanes (%): 11.0 Total Delay for Signalled Lanes (pcuHr): 13.02 Cycle Time (s): 240
PRC Over All Lanes (%): 11.0 Total Delay Over All Lanes(pcuHr): 13.02

Scenario 4: '2025 Do-Nothing - PM (Crossings Every Other Cycle)' (FG2: '2025 Do Nothing - PM', Plan 2: 'Crossings Every Other Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**97.9%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**97.9%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	640	Inf	Inf	Inf	0.0%	640	640
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		2	152	6(122)	66(214)	-	-	1227	1968:1687	1968	1222+32	97.9 : 97.9%	1227	1227
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	62	Inf	Inf	Inf	0.0%	62	62
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		2	14	72(220)	79(227)	-	-	25	1709	1709	114	21.9%	25	25
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1157	Inf	Inf	Inf	0.0%	1157	1157
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		2	155	5(122)	67(215)	-	-	609	1976:1687	1976	1275+26	46.8 : 46.8%	609	609
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	39	Inf	Inf	Inf	0.0%	39	39
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		2	14	85(233)	92(0)	-	-	37	1752	1752	117	31.7%	37	37

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**36**	**0**	**7**	**10.5**	**12.9**	**0.2**	**23.6**	-	**1750.0**	-	-	-	-	-	-	-	**97.9%**	**26.8**	-
B4267 Leckwith Road / Site Access (Option 1)	**36**	**0**	**7**	**10.5**	**12.9**	**0.2**	**23.6**	-	**1750.0**	-	-	-	-	-	-	-	**97.9%**	**26.8**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	31	0	0	7.6	12.1	0.0	19.7	57.9	1183.6	1.0	18.0	50.1	12.1	62.1	-	0.00	97.9 : 97.9%	21.9	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.4	0.1	-	0.5	76.6	23.6	0.9	1.0	1.0	0.1	1.1	-	0.00	21.9%	0.6	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	7	1.9	0.4	0.2	2.5	14.8	507.6	0.8	8.7	13.0	0.4	13.4	-	0.00	46.8 : 46.8%	3.4	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.6	0.2	-	0.8	79.2	35.2	0.9	1.4	1.5	0.2	1.7	-	0.00	31.7%	0.9	-

C1 PRC for Signalled Lanes (%): -8.7 Total Delay for Signalled Lanes (pcuHr): 23.57 Cycle Time (s): 240
PRC Over All Lanes (%): -8.7 Total Delay Over All Lanes(pcuHr): 23.57

Scenario 5: '2025 Do-Something - AM (Crossings Every Cycle)' (FG3: '2025 Do-Something - AM', Plan 1: 'Crossings Every Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**96.5%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**96.5%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1130	Inf	Inf	Inf	0.0%	1130	1130
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	64	14	78	-	-	702	1972:1687	1972	1023+36	66.3 : 66.3%	702	702
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	24	Inf	Inf	Inf	0.0%	24	24
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		1	7	84	91	-	-	57	1709	1709	114	50.0%	57	57
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	680	Inf	Inf	Inf	0.0%	680	680
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	65	14	79	-	-	1055	1979:1687	1979	1088+5	96.5 : 96.5%	1055	1055
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	27	Inf	Inf	Inf	0.0%	27	27
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		1	7	97	104	-	-	47	1752	1752	117	40.2%	47	47

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**17**	**0**	**12**	**13.0**	**11.0**	**0.3**	**24.3**	-	**2548.1**	-	-	-	-	-	-	-	**96.5%**	**29.0**	-
B4267 Leckwith Road / Site Access (Option 1)	**17**	**0**	**12**	**13.0**	**11.0**	**0.3**	**24.3**	-	**2548.1**	-	-	-	-	-	-	-	**96.5%**	**29.0**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	12	0	12	3.9	1.0	0.3	5.1	26.1	524.9	0.7	10.3	16.5	1.0	17.5	-	0.00	66.3 : 66.3%	6.1	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.9	0.5	-	1.3	85.2	54.6	1.0	1.7	1.8	0.5	2.3	-	0.00	50.0%	1.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	7.6	9.2	0.0	16.8	57.4	1923.5	1.8	15.2	33.5	9.2	42.8	-	0.00	96.5 : 96.5%	20.4	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.7	0.3	-	1.0	79.3	45.0	1.0	1.4	1.5	0.3	1.8	-	0.00	40.2%	1.1	-

C1 PRC for Signalled Lanes (%): -7.2 Total Delay for Signalled Lanes (pcuHr): 24.31 Cycle Time (s): 120
PRC Over All Lanes (%): -7.2 Total Delay Over All Lanes(pcuHr): 24.31

Scenario 6: '2025 Do-Something - PM (Crossings Every Cycle)' (FG4: '2025 Do-Something - PM', Plan 1: 'Crossings Every Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**115.2%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**115.2%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	638	Inf	Inf	Inf	0.0%	638	638
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	64	14	78	-	-	1219	1969:1687	1969	1034+24	115.2 : 115.2%	1219	1058
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	57	Inf	Inf	Inf	0.0%	51	51
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		1	7	84	91	-	-	22	1709	1709	114	19.3%	22	22
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1156	Inf	Inf	Inf	0.0%	1005	1005
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	65	14	79	-	-	609	1976:1687	1976	1074+22	55.6 : 55.6%	609	609
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	36	Inf	Inf	Inf	0.0%	32	32
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		1	7	97	104	-	-	37	1752	1752	117	31.7%	37	37

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**25**	**0**	**12**	**21.7**	**84.9**	**0.2**	**106.8**	-	**2036.4**	-	-	-	-	-	-	-	**115.2%**	**110.5**	-
B4267 Leckwith Road / Site Access (Option 1)	**25**	**0**	**12**	**21.7**	**84.9**	**0.2**	**106.8**	-	**2036.4**	-	-	-	-	-	-	-	**115.2%**	**110.5**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	24	0	0	17.9	83.9	0.0	101.8	300.7	1289.7	1.1	23.2	46.6	83.9	130.5	-	0.00	115.2 : 115.2%	104.2	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.3	0.1	-	0.4	72.6	20.7	0.9	0.7	0.7	0.1	0.8	-	0.00	19.3%	0.5	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	0	0	12	2.9	0.6	0.1	3.7	21.9	690.8	1.1	8.7	13.0	0.6	13.6	-	0.00	55.6 : 55.6%	5.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.5	0.2	-	0.8	75.9	35.2	1.0	1.1	1.2	0.2	1.4	-	0.00	31.7%	0.8	-

C1 PRC for Signalled Lanes (%): -28.0 Total Delay for Signalled Lanes (pcuHr): 106.75 Cycle Time (s): 120
PRC Over All Lanes (%): -28.0 Total Delay Over All Lanes(pcuHr): 106.75

Scenario 7: '2025 Do-Something - AM (Crossings Every Other Cycle)' (FG3: '2025 Do-Something - AM', Plan 2: 'Crossings Every Other Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**81.1%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**81.1%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1130	Inf	Inf	Inf	0.0%	1130	1130
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		2	152	6(154)	98(214)	-	-	702	1972:1687	1972	1212+43	55.9 : 55.9%	702	702
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	24	Inf	Inf	Inf	0.0%	24	24
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		2	14	104(220)	111(227)	-	-	57	1709	1709	114	50.0%	57	57
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	680	Inf	Inf	Inf	0.0%	680	680
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		2	155	5(154)	99(215)	-	-	1055	1979:1687	1979	1295+6	81.1 : 81.1%	1055	1055
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	27	Inf	Inf	Inf	0.0%	27	27
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		2	14	117(233)	124(0)	-	-	47	1752	1752	117	40.2%	47	47

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**18**	**0**	**11**	**9.0**	**3.6**	**0.2**	**12.7**	-	**1960.2**	-	-	-	-	-	-	-	**81.1%**	**16.3**	-
B4267 Leckwith Road / Site Access (Option 1)	**18**	**0**	**11**	**9.0**	**3.6**	**0.2**	**12.7**	-	**1960.2**	-	-	-	-	-	-	-	**81.1%**	**16.3**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	13	0	11	2.5	0.6	0.2	3.3	17.1	411.0	0.6	10.3	16.5	0.6	17.1	-	0.00	55.9 : 55.9%	4.1	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.9	0.5	-	1.3	85.2	54.9	1.0	1.8	1.9	0.5	2.4	-	0.00	50.0%	1.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	4.9	2.1	0.0	7.0	23.9	1449.4	1.4	15.2	33.5	2.1	35.7	-	0.00	81.1 : 81.1%	9.7	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.7	0.3	-	1.0	79.3	44.8	1.0	1.5	1.6	0.3	1.9	-	0.00	40.2%	1.1	-

C1 PRC for Signalled Lanes (%): 11.0 Total Delay for Signalled Lanes (pcuHr): 12.73 Cycle Time (s): 240
PRC Over All Lanes (%): 11.0 Total Delay Over All Lanes(pcuHr): 12.73

Scenario 8: '2025 Do-Something - PM (Crossings Every Other Cycle)' (FG4: '2025 Do-Something - PM', Plan 2: 'Crossings Every Other Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**97.2%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**97.2%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	638	Inf	Inf	Inf	0.0%	638	638
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		2	152	6(124)	68(214)	-	-	1219	1969:1687	1969	1226+29	97.2 : 97.2%	1219	1219
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	57	Inf	Inf	Inf	0.0%	57	57
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		2	14	74(220)	81(227)	-	-	22	1709	1709	114	19.3%	22	22
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1156	Inf	Inf	Inf	0.0%	1156	1156
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		2	155	5(124)	69(215)	-	-	609	1976:1687	1976	1275+26	46.8 : 46.8%	609	609
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	36	Inf	Inf	Inf	0.0%	36	36
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		2	14	87(233)	94(0)	-	-	37	1752	1752	117	31.7%	37	37

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**33**	**0**	**7**	**10.3**	**11.5**	**0.2**	**22.0**	-	**1723.4**	-	-	-	-	-	-	-	**97.2%**	**25.1**	-
B4267 Leckwith Road / Site Access (Option 1)	**33**	**0**	**7**	**10.3**	**11.5**	**0.2**	**22.0**	-	**1723.4**	-	-	-	-	-	-	-	**97.2%**	**25.1**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	28	0	0	7.5	10.7	0.0	18.2	53.8	1160.3	1.0	17.9	49.1	10.7	59.7	-	0.00	97.2 : 97.2%	20.3	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.3	0.1	-	0.5	75.4	20.7	0.9	0.8	0.8	0.1	1.0	-	0.00	19.3%	0.5	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	7	1.9	0.4	0.2	2.5	14.7	507.4	0.8	8.7	13.0	0.4	13.4	-	0.00	46.8 : 46.8%	3.4	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.6	0.2	-	0.8	78.7	35.0	0.9	1.4	1.4	0.2	1.7	-	0.00	31.7%	0.9	-

C1 PRC for Signalled Lanes (%): -8.0 Total Delay for Signalled Lanes (pcuHr): 21.97 Cycle Time (s): 240
PRC Over All Lanes (%): -8.0 Total Delay Over All Lanes(pcuHr): 21.97

Scenario 9: '2030 Do-Nothing - AM (Crossings Every Cycle)' (FG5: '2030 Do-Nothing - AM', Plan 1: 'Crossings Every Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**100.6%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**100.6%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1182	Inf	Inf	Inf	0.0%	1175	1175
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	64	14	78	-	-	732	1971:1687	1971	1022+36	69.2 : 69.2%	732	732
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	26	Inf	Inf	Inf	0.0%	26	26
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		1	7	84	91	-	-	63	1709	1709	114	55.3%	63	63
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	709	Inf	Inf	Inf	0.0%	709	709
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	65	14	79	-	-	1100	1979:1687	1979	1088+5	100.6 : 100.6%	1100	1093
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	29	Inf	Inf	Inf	0.0%	29	29
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		1	7	97	104	-	-	51	1752	1752	117	43.7%	51	51

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**5**	**0**	**25**	**14.4**	**20.4**	**0.3**	**35.1**	-	**2790.8**	-	-	-	-	-	-	-	**100.6%**	**40.2**	-
B4267 Leckwith Road / Site Access (Option 1)	**5**	**0**	**25**	**14.4**	**20.4**	**0.3**	**35.1**	-	**2790.8**	-	-	-	-	-	-	-	**100.6%**	**40.2**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	0	0	25	4.1	1.1	0.3	5.5	27.1	562.9	0.8	10.7	17.8	1.1	18.9	-	0.00	69.2 : 69.2%	6.6	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	1.0	0.6	-	1.6	88.8	60.9	1.0	1.9	2.0	0.6	2.6	-	0.00	55.3%	1.7	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	8.6	18.3	0.0	26.9	88.1	2118.1	1.9	16.1	37.2	18.3	55.5	-	0.00	100.6 : 100.6%	30.8	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.8	0.4	-	1.1	80.9	48.9	1.0	1.6	1.6	0.4	2.0	-	0.00	43.7%	1.2	-

C1 PRC for Signalled Lanes (%): -11.8 Total Delay for Signalled Lanes (pcuHr): 35.14 Cycle Time (s): 120
PRC Over All Lanes (%): -11.8 Total Delay Over All Lanes(pcuHr): 35.14

Scenario 10: '2030 Do-Nothing - PM (Crossings Every Cycle)' (FG6: '2030 Do-Nothing - PM', Plan 1: 'Crossings Every Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**120.5%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**120.5%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	666	Inf	Inf	Inf	0.0%	666	666
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	64	14	78	-	-	1275	1968:1687	1968	1032+26	120.5 : 120.5%	1275	1058
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	62	Inf	Inf	Inf	0.0%	53	53
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		1	7	84	91	-	-	25	1709	1709	114	21.9%	25	25
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1205	Inf	Inf	Inf	0.0%	1002	1002
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	65	14	79	-	-	635	1976:1687	1976	1075+21	57.9 : 57.9%	635	635
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	40	Inf	Inf	Inf	0.0%	35	35
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		1	7	97	104	-	-	38	1752	1752	117	32.5%	38	38

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**26**	**0**	**12**	**25.4**	**112.5**	**0.2**	**138.1**	-	**2136.6**	-	-	-	-	-	-	-	**120.5%**	**142.0**	-
B4267 Leckwith Road / Site Access (Option 1)	**26**	**0**	**12**	**25.4**	**112.5**	**0.2**	**138.1**	-	**2136.6**	-	-	-	-	-	-	-	**120.5%**	**142.0**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	26	0	0	21.3	111.4	0.0	132.8	375.0	1346.7	1.1	26.0	50.4	111.4	161.8	-	0.00	120.5 : 120.5%	135.3	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.4	0.1	-	0.5	73.3	23.5	0.9	0.8	0.8	0.1	0.9	-	0.00	21.9%	0.6	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	0	0	12	3.1	0.7	0.1	4.0	22.4	730.2	1.1	9.1	13.7	0.7	14.4	-	0.00	57.9 : 57.9%	5.3	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.6	0.2	-	0.8	76.2	36.1	0.9	1.2	1.2	0.2	1.4	-	0.00	32.5%	0.9	-

C1 PRC for Signalled Lanes (%): -33.9 Total Delay for Signalled Lanes (pcuHr): 138.08 Cycle Time (s): 120
PRC Over All Lanes (%): -33.9 Total Delay Over All Lanes(pcuHr): 138.08

Scenario 11: '2030 Do-Nothing - AM (Crossings Every Other Cycle)' (FG5: '2030 Do-Nothing - AM', Plan 2: 'Crossings Every Other Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**84.6%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**84.6%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1182	Inf	Inf	Inf	0.0%	1182	1182
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	**N/A**	**N/A**	A		2	152	6(149)	93(214)	-	-	732	1971:1687	1971	1211+43	58.4 : 58.4%	732	732
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	26	Inf	Inf	Inf	0.0%	26	26
4/1	Site Access (SE) Right Left Ahead	U	**N/A**	**N/A**	B		2	14	99(220)	106(227)	-	-	63	1709	1709	114	55.3%	63	63
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	709	Inf	Inf	Inf	0.0%	709	709
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	**N/A**	**N/A**	C		2	155	5(149)	94(215)	-	-	1100	1979:1687	1979	1295+6	84.6 : 84.6%	1100	1100
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	29	Inf	Inf	Inf	0.0%	29	29
8/1	Site Access (NW) Left Ahead Right	U	**N/A**	**N/A**	D		2	14	112(233)	119(0)	-	-	51	1752	1752	117	43.7%	51	51

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**17**	**0**	**13**	**9.8**	**4.4**	**0.2**	**14.3**	-	**2137.2**	-	-	-	-	-	-	-	**84.6%**	**18.3**	-
B4267 Leckwith Road / Site Access (Option 1)	**17**	**0**	**13**	**9.8**	**4.4**	**0.2**	**14.3**	-	**2137.2**	-	-	-	-	-	-	-	**84.6%**	**18.3**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	12	0	13	2.7	0.7	0.2	3.6	17.7	439.2	0.6	10.7	17.8	0.7	18.5	-	0.00	58.4 : 58.4%	4.4	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	1.0	0.6	-	1.6	88.8	60.9	1.0	1.9	2.0	0.6	2.7	-	0.00	55.3%	1.7	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	5.4	2.7	0.0	8.0	26.3	1588.3	1.4	15.9	36.7	2.7	39.3	-	0.00	84.6 : 84.6%	10.9	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.8	0.4	-	1.1	80.9	48.9	1.0	1.6	1.6	0.4	2.0	-	0.00	43.7%	1.2	-

C1 PRC for Signalled Lanes (%): 6.4 Total Delay for Signalled Lanes (pcuHr): 14.34 Cycle Time (s): 240
PRC Over All Lanes (%): 6.4 Total Delay Over All Lanes(pcuHr): 14.34

Scenario 12: '2030 Do-Nothing - PM (Crossings Every Other Cycle)' (FG6: '2030 Do-Nothing - PM', Plan 2: 'Crossings Every Other Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**101.7%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**101.7%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	666	Inf	Inf	Inf	0.0%	666	666
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		2	152	6(112)	56(214)	-	-	1275	1968:1687	1968	1223+30	101.7 : 101.7%	1275	1254
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	62	Inf	Inf	Inf	0.0%	61	61
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		2	14	62(220)	69(227)	-	-	25	1709	1709	114	21.9%	25	25
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1205	Inf	Inf	Inf	0.0%	1185	1185
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		2	155	5(112)	57(215)	-	-	635	1976:1687	1976	1276+25	48.8 : 48.8%	635	635
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	40	Inf	Inf	Inf	0.0%	39	39
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		2	14	75(233)	82(0)	-	-	38	1752	1752	117	32.5%	38	38

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**31**	**0**	**12**	**14.0**	**24.8**	**0.2**	**39.0**	-	**1945.9**	-	-	-	-	-	-	-	**101.7%**	**42.5**	-
B4267 Leckwith Road / Site Access (Option 1)	**31**	**0**	**12**	**14.0**	**24.8**	**0.2**	**39.0**	-	**1945.9**	-	-	-	-	-	-	-	**101.7%**	**42.5**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	30	0	0	11.0	23.9	0.0	34.9	98.5	1344.1	1.1	21.5	59.4	23.9	83.3	-	0.00	101.7 : 101.7%	37.3	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.4	0.1	-	0.6	79.4	23.6	0.9	1.0	1.1	0.1	1.2	-	0.00	21.9%	0.6	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	0	0	12	2.0	0.5	0.2	2.7	15.1	542.0	0.9	9.1	13.7	0.5	14.2	-	0.00	48.8 : 48.8%	3.7	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.6	0.2	-	0.9	82.3	36.1	0.9	1.6	1.6	0.2	1.9	-	0.00	32.5%	0.9	-

C1 PRC for Signalled Lanes (%): -13.0 Total Delay for Signalled Lanes (pcuHr): 38.97 Cycle Time (s): 240
PRC Over All Lanes (%): -13.0 Total Delay Over All Lanes(pcuHr): 38.97

Scenario 13: '2030 Do-Something - AM (Crossings Every Cycle)' (FG7: '2030 Do-Something - AM', Plan 1: 'Crossings Every Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**100.5%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**100.5%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1174	Inf	Inf	Inf	0.0%	1168	1168
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	64	14	78	-	-	730	1972:1687	1972	1023+36	68.9 : 68.9%	730	730
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	24	Inf	Inf	Inf	0.0%	24	24
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		1	7	84	91	-	-	57	1709	1709	114	50.0%	57	57
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	707	Inf	Inf	Inf	0.0%	707	707
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	65	14	79	-	-	1099	1979:1687	1979	1088+5	100.5 : 100.5%	1099	1093
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	28	Inf	Inf	Inf	0.0%	28	28
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		1	7	97	104	-	-	47	1752	1752	117	40.2%	47	47

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**5**	**0**	**25**	**14.2**	**20.0**	**0.3**	**34.4**	-	**2763.2**	-	-	-	-	-	-	-	**100.5%**	**39.5**	-
B4267 Leckwith Road / Site Access (Option 1)	**5**	**0**	**25**	**14.2**	**20.0**	**0.3**	**34.4**	-	**2763.2**	-	-	-	-	-	-	-	**100.5%**	**39.5**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	0	0	25	4.1	1.1	0.3	5.5	27.1	555.5	0.8	10.7	17.6	1.1	18.7	-	0.00	68.9 : 68.9%	6.5	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.9	0.5	-	1.3	85.2	54.6	1.0	1.7	1.8	0.5	2.3	-	0.00	50.0%	1.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	8.5	18.0	0.0	26.6	87.1	2108.0	1.9	16.0	36.8	18.0	54.8	-	0.00	100.5 : 100.5%	30.4	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.7	0.3	-	1.0	79.3	45.0	1.0	1.4	1.5	0.3	1.8	-	0.00	40.2%	1.1	-

C1 PRC for Signalled Lanes (%): -11.7 Total Delay for Signalled Lanes (pcuHr): 34.45 Cycle Time (s): 120
PRC Over All Lanes (%): -11.7 Total Delay Over All Lanes(pcuHr): 34.45

Scenario 14: '2030 Do-Something - PM (Crossings Every Cycle)' (FG8: '2030 Do-Something - PM', Plan 1: 'Crossings Every Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**119.8%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**119.8%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	663	Inf	Inf	Inf	0.0%	663	663
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	64	14	78	-	-	1268	1969:1687	1969	1034+24	119.8 : 119.8%	1268	1059
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	56	Inf	Inf	Inf	0.0%	49	49
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		1	7	84	91	-	-	22	1709	1709	114	19.3%	22	22
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1204	Inf	Inf	Inf	0.0%	1007	1007
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	65	14	79	-	-	633	1976:1687	1976	1077+19	57.8 : 57.8%	633	633
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	37	Inf	Inf	Inf	0.0%	32	32
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		1	7	97	104	-	-	37	1752	1752	117	31.7%	37	37

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**24**	**0**	**11**	**24.9**	**108.7**	**0.2**	**133.8**	-	**2123.5**	-	-	-	-	-	-	-	**119.8%**	**137.7**	-
B4267 Leckwith Road / Site Access (Option 1)	**24**	**0**	**11**	**24.9**	**108.7**	**0.2**	**133.8**	-	**2123.5**	-	-	-	-	-	-	-	**119.8%**	**137.7**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	24	0	0	20.9	107.7	0.0	128.6	365.2	1339.0	1.1	25.6	49.9	107.7	157.6	-	0.00	119.8 : 119.8%	131.1	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.3	0.1	-	0.4	72.6	20.7	0.9	0.7	0.7	0.1	0.8	-	0.00	19.3%	0.5	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	0	0	11	3.1	0.7	0.1	3.9	22.3	728.6	1.2	9.1	13.7	0.7	14.3	-	0.00	57.8 : 57.8%	5.3	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.5	0.2	-	0.8	75.9	35.2	1.0	1.1	1.2	0.2	1.4	-	0.00	31.7%	0.8	-

C1 PRC for Signalled Lanes (%): -33.1 Total Delay for Signalled Lanes (pcuHr): 133.76 Cycle Time (s): 120
PRC Over All Lanes (%): -33.1 Total Delay Over All Lanes(pcuHr): 133.76

Scenario 15: '2030 Do-Something - AM (Crossings Every Other Cycle)' (FG7: '2030 Do-Something - AM', Plan 2: 'Crossings Every Other Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**84.5%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**84.5%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1174	Inf	Inf	Inf	0.0%	1174	1174
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	**N/A**	**N/A**	A		2	152	6(149)	93(214)	-	-	730	1972:1687	1972	1212+43	58.2 : 58.2%	730	730
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	24	Inf	Inf	Inf	0.0%	24	24
4/1	Site Access (SE) Right Left Ahead	U	**N/A**	**N/A**	B		2	14	99(220)	106(227)	-	-	57	1709	1709	114	50.0%	57	57
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	707	Inf	Inf	Inf	0.0%	707	707
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	**N/A**	**N/A**	C		2	155	5(149)	94(215)	-	-	1099	1979:1687	1979	1295+6	84.5 : 84.5%	1099	1099
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	28	Inf	Inf	Inf	0.0%	28	28
8/1	Site Access (NW) Left Ahead Right	U	**N/A**	**N/A**	D		2	14	112(233)	119(0)	-	-	47	1752	1752	117	40.2%	47	47

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**17**	**0**	**13**	**9.6**	**4.2**	**0.2**	**14.0**	-	**2122.1**	-	-	-	-	-	-	-	**84.5%**	**17.9**	-
B4267 Leckwith Road / Site Access (Option 1)	**17**	**0**	**13**	**9.6**	**4.2**	**0.2**	**14.0**	-	**2122.1**	-	-	-	-	-	-	-	**84.5%**	**17.9**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	12	0	13	2.7	0.7	0.2	3.6	17.7	435.2	0.6	10.7	17.6	0.7	18.3	-	0.00	58.2 : 58.2%	4.4	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.9	0.5	-	1.3	85.2	54.6	1.0	1.8	1.8	0.5	2.3	-	0.00	50.0%	1.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	5.3	2.7	0.0	8.0	26.2	1587.3	1.4	15.9	36.6	2.7	39.3	-	0.00	84.5 : 84.5%	10.9	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.7	0.3	-	1.0	79.3	45.0	1.0	1.4	1.5	0.3	1.8	-	0.00	40.2%	1.1	-

C1 PRC for Signalled Lanes (%): 6.5 Total Delay for Signalled Lanes (pcuHr): 13.98 Cycle Time (s): 240
PRC Over All Lanes (%): 6.5 Total Delay Over All Lanes(pcuHr): 13.98

Scenario 16: '2030 Do-Something - PM (Crossings Every Other Cycle)' (FG8: '2030 Do-Something - PM', Plan 2: 'Crossings Every Other Cycle')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**101.1%**	-	-
B4267 Leckwith Road / Site Access (Option 1)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**101.1%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	663	Inf	Inf	Inf	0.0%	663	663
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		2	152	6(114)	58(214)	-	-	1268	1969:1687	1969	1226+29	101.1 : 101.1%	1268	1255
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	56	Inf	Inf	Inf	0.0%	56	56
4/1	Site Access (SE) Right Left Ahead	U	N/A	N/A	B		2	14	64(220)	71(227)	-	-	22	1709	1709	114	19.3%	22	22
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1204	Inf	Inf	Inf	0.0%	1191	1191
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		2	155	5(114)	59(215)	-	-	633	1976:1687	1976	1279+23	48.6 : 48.6%	633	633
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	37	Inf	Inf	Inf	0.0%	37	37
8/1	Site Access (NW) Left Ahead Right	U	N/A	N/A	D		2	14	77(233)	84(0)	-	-	37	1752	1752	117	31.7%	37	37

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 1)	**29**	**0**	**11**	**12.9**	**22.3**	**0.2**	**35.3**	-	**1932.6**	-	-	-	-	-	-	-	**101.1%**	**38.9**	-
B4267 Leckwith Road / Site Access (Option 1)	**29**	**0**	**11**	**12.9**	**22.3**	**0.2**	**35.3**	-	**1932.6**	-	-	-	-	-	-	-	**101.1%**	**38.9**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	29	0	0	9.9	21.5	0.0	31.4	89.1	1336.6	1.1	20.4	57.4	21.5	78.8	-	0.00	101.1 : 101.1%	33.8	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	-	-	-	0.4	0.1	-	0.5	78.0	20.6	0.9	0.9	0.9	0.1	1.0	-	0.00	19.3%	0.5	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	0	0	11	2.0	0.5	0.2	2.6	15.0	540.2	0.9	9.1	13.7	0.5	14.1	-	0.00	48.6 : 48.6%	3.6	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	-	-	-	0.6	0.2	-	0.8	81.4	35.2	0.9	1.5	1.6	0.2	1.8	-	0.00	31.7%	0.9	-

C1 PRC for Signalled Lanes (%): -12.3 Total Delay for Signalled Lanes (pcuHr): 35.35 Cycle Time (s): 240
PRC Over All Lanes (%): -12.3 Total Delay Over All Lanes(pcuHr): 35.35

Appendix O:

Model Output Report: Site Access (Proposed Design – Option 2)

AECOM LinSig Results

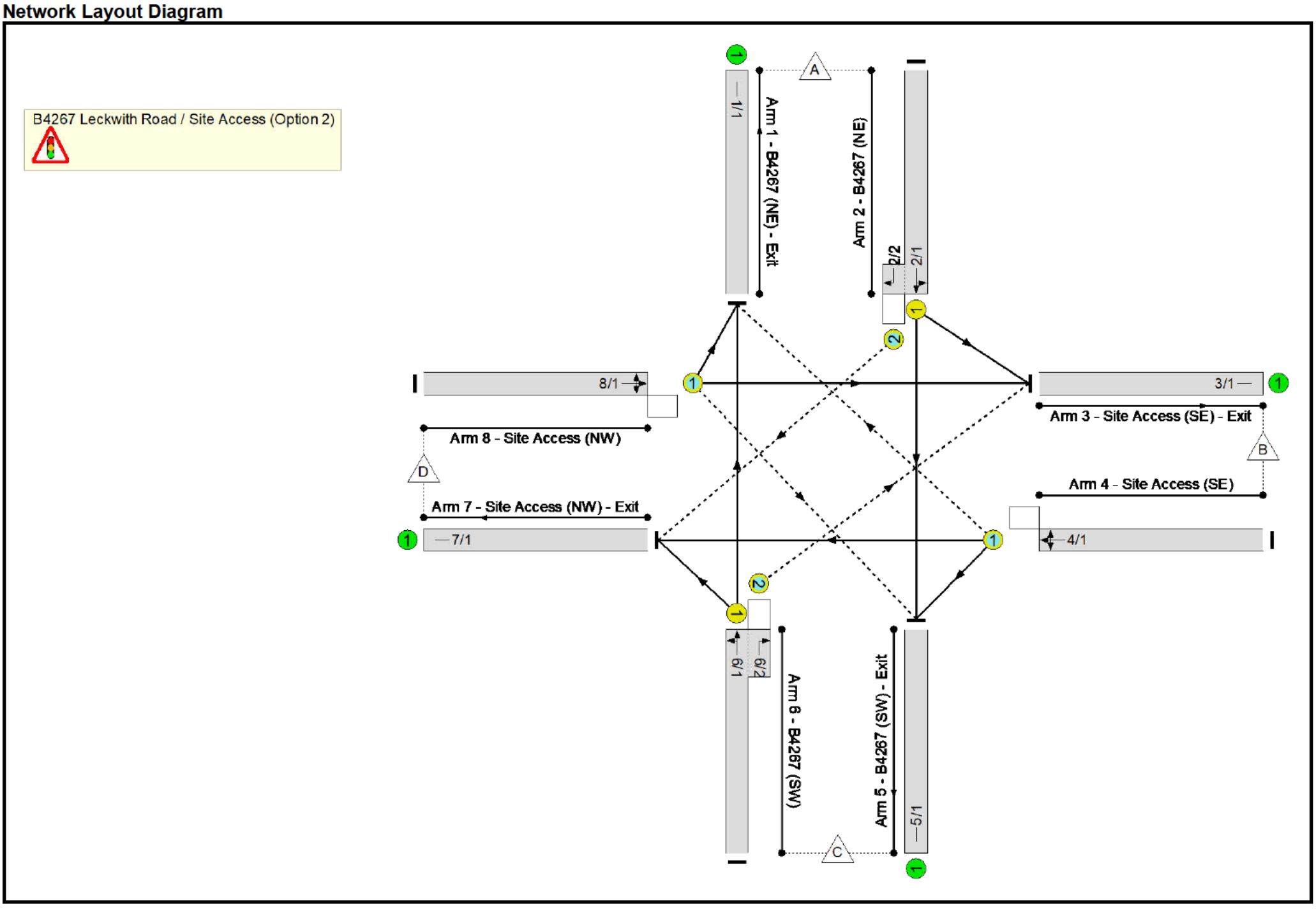
Project and User Details

Project:	**Leckwith Quays, Cardiff**
Title:	**B4267 Leckwith Road / Site Access (Option 2)**
Location:	Leckwith, Cardiff
Client:	Phil Worthing (instructed by Gareth Davies Project Services Ltd)
Additional detail:	Model based on WSP's 'Highway General Arrangment Option 2' Drawing No. 70053561-XX-XX-102 Rev P02.
File name:	B4267 Leckwith Road Site Access (Option 2).lsg3x
Author:	Matthew Davies
Company:	AECOM
Address:	1 Callaghan Square, Cardiff, CF10 5BT
Linsig Version:	3, 2, 39, 0

Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2025 Do-Nothing - AM	2025 Do-Nothing - AM	Network Control Plan 1	07:30 - 08:30	90	39.5	4.70
2	2025 Do-Nothing - PM	2025 Do Nothing - PM	Network Control Plan 1	16:30 - 17:30	90	14.6	5.09
3	2025 Do-Something - AM	2025 Do-Something - AM	Network Control Plan 1	07:30 - 08:30	90	39.5	4.52
4	2025 Do-Something - PM	2025 Do-Something - PM	Network Control Plan 1	16:30 - 17:30	90	15.5	4.95
5	2030 Do-Nothing - AM	2030 Do-Nothing - AM	Network Control Plan 1	07:30 - 08:30	90	33.7	5.01
6	2030 Do-Nothing - PM	2030 Do-Nothing - PM	Network Control Plan 1	16:30 - 17:30	90	10.3	5.72
7	2030 Do-Something - AM	2030 Do-Something - AM	Network Control Plan 1	07:30 - 08:30	90	33.9	4.79
8	2030 Do-Something - PM	2030 Do-Something - PM	Network Control Plan 1	16:30 - 17:30	90	11.0	5.55

Network Layout Diagram



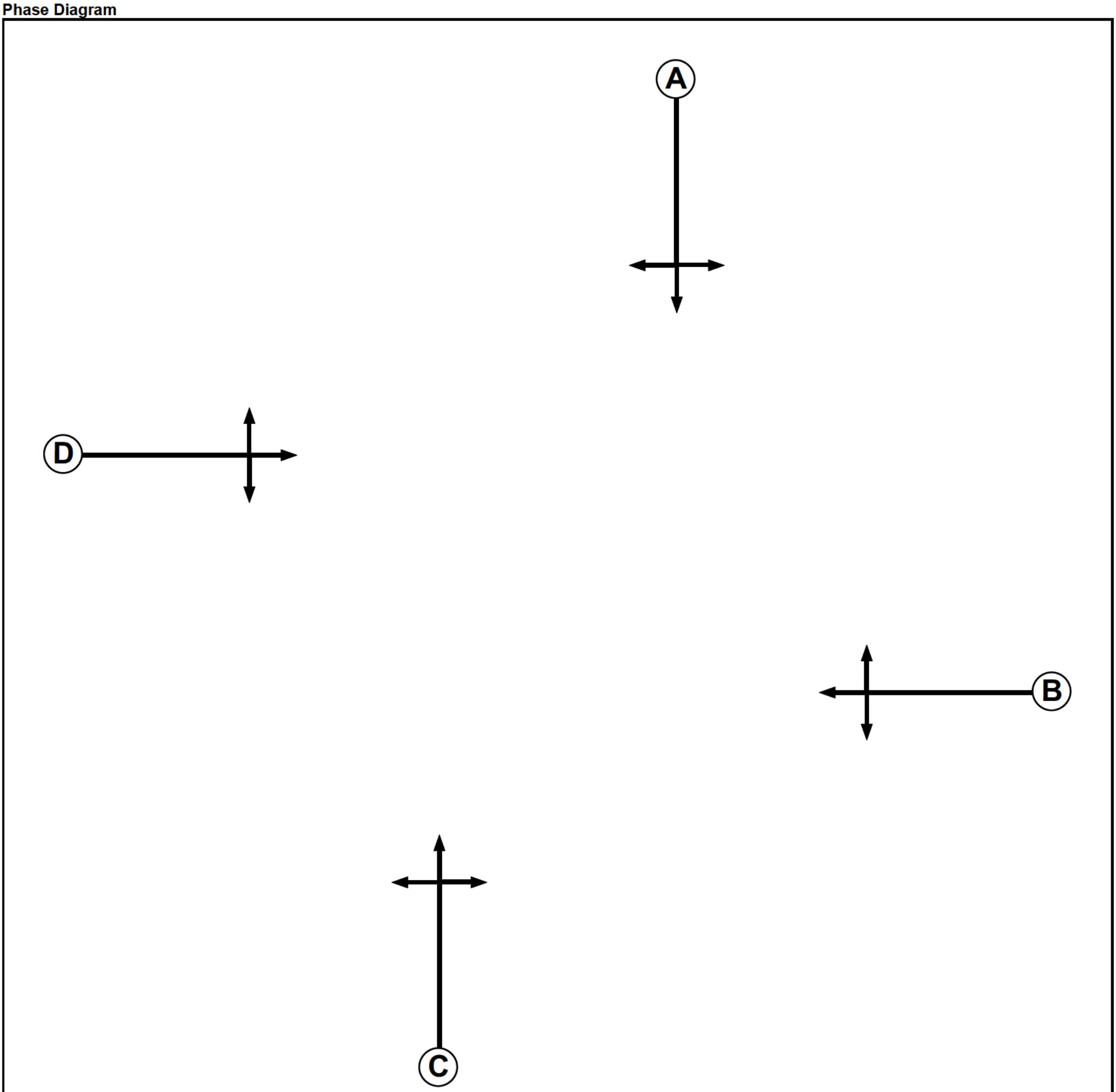
Lane Input Data

Junction: B4267 Leckwith Road / Site Access (Option 2)												
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 (B4267 (NE) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
2/1 (B4267 (NE))	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 3 Left Arm 5 Ahead	10.00 Inf
2/2 (B4267 (NE))	O	A	2	3	2.0	Geom	-	3.25	0.00	Y	Arm 7 Right	10.00
3/1 (Site Access (SE) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1 (Site Access (SE))	O	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 1 Right Arm 5 Left Arm 7 Ahead	10.00 10.00 Inf
5/1 (B4267 (SW) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (B4267 (SW))	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 1 Ahead Arm 7 Left	Inf 10.00
6/2 (B4267 (SW))	O	C	2	3	3.2	Geom	-	3.25	0.00	Y	Arm 3 Right	10.00
7/1 (Site Access (NW) - Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Site Access (NW))	O	D	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 1 Left Arm 3 Ahead Arm 5 Right	10.00 Inf 10.00

Give-Way Lane Input Data

Junction: B4267 Leckwith Road / Site Access (Option 2)											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
2/2 (B4267 (NE))	7/1 (Right)	1439	0	6/1	1.09	All	2.00	-	0.50	2	2.00
4/1 (Site Access (SE))	1/1 (Right)	1439	0	8/1	1.09	To 1/1 (Left) To 3/1 (Ahead)	2.00	2.00	0.50	2	2.00
6/2 (B4267 (SW))	3/1 (Right)	1439	0	2/1	1.09	All	2.00	-	0.50	2	2.00
8/1 (Site Access (NW))	5/1 (Right)	1439	0	4/1	1.09	To 5/1 (Left) To 7/1 (Ahead)	2.00	2.00	0.50	2	2.00

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	6
D	Traffic		7	7

Phase Intergreens Matrix

	Starting Phase				
Terminating Phase		A	B	C	D
	A		6	-	5
	B	6		5	-
	C	-	5		5
	D	6	-	5	

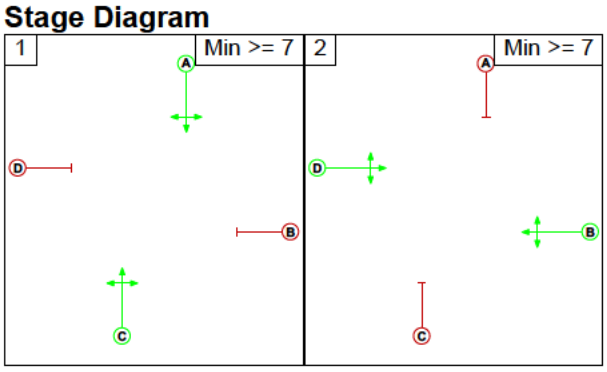
Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	C	Losing	1	1

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	B D

Stage Diagram



Network Control Plans

Plan	Controller	Sequence Name	Sequence
Network Control Plan 1	C1	Stage Sequence No. 1	1,2

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2025 Do-Nothing - AM'	07:30	08:30	01:00	
2: '2025 Do Nothing - PM'	16:30	17:30	01:00	
3: '2025 Do-Something - AM'	07:30	08:30	01:00	
4: '2025 Do-Something - PM'	16:30	17:30	01:00	
5: '2030 Do-Nothing - AM'	07:30	08:30	01:00	
6: '2030 Do-Nothing - PM'	16:30	17:30	01:00	
7: '2030 Do-Something - AM'	07:30	08:30	01:00	
8: '2030 Do-Something - PM'	16:30	17:30	01:00	

Traffic Flows, Desired
FG1: '2025 Do-Nothing - AM'
Desired Flow :

		Destination				
Origin		A	B	C	D	Tot.
	A	0	21	659	25	705
	B	51	0	12	0	63
	C	1047	5	0	3	1055
	D	39	0	10	0	49
	Tot.	1137	26	681	28	1872

FG2: '2025 Do Nothing - PM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	50	1146	31	1227
B	20	0	5	0	25
C	589	12	0	8	609
D	31	0	6	0	37
Tot.	640	62	1157	39	1898

FG3: '2025 Do-Something - AM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	19	659	24	702
B	46	0	11	0	57
C	1047	5	0	3	1055
D	37	0	10	0	47
Tot.	1130	24	680	27	1861

FG4: '2025 Do-Something - PM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	45	1146	28	1219
B	18	0	4	0	22
C	589	12	0	8	609
D	31	0	6	0	37
Tot.	638	57	1156	36	1887

FG5: '2030 Do-Nothing - AM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	21	686	25	732
B	51	0	12	0	63
C	1091	5	0	4	1100
D	40	0	11	0	51
Tot.	1182	26	709	29	1946

FG6: '2030 Do-Nothing - PM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	50	1194	31	1275
B	20	0	5	0	25
C	614	12	0	9	635
D	32	0	6	0	38
Tot.	666	62	1205	40	1973

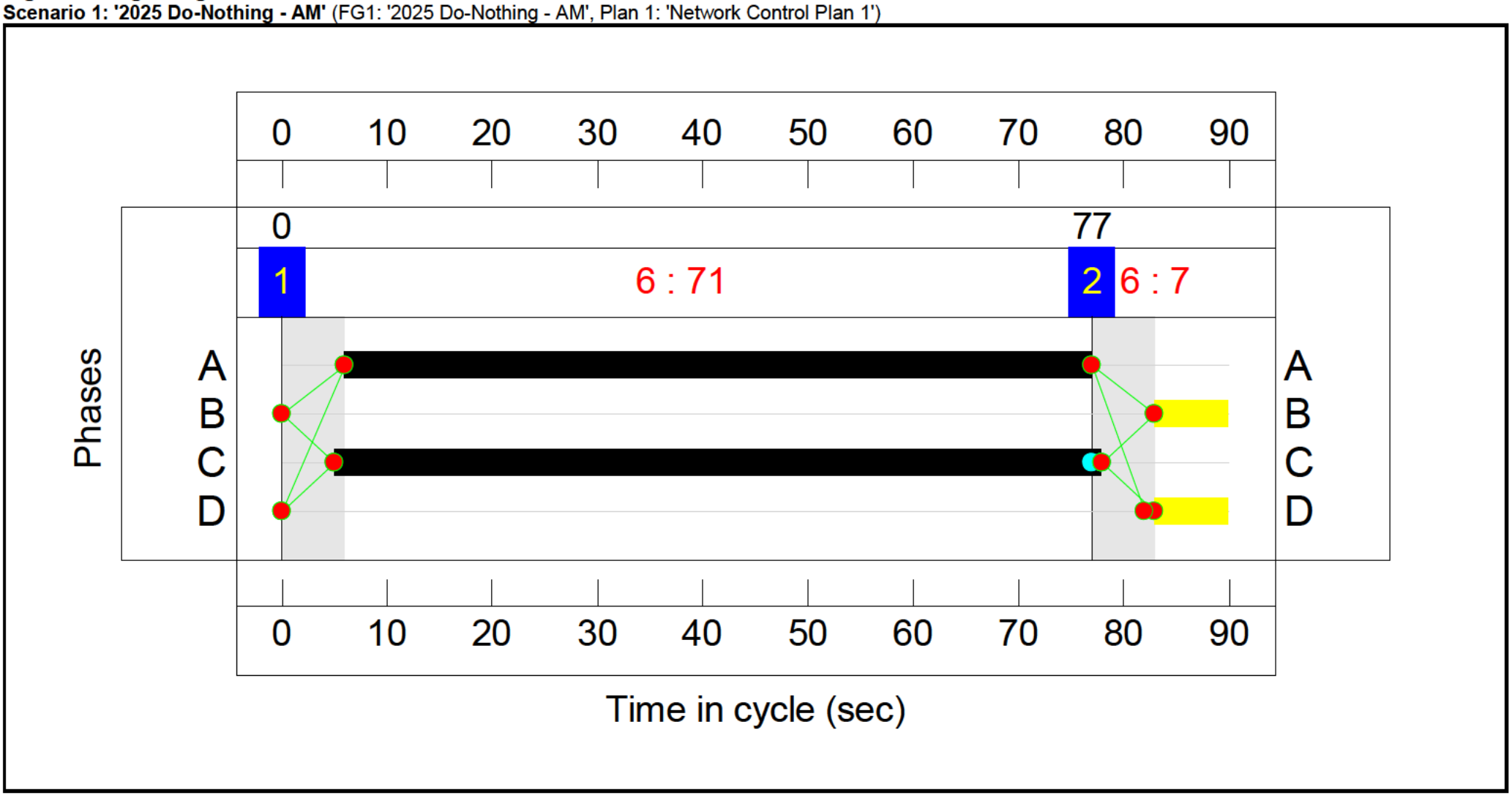
FG7: '2030 Do-Something - AM'
Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	19	686	25	730
B	46	0	11	0	57
C	1091	5	0	3	1099
D	37	0	10	0	47
Tot.	1174	24	707	28	1933

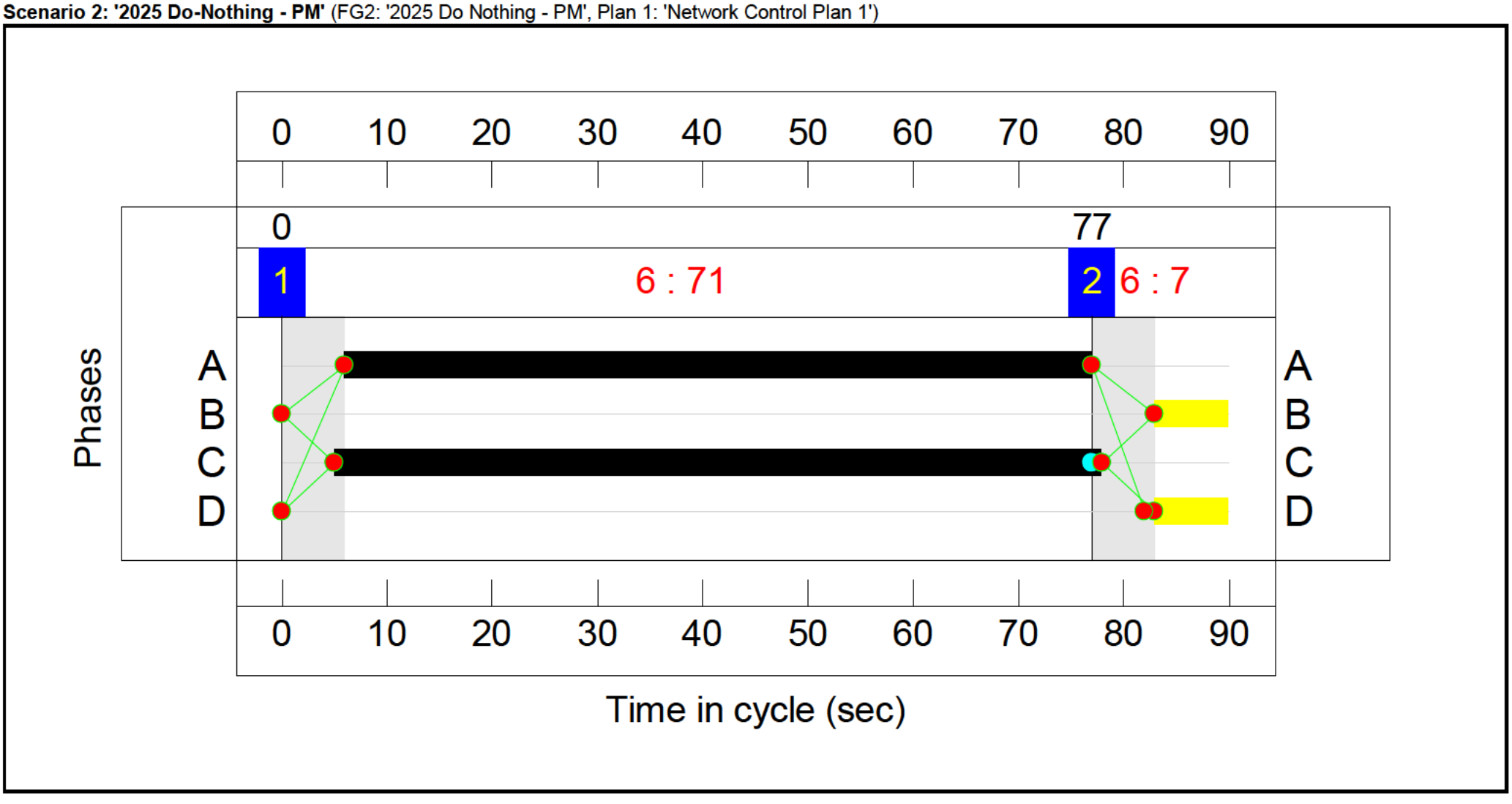
FG8: '2030 Do-Something - PM'
Desired Flow :

Origin	Destination					
		A	B	C	D	Tot.
	A	0	45	1194	29	1268
	B	18	0	4	0	22
	C	614	11	0	8	633
	D	31	0	6	0	37
	Tot.	663	56	1204	37	1960

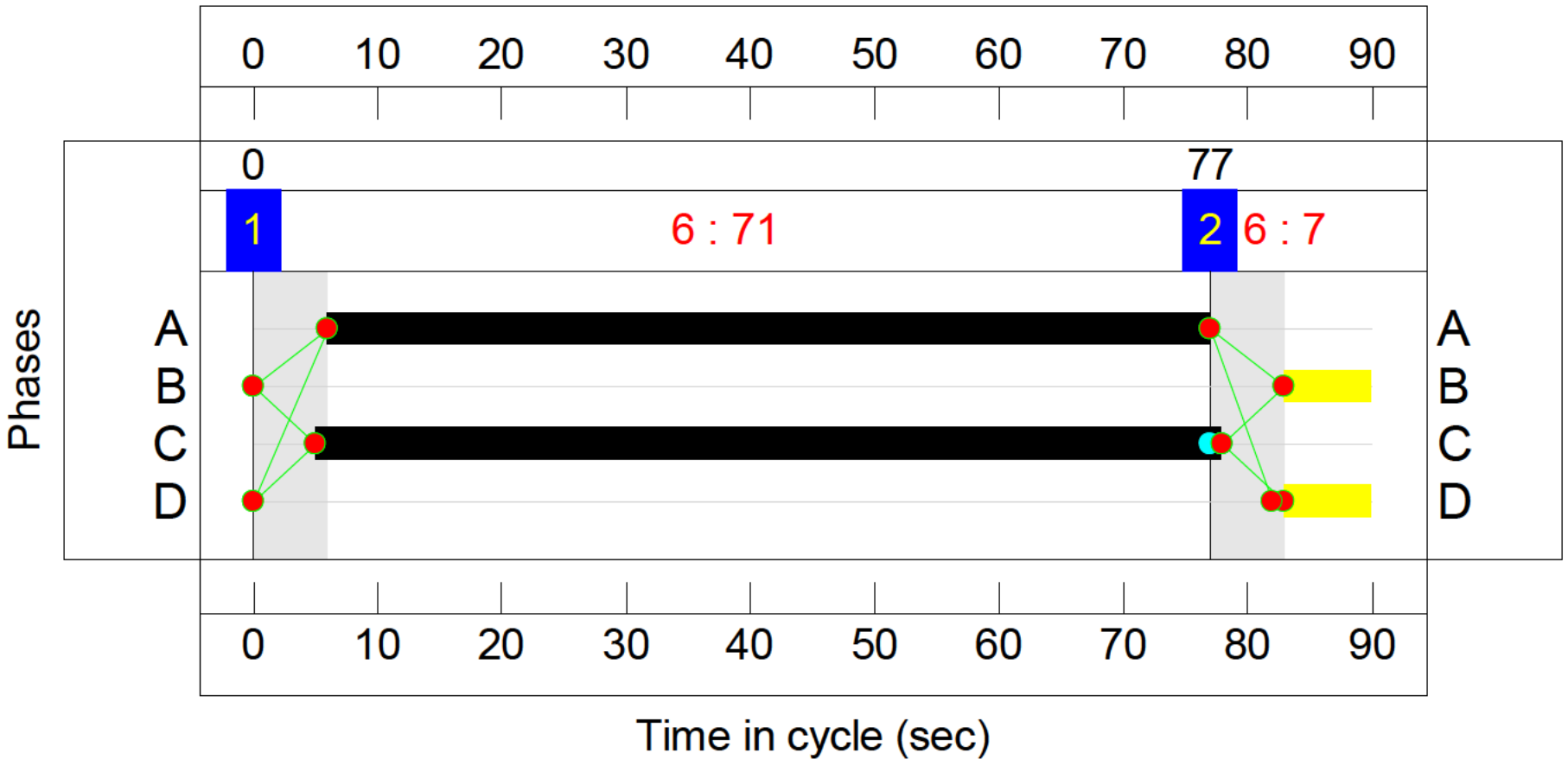
Signal Timings Diagram
Scenario 1: '2025 Do-Nothing - AM' (FG1: '2025 Do-Nothing - AM', Plan 1: 'Network Control Plan 1')



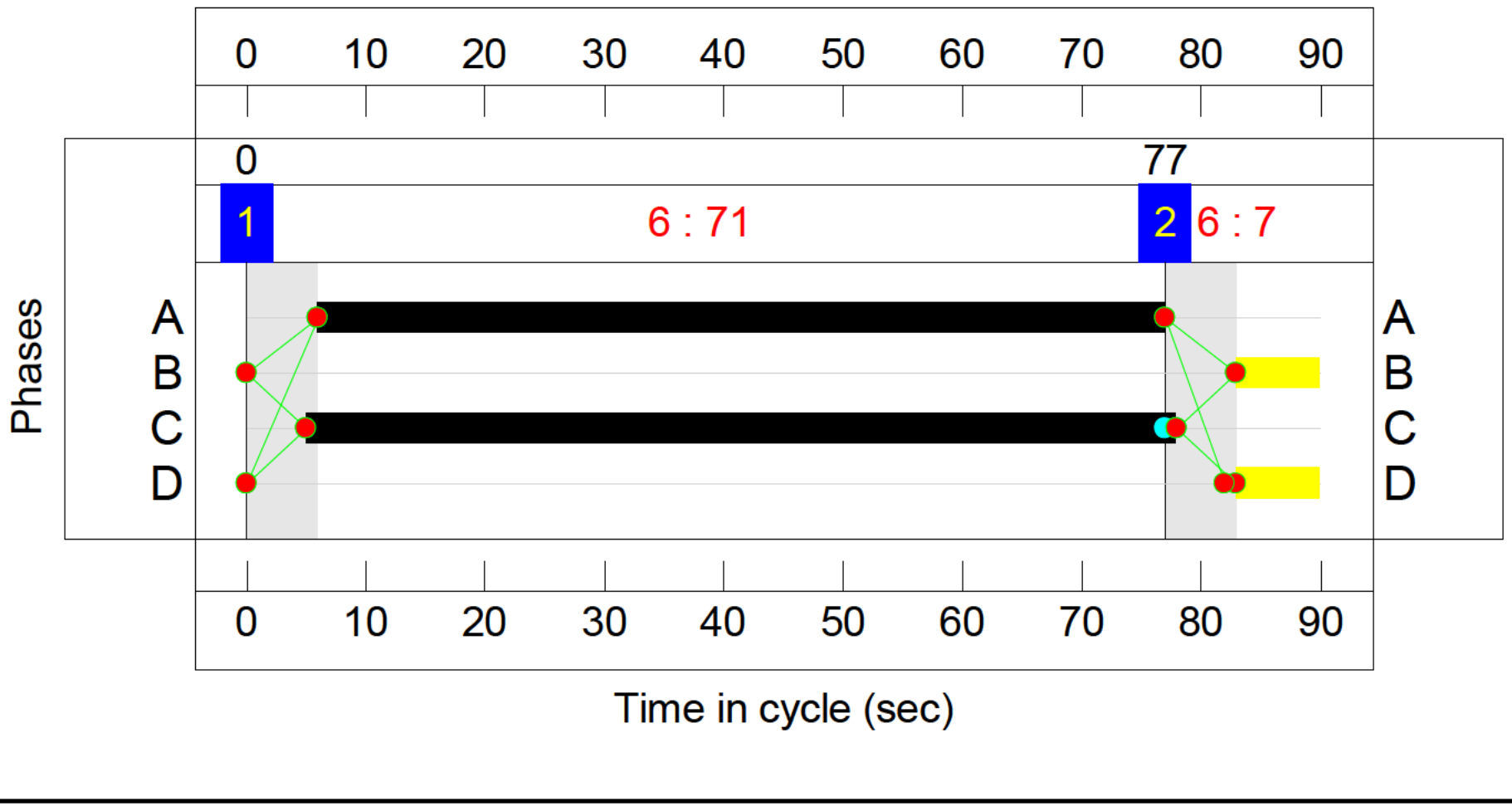
Scenario 2: '2025 Do-Nothing - PM' (FG2: '2025 Do Nothing - PM', Plan 1: 'Network Control Plan 1')



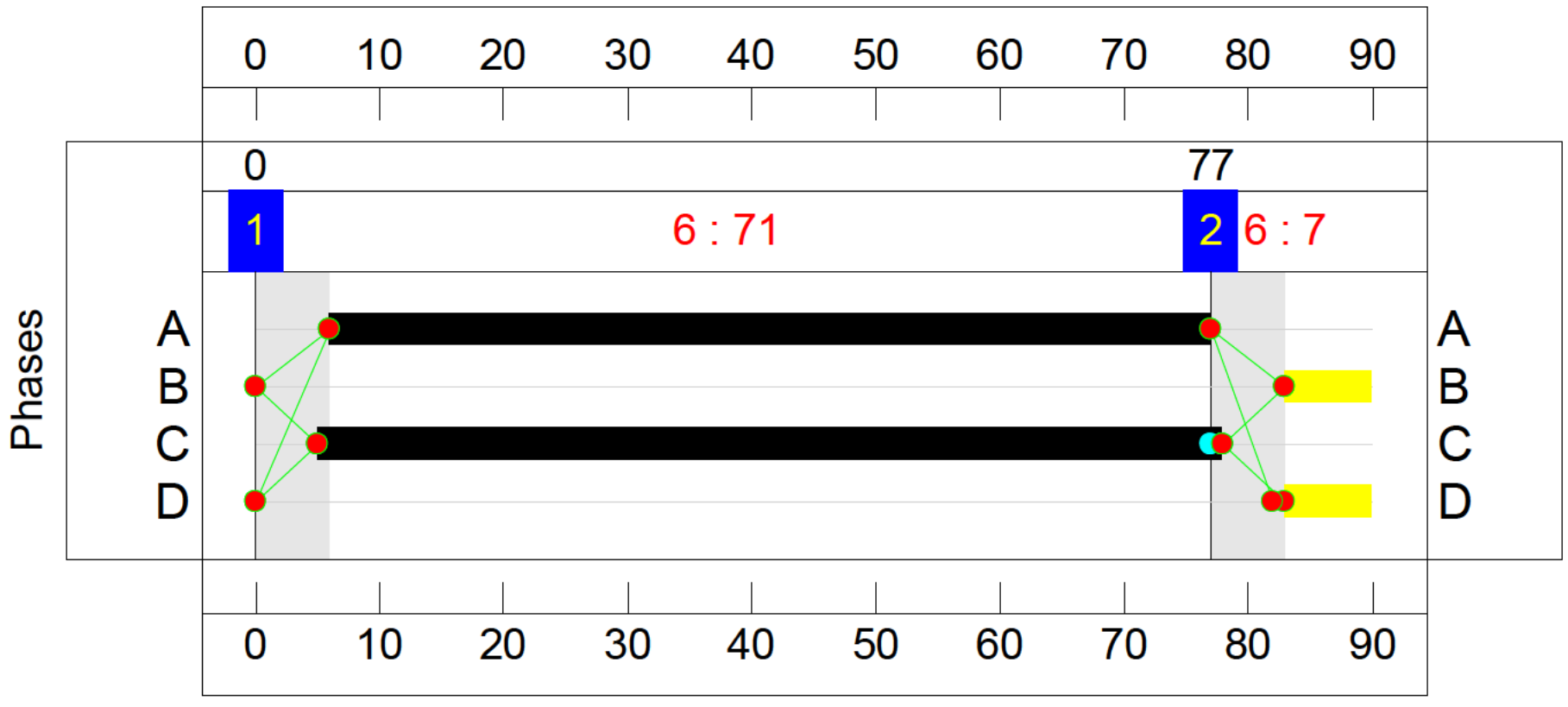
Scenario 3: '2025 Do-Something - AM' (FG3: '2025 Do-Something - AM', Plan 1: 'Network Control Plan 1')



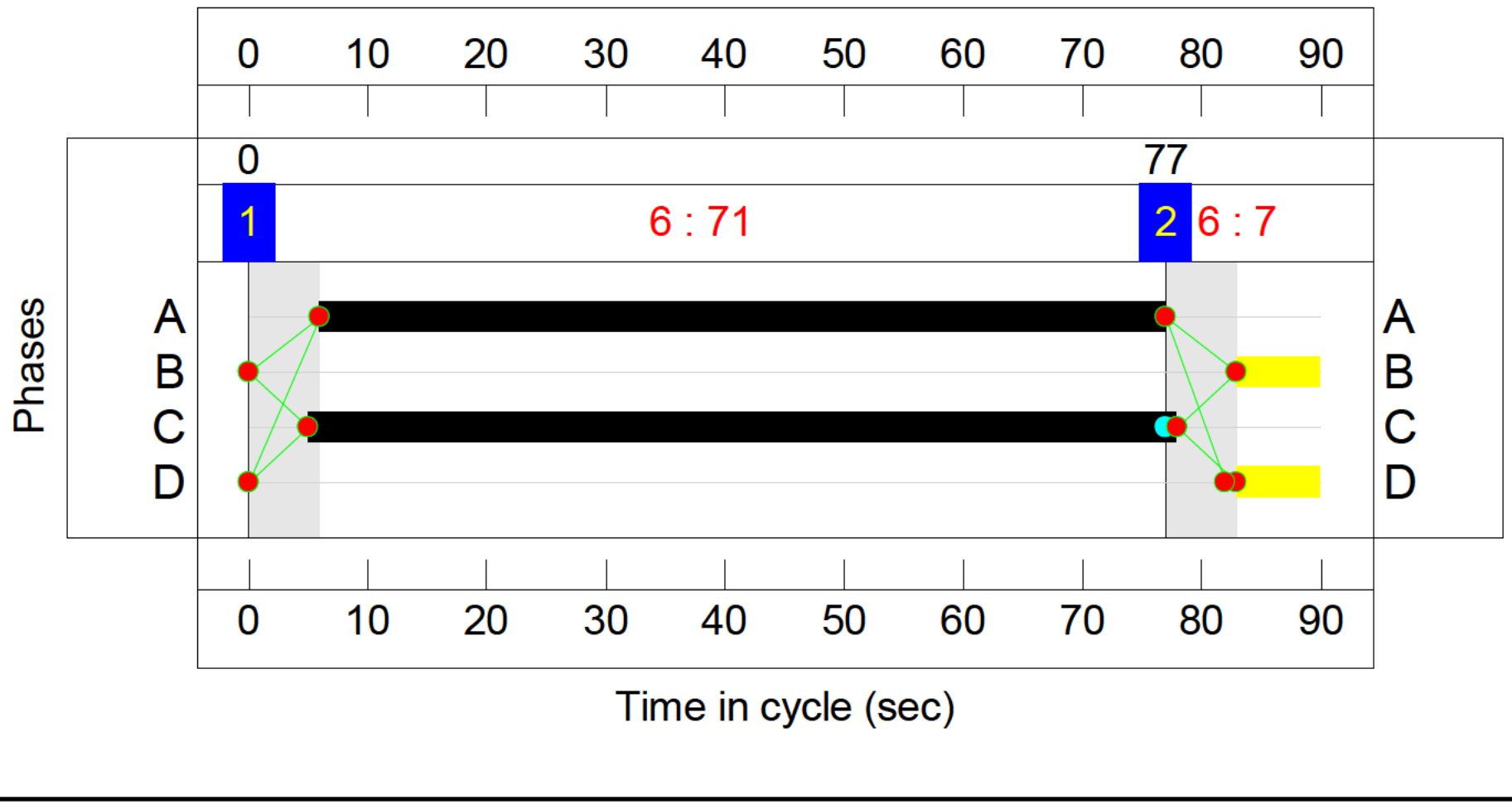
Scenario 4: '2025 Do-Something - PM' (FG4: '2025 Do-Something - PM', Plan 1: 'Network Control Plan 1')



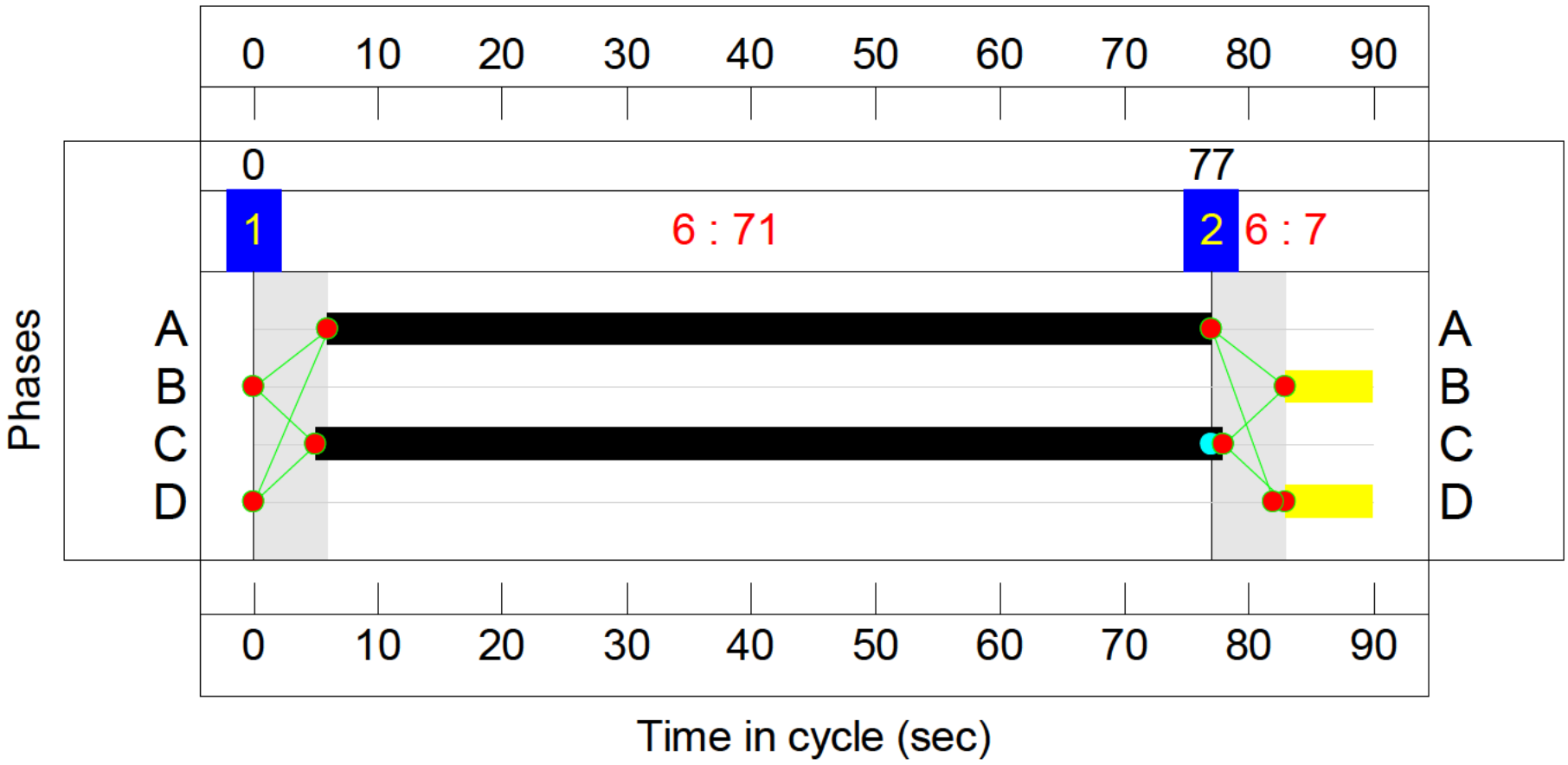
Scenario 5: '2030 Do-Nothing - AM' (FG5: '2030 Do-Nothing - AM', Plan 1: 'Network Control Plan 1')



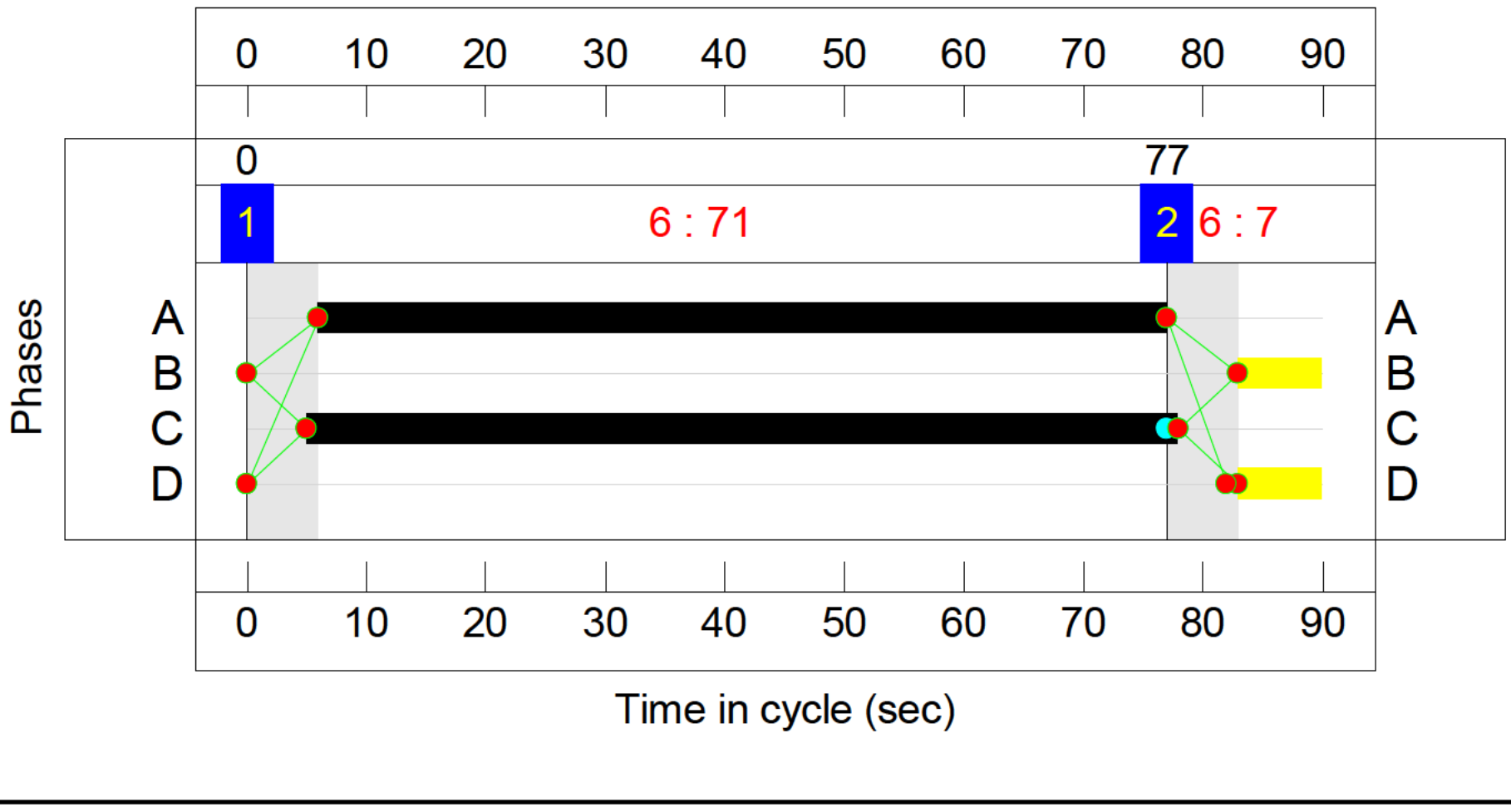
Scenario 6: '2030 Do-Nothing - PM' (FG6: '2030 Do-Nothing - PM', Plan 1: 'Network Control Plan 1')



Scenario 7: '2030 Do-Something - AM' (FG7: '2030 Do-Something - AM', Plan 1: 'Network Control Plan 1')



Scenario 8: '2030 Do-Something - PM' (FG8: '2030 Do-Something - PM', Plan 1: 'Network Control Plan 1')



Network Results

Scenario 1: '2025 Do-Nothing - AM' (FG1: '2025 Do-Nothing - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**64.5%**	-	-
B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**64.5%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1137	Inf	Inf	Inf	0.0%	1137	1137
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	71	6	77	-	-	705	1971:1687	1971	1508+55	45.1 : 45.1%	705	705
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	26	Inf	Inf	Inf	0.0%	26	26
4/1	Site Access (SE) Right Left Ahead	O	N/A	N/A	B		1	7	83	0	-	-	63	1709	1709	133	47.4%	63	63
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	681	Inf	Inf	Inf	0.0%	681	681
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	73	5	78	-	-	1055	1979:1687	1979	1627+8	64.5 : 64.5%	1055	1055
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	28	Inf	Inf	Inf	0.0%	28	28
8/1	Site Access (NW) Left Ahead Right	O	N/A	N/A	D		1	7	83	0	-	-	49	1752	1752	156	31.5%	49	49

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 2)	**91**	**0**	**0**	**2.6**	**2.0**	**0.1**	**4.7**	**-**	**1045.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**64.5%**	**6.6**	**-**
B4267 Leckwith Road / Site Access (Option 2)	**91**	**0**	**0**	**2.6**	**2.0**	**0.1**	**4.7**	**-**	**1045.4**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**64.5%**	**6.6**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	25	0	0	0.6	0.4	0.0	1.0	5.1	234.5	0.3	3.1	5.4	0.4	5.8	-	0.00	45.1 : 45.1%	1.4	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	51	0	0	0.7	0.4	0.0	1.2	66.1	108.8	1.7	1.4	1.5	0.4	1.9	-	0.00	47.4%	1.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	0.9	0.9	0.0	1.8	6.1	656.4	0.6	4.1	9.9	0.9	10.8	-	0.00	64.5 : 64.5%	3.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	10	0	0	0.5	0.2	0.0	0.8	55.3	45.7	0.9	1.1	1.1	0.2	1.4	-	0.00	31.5%	0.8	-

C1 PRC for Signalled Lanes (%): 39.5 Total Delay for Signalled Lanes (pcuHr): 4.70 Cycle Time (s): 90
PRC Over All Lanes (%): 39.5 Total Delay Over All Lanes(pcuHr): 4.70

Scenario 2: '2025 Do-Nothing - PM' (FG2: '2025 Do Nothing - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**78.5%**	-	-
B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**78.5%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	640	Inf	Inf	Inf	0.0%	640	640
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	71	6	77	-	-	1227	1968:1687	1968	1523+39	78.5 : 78.5%	1227	1227
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	62	Inf	Inf	Inf	0.0%	62	62
4/1	Site Access (SE) Right Left Ahead	O	N/A	N/A	B		1	7	83	0	-	-	25	1709	1709	152	16.5%	25	25
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1157	Inf	Inf	Inf	0.0%	1157	1157
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	73	5	78	-	-	609	1976:1687	1976	1604+32	37.2 : 37.2%	609	609
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	39	Inf	Inf	Inf	0.0%	39	39
8/1	Site Access (NW) Left Ahead Right	O	N/A	N/A	D		1	7	83	0	-	-	37	1752	1752	156	23.8%	37	37

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 2)	**69**	**0**	**0**	**2.7**	**2.4**	**0.1**	**5.1**	**-**	**908.5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**78.5%**	**6.7**	**-**
B4267 Leckwith Road / Site Access (Option 2)	**69**	**0**	**0**	**2.7**	**2.4**	**0.1**	**5.1**	**-**	**908.5**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**78.5%**	**6.7**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	31	0	0	1.7	1.8	0.0	3.5	10.2	657.8	0.5	5.4	16.3	1.8	18.1	-	0.00	78.5 : 78.5%	4.7	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	20	0	0	0.3	0.1	0.0	0.4	53.4	41.9	1.7	0.6	0.6	0.1	0.7	-	0.00	16.5%	0.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	12	0	0	0.3	0.3	0.0	0.7	4.0	174.6	0.3	2.3	3.7	0.3	4.0	-	0.00	37.2 : 37.2%	1.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	6	0	0	0.4	0.2	0.0	0.5	53.3	34.1	0.9	0.8	0.9	0.2	1.0	-	0.00	23.8%	0.6	-

C1 PRC for Signalled Lanes (%): 14.6 Total Delay for Signalled Lanes (pcuHr): 5.09 Cycle Time (s): 90
PRC Over All Lanes (%): 14.6 Total Delay Over All Lanes(pcuHr): 5.09

Scenario 3: '2025 Do-Something - AM' (FG3: '2025 Do-Something - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**64.5%**	-	-
B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**64.5%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1130	Inf	Inf	Inf	0.0%	1130	1130
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	71	6	77	-	-	702	1972:1687	1972	1511+53	44.9 : 44.9%	702	702
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	24	Inf	Inf	Inf	0.0%	24	24
4/1	Site Access (SE) Right Left Ahead	O	N/A	N/A	B		1	7	83	0	-	-	57	1709	1709	133	42.9%	57	57
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	680	Inf	Inf	Inf	0.0%	680	680
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	73	5	78	-	-	1055	1979:1687	1979	1627+8	64.5 : 64.5%	1055	1055
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	27	Inf	Inf	Inf	0.0%	27	27
8/1	Site Access (NW) Left Ahead Right	O	N/A	N/A	D		1	7	83	0	-	-	47	1752	1752	156	30.2%	47	47

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 2)	**85**	**0**	**0**	**2.6**	**1.9**	**0.1**	**4.5**	-	**1031.3**	-	-	-	-	-	-	-	**64.5%**	**6.4**	-
B4267 Leckwith Road / Site Access (Option 2)	**85**	**0**	**0**	**2.6**	**1.9**	**0.1**	**4.5**	-	**1031.3**	-	-	-	-	-	-	-	**64.5%**	**6.4**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	24	0	0	0.6	0.4	0.0	1.0	5.1	233.4	0.3	3.0	5.4	0.4	5.8	-	0.00	44.9 : 44.9%	1.4	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	46	0	0	0.6	0.4	0.0	1.0	63.9	97.7	1.7	1.3	1.3	0.4	1.7	-	0.00	42.9%	1.2	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	0.9	0.9	0.0	1.8	6.1	656.4	0.6	4.1	9.9	0.9	10.8	-	0.00	64.5 : 64.5%	3.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	10	0	0	0.5	0.2	0.0	0.7	54.9	43.9	0.9	1.0	1.1	0.2	1.3	-	0.00	30.2%	0.8	-

C1 PRC for Signalled Lanes (%): 39.5 Total Delay for Signalled Lanes (pcuHr): 4.52 Cycle Time (s): 90
PRC Over All Lanes (%): 39.5 Total Delay Over All Lanes(pcuHr): 4.52

Scenario 4: '2025 Do-Something - PM' (FG4: '2025 Do-Something - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**77.9%**	-	-
B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**77.9%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	638	Inf	Inf	Inf	0.0%	638	638
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	71	6	77	-	-	1219	1969:1687	1969	1528+36	77.9 : 77.9%	1219	1219
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	57	Inf	Inf	Inf	0.0%	57	57
4/1	Site Access (SE) Right Left Ahead	O	N/A	N/A	B		1	7	83	0	-	-	22	1709	1709	152	14.5%	22	22
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1156	Inf	Inf	Inf	0.0%	1156	1156
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	73	5	78	-	-	609	1976:1687	1976	1604+32	37.2 : 37.2%	609	609
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	36	Inf	Inf	Inf	0.0%	36	36
8/1	Site Access (NW) Left Ahead Right	O	N/A	N/A	D		1	7	83	0	-	-	37	1752	1752	156	23.8%	37	37

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 2)	**64**	**0**	**0**	**2.6**	**2.3**	**0.1**	**5.0**	-	**899.4**	-	-	-	-	-	-	-	**77.9%**	**6.6**	-
B4267 Leckwith Road / Site Access (Option 2)	**64**	**0**	**0**	**2.6**	**2.3**	**0.1**	**5.0**	-	**899.4**	-	-	-	-	-	-	-	**77.9%**	**6.6**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	28	0	0	1.6	1.7	0.0	3.4	10.0	653.6	0.5	5.4	16.2	1.7	18.0	-	0.00	77.9 : 77.9%	4.6	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	18	0	0	0.2	0.1	0.0	0.3	53.1	37.1	1.7	0.5	0.5	0.1	0.6	-	0.00	14.5%	0.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	12	0	0	0.3	0.3	0.0	0.7	4.0	174.6	0.3	2.3	3.7	0.3	4.0	-	0.00	37.2 : 37.2%	1.0	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	6	0	0	0.4	0.2	0.0	0.5	53.3	34.1	0.9	0.8	0.9	0.2	1.0	-	0.00	23.8%	0.6	-

C1 PRC for Signalled Lanes (%): 15.5 Total Delay for Signalled Lanes (pcuHr): 4.95 Cycle Time (s): 90
PRC Over All Lanes (%): 15.5 Total Delay Over All Lanes(pcuHr): 4.95

Scenario 5: '2030 Do-Nothing - AM' (FG5: '2030 Do-Nothing - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**67.3%**	-	-
B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**67.3%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1182	Inf	Inf	Inf	0.0%	1182	1182
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	71	6	77	-	-	732	1971:1687	1971	1510+53	46.8 : 46.8%	732	732
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	26	Inf	Inf	Inf	0.0%	26	26
4/1	Site Access (SE) Right Left Ahead	O	N/A	N/A	B		1	7	83	0	-	-	63	1709	1709	133	47.4%	63	63
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	709	Inf	Inf	Inf	0.0%	709	709
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	73	5	78	-	-	1100	1979:1687	1979	1627+7	67.3 : 67.3%	1100	1100
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	29	Inf	Inf	Inf	0.0%	29	29
8/1	Site Access (NW) Left Ahead Right	O	N/A	N/A	D		1	7	83	0	-	-	51	1752	1752	156	32.7%	51	51

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 2)	**92**	**0**	**0**	**2.8**	**2.2**	**0.1**	**5.0**	-	**1126.2**	-	-	-	-	-	-	-	**67.3%**	**7.1**	-
B4267 Leckwith Road / Site Access (Option 2)	**92**	**0**	**0**	**2.8**	**2.2**	**0.1**	**5.0**	-	**1126.2**	-	-	-	-	-	-	-	**67.3%**	**7.1**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	25	0	0	0.6	0.4	0.0	1.1	5.3	248.8	0.3	3.2	5.8	0.4	6.3	-	0.00	46.8 : 46.8%	1.5	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	51	0	0	0.7	0.4	0.0	1.2	66.1	108.8	1.7	1.4	1.5	0.4	1.9	-	0.00	47.4%	1.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	1.0	1.0	0.0	2.0	6.5	721.0	0.7	4.3	10.6	1.0	11.7	-	0.00	67.3 : 67.3%	3.3	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	11	0	0	0.5	0.2	0.0	0.8	55.6	47.6	0.9	1.1	1.2	0.2	1.4	-	0.00	32.7%	0.9	-

C1 PRC for Signalled Lanes (%): 33.7 Total Delay for Signalled Lanes (pcuHr): 5.01 Cycle Time (s): 90
PRC Over All Lanes (%): 33.7 Total Delay Over All Lanes(pcuHr): 5.01

Scenario 6: '2030 Do-Nothing - PM' (FG6: '2030 Do-Nothing - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**81.6%**	-	-
B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**81.6%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	666	Inf	Inf	Inf	0.0%	666	666
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	71	6	77	-	-	1275	1968:1687	1968	1525+38	81.6 : 81.6%	1275	1275
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	62	Inf	Inf	Inf	0.0%	62	62
4/1	Site Access (SE) Right Left Ahead	O	N/A	N/A	B		1	7	83	0	-	-	25	1709	1709	152	16.5%	25	25
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1205	Inf	Inf	Inf	0.0%	1205	1205
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	73	5	78	-	-	635	1976:1687	1976	1605+31	38.8 : 38.8%	635	635
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	40	Inf	Inf	Inf	0.0%	40	40
8/1	Site Access (NW) Left Ahead Right	O	N/A	N/A	D		1	7	83	0	-	-	38	1752	1752	156	24.4%	38	38

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 2)	**69**	**0**	**0**	**2.9**	**2.8**	**0.1**	**5.7**	**-**	**1026.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**81.6%**	**7.6**	**-**
B4267 Leckwith Road / Site Access (Option 2)	**69**	**0**	**0**	**2.9**	**2.8**	**0.1**	**5.7**	**-**	**1026.0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**81.6%**	**7.6**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	31	0	0	1.9	2.2	0.0	4.1	11.4	751.4	0.6	5.6	18.4	2.2	20.5	-	0.00	81.6 : 81.6%	5.4	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	20	0	0	0.3	0.1	0.0	0.4	53.5	41.9	1.7	0.6	0.6	0.1	0.7	-	0.00	16.5%	0.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	12	0	0	0.4	0.3	0.1	0.7	4.2	197.6	0.3	2.4	4.0	0.3	4.3	-	0.00	38.8 : 38.8%	1.1	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	6	0	0	0.4	0.2	0.0	0.6	53.5	35.0	0.9	0.8	0.9	0.2	1.0	-	0.00	24.4%	0.6	-

C1 PRC for Signalled Lanes (%): 10.3 Total Delay for Signalled Lanes (pcuHr): 5.72 Cycle Time (s): 90
PRC Over All Lanes (%): 10.3 Total Delay Over All Lanes(pcuHr): 5.72

Scenario 7: '2030 Do-Something - AM' (FG7: '2030 Do-Something - AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**67.2%**	-	-
B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**67.2%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1174	Inf	Inf	Inf	0.0%	1174	1174
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	71	6	77	-	-	730	1972:1687	1972	1511+54	46.7 : 46.7%	730	730
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	24	Inf	Inf	Inf	0.0%	24	24
4/1	Site Access (SE) Right Left Ahead	O	N/A	N/A	B		1	7	83	0	-	-	57	1709	1709	133	42.9%	57	57
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	707	Inf	Inf	Inf	0.0%	707	707
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	73	5	78	-	-	1099	1979:1687	1979	1627+7	67.2 : 67.2%	1099	1099
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	28	Inf	Inf	Inf	0.0%	28	28
8/1	Site Access (NW) Left Ahead Right	O	N/A	N/A	D		1	7	83	0	-	-	47	1752	1752	156	30.2%	47	47

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 2)	**86**	**0**	**0**	**2.7**	**2.0**	**0.1**	**4.8**	-	**1102.1**	-	-	-	-	-	-	-	**67.2%**	**6.8**	-
B4267 Leckwith Road / Site Access (Option 2)	**86**	**0**	**0**	**2.7**	**2.0**	**0.1**	**4.8**	-	**1102.1**	-	-	-	-	-	-	-	**67.2%**	**6.8**	-
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	25	0	0	0.6	0.4	0.0	1.1	5.2	240.2	0.3	3.2	5.6	0.4	6.0	-	0.00	46.7 : 46.7%	1.5	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	46	0	0	0.6	0.4	0.0	1.0	63.9	97.7	1.7	1.3	1.3	0.4	1.7	-	0.00	42.9%	1.2	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	5	0	0	1.0	1.0	0.0	2.0	6.5	720.4	0.7	4.3	10.6	1.0	11.7	-	0.00	67.2 : 67.2%	3.3	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	10	0	0	0.5	0.2	0.0	0.7	54.9	43.9	0.9	1.0	1.1	0.2	1.3	-	0.00	30.2%	0.8	-

C1 PRC for Signalled Lanes (%): 33.9 Total Delay for Signalled Lanes (pcuHr): 4.79 Cycle Time (s): 90
PRC Over All Lanes (%): 33.9 Total Delay Over All Lanes(pcuHr): 4.79

Scenario 8: '2030 Do-Something - PM' (FG8: '2030 Do-Something - PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Start Green (s)	End Green (s)	Arrow Green (s)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Max Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)
Network: B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**81.1%**	-	-
B4267 Leckwith Road / Site Access (Option 2)	-	-	**N/A**	-	-		-	-	-	-	-	-	-	-	-	-	**81.1%**	-	-
1/1	B4267 (NE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	663	Inf	Inf	Inf	0.0%	663	663
2/1+2/2	B4267 (NE) Left Ahead Right	U+O	N/A	N/A	A		1	71	6	77	-	-	1268	1969:1687	1969	1528+36	81.1 : 81.1%	1268	1268
3/1	Site Access (SE) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	56	Inf	Inf	Inf	0.0%	56	56
4/1	Site Access (SE) Right Left Ahead	O	N/A	N/A	B		1	7	83	0	-	-	22	1709	1709	152	14.5%	22	22
5/1	B4267 (SW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	1204	Inf	Inf	Inf	0.0%	1204	1204
6/1+6/2	B4267 (SW) Ahead Right Left	U+O	N/A	N/A	C		1	73	5	78	-	-	633	1976:1687	1976	1608+28	38.7 : 38.7%	633	633
7/1	Site Access (NW) - Exit	U	N/A	N/A	-		-	-	-	-	-	-	37	Inf	Inf	Inf	0.0%	37	37
8/1	Site Access (NW) Left Ahead Right	O	N/A	N/A	D		1	7	83	0	-	-	37	1752	1752	156	23.8%	37	37

Item	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Uniform Stops (stops)	Av. Uniform Stops Per PCU (stops/pcu)	Back of Uniform Q At End of Red(pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	De-sliver Threshold (pcu)	Average Excess Queue (pcu)	Weighted Deg Sat (%)	Weighted Total Delay (pcuHr)	Ignoring Random Delay ?
Network: B4267 Leckwith Road / Site Access (Option 2)	**64**	**0**	**0**	**2.8**	**2.7**	**0.1**	**5.5**	**-**	**1000.6**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**81.1%**	**7.4**	**-**
B4267 Leckwith Road / Site Access (Option 2)	**64**	**0**	**0**	**2.8**	**2.7**	**0.1**	**5.5**	**-**	**1000.6**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**81.1%**	**7.4**	**-**
1/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
2/1+2/2	29	0	0	1.8	2.1	0.0	4.0	11.2	733.3	0.6	5.6	17.9	2.1	20.0	-	0.00	81.1 : 81.1%	5.3	-
3/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
4/1	18	0	0	0.2	0.1	0.0	0.3	53.1	37.1	1.7	0.5	0.5	0.1	0.6	-	0.00	14.5%	0.4	-
5/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
6/1+6/2	11	0	0	0.4	0.3	0.0	0.7	4.1	196.0	0.3	2.4	4.0	0.3	4.3	-	0.00	38.7 : 38.7%	1.1	-
7/1	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.00	0.0%	0.0	-
8/1	6	0	0	0.4	0.2	0.0	0.5	53.3	34.1	0.9	0.8	0.9	0.2	1.0	-	0.00	23.8%	0.6	-

C1 PRC for Signalled Lanes (%): 11.0 Total Delay for Signalled Lanes (pcuHr): 5.55 Cycle Time (s): 90
PRC Over All Lanes (%): 11.0 Total Delay Over All Lanes(pcuHr): 5.55