



LAND WEST OF TYE LANE, WALBERTON

HIGHWAYS RESPONSE NOTE

December 2020

David Wilson Homes

RESIDENTIAL DEVELOPMENT
LAND WEST OF TYE LANE
WALBERTON

HIGHWAYS RESPONSE NOTE

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1. INTRODUCTION

- 1.1 This Highways Response Note (HRN) has been prepared by Paul Basham Associates on behalf of David Wilson Homes to support an 'Outline application with all matters reserved, other than means of access, for the construction of up to 155no. dwellings' (application reference: WA/68/20/OUT) at land to the west of Tye Lane, Walberton. The site location is demonstrated in **Figure 1**, with the site layout included in **Appendix A**.

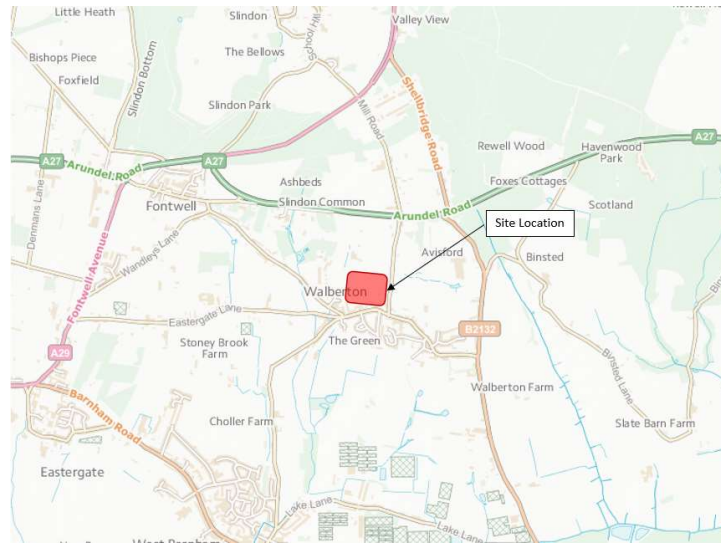


Figure 1: Site Location

- 1.2 The application was submitted in October 2020 for which a Transport Assessment (TA), Travel Plan (TP) and Walking, Cycling and Horse-Riding Assessment Review (WCHAR) were prepared and submitted by Paul Basham Associates.
- 1.3 Whilst the application is yet to be determined, this report aims to address the highways comments received from both West Sussex County Council (WSCC) and Highways England (HE) where appropriate and suitable. Specifically, this report will provide commentary and evidence on the following:
- Consideration of the preferred A27 Bypass route
 - Further information regarding the pedestrian access, flows anticipated to be generated by the site and improvements to pedestrian infrastructure being proposed by the proposed site and the Linden development opposite
 - Modelling of the A27 Fontwell Junctions to determine the proposed development's impact
 - Sensitivity distributions with Linden development vehicular access onto Tye Lane and closure of Tye Lane to the A27, and
 - Sensitivity modelling of the Tye Lane/The Street junction to include for both the proposed development and the Linden application.

2. PEDESTRIAN INFRASTRUCTURE

- 2.1 The TA submitted alongside the planning application detailed a separate pedestrian access between the south western corner of the site with The Street via Field Close. This pedestrian access was proposed as a separate pedestrian access because the restricted width along Tye Lane made it difficult to provide a footway adjacent to Tye Lane.
- 2.2 The highway comments received from WSCC detailed their preference for a footway to accompany the vehicular access along Tye Lane, continuing south and connecting into The Street.
- 2.3 As part of the application for vehicular access to Land to the East of Tye Lane submitted by Linden Homes, a vehicular access is proposed onto Tye Lane together with an accompanying footway which routes alongside the eastern edge of Tye Lane between the Linden Homes vehicular access and The Street. The configuration of this access and footway is shown at **Appendix B**. Sections of this footway narrow to less than 1m due to various pinch points and as a result WSCC have indicated that their preference would be for the footway to route along the western edge of Tye Lane as there is a wider highway verge and therefore less need to restrict the width of the footway.
- 2.4 Having considered WSCC's comments, a footway design has been prepared which routes along the western edge of Tye Lane. The proposed footway maintains a 1.5m footway between the Land West of Tye Lane vehicular access and The Street. This footway proposes two alternative options to connect into the footway accompanying the Linden Homes site, depending on whether they construct the consented pedestrian only access or the currently proposed vehicular access onto Tye Lane. The arrangement for this footway, together with the two connection options, is shown at **Appendix C**.
- 2.5 As can be seen from the drawing at **Appendix C**, the footway measures a consistent 1.5m along its entire length, between the vehicular access to the north and The Street to the south, connecting into the existing section of footway along Tye Lane to the southern extent. As a result, the carriageway width is restricted in places to between 4.8-5.0m. The carriageway width of Tye Lane is currently c. 5m so this narrowing only takes place in certain places and is considered appropriate given the current characteristics of Tye Lane.
- 2.6 The only anomaly to the above is where, due to restricted land availability, the carriageway is reduced to a width of 4.1m (still sufficient for 2 cars to pass according to Manual for Streets) and as a result the footway is reduced to 1.3m. This narrowing takes place over a distance of c.10m towards the south of Tye Lane and is considered necessary to provide a footway of acceptable width whilst maintaining a carriageway width suitable for two cars to pass.

3. A27 FONTWELL ROUNDABOUTS JUNCTION CAPACITY ASSESSMENTS

- 3.1 As part of the TA submitted to support the application, assessments were undertaken of both the A27 Fontwell East and A27 Fontwell West roundabouts. Given the quantum of development traffic anticipated to be placed through the junctions (between 25 and 43 vehicle movements), a percentage impact assessment was provided which demonstrated a maximum percentage impact of 1.04%. This was recorded in the 2020 morning peak scenario at the A27 Fontwell East roundabout.
- 3.2 The highway comments received from both WSCC and HE, however, have requested that junction capacity assessments are undertaken for both roundabouts to fully determine the likely impact of the proposed development on their operation. Discussions with WSCC have been undertaken to determine the model that is considered to be the most robust and 'up-to-date' in order for these assessments to be undertaken. The following scenarios are therefore those used within our assessment:
- 2031 + Local Plan + Mitigation + Linden Development
- 3.3 The models for the roundabouts have been re-created using the geometries set out within the outline application for Land East of Tye Lane (reference: WA/44/17/OUT). In order to determine the impact of the proposed development on the operation of the junctions, the results provided within the Land East of Tye Lane application have also been reprovided for reference.
- 3.4 It should be noted that these results are considered to be for the 'as existing' scenario, whereby vehicles associated with the proposed development can continue to travel northbound along Tye Lane and turn left onto the A27. A sensitivity assessment that considers the potential closure of Tye Lane is completed later within this HRN.

Fontwell East Roundabout

- 3.5 The A27 Arundel Road/A29 Farmile Road roundabout is located 2.6km west of the proposed development site and connects to the A27 (westbound) as well as providing the opportunity to complete a U-turn and continue eastbound along the A27. The A29 provides a route towards destinations such as Storrington and Pulborough.
- 3.6 It is anticipated that of the 68% of development traffic utilising this roundabout, 20% are likely to complete a U-turn to continue eastbound along the A27 towards destinations including Arundel and Brighton. 5% of development traffic is anticipated to utilise the A29 (NB) arm towards Pulborough, areas of Chichester District and the South Downs National Park. The remaining 43% of traffic is anticipated to continue on the A27 westbound to the A27/A29 Fontwell West roundabout.

- 3.7 For vehicles arriving to the site, the 20% of vehicles who completed the U-turn back along the A27 eastbound will return to the site via the Tye Lane/A27 junction. For both the 5% travelling back from the A29 (NB) and the 43% continuing along the A27 towards the A27/A29 Fontwell West roundabout, these have been distributed onto the A27/A29 Fontwell West roundabout and specifically the A29 Fontwell Avenue (SB) arm which connects to Eastergate Lane and subsequently back onto The Street.
- 3.8 The vehicle flows added to the junction associated with the proposed development are demonstrated in **Figure 2**, and these are as per the distributions presented as part of the live application and approved by WSCC.

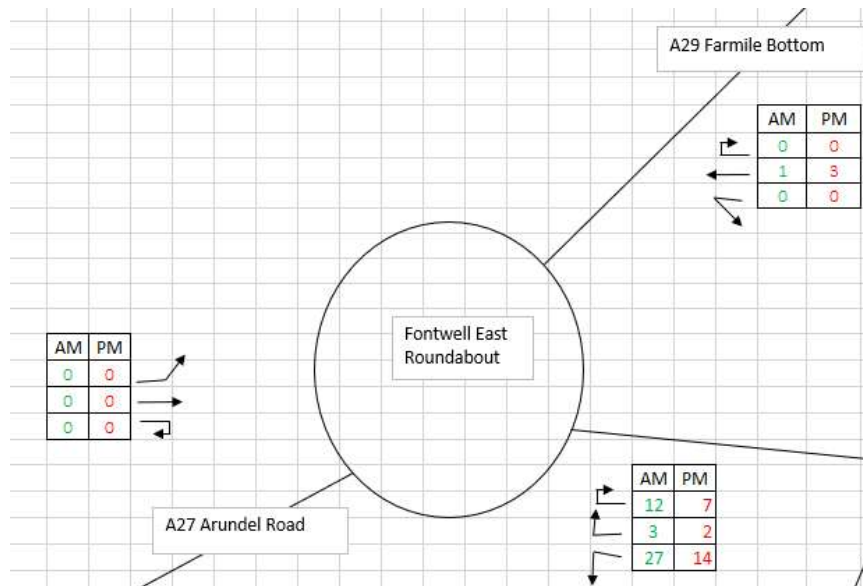


Figure 2: Development Flows on Fontwell East Roundabout

- 3.9 This junction has been assessed using LinSig, utilising the information provided within the i-Transport TA for the Linden Homes site to the East of Tye Lane. The results of the junction capacity assessment are presented in **Table 1**, with the full outputs included in **Appendix D**.

	AM Peak Period			PM Peak Period		
	DOS	Queue (vehicles)	Delay (s)	DOS	Queue (vehicles)	Delay (s)
2031 + Local Plan + Mitigation + Linden						
A27 W Ahead	82.1%	8	18	85.7%	9	17
A27 W Ahead	71.7%	6	20	73.0%	7	16
A29 Ahead	83.0%	6	18	84.6%	7	19
A27 E Ahead	83.9%	10	20	68.5%	6	19
A27 E Ahead	88.2%	11	20	72.4%	6	18

2031 + Local Plan + Mitigation + Linden + Proposed Development						
A27 W Ahead	82.1%	8	18	85.7%	9	17
A27 W Ahead	71.7%	6	20	73.0%	7	16
A29 Ahead	85.2%	7	20	85.8%	7	20
A27 E Ahead	86.7%	11	22	70.5%	6	19
A27 E Ahead	89.2%	12	21	73.3%	6	19

Table 1: Fontwell East Roundabout Junction Capacity Assessment

- 3.10 **Table 1** demonstrates that the impact of the proposed development is minimal, with the worst performing arm in the AM deteriorates from a DoS of 88.2% to 89.2% with the development and in the PM the worst performing arm deteriorates from 84.6% 85.8% with the development, both of which have an insignificant impact on the delay and queuing of vehicles.

Fontwell West Roundabout

- 3.11 The A27 Arundel Road/A29 Fontwell Avenue roundabout is located 2.7km west of the proposed development site and provides access to destinations including Fontwell, Eastergate and continuing along the A27 westbound towards Chichester and Hampshire.
- 3.12 It is anticipated that of the 43% of development traffic utilising this roundabout, all are likely to continue straight across and continue on the A27 westbound. No vehicular traffic is anticipated to travel southbound on the A29 from this roundabout given the connection between the site and Eastergate Lane.
- 3.13 For vehicles arriving to the site, the 43% of vehicles travelling from the A27 are anticipated to enter the roundabout and exit via the A29 Fontwell Avenue in order to complete their journey via Eastergate Lane and The Street. They are also joined by the 5% arriving from the A29 Farmile roundabout.
- 3.14 The vehicle flows added to the junction associated with the proposed development are demonstrated in **Figure 3**, and again these are as per the distributions presented as part of the live application and approved by WSCC.

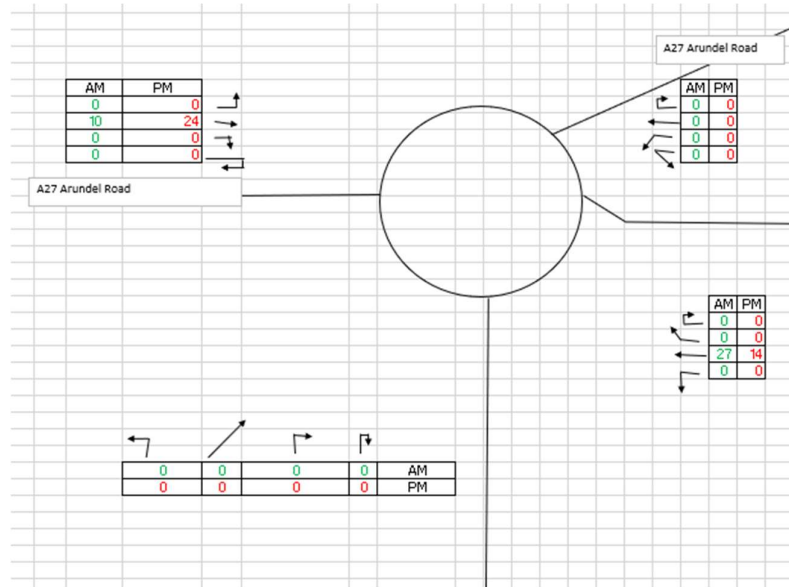


Figure 3: Development Flows on Fontwell West Roundabout

3.15 The results of the junction capacity assessment are presented in **Table 2**, with the full outputs included in **Appendix E**.

	AM Peak Period			PM Peak Period		
	DOS	Queue (vehicles)	Delay (s)	DOS	Queue (vehicles)	Delay (s)
2031 + Local Plan + Mitigation + Linden						
A27 W Ahead	89.7%	11	26	98.3%	28	44
A27 W Ahead	64.5%	5	20	116.9%	108	299
A27 E Ahead/Left	79.2%	9	16	102.3%	34	98
A27 E Ahead	79.2%	9	19	103.0%	29	125
Arundel Road	73.4%	4	19	72.4%	3	26
A29 Fontwell Avenue	97.0%	10	65	48.6%	3	11
2031 + Local Plan + Mitigation + Linden + Proposed Development						
A27 W Ahead	89.7%	11	26	98.3%	28	44
A27 W Ahead	66.0%	6	20	119.4%	120	330
A27 E Ahead/Left	80.7%	10	17	102.7%	36	102
A27 E Ahead	80.6%	10	20	104.1%	32	139
Arundel Road	73.4%	4	19	72.4%	3	26
A29 Fontwell Avenue	97.0%	10	65	48.6%	3	11

Table 2: Fontwell West Roundabout Junction Capacity Assessment

- 3.16 **Table 2** demonstrates that the impact of the proposed development is minimal, and that the junction is expected to operate above capacity with and without the proposed development in the PM period. In the AM period the worst performing arm deteriorates remains the same at 97.0% DoS, however other arms deteriorate slightly and therefore the impact is balanced across the junction. In the PM the worst performing arm, which is already over capacity, is impacted further with an increase in its DoS from 116.9% to 119.4%. This impact is only slight and its impact upon queueing vehicles is exaggerated due to already being over capacity at this point.
- 3.17 As mentioned above, this modelling has been undertaken to replicate the i-Transport modelling as appropriate. However, were the cycle times revised to c. 70 seconds (from 45 in the AM and 58 in the PM) and optimised appropriately there would be capacity improvements across the junction that would exceed the proposed development's impact and should provide an overall betterment to the junction.

4. A27 ARUNDEL BYPASS AND REVISED BASELINE FLOWS

- 4.1 This section of the report assesses the likely implications of the preferred route of the A27 Arundel Bypass, specifically upon the operation of Tye Lane and the junction with The Street.

A27 Arundel Bypass Preferred Route

- 4.2 Providing a strategic route across the south coast, the A27 forms a critical part of the road network, and as such, the A27 Arundel Bypass scheme was identified within the Government's Road Investment Strategy 2015 – 2020 to help tackle congestion and other issues in and around Arundel.
- 4.3 Following extensive research, assessment, consideration and discussions, in October 2020 HE announced their preferred route (5Bv1) which would have an impact upon the village of Walberton and the proposed development site. In addition, it would have significant impacts on the 'currently under construction' Land East of Tye Lane development, approved under application reference: WA/44/17/OUT).
- 4.4 The preferred route (which is demonstrated in **Figure 4**) will feature approximately 8km of dual two-lane carriageway to the south of the existing A27. The route will start at Crossbush and reconnect to the A27 near the A27/A29 Fontwell East roundabout. Whilst the proposal put forward by HE is not guaranteed, it provides an indication of the likely extent of the new road and therefore will likely include the following:
- A junction at Crossbush with access to and from the A27 in both directions:
 - A new viaduct spanning the River Arun and a bridge over the Arun Valley Railway:
 - A new bridge over Binsted Rife:
 - A new junction with the existing A27 at Tye Lane to the north of Walberton (with the A27 continuing via an underpass) enabling westbound access onto the A27 and eastbound access from the A27: and
 - The closure of Tye Lane south of the new route.



Figure 4: Extent of Preferred Route (Source: Highways England)

- 4.5 The preferred route will also result in a new overbridge being provided on Yapton Lane which would result in vehicles not being able to access the new bypass in this location, but instead continuing northbound and adjoining the existing A27.
- 4.6 As the proposed development is seeking to provide vehicular access onto Tye Lane, a sensitivity assessment has been undertaken to determine the likely impact of the potential closure of Tye Lane on the operation of other local junctions. This section also includes for the revised Linden Homes vehicular access to be provided onto Tye Lane because of the proposed bypass cutting through their existing access onto Yapton Lane.

Revised Baseline Flows on Tye Lane

- 4.7 It is important to note that Tye Lane serves as a key route within the village of Walberton at present given the direct access onto the A27. With the closure of Tye Lane, a number of vehicle movements would be displaced and therefore educated assumptions and routing of these has been undertaken using the information obtained from the turning counts and Automated Traffic Count (ATC) surveys that were included as part of the TA.
- 4.8 The revised baseline vehicle movements at each junction are discussed in the subsequent paragraphs, with the revised distribution diagrams included in **Appendix F**.

Tye Lane Movements

- 4.9 The ATC undertaken on Tye Lane in 2018, identified 80 AM vehicle movements (of which 28 were southbound and 52 were northbound) and 68 vehicle movements in the PM (of which 47 were southbound and 21 were northbound). These were factored up to represent the 2031 future year scenario from which junction models were run.
- 4.10 As Tye Lane is to be closed off because of the proposed bypass, a number of vehicle movements that were occurring and recorded along Tye Lane can be discounted and/or re-distributed on the local road network. Given that to the north of the proposed development is an industrial estate and a small number of dwellings, it is anticipated that a small number of vehicle movements would still occur both northbound and southbound past the proposed development even with the closure of Tye Lane to the A27.
- 4.11 With consideration given to the turning counts and movements at the Tye Lane/The Street junction and the subsequent flows past the proposed development site access, the following movements were retained on the network along Tye Lane.
- 5 AM departures and 8 PM departures (both SB movements on Tye Lane) retained to reflect the dwellings leaving Tye Lane in the morning and the industrial estate users leaving in the evening; and
 - 5 AM and 8 PM movements were retained as turning into Tye Lane from The Street to reflect those arriving to the industrial estate in the morning and those arriving home in the evening.
- 4.12 The revised 2031 baseline vehicle movements anticipated along Tye Lane outside the proposed site access are demonstrated in **Figure 5**.

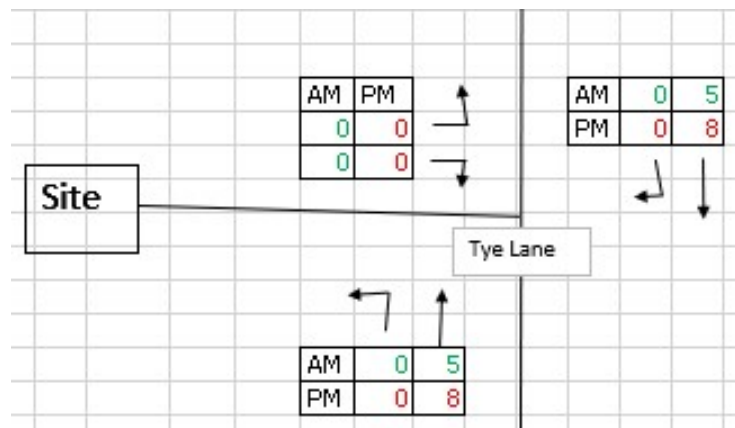


Figure 5: Revised Tye Lane Movements

Tye Lane/A27 Junction

- 4.13 At the Tye Lane/A27 junction, the 22 AM and 56 PM vehicle movements that were recorded as turning left in to Tye Lane have instead been re-distributed as continuing along the A27 to the Arundel Road left slip, left at the Arundel Road/West Walberton Road roundabout and subsequently left into Tye Lane at the Tye Lane/The Street junction.
- 4.14 The vehicle movements recorded as turning left out of Tye Lane onto the A27 (63 in the AM and 34 in the PM) are anticipated to be 'rat-runners' who utilised Tye Lane for access onto the A27. Therefore, these have been added onto the westbound movements along The Street, before continuing their journeys up West Walberton Lane. At the West Walberton Lane/Arundel Road roundabout, 75% of the vehicles (47 vehicles in the AM and 26 vehicles in the PM) are anticipated to travel to the Fontwell West roundabout and continue straight across to continue on the A27, whereas the remaining 25% (16 vehicles in the AM and 9 vehicles in the PM) are anticipated to turn right at the West Walberton Lane/Arundel Road roundabout, left onto the A27 and then distribute to either the A29 northbound or along the A27 eastbound.
- 4.15 The 63 AM and 34 PM vehicle movements discussed above do not need to be routed back into the site, given that there was no opportunity for them to turn right into Tye Lane from the A27 and therefore they are considered to already be included in the network flows.
- 4.16 The revised 2031 baseline vehicle movements anticipated at this junction are demonstrated in **Figure 6**.

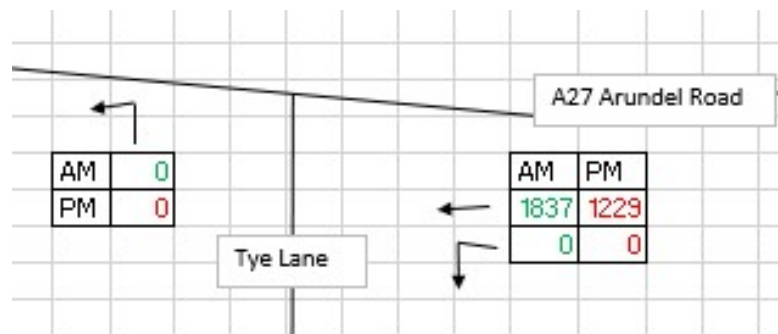


Figure 6: Revised Movements at the Tye Lane/A27 Junction

Tye Lane/The Street Junction

- 4.17 The recorded turning movements at the Tye Lane/The Street junction have been re-assessed to determine the likely number of vehicle movements anticipated through this junction once the closure of Tye Lane to the A27 is in place.

- 4.18 As aforementioned, Tye Lane would only serve the existing industrial estate and dwellings both located to the north of the proposed development site (before consideration is given to the proposed development and the possible Linden Homes development to the east as discussed later in the report).
- 4.19 It is anticipated that only 5 vehicle movements would occur both NB and SB along Tye Lane in the AM peak period, with 8 vehicle movements occurring both NB and SB in the PM peak period. Therefore, in addition to these movements, the 22 AM and 56 PM movements that were previously identified as turning left into Tye Lane from the A27 have been added to the 'left in' movement into Tye Lane from The Street – a very worst case scenario as these are almost certainly rat-runners rather than having Tye Lane as a destination. The additional 63 AM and 34 PM vehicle movements that were previously identified as turning 'left out' of Tye Lane onto the A27 have been added to the westbound movements along The Street.
- 4.20 The revised 2031 baseline vehicle movements anticipated at this junction are demonstrated in **Figure 7**.

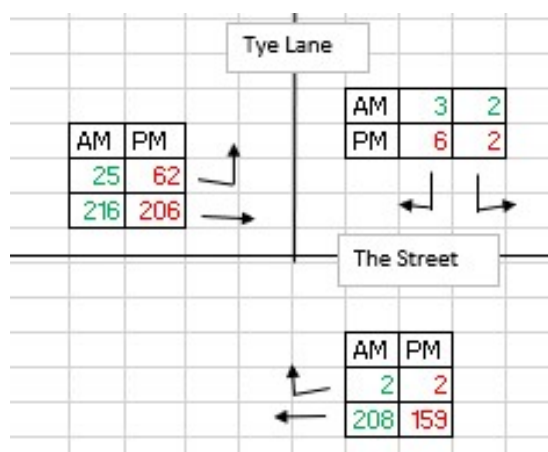


Figure 7: Revised Tye Lane/The Street Vehicle Movements

- 4.21 The revised vehicle movements along Tye Lane (and specifically at the Tye Lane/The Street junction) will be used later in this report to re-model the capacity of the Tye Lane/The Street junction with the addition of both the proposed development and the relocated Linden Homes developments' access.

5. SENSITIVITY ASSESSMENT - TRIP DISTRIBUTION AND ROUTE ASSIGNMENT

- 5.1 As part of the TA submitted to support the application, the distribution of vehicle trips to and from the site was assessed using data obtained from the 2011 'Travel to Work' Census Data for Arun 003. The data enabled us to determine the likely destinations and route residents of the proposed development would use and by which proportion.
- 5.2 The results of the initial assessment suggested that 68% of development traffic would have turned left out of the site and subsequently left onto the A27, with the remaining 32% turning right out of the site and continuing either eastbound (11%) or westbound (21%) on The Street. The route assignment submitted a part of the TA is provided in **Table 3** for reference.

Route Assignment	Percentage
North End Road	11%
Eastergate Lane	21%
A27 Westbound	43%
A27 Eastbound	20%
A29 SB	0%
A29 NB	5%
TOTAL	100%

Table 3: Route Assignment by Percentage (TA Submission)

- 5.3 Given that the preferred bypass route would involve the closure of Tye Lane and subsequently restricting access to the A27 to the north of the site, the distributions have been re-assessed, with all movements being required to turn right out and left into the site at the access. These have then been distributed appropriately onto the local road network. The revised distributions are set out within **Table 4**.

Destination	Percentage	Route Assignment
Chichester	34%	100% West Walberton Lane, A27 westbound
Arun 003: Eastergate/Westergate	14%	100% Eastergate Lane
Worthing	5%	100% A27 Eastbound
Arun 017: Bognor Regis	4%	50% North End Road, 50% Eastergate Lane
Arun 001: Arundel	4%	100% West Walberton Lane, A27 Eastbound
London Districts	3%	100% West Walberton Lane: 50% A29 NB, 50% A27 westbound
Arun 014: North Bognor Regis	3%	50% North End Road, 50% Eastergate Lane
Horsham	3%	100% West Walberton Lane: 50% A29, 50% A27 eastbound
Arun 006: Yapton	2%	100% North End Road
Portsmouth & IOW	2%	100% West Walberton Lane, A27 westbound
Arun 012: North Bersted	2%	100% Eastergate Lane
Havant	2%	100% West Walberton Lane, A27 westbound
Arun 004: Toddington	2%	100% North End Road
Arun 011: Littlehampton Central	2%	100% North End Road
Brighton and Hove	1%	100% West Walberton Lane, A27 Eastbound
Arun 009: Littlehampton East	1%	100% North End Road
Crawley	1%	100% West Walberton Lane: 50% A29, 50% A27 eastbound

Adur	1%	100% West Walberton Lane, A27 Eastbound
Arun 005: Angmering	1%	100% North End Road
Arun 016: Bognor Regis West	1%	50% North End Road, 50% Eastergate Lane
Arun 007: Rustington	1%	100% North End Road
East Hampshire	1%	100% West Walberton Lane, A27 westbound
Guildford	1%	100% West Walberton Lane: 50% A29, 50% A27 westbound
Fareham	1%	100% West Walberton Lane, A27 westbound
Other	8%	1% North End Road, 1% Eastergate Lane, 1% A29 NB, 3% A27 WB, 2% A27 EB
TOTAL	100%	N/A

Table 4: Revised Distribution Percentages

5.4 The revised route assignment percentages are provided in **Table 5**.

Direction from Tye Lane	Route Assignment		Percentage
Right from Tye Lane	Eastergate Lane	A29 SB	21%
Right from Tye Lane	West Walberton Lane	A27 Westbound	45%
		A27 Eastbound	10%
		A29 SB	0%
		A29 NB	5%
Left from Tye Lane	The Street	North End Road	19%
TOTAL	-	-	100%

Table 5: Revised Route Assignment

5.5 The revised distributions as set out within **Table 5** are still provided in line with those set out within the TA, albeit with the percentage utilising the A27 eastbound reduced and the percentage utilising North End Road increasing. This is due to the closure of Tye Lane resulting in a longer route to destinations such as Littlehampton and Rustington.

5.6 The preferred route of the A27 Arundel Bypass would have a significant impact on the access designed (and built) as part of the Linden Homes development on Land East of Tye Lane. As a result of the possibility of losing this access, a revised access application (reference: WA/93/20/PL) has been submitted in December 2020. As part of the revised application, distribution diagrams were presented to identify how the vehicles were anticipated to re-route from the new access onto Tye Lane and the wider network.

5.7 The results of the revised Linden Homes assessment were very similar to those presented in **Table 5**, with 83% anticipated to turn right out of Tye Lane onto The Street (in comparison to our suggested 81%) and 17% anticipated to turn left out onto The Street (in comparison to our 19%).

5.8 Whilst the results presented in **Table 5** are very similar to those suggested in the Linden application, WSCC highways officers have requested that the distributions are the same, and therefore for robustness (and as they have been agreed), the Linden distributions have been used.

- 5.9 The revised distribution of the development traffic from the site (which matches those submitted as part of the revised Linden Homes scheme under application reference: WA/93/20/PL) is summarised within the following paragraphs of the report and subsequently demonstrated in the distribution diagram included in **Appendix F**.

Site Access

- 5.10 The closure of Tye Lane to the north of the development site would result in all development traffic being required to turn right out of the site to continue southbound along Tye Lane. Similarly, the left turn manoeuvres from the A27 will no longer be achievable with vehicles being re-routed on the local road network as later discussed. Therefore, the distribution from the site access will be 100% turning right out and 100% turning left in.

Tye Lane/A27 Junction

- 5.11 As aforementioned, the A27 will no longer provided a junction with Tye Lane in this location, therefore inhibiting any left turn manoeuvres out of Tye Lane or left turn manoeuvres into Tye Lane.
- 5.12 Given that the 13% of vehicles associated with the development site who are anticipated to travel eastbound along the A27 towards destinations such as Arundel and Brighton, can no longer turn left into Tye Lane upon their return, they have been placed on the Yapton Lane southbound route. Vehicles are then anticipated to travel westbound along The Street and right into Tye Lane at the junction with The Street.

Tye Lane/The Street Junction

- 5.13 It is anticipated that of the 100% of development traffic departing the site, 83% will turn right onto The Street with the remaining 17% turning left. Given that no vehicles can turn right into the site from the north, all arrivals will be from the south and subsequently through the Tye Lane/The Street junction. As such, 69% of arrivals will be left into Tye Lane, with the remaining 31% turning right in.

The Street/West Walberton Lane Junction

- 5.14 The West Walberton Lane/The Street junction was not assessed in detail as part of the original TA given that only 21% of development traffic was to pass through it associated with vehicles traveling along Eastergate Lane. However, as the A27 would no longer be accessible to the north of the site, all vehicles wanting to travel northbound (to head either eastbound or westbound along the A27 or northbound on the A29) would be required to use West Walberton Lane.

5.15 Therefore, at this junction, it is anticipated that 56% of vehicles will travel northbound and 43% will travel southbound.

5.16 The remaining 26% who were anticipated to turn right out of Tye Lane onto The Street are anticipated to continue along The Street and utilise either Barnham Lane or Eastergate Lane.

West Walberton Lane/ Arundel Road Roundabout

5.17 Of the 56% travelling north on West Walberton Lane, 13% is turn right at the roundabout with Arundel Road and continue onto the A27 for access to the A27 Fontwell East roundabout. The remaining 43% is anticipated to turn left at the roundabout to continue along Arundel Road towards the A27 Fontwell West roundabout.

5.18 43% of vehicles are anticipated to travel through this roundabout and subsequently southbound on West Walberton Lane. This 43% are the vehicles arriving from the A27 eastbound who would travel straight across the Fontwell West roundabout and onto Arundel Road. The 13% who passed through this roundabout for site departures are routed back into the site via Yapton Lane as previously discussed and in accordance with the Linden Homes distributions.

A27/A29 Farmile Bottom Roundabout (Fontwell East Roundabout)

5.19 The distributions suggest that 13% of development traffic would utilise the A27 Fontwell East roundabout. As part of the original TA prepared by Paul Basham Associates, 15% of development traffic was anticipated to utilise this roundabout, of which 5% was anticipated to travel northbound along the A29, with the remaining 10% completing a U-turn and travelling eastbound along the A27.

5.20 However, the distributions set out by the revised Linden application (reference: WA/93/20/PL) suggest that the 13% utilising the Fontwell East roundabout would all travel eastbound along the A27 towards destinations including Brighton and East Sussex, with no vehicles anticipated to travel northbound along the A29. As such, our revised distribution diagram accords with those submitted through the Linden scheme. These vehicles would route back to the site via Yapton Lane.

A27/A29 Fontwell Avenue Roundabout (Fontwell West Roundabout)

5.21 As identified, it is anticipated that 43% of development departures and arrivals would use the A27 Fontwell West roundabout, arriving and departing via the Arundel Road arm. All vehicles would continue straight across the roundabout and utilise the A27 (westbound).

The Street/Yapton Lane/North End Road Roundabout

- 5.22 17% of vehicles departing the site are anticipated to travel eastbound along The Street and turn right at the 'The' Street/Yapton Lane/North End Road roundabout and continue south along Yapton Lane. For those arriving back to the site, all 17% of vehicles would turn left at the roundabout (and be joined by the 13% returning via Yapton Lane) and back onto The Street.



6. SENSITIVITY ASSESSMENT – TYE LANE/THE STREET JUNCTION CAPACITY ASSESSMENT

- 6.1 As part of the original TA submitted to support the application, junction capacity assessments of several local junctions were undertaken. Whilst the A27 roundabouts have been assessed earlier in this report as if the network were to remain as existing to determine the impact of the proposed development, a sensitivity assessment on the operation of the Tye Lane/The Street junction has been assessed, given the impact of the preferred Bypass route in the area.
- 6.2 The works completed by HE to date do not provide a comprehensive and complete assessment of the impact of the preferred bypass route on the operation of all the local junctions in and around Walberton, particularly in relation to how vehicle movements who would have previously travelled NB on Yapton Lane and onto the A27 will now do so. It is anticipated that these vehicles would likely route through the village, but with no real information to assess this, we can only base our assessment off the flows and data we do have.
- 6.3 Therefore, the Tye Lane/The Street junction model has been re-run to include for the revised 2031 flows, the inclusion of the Linden Homes revised access onto Tye Lane and the proposed development.
- 6.4 When this junction was modelled as part of the original TA, the Linden development was for 175 dwellings. Since then, an application has been submitted to increase the number of units on their site by 30, taking the total to 205 dwellings (through application WA/59/20/PL), and with the fall-back access position onto Tye Lane (application reference: WA/93/20/PL). Whilst the application for the additional units is yet to be determined, for robustness, this uplift in vehicle flows has been applied as part of the sensitivity test and distributed onto the network as per the percentages set out in **Appendix F**.
- 6.5 The junction modelling for the Tye Lane/The Street has therefore been re-run for the following scenarios:
- 2031 Baseline:
 - 2031 Baseline + Committed Developments (includes 205 dwellings at Land East of Tye Lane):
and
 - 2031 Baseline + Committed Developments + Proposed Development
- 6.6 The results of the junction modelling assessment are summarised in **Table 6**, with the full outputs included in **Appendix G**.

Arm	AM Peak Period			PM Peak Period		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
2031 Baseline						
The Street (EB)	-	-	-	-	-	-
Tye Lane	0.0	9.29	0.01	0.0	9.73	0.02
The Street (WB)	0.0	5.68	0.01	0.0	5.95	0.00
2031 Baseline + Committed Development						
The Street (EB)	-	-	-	-	-	-
Tye Lane	0.4	13.60	0.27	0.2	11.95	0.16
The Street (WB)	0.0	5.79	0.03	0.1	6.29	0.06
2031 Baseline + Committed Development + Proposed Development						
The Street (EB)	-	-	-	-	-	-
Tye Lane	0.8	18.82	0.46	0.4	14.06	0.27
The Street (WB)	0.1	5.88	0.05	0.2	6.72	0.11

Table 6: Revised Tye Lane/The Street Modelling

- 6.7 **Table 6** demonstrates that the Tye Lane/ The Street junction has a maximum RFC of 0.46, well below the recognised threshold of 0.85, therefore indicating that the operation of the junction will be within its capacity. This translates into queues of less than 1 vehicle and delays of under 20 seconds further illustrating the junction will operate efficiently even with the closure of Tye Lane, the addition of the Linden Homes scheme and the addition of the proposed development.
- 6.8 The results presented in **Table 6** are broadly in line with those submitted as part of the revised Linden Homes application (reference: WA/93/20/PL) which provided a maximum RFC of 0.30 in the '2031 baseline + Committed Development + Development' AM scenario on Tye Lane and 0.25 in the PM scenario.
- 6.9 It is important to note that, whilst the results presented within this report are broadly in keeping with those submitted as part of application WA/93/20/PL, it is the responsibility of this application to demonstrate the impact of the development on the local road network (with due consideration to the potential A27 realignment) and not to assess the implications of the A27 realignment on Walberton Village as a whole.

7. SUMMARY AND CONCLUSIONS

- 7.1 This Highways Response Note has been prepared by Paul Basham Associates on behalf of David Wilson Homes to support an *'Outline application with all matters reserved, other than means of access, for the construction of up to 155no. dwellings'* (application reference: WA/68/20/OUT) at land to the west of Tye Lane, Walberton.
- 7.2 This report has been written in order to address the highways comments received from both West Sussex County Council and Highways England where appropriate and suitable.
- 7.3 As requested by WSCC a pedestrian footway link has been provided alongside the western edge of Tye Lane. This footway measures 1.5m between the proposed vehicular access to lane west of Tye Lane and The Street, connecting into the existing footway at the south of Tye Lane. Two points of connection to the Linden Homes development to the East of Tye Lane have been proposed depending on whether they construct the consented pedestrian only access or the proposed vehicular access onto Tye Lane
- 7.4 A modelling assessment of the development impact on both the A27 Fontwell West and A27 Fontwell East roundabouts has demonstrated that the impact is negligible (unlikely to be distinguishable amongst daily fluctuations on these heavily-trafficked routes), and certainly not severe to reference NPPF terminology.
- 7.5 Following extensive research, assessment, consideration and discussions, in October 2020, HE announced their preferred route for the A27 Arundel Bypass scheme (5Bv1) which would have an impact upon the village of Walberton and the proposed development site. In addition, it would have significant impacts on the 'currently under construction' Land East of Tye Lane development, approved under application reference: WA/44/17/OUT). As such, assessments on the implications that this may cause on the area and in particular Tye Lane and its junction with The Street have been undertaken.
- 7.6 The recorded 2018 vehicle flows along Tye Lane in addition to the turning count movements recorded at the Tye Lane/The Street junction have been reassessed and re-distributed onto the local road network to take into account the closure of Tye Lane to the north of the proposed development site. This has included taking vehicles off of Tye Lane and placing them onto different arms at nearby junctions, whilst ensuring the flows are included at each relevant junction on the network.



- 7.7 In addition to the revision of the baseline flows, further assessment into the likely vehicular distribution of the proposed development sites' traffic has been provided. The revised distributions have been provided in accordance with those set out within the revised Linden Homes access application (reference: WA/93/20/PL) which indicate an 83%/17% split right and left respectively for departures at the Tye Lane/The Street junction, and a 69%/31% split for those coming left and right into Tye Lane respectively.
- 7.8 In order to assess the capacity and capability of the Tye Lane/The Street junction to accommodate the closure of Tye Lane, the proposed development and the addition of 205 dwellings on land east of Tye Lane, a revised junction capacity model was undertaken, using the geometries set out within the original assessment completed as part of the Transport Assessment.
- 7.9 The results of the assessment indicate that there are no capacity concerns in relation to the operation of the junction should the bypass be provided and the implications it would cause to the local area. Whilst the results presented within this report are broadly in keeping with those submitted as part of the revised Linden Homes access application, the full impact of the closure of the Bypass on this junction cannot be determined given a lack of information in the public realm by Highways England, specifically relating to the distribution of other vehicles in the village.
- 7.10 The information provided within this report has aimed to address the comments raised by WSCC and HE and we therefore encourage these highway authorities to look favourably upon this development in relation to highways.

Appendix A





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Rev	Description
P1	Preliminary Issue
P2	Key amended
P3	Redline amended

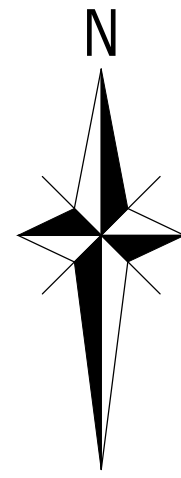
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10.08.20	Cl/dr	--/--
11.09.20	Cl/kn	
15.09.20	Cl/kn	

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Drawing	Concept Masterplan - 01		
Client	DAVID WILSON HOMES		
Job no.	BARR190813	Date	10.08.20
Dwg no.	CMP-01	Rev.	P3
Author	Cl/dr	Checked	-/-
Status	PRELIMINARY		Scale 1:1000@A1
		Office	Romsey
Client ref.	-		



Appendix B





VIEWPORT 1 - PROPOSED RESIDENTIAL ACCESS AT TYE LANE

VIEWPORT 4 - PROPOSED EMERGENCY ACCESS AT AVISFOD PARK ROAD

NOTES:

1. BASED ON TOPOGRAPHICAL SURVEY PREPARED BY K.A.RYLANCE LIMITED FOR VISTRY HOMES LIMITED, NOVEMBER 2020.

FOR INFORMATION ONLY

A	RED LINE BOUNDARY AMENDED	KI	KI	KM	01.12.20
Rev	Description	Drm	Chk	App	Date

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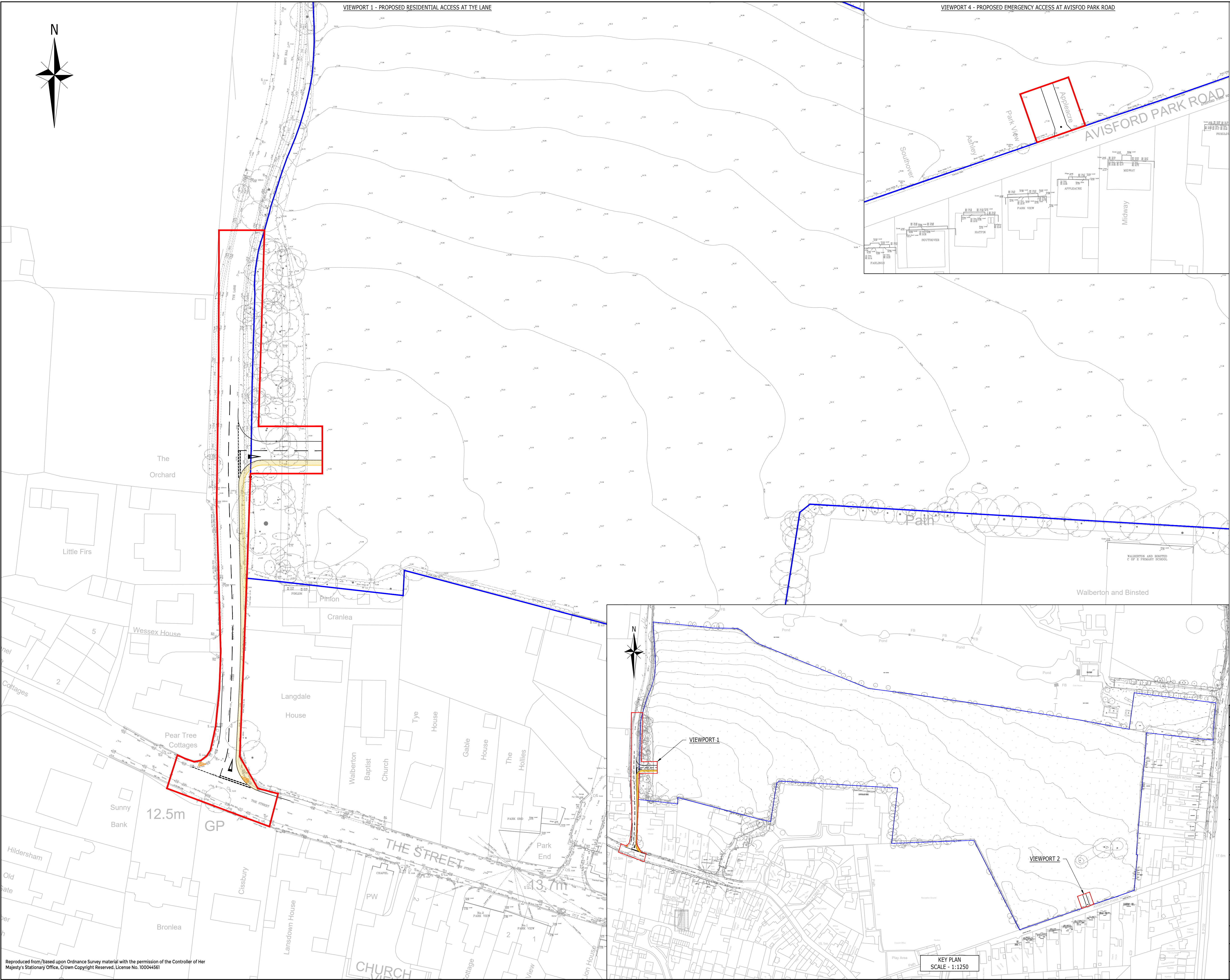

SSIP

Client
VISTRY SOUTH EAST

Project Title:
LAND EAST OF TYE LANE, WALBERTON

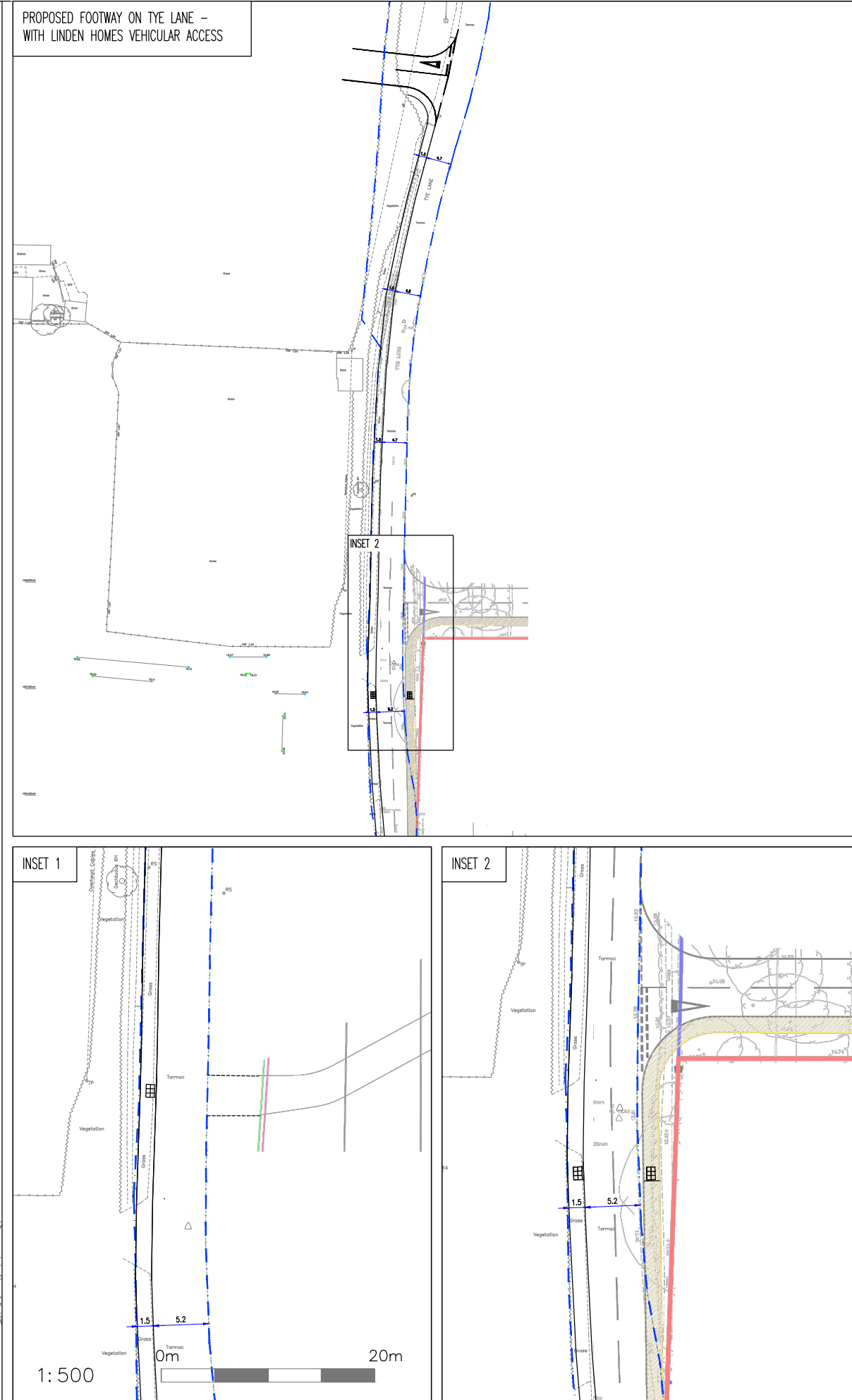
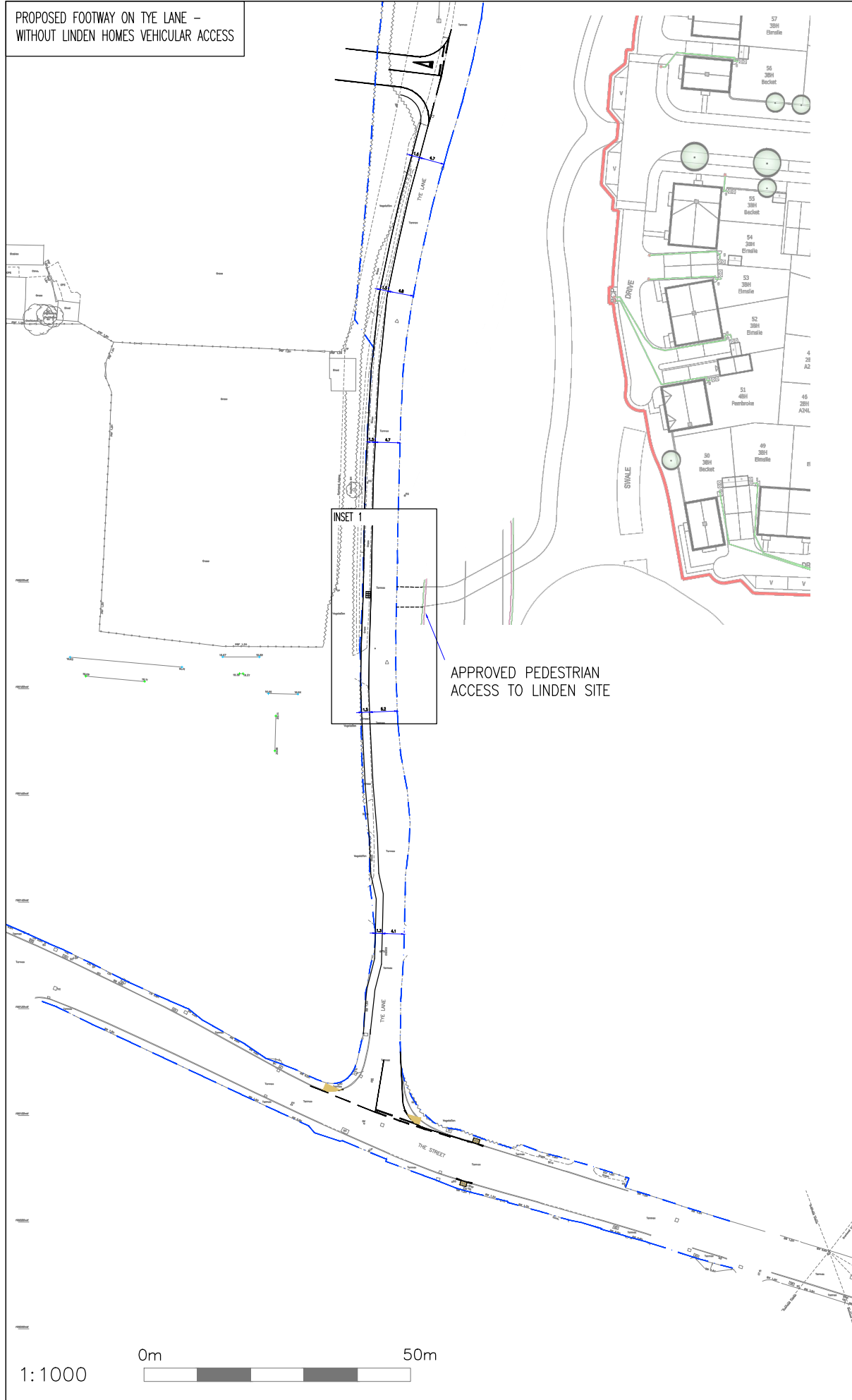
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PROPOSED ALTERNATIVE ACCESS

A1 Scale	Date	Designed by
1:500	DEC 2020	KI
Drawn by	Checked by	Approved by
KI	KI	KM
Drawing Number	183248-003	
		Rev A



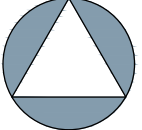
Appendix C





GENERAL NOTES

- THIS DRAWING IS INTENDED TO BE VIEWED IN COMBINATION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
- ANY VARIATIONS OR DISCREPANCIES BETWEEN THESE DRAWINGS IN TERMS OF DIMENSIONS OR DETAILS SHOULD BE DRAWN TO THE ATTENTION OF THE ARCHITECT AND/OR THE ENGINEER FOR CLARIFICATION.
- PAUL BASHAM ASSOCIATES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES – THIS MUST BE TREATED AS INDICATIVE ONLY.
- ALL DIMENSIONS AND LEVELS ARE IN METRES. DO NOT SCALE THIS DRAWING, PRINT, PLOT OR DISK.
- THIS DRAWING SHOULD ONLY BE USED FOR CONSTRUCTION IF THE PROJECT PHASE IN THE TITLE FRAME BELOW IS SHOWN AS "CONSTRUCTION". PAUL BASHAM ASSOCIATES TAKE NO RESPONSIBILITY FOR CONSTRUCTION WORKS UNDERTAKEN TO DRAWINGS WHICH ARE NOT MARKED UNDER THIS PHASE.



NORTH

Rev	Description	Date	By	Chkd
-	-	---	--	--

Project Name	Title		Client		Checked By	Checked Date	Scale	
LAND WEST OF TYE LANE, WALBERTON	POTENTIAL FOOTWAY LINK ON TYE LANE		DAVID WILSON HOMES		MS	17.12.20	SEE INSETS	
Project Phase	Paul Basham Associates Ltd Suite 4, Hitching Court, Blacklands Way, Abingdon Business Park, Abingdon, OX14 1RG 01235 425460 info@paulbashamassociates.com www.paulbashamassociates.com		WHERE QUALITY LIVES		Drawn By	Drawn Date	Client Drawing No.	PBA Drawing No.
PRELIMINARY					THP	17.12.20	-	041.0071.006
							Revision	(AT A3 SIZE)
							-	

Appendix D

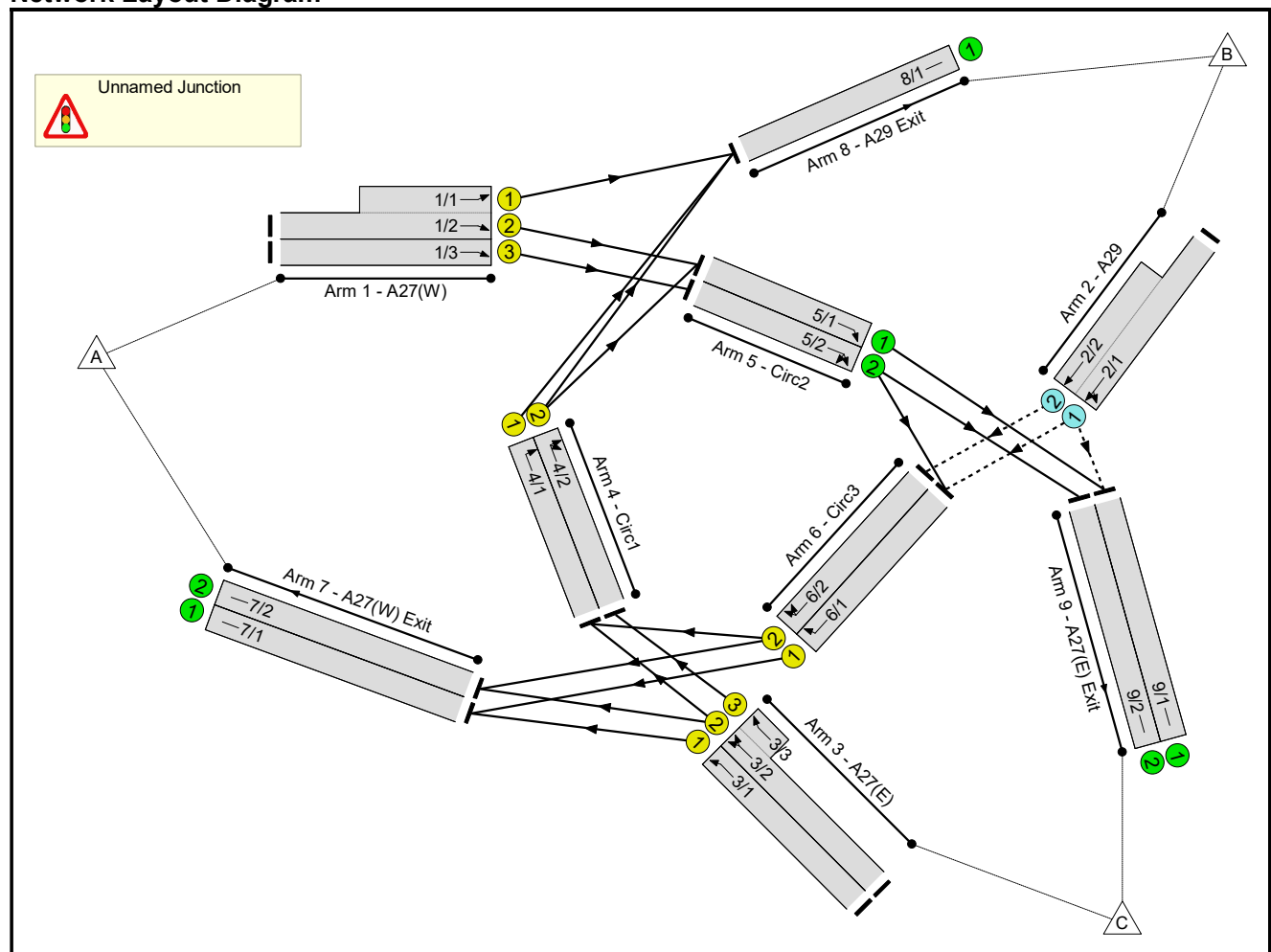


Full Input Data And Results
Full Input Data And Results

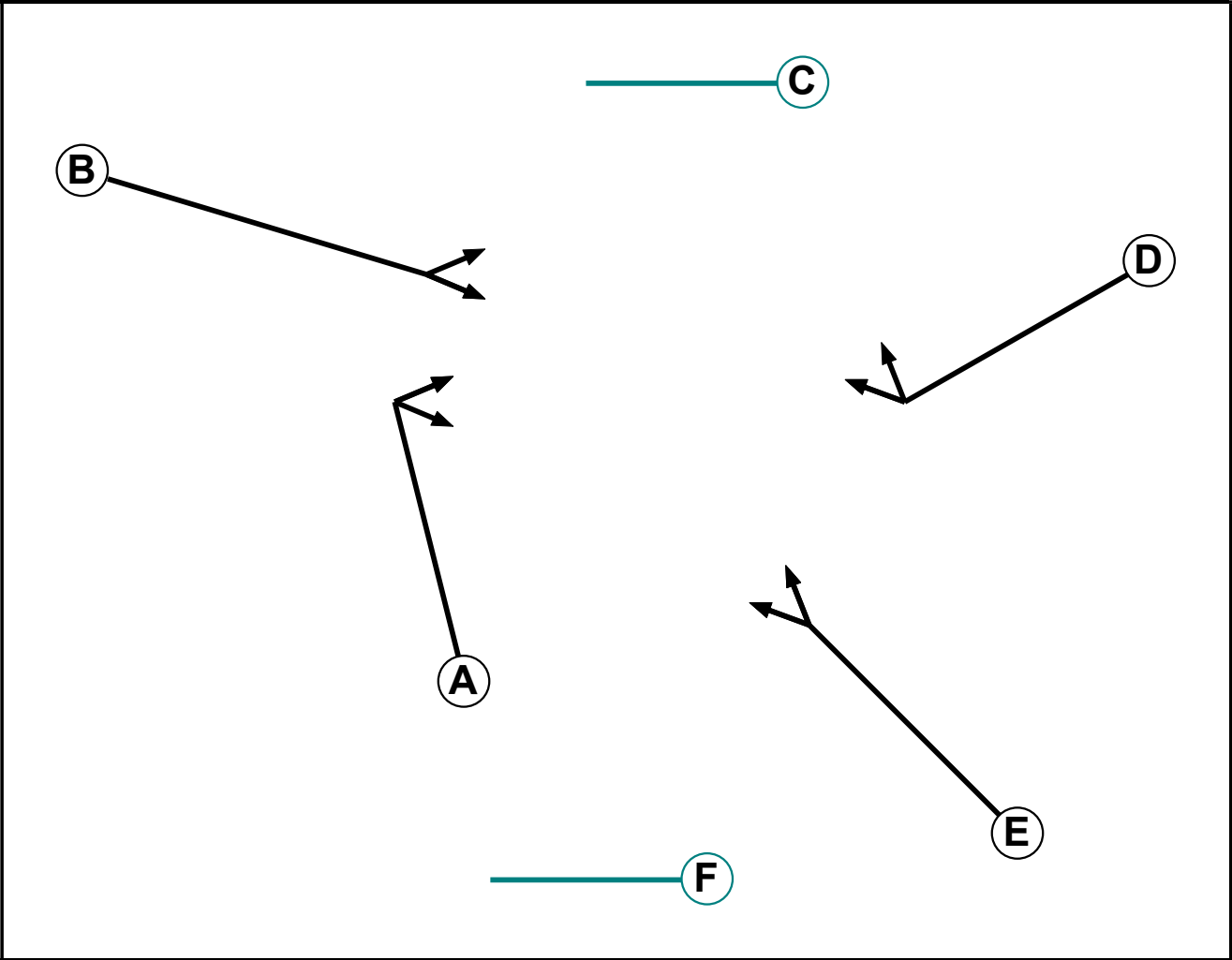
User and Project Details

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Title:	A27 / A29 Signals (Fontwell Eastern Rbt)
Location:	
Additional detail:	
File name:	A27_A29_East.lsg3x
Author:	THP
Company:	PBA
Address:	

Network Layout Diagram



Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Dummy	1		7	7
D	Traffic	2		7	7
E	Traffic	2		7	7
F	Dummy	2		7	7

Full Input Data And Results

Phase Intergreens Matrix

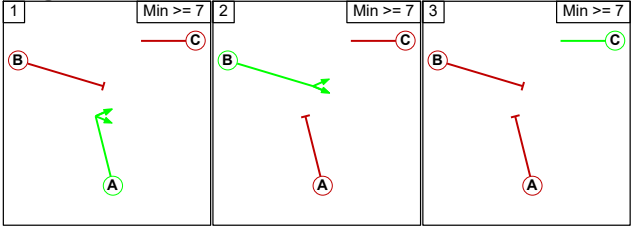
		Starting Phase					
Terminating Phase		A	B	C	D	E	F
	A		6	3	-	-	-
	B	6		3	-	-	-
	C	2	2		-	-	-
	D	-	-	-		6	3
	E	-	-	-	6		3
	F	-	-	-	2	2	

Phases in Stage

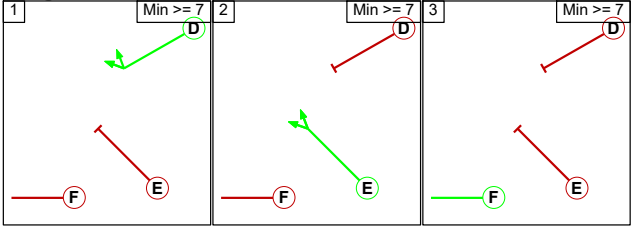
Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
1	3	C
2	1	D
2	2	E
2	3	F

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

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					

Prohibited Stage Change
Stage Stream: 1

	To Stage			
From Stage		1	2	3
	1		6	3
	2	6		3
	3	2	2	

Stage Stream: 2

	To Stage			
From Stage		1	2	3
	1		6	3
	2	6		3
	3	2	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction											
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)
2/1 (A29)	6/1 (Ahead)	1170	0	5/1	1.00	All	-	-	-	-	-
				5/2	1.00	All					
	9/1 (Left)	1170	0	5/1	1.00	All					
				5/2	1.00	All					
2/2 (A29)	6/2 (Ahead)	1170	0	5/1	1.00	All	-	-	-	-	-
				5/2	1.00	All					

Lane Input Data

Junction: Unnamed Junction												
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 (A27(W))	U	B	2	3	7.5	User	1900	-	-	-	-	-
1/2 (A27(W))	U	B	2	3	60.0	User	1900	-	-	-	-	-
1/3 (A27(W))	U	B	2	3	60.0	User	1900	-	-	-	-	-
2/1 (A29)	O		2	3	60.0	User	1900	-	-	-	-	-
2/2 (A29)	O		2	3	8.3	User	1900	-	-	-	-	-
3/1 (A27(E))	U	E	2	3	60.0	User	1900	-	-	-	-	-
3/2 (A27(E))	U	E	2	3	60.0	User	1900	-	-	-	-	-
3/3 (A27(E))	U	E	2	3	2.5	User	1900	-	-	-	-	-
4/1 (Circ1)	U	A	2	3	6.7	User	1900	-	-	-	-	-
4/2 (Circ1)	U	A	2	3	6.7	User	1900	-	-	-	-	-
5/1 (Circ2)	U		2	3	6.8	Inf	-	-	-	-	-	-
5/2 (Circ2)	U		2	3	6.8	Inf	-	-	-	-	-	-
6/1 (Circ3)	U	D	2	3	6.7	User	1900	-	-	-	-	-
6/2 (Circ3)	U	D	2	3	6.7	User	1900	-	-	-	-	-
7/1 (A27(W) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2 (A27(W) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A29 Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (A27(E) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/2 (A27(E) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2031 with Mit + Linden AM'	07:15	08:15	01:00	
2: '2031 with Mit + Linden PM'	16:45	17:45	01:00	
3: 'Dev AM'	07:15	08:15	01:00	
4: 'Dev PM'	16:45	17:45	01:00	
5: '2031 + Mit + Linden + Dev AM'	07:15	08:15	01:00	F1+F3
6: '2031 + Mit + Linden + Dev PM'	16:45	17:45	01:00	F2+F4

Scenario 1: '2031 with Mit + Linden AM' (FG1: '2031 with Mit + Linden AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	544	1096	1640
	B	770	0	1	771
	C	921	664	221	1806
	Tot.	1691	1208	1318	4217

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2031 with Mit + Linden AM
Junction: Unnamed Junction	
1/1 (short)	544
1/2 (with short)	1129(In) 585(Out)
1/3	511
2/1 (with short)	771(In) 386(Out)
2/2 (short)	385
3/1	797
3/2 (with short)	1009(In) 566(Out)
3/3 (short)	443
4/1	442
4/2	443
5/1	806
5/2	511
6/1	385
6/2	385
7/1	1182
7/2	509
8/1	1208
9/1	807
9/2	511

Full Input Data And Results

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A27(W) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A27(W) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (A27(W) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A29 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/2 (A29 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A27(E) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A27(E) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A27(E) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
4/1 (Circ1 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
4/2 (Circ1 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Circ2 Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Circ2 Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (Circ3 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Circ3 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A27(W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (A27(W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (A29 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A27(E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A27(E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: '2031 with Mit + Linden PM' (FG2: '2031 with Mit + Linden PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	703	1251	1954
	B	920	0	4	924
	C	813	224	22	1059
	Tot.	1733	927	1277	3937

Traffic Lane Flows

Lane	Scenario 2: 2031 with Mit + Linden PM
Junction: Unnamed Junction	
1/1 (short)	703
1/2 (with short)	1295(In) 592(Out)
1/3	659
2/1 (with short)	924(In) 463(Out)
2/2 (short)	461
3/1	488
3/2 (with short)	571(In) 448(Out)
3/3 (short)	123
4/1	123
4/2	123
5/1	614
5/2	659
6/1	459
6/2	461
7/1	947
7/2	786
8/1	927
9/1	618
9/2	659

Full Input Data And Results

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A27(W) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A27(W) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (A27(W) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A29 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/2 (A29 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A27(E) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A27(E) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A27(E) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
4/1 (Circ1 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
4/2 (Circ1 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Circ2 Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Circ2 Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (Circ3 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Circ3 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A27(W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (A27(W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (A29 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A27(E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A27(E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2031 with Mit + Linden + Dev AM' (FG5: '2031 + Mit + Linden + Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	544	1096	1640
	B	771	0	1	772
	C	948	676	224	1848
	Tot.	1719	1220	1321	4260

Traffic Lane Flows

Lane	Scenario 3: 2031 with Mit + Linden + Dev AM
Junction: Unnamed Junction	
1/1 (short)	544
1/2 (with short)	1129(In) 585(Out)
1/3	511
2/1 (with short)	772(In) 386(Out)
2/2 (short)	386
3/1	824
3/2 (with short)	1024(In) 569(Out)
3/3 (short)	455
4/1	445
4/2	455
5/1	818
5/2	511
6/1	385
6/2	386
7/1	1209
7/2	510
8/1	1211
9/1	819
9/2	511

Full Input Data And Results

Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A27(W) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A27(W) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (A27(W) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A29 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/2 (A29 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A27(E) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A27(E) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A27(E) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
4/1 (Circ1 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
4/2 (Circ1 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Circ2 Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Circ2 Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (Circ3 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Circ3 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A27(W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (A27(W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (A29 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A27(E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A27(E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 4: '2031 with Mit + Linden + Dev PM' (FG6: '2031 + Mit + Linden + Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination				
Origin		A	B	C	Tot.
	A	0	703	1251	1954
	B	923	0	4	927
	C	827	231	24	1082
	Tot.	1750	934	1279	3963

Traffic Lane Flows

Lane	Scenario 4: 2031 with Mit + Linden + Dev PM
Junction: Unnamed Junction	
1/1 (short)	703
1/2 (with short)	1295(In) 592(Out)
1/3	659
2/1 (with short)	927(In) 463(Out)
2/2 (short)	464
3/1	502
3/2 (with short)	580(In) 450(Out)
3/3 (short)	130
4/1	125
4/2	130
5/1	621
5/2	659
6/1	459
6/2	464
7/1	961
7/2	789
8/1	929
9/1	625
9/2	659

Full Input Data And Results

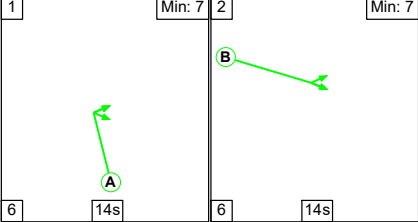
Lane Saturation Flows

Junction: Unnamed Junction								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A27(W) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (A27(W) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (A27(W) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (A29 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/2 (A29 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (A27(E) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (A27(E) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/3 (A27(E) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
4/1 (Circ1 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
4/2 (Circ1 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/1 (Circ2 Lane 1)	Infinite Saturation Flow						Inf	Inf
5/2 (Circ2 Lane 2)	Infinite Saturation Flow						Inf	Inf
6/1 (Circ3 Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Circ3 Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (A27(W) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (A27(W) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (A29 Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/1 (A27(E) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
9/2 (A27(E) Exit Lane 2)	Infinite Saturation Flow						Inf	Inf

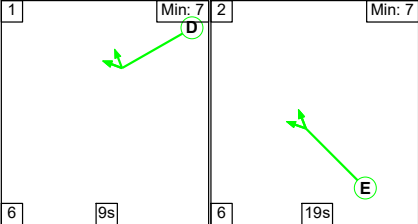
Scenario 1: '2031 with Mit + Linden AM' (FG1: '2031 with Mit + Linden AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

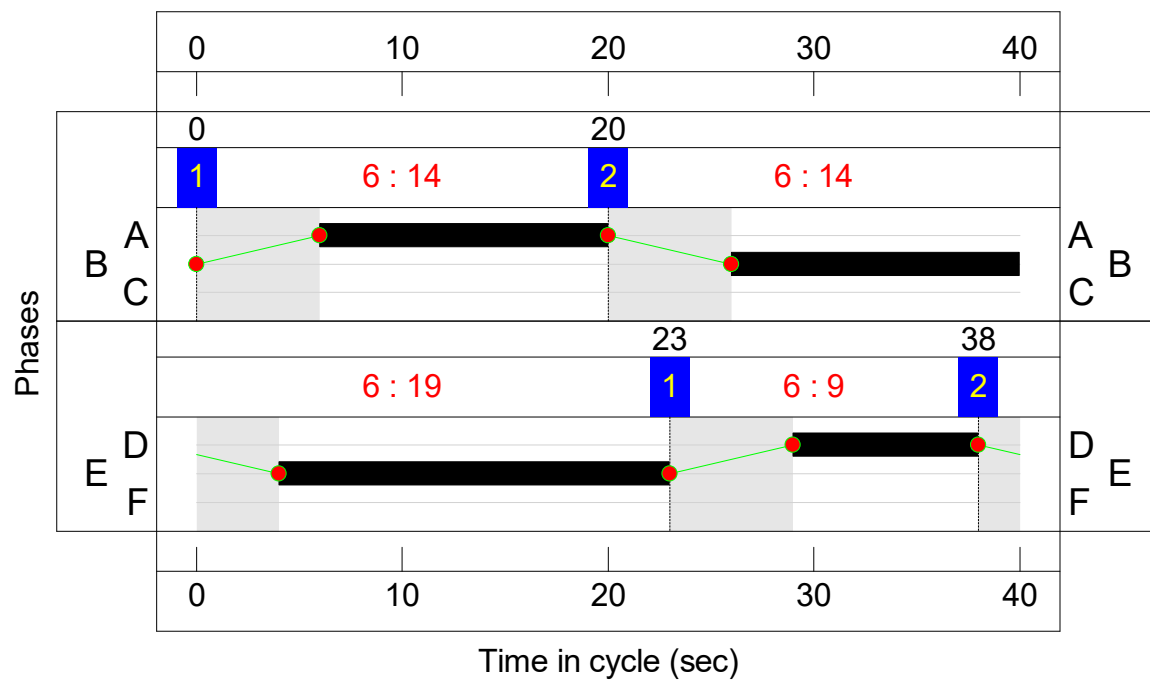
Stage Stream: 1

Stage	1	2
Duration	14	14
Change Point	0	20

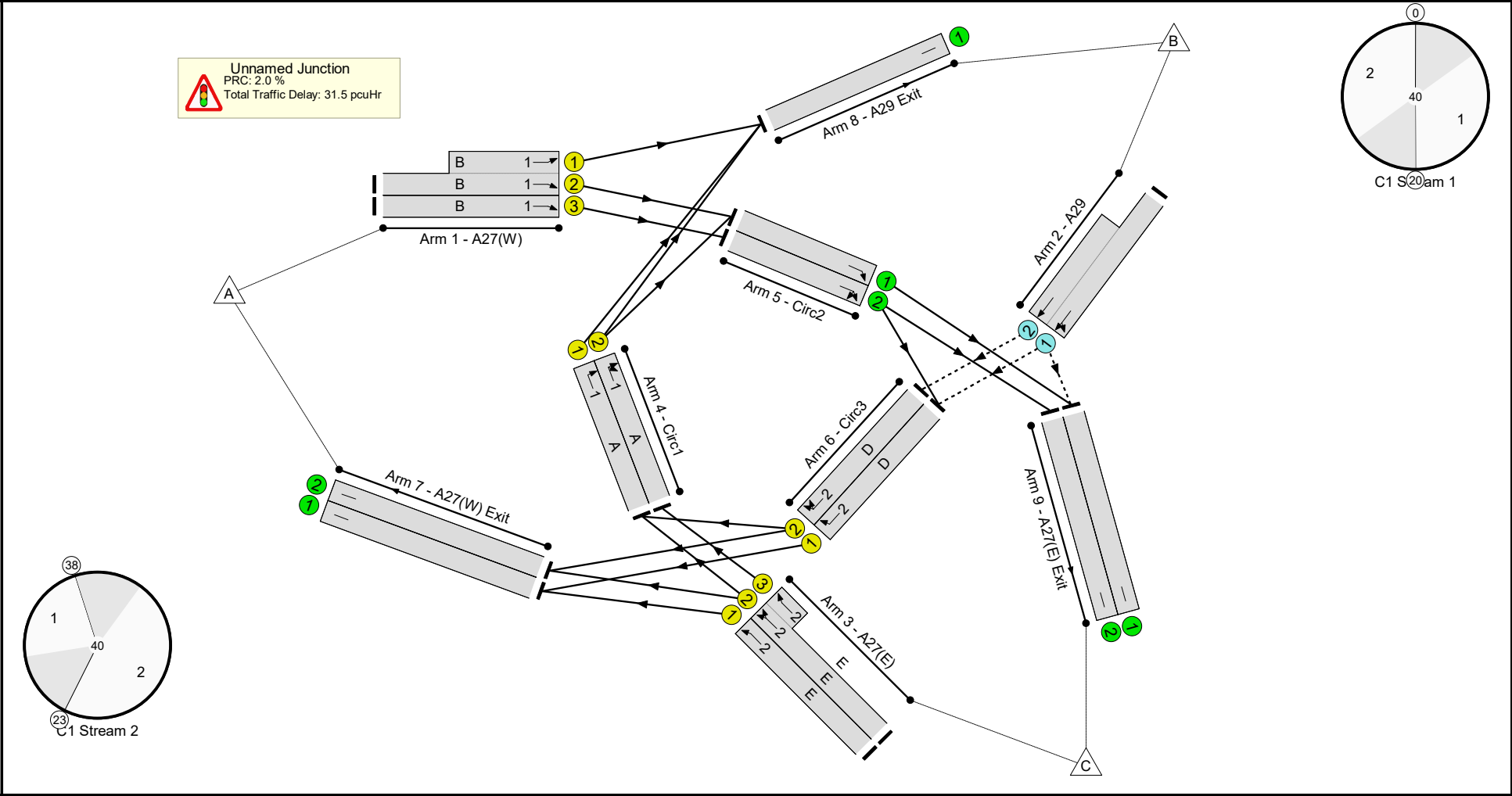
Stage Stream: 2

Stage	1	2
Duration	9	19
Change Point	23	38

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	88.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	88.2%
1/2+1/1	A27(W) Ahead Ahead2	U	1	N/A	B		1	14	-	1129	1900:1900	713+663	82.1 : 82.1%
1/3	A27(W) Ahead	U	1	N/A	B		1	14	-	511	1900	713	71.7%
2/1+2/2	A29 Ahead Left	O	N/A	N/A	-		-	-	-	771	1900:1900	465+465	83.0 : 82.8%
3/1	A27(E) Ahead	U	2	N/A	E		1	19	-	797	1900	950	83.9%
3/2+3/3	A27(E) Ahead Ahead2	U	2	N/A	E		1	19	-	1009	1900:1900	642+502	88.2 : 88.2%
4/1	Circ1 Right	U	1	N/A	A		1	14	-	442	1900	713	62.0%
4/2	Circ1 Right Right2	U	1	N/A	A		1	14	-	443	1900	713	62.2%
5/1	Circ2 Right	U	N/A	N/A	-		-	-	-	806	Inf	Inf	0.0%
5/2	Circ2 Right Right2	U	N/A	N/A	-		-	-	-	511	Inf	Inf	0.0%
6/1	Circ3 Right	U	2	N/A	D		1	9	-	385	1900	475	81.1%
6/2	Circ3 Right Right2	U	2	N/A	D		1	9	-	385	1900	475	81.1%
7/1	A27(W) Exit	U	N/A	N/A	-		-	-	-	1182	Inf	Inf	0.0%
7/2	A27(W) Exit	U	N/A	N/A	-		-	-	-	509	Inf	Inf	0.0%
8/1	A29 Exit	U	N/A	N/A	-		-	-	-	1208	Inf	Inf	0.0%
9/1	A27(E) Exit	U	N/A	N/A	-		-	-	-	807	Inf	Inf	0.0%
9/2	A27(E) Exit	U	N/A	N/A	-		-	-	-	511	Inf	Inf	0.0%

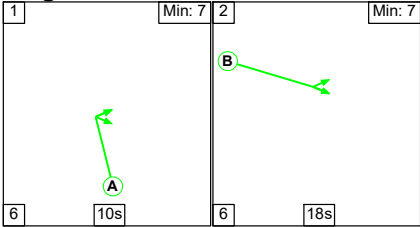
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	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)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1542	0	0	13.9	17.7	0.0	31.5	-	-	-	-
Unnamed Junction	-	-	1542	0	0	13.9	17.7	0.0	31.5	-	-	-	-
1/2+1/1	1129	1129	-	-	-	3.5	2.3	-	5.7	18.3	5.9	2.3	8.1
1/3	511	511	-	-	-	1.5	1.3	-	2.8	19.5	4.8	1.3	6.1
2/1+2/2	771	771	1542	0	0	1.4	2.4	-	3.8	17.6	3.8	2.4	6.1
3/1	797	797	-	-	-	1.9	2.5	-	4.4	20.0	7.5	2.5	10.0
3/2+3/3	1009	1009	-	-	-	2.1	3.5	-	5.7	20.2	7.3	3.5	10.8
4/1	442	442	-	-	-	0.7	0.8	-	1.5	12.5	1.3	0.8	2.1
4/2	443	443	-	-	-	0.7	0.8	-	1.5	12.5	1.3	0.8	2.1
5/1	806	806	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	385	385	-	-	-	1.0	2.0	-	3.0	28.5	4.1	2.0	6.2
6/2	385	385	-	-	-	1.0	2.0	-	3.0	28.5	4.1	2.0	6.2
7/1	1182	1182	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	509	509	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1208	1208	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	807	807	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): 9.6 C1 Stream: 2 PRC for Signalled Lanes (%): 2.0 PRC Over All Lanes (%): 2.0 Total Delay for Signalled Lanes (pcuHr): 11.58 Total Delay for Signalled Lanes (pcuHr): 16.19 Total Delay Over All Lanes(pcuHr): 31.54 Cycle Time (s): 40 Cycle Time (s): 40													

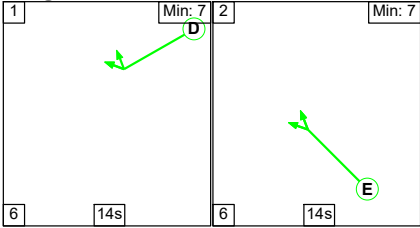
Full Input Data And Results
Scenario 2: '2031 with Mit + Linden PM' (FG2: '2031 with Mit + Linden PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

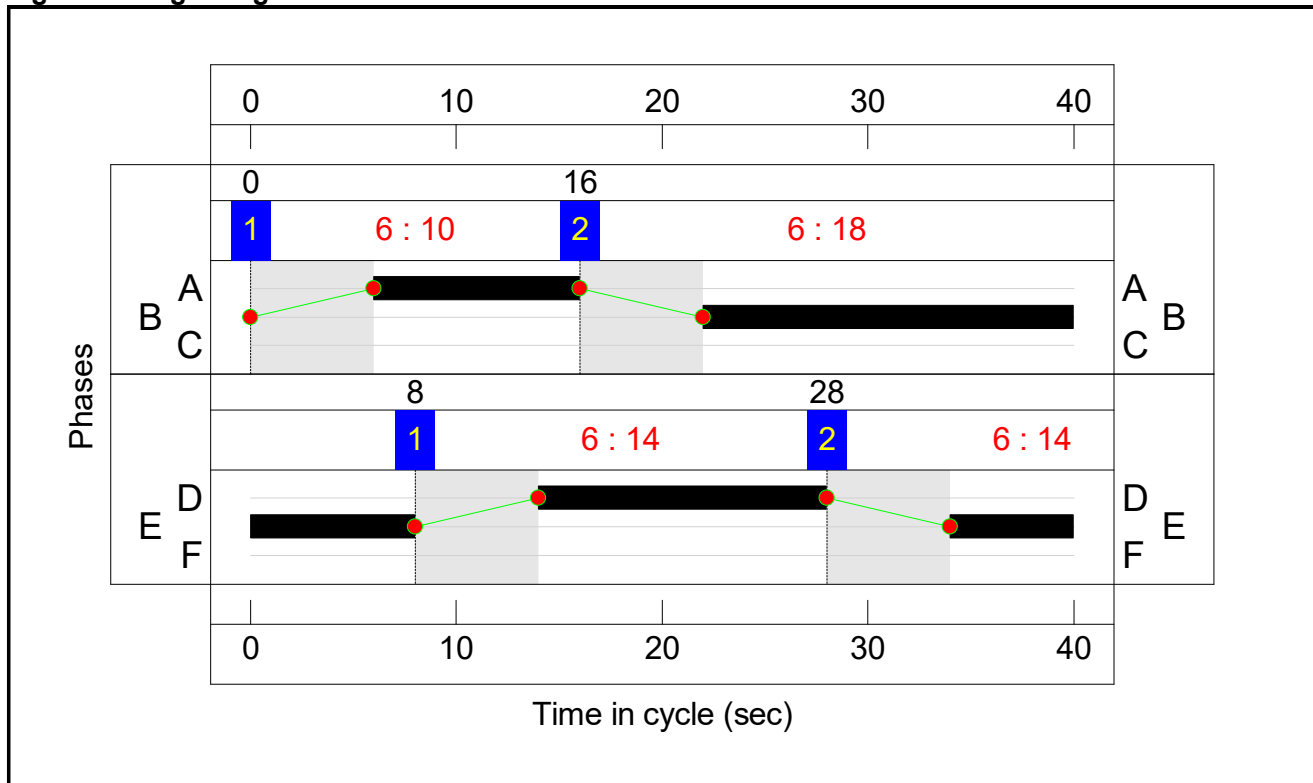
Stage Stream: 1

Stage	1	2
Duration	10	18
Change Point	0	16

Stage Stream: 2

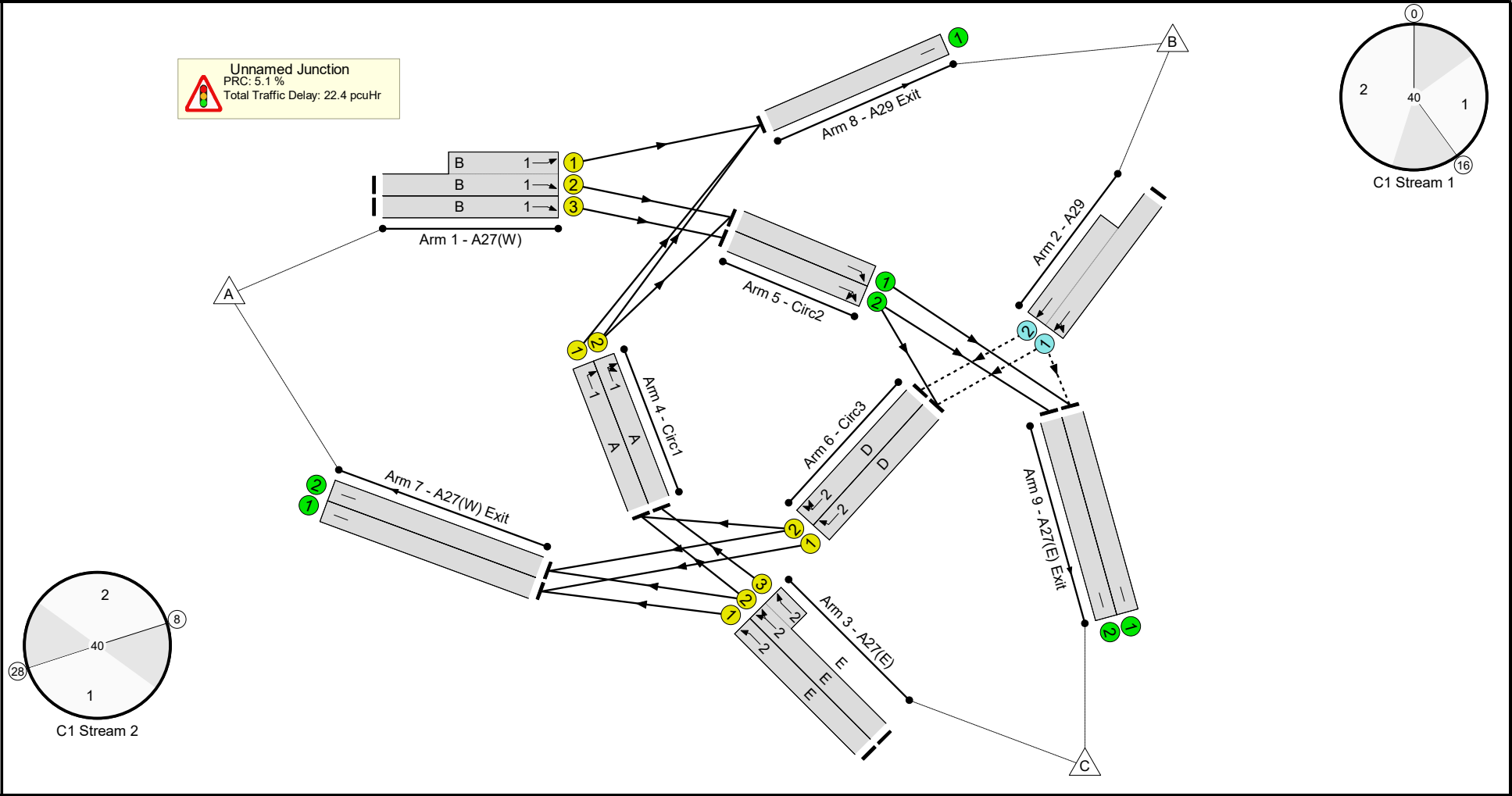
Stage	1	2
Duration	14	14
Change Point	8	28

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	85.7%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	85.7%
1/2+1/1	A27(W) Ahead Ahead2	U	1	N/A	B		1	18	-	1295	1900:1900	691+821	85.7 : 85.7%
1/3	A27(W) Ahead	U	1	N/A	B		1	18	-	659	1900	903	73.0%
2/1+2/2	A29 Ahead Left	O	N/A	N/A	-		-	-	-	924	1900:1900	548+548	84.6 : 84.2%
3/1	A27(E) Ahead	U	2	N/A	E		1	14	-	488	1900	713	68.5%
3/2+3/3	A27(E) Ahead Ahead2	U	2	N/A	E		1	14	-	571	1900:1900	619+170	72.4 : 72.4%
4/1	Circ1 Right	U	1	N/A	A		1	10	-	123	1900	523	23.5%
4/2	Circ1 Right Right2	U	1	N/A	A		1	10	-	123	1900	523	23.5%
5/1	Circ2 Right	U	N/A	N/A	-		-	-	-	614	Inf	Inf	0.0%
5/2	Circ2 Right Right2	U	N/A	N/A	-		-	-	-	659	Inf	Inf	0.0%
6/1	Circ3 Right	U	2	N/A	D		1	14	-	459	1900	713	64.4%
6/2	Circ3 Right Right2	U	2	N/A	D		1	14	-	461	1900	713	64.7%
7/1	A27(W) Exit	U	N/A	N/A	-		-	-	-	947	Inf	Inf	0.0%
7/2	A27(W) Exit	U	N/A	N/A	-		-	-	-	786	Inf	Inf	0.0%
8/1	A29 Exit	U	N/A	N/A	-		-	-	-	927	Inf	Inf	0.0%
9/1	A27(E) Exit	U	N/A	N/A	-		-	-	-	618	Inf	Inf	0.0%
9/2	A27(E) Exit	U	N/A	N/A	-		-	-	-	659	Inf	Inf	0.0%

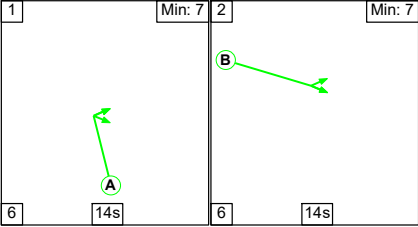
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	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)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1848	0	0	11.0	11.4	0.0	22.4	-	-	-	-
Unnamed Junction	-	-	1848	0	0	11.0	11.4	0.0	22.4	-	-	-	-
1/2+1/1	1295	1295	-	-	-	3.0	2.9	-	5.9	16.5	6.4	2.9	9.4
1/3	659	659	-	-	-	1.5	1.3	-	2.9	15.8	5.9	1.3	7.2
2/1+2/2	924	924	1848	0	0	2.3	2.6	-	4.9	19.2	4.5	2.6	7.1
3/1	488	488	-	-	-	1.4	1.1	-	2.5	18.5	4.5	1.1	5.5
3/2+3/3	571	571	-	-	-	1.6	1.3	-	2.9	18.3	4.5	1.3	5.8
4/1	123	123	-	-	-	0.1	0.2	-	0.3	7.8	1.1	0.2	1.3
4/2	123	123	-	-	-	0.1	0.2	-	0.3	8.7	1.1	0.2	1.3
5/1	614	614	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	659	659	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	459	459	-	-	-	0.4	0.9	-	1.3	10.4	1.7	0.9	2.6
6/2	461	461	-	-	-	0.4	0.9	-	1.3	10.4	1.7	0.9	2.6
7/1	947	947	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	786	786	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	927	927	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	659	659	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): 5.1 C1 Stream: 2 PRC for Signalled Lanes (%): 24.3 PRC Over All Lanes (%): 5.1 Total Delay for Signalled Lanes (pcuHr): 9.38 Total Delay for Signalled Lanes (pcuHr): 8.06 Total Delay Over All Lanes(pcuHr): 22.36 Cycle Time (s): 40 Cycle Time (s): 40													

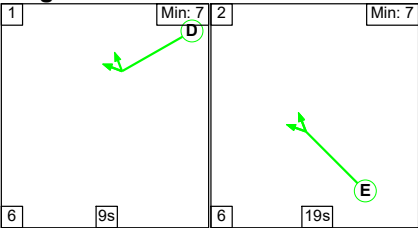
Full Input Data And Results
Scenario 3: '2031 with Mit + Linden + Dev AM' (FG5: '2031 + Mit + Linden + Dev AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



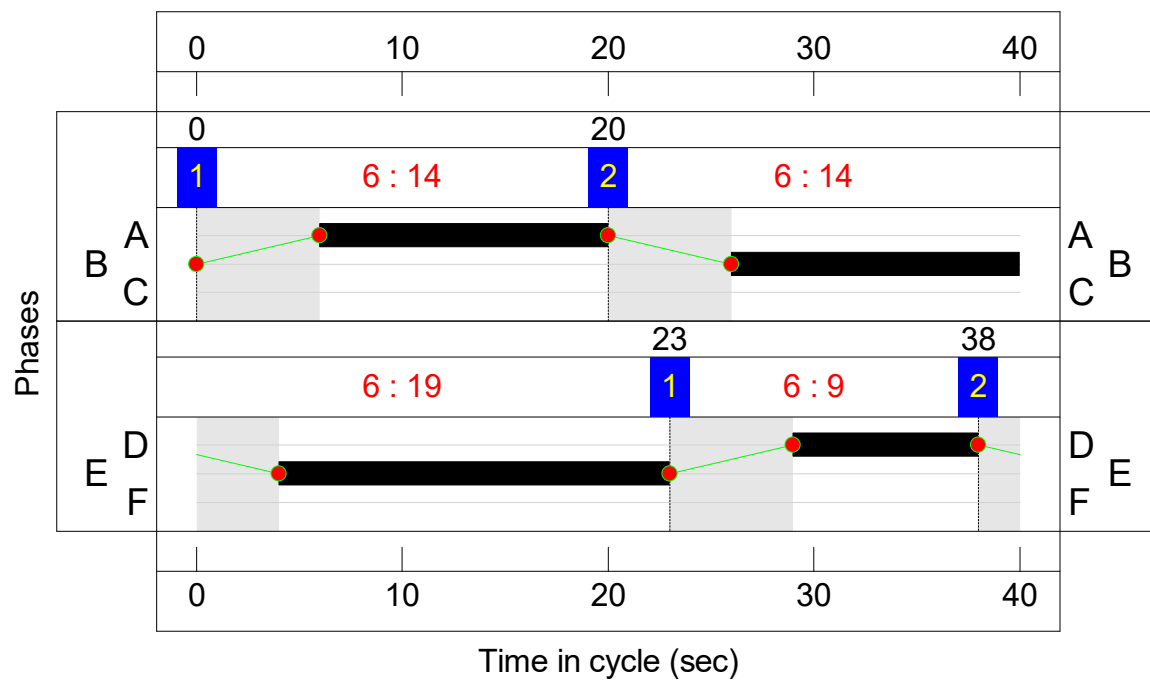
Stage Timings

Stage Stream: 1

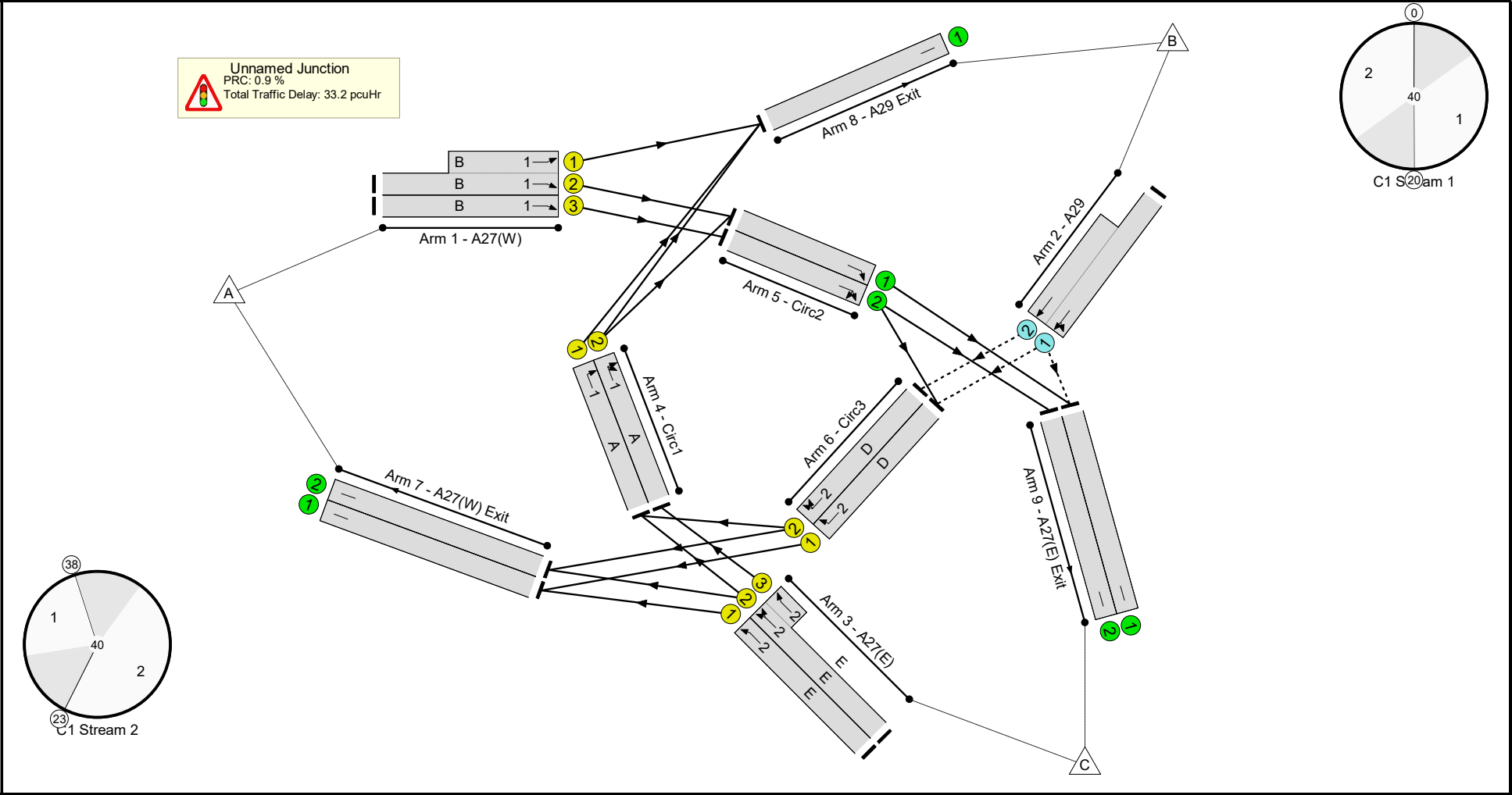
Stage	1	2
Duration	14	14
Change Point	0	20

Stage Stream: 2

Stage	1	2
Duration	9	19
Change Point	23	38

Signal Timings Diagram

Full Input Data And Results
Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	89.2%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	89.2%
1/2+1/1	A27(W) Ahead Ahead2	U	1	N/A	B		1	14	-	1129	1900:1900	713+663	82.1 : 82.1%
1/3	A27(W) Ahead	U	1	N/A	B		1	14	-	511	1900	713	71.7%
2/1+2/2	A29 Ahead Left	O	N/A	N/A	-		-	-	-	772	1900:1900	453+453	85.2 : 85.2%
3/1	A27(E) Ahead	U	2	N/A	E		1	19	-	824	1900	950	86.7%
3/2+3/3	A27(E) Ahead Ahead2	U	2	N/A	E		1	19	-	1024	1900:1900	638+510	89.2 : 89.2%
4/1	Circ1 Right	U	1	N/A	A		1	14	-	445	1900	713	62.5%
4/2	Circ1 Right Right2	U	1	N/A	A		1	14	-	455	1900	713	63.9%
5/1	Circ2 Right	U	N/A	N/A	-		-	-	-	818	Inf	Inf	0.0%
5/2	Circ2 Right Right2	U	N/A	N/A	-		-	-	-	511	Inf	Inf	0.0%
6/1	Circ3 Right	U	2	N/A	D		1	9	-	385	1900	475	81.1%
6/2	Circ3 Right Right2	U	2	N/A	D		1	9	-	386	1900	475	81.3%
7/1	A27(W) Exit	U	N/A	N/A	-		-	-	-	1209	Inf	Inf	0.0%
7/2	A27(W) Exit	U	N/A	N/A	-		-	-	-	510	Inf	Inf	0.0%
8/1	A29 Exit	U	N/A	N/A	-		-	-	-	1211	Inf	Inf	0.0%
9/1	A27(E) Exit	U	N/A	N/A	-		-	-	-	819	Inf	Inf	0.0%
9/2	A27(E) Exit	U	N/A	N/A	-		-	-	-	511	Inf	Inf	0.0%

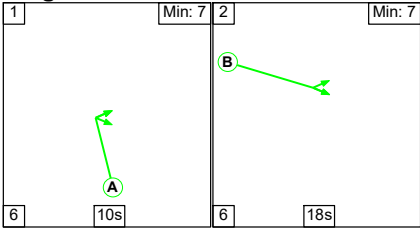
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	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)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1544	0	0	14.1	19.1	0.0	33.2	-	-	-	-
Unnamed Junction	-	-	1544	0	0	14.1	19.1	0.0	33.2	-	-	-	-
1/2+1/1	1129	1129	-	-	-	3.5	2.3	-	5.7	18.3	5.9	2.3	8.1
1/3	511	511	-	-	-	1.5	1.3	-	2.8	19.5	4.8	1.3	6.1
2/1+2/2	772	772	1544	0	0	1.5	2.8	-	4.2	19.8	3.9	2.8	6.6
3/1	824	824	-	-	-	2.0	3.1	-	5.1	22.4	8.0	3.1	11.1
3/2+3/3	1024	1024	-	-	-	2.2	3.9	-	6.1	21.3	7.7	3.9	11.6
4/1	445	445	-	-	-	0.7	0.8	-	1.6	12.7	1.3	0.8	2.2
4/2	455	455	-	-	-	0.8	0.9	-	1.6	13.0	1.4	0.9	2.2
5/1	818	818	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	385	385	-	-	-	1.0	2.0	-	3.0	28.2	4.1	2.0	6.2
6/2	386	386	-	-	-	1.0	2.1	-	3.0	28.4	4.2	2.1	6.3
7/1	1209	1209	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	510	510	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1211	1211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	819	819	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	511	511	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%):					9.6	Total Delay for Signalled Lanes (pcuHr):			11.73	Cycle Time (s): 40			
C1 Stream: 2 PRC for Signalled Lanes (%):					0.9	Total Delay for Signalled Lanes (pcuHr):			17.26	Cycle Time (s): 40			
PRC Over All Lanes (%):					0.9	Total Delay Over All Lanes(pcuHr):			33.23				

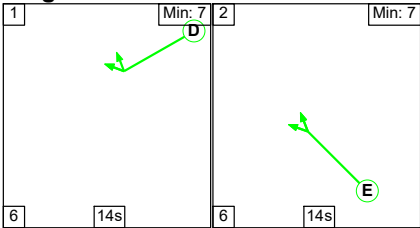
Full Input Data And Results
Scenario 4: '2031 with Mit + Linden + Dev PM' (FG6: '2031 + Mit + Linden + Dev PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

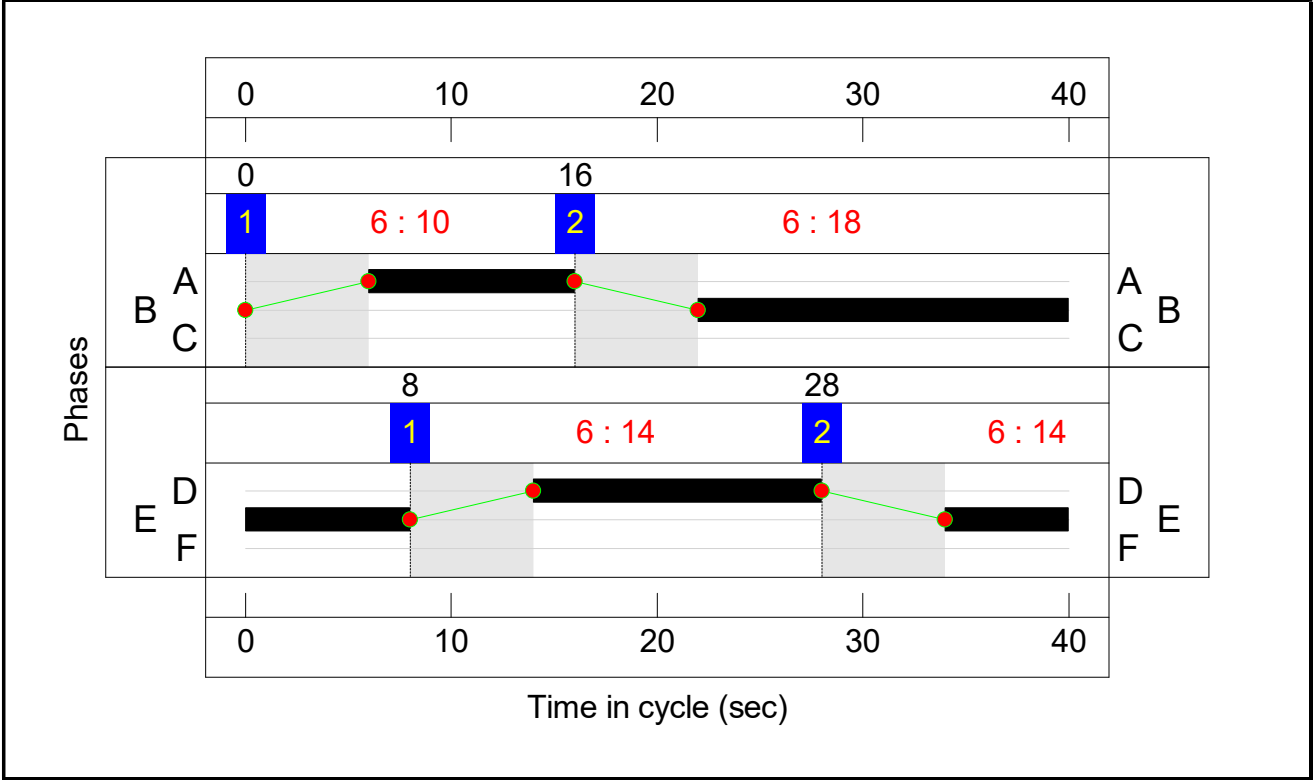
Stage Stream: 1

Stage	1	2
Duration	10	18
Change Point	0	16

Stage Stream: 2

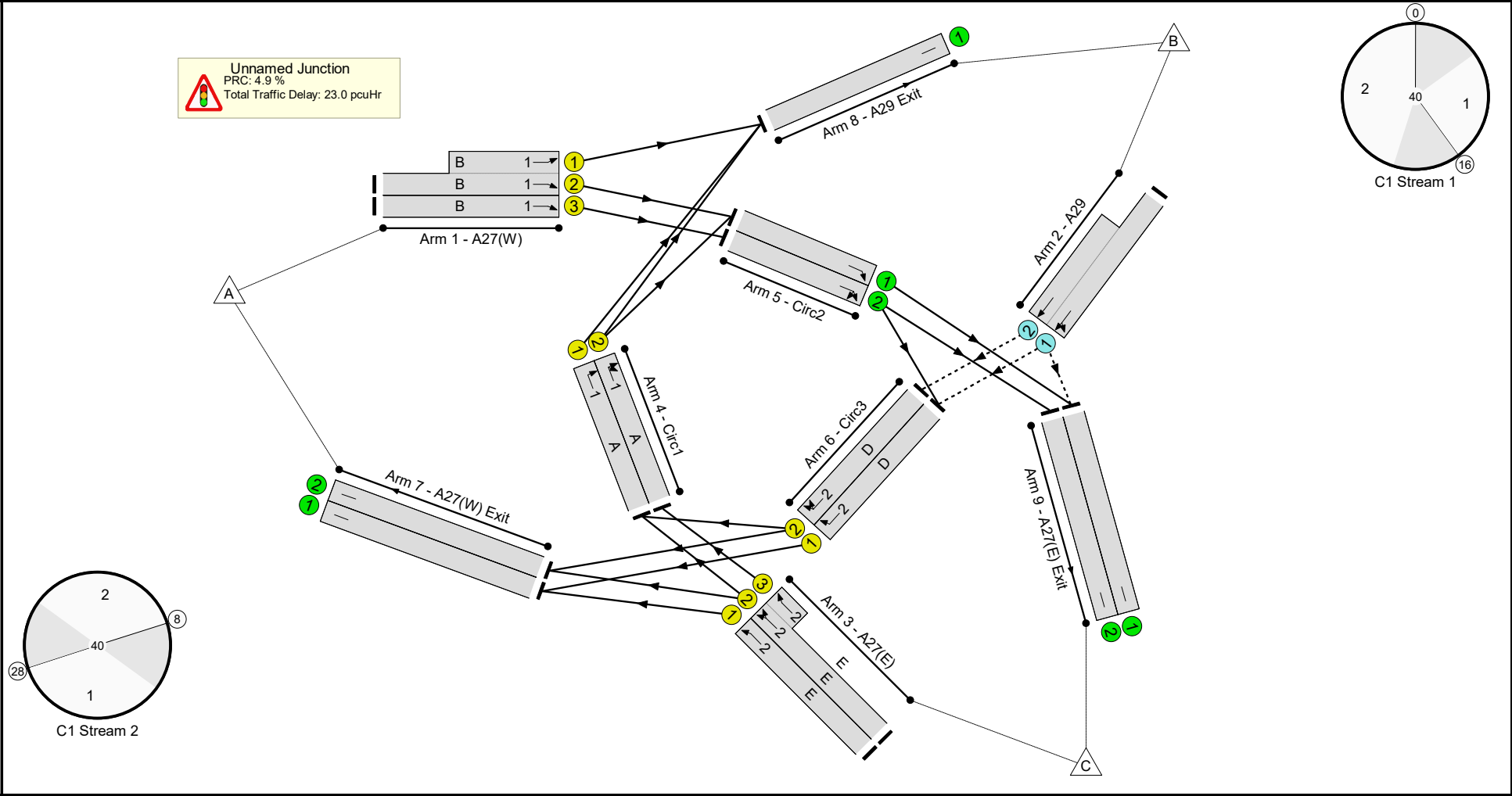
Stage	1	2
Duration	14	14
Change Point	8	28

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	85.8%
Unnamed Junction	-	-	N/A	-	-		-	-	-	-	-	-	85.8%
1/2+1/1	A27(W) Ahead Ahead2	U	1	N/A	B		1	18	-	1295	1900:1900	691+821	85.7 : 85.7%
1/3	A27(W) Ahead	U	1	N/A	B		1	18	-	659	1900	903	73.0%
2/1+2/2	A29 Ahead Left	O	N/A	N/A	-		-	-	-	927	1900:1900	541+541	85.7 : 85.8%
3/1	A27(E) Ahead	U	2	N/A	E		1	14	-	502	1900	713	70.5%
3/2+3/3	A27(E) Ahead Ahead2	U	2	N/A	E		1	14	-	580	1900:1900	614+177	73.3 : 73.3%
4/1	Circ1 Right	U	1	N/A	A		1	10	-	125	1900	523	23.9%
4/2	Circ1 Right Right2	U	1	N/A	A		1	10	-	130	1900	523	24.9%
5/1	Circ2 Right	U	N/A	N/A	-		-	-	-	621	Inf	Inf	0.0%
5/2	Circ2 Right Right2	U	N/A	N/A	-		-	-	-	659	Inf	Inf	0.0%
6/1	Circ3 Right	U	2	N/A	D		1	14	-	459	1900	713	64.4%
6/2	Circ3 Right Right2	U	2	N/A	D		1	14	-	464	1900	713	65.1%
7/1	A27(W) Exit	U	N/A	N/A	-		-	-	-	961	Inf	Inf	0.0%
7/2	A27(W) Exit	U	N/A	N/A	-		-	-	-	789	Inf	Inf	0.0%
8/1	A29 Exit	U	N/A	N/A	-		-	-	-	929	Inf	Inf	0.0%
9/1	A27(E) Exit	U	N/A	N/A	-		-	-	-	625	Inf	Inf	0.0%
9/2	A27(E) Exit	U	N/A	N/A	-		-	-	-	659	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	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)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1854	0	0	11.2	11.8	0.0	23.0	-	-	-	-
Unnamed Junction	-	-	1854	0	0	11.2	11.8	0.0	23.0	-	-	-	-
1/2+1/1	1295	1295	-	-	-	3.0	2.9	-	5.9	16.5	6.4	2.9	9.4
1/3	659	659	-	-	-	1.5	1.3	-	2.9	15.8	5.9	1.3	7.2
2/1+2/2	927	927	1854	0	0	2.3	2.9	-	5.2	20.3	4.5	2.9	7.4
3/1	502	502	-	-	-	1.5	1.2	-	2.7	19.1	4.6	1.2	5.8
3/2+3/3	580	580	-	-	-	1.6	1.4	-	3.0	18.5	4.6	1.4	5.9
4/1	125	125	-	-	-	0.1	0.2	-	0.3	7.8	1.1	0.2	1.3
4/2	130	130	-	-	-	0.2	0.2	-	0.3	8.8	1.2	0.2	1.3
5/1	621	621	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	659	659	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	459	459	-	-	-	0.4	0.9	-	1.3	10.5	1.7	0.9	2.6
6/2	464	464	-	-	-	0.5	0.9	-	1.4	10.7	1.8	0.9	2.7
7/1	961	961	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	789	789	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	929	929	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	625	625	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	659	659	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 Stream: 1 PRC for Signalled Lanes (%): 5.1 C1 Stream: 2 PRC for Signalled Lanes (%): 22.9 PRC Over All Lanes (%): 4.9 Total Delay for Signalled Lanes (pcuHr): 9.41 Total Delay for Signalled Lanes (pcuHr): 8.36 Total Delay Over All Lanes(pcuHr): 23.01 Cycle Time (s): 40 Cycle Time (s): 40													