PROPOSED RESIDENTIAL DEVELOPMENT, LAND AT A183 MILL LANE, WHITBURN – TRANSPORT TECHNICAL NOTE 01 – MAY 2026

Introduction

1 BTG Eddisons has been instructed by Story Homes to advise on the traffic and transport issues relating to the proposed residential development on land at the A183 Mill Lane in Whitburn (Planning Ref: 260049).

2 This Transport Note has been produced in responses to the consultation responses received from following statutory consultees:

- South Tyneside Council Highways – Comments dated 13th March 2026.
- Systra – Technical Note dated 11th March 2026.
- Nexus

Proposed Site Access Arrangement

3 The following section will consider the comments raised by the above consultees on the proposed vehicular access point into the site.

4 South Tyneside Council has stated that they require:

"Increase entry width at junction, including initial stretch of estate road to accommodate refuse vehicle passing a car at the junction (both directions - accessing and egressing), proven by required additional swept path analysis. The road shall then reduce down to 5.5m gradually over a 15m long distance. To avoid conflict and delays on the A183 and impacting on the free flow of traffic.

Increase size of new pedestrian refuge island on Mill Lane to accommodate cyclists, including route from required widened shared use route around the site perimeter to/from the crossing point."

5 Systra have also made a comment regarding cycle facilities:

"It is recommended that the applicant consider how cyclists can move from the cycleway on the eastern side of the A183 to and from the development. An improved arrangement could be designed in to allow cyclists to cross via the refuge with a wider footway running into the development."

6 These comments have been addressed and incorporated into a revised site access arrangement shown on **Plan 1**.

7 SYSTRA has stated:

"Eddisons state that the northbound bus stop currently operates safely and suitably and can exist with the proposed site access, concluding that there is no requirement for a bus lay-by to be provided. SYSTRA would recommend that consultation is undertaken with the bus operators to seek their view and preference. Operators often do not like laybys as they find it difficult to rejoin the running carriageway if traffic flow is consistent."

8 Eddisons view is that the bus stop is currently operating in a safe and suitable manner therefore, there is no necessity for a new bus lay-by to be provided.

9 Systra has stated:

"The southbound bus stop is located opposite the site access junction. This raises concerns that when a bus stops, vehicles will seek to move round the bus into the ghost island resulting in confusion for following drivers whether they are passing the bus or stopping within the ghost island. This increases the risk of shunt type collisions or side swipes if vehicles that are stuck behind a right turning vehicle seek to rejoin the running lane. Consideration of the junction and bus stop location should be undertaken."

10 The frequency of the services equates to around 3 buses per hour which in our view will not have a detrimental impact on the existing operation of the A183 Mill Lane. This matter has not been raised as an issue by the local highway authority and as such our view is that the southbound bus stop should remain as existing.

11 South Tyneside Council has stated:

"The 2.4 x 43m visibility splays to Mill Lane is required to be amended to 4.5m x 43m (shown on plan in TA drwg no. 3493-F01-Rev.'E' - 'Proposed Site Access Plan'."

12 The visibility setback of 4.5 metre is not deemed appropriate in this instance. As set out in Manual for Streets (MfS 7.6.4), a 2.4 metre setback is appropriate given the context of the site. As such, the proposed vehicular access arrangements, as revised as part of this response, should be considered entirely appropriate to serve the proposed development.

Internal Layout

13 South Tyneside Council has stated:

"Any visibility splay lines that cut across residential plot frontages or open space area are required to have the additional slithers of land included in the prospectively adoptable areas and excluded from plot title deeds and open space areas, including plots 26, 34, 46, 85, 90(open space) & 198."

14 South Tyneside Council has stated:

"Drawing no. 3493-01 – 'Visibility Plan' within the Transport Assessment document, shows 2.4m x 25m visibility splays on all internal junctions (based on MfS standards for a 20mph road). However, on the gable end of plots 33, 172 the visibility splay goes through the visitor parking (VP) spaces, which is unacceptable due to the obstruction to drivers views and the VP spaces will therefore need to be relocated clear."

15 These matters have been resolved and included in an amended layout, and the revised visibility plan is displayed on **Plan 2**.

16 South Tyneside Council has stated:

"Where visitor parking (VP) spaces obstruct required visibility splays at junctions, these shall be relocated clear of splay areas.

Parallel VP spaces are required to be 6m length each.

The overall numbers of visitor parking (VP) spaces are adequate, however, 4 are located within private driveways. This number should be reduced as they don't serve enough properties and won't be available to/used by the other residents. Or additional VP spaces provided in the necessary areas in addition to VP spaces on adoptable sections of the estate road i.e. to even out distribution of VP spaces across the site.

Add 1x adoptable unallocated VP space to serve plots 125-129.

The northern end of the site is over provided for with regard to VP spaces, whilst being the least dense area of the development. This is required to be rectified to give the greater housing density areas the greater number of VP spaces, evenly distributed. Otherwise, this will become an issue at adoption.

Query manoeuvring distance for cars on driveways 14, 150, 152, 155-158, depending on location of boundary treatment opposite and ownership of slither of land.

Extend adoptable footway sections to the 2x VP spaces fronting plots 88& 89; and 91&92 to allow visitors to walk clear of carriageway to/from the spaces.

The new footpath around the outer edge of properties on site is required to be constructed to 3m shared cycle/footpath width, with lighting columns located in the landscaped area adjacent. Radii at intersections of routes to be 3m.

LTN1:20 compliant. Boundary treatments shall not encroach on the route, with any boundaries being in land adjacent (VP spaces etc).

Intersections/connectivity of footpaths with Mill Lane, Lizard Lane, play park to be increased to 3m, as shared use cycle/footpaths, with street lighting in adjacent landscaped areas.

Provision for cyclists to get to/from the cul-de-sac carriageway areas to the required cycleway routes around the perimeter of the site and to/from highway carriageways.

The boundary treatments will require amendment at the junction to Mill Lane to accommodate a segregated hared cycle/footpath from the estate to the pedestrian refuge crossing point on Mill Lane.

Traffic calming features throughout the development are not considered approved as part of this submission. They are required to be modified as part of the s38 adoptable highway technical submission to assist in ensuring 20mph vehicle speeds are achieved throughout the development whilst trying to minimise tabletop areas.

Highway adoption extent drawing to include additional widening of footpaths to shared cycle/footpath routes, including lighting columns located adjacent to the routes.

The Surface Treatment Plan is not considered an accepted plan for highway adoption purposes and will be subject to separate s38 Highways technical approval. Similarly, the engineering drawings and cross sections, as they relate to prospectively adoptable highway areas, will be considered as part of the s38 technical approval. These drawings should not therefore be included on any approved drawing list, as they will be subject to potential change."

17 These matters have been resolved and included in an amended layout.

18 In addition to this, following further discussions with the planning officer at South Tyneside Council, the emergency vehicle access onto Lizard Lane has been removed from the site layout.

19 The revised site layout is shown in **Plan 3**.

Accessibility

20 In terms of accessibility, SYSTRA has stated:

"SYSTRA would suggest that the TA has presented evidence indicating that the site has a reasonable level of accessibility via walking and cycling to some local amenities and that some short journey trips via these modes are possible. However, it is recommended that the applicant consider how the embedding of the development within the existing cycle infrastructure could be improved."

21 The width of the pedestrian refuge island has been increased to accommodate cyclists, allow for safe pedestrian access across the A183 Mill Lane.

22 In terms of bus connectivity, Nexus has stated:

"It is recommended that the existing brick bus shelters on the A183/Mill Lane, adjacent to the proposed development site, should be upgraded to modern standard that meet Nexus specification. Modern shelters should meet the expectations of bus passengers, including provision of accessibility requirements such as tactile paving, lighting, Real Time Information, and sheltering. Bus stops that are inclusive of these measures will help to generate safer and more accessible public transport for users and local residents."

23 This is deemed acceptable by the applicant, who is willing to make an appropriate financial contribution towards improvements to the existing bus stop facilities on the A183 Mill Lane.

24 The precise scope of the works, including the form of shelter provision, accessibility measures, lighting, and any requirements relating to Real Time Information, will be agreed with South Tyneside Council and Nexus.

"The applicant will need to consult the appropriate commercial operator for the bus service E6 to ensure the service is able to support these additional stops. The developer should seek that the stops promote an accessible and welcoming environment, with aspects such as sheltering, lighting, adjacency to a bus layby, dropped kerbs, suitable crossings, tactile paving, and Real Time Information (RTI) boards, in order to meet Nexus specification. This would more likely promote bus patronage which would improve the sustainability of the overall site. The applicant would need to ensure that the bus stops on Lizard Lane are accessible from the development site to pedestrians."

25 Due to the proposed upgrades to the existing bus stop provisions on the A183 Mill Lane, additional bus stops along Lizard Lane are not considered necessary.

26 The existing A183 Mill Lane bus stops are located adjacent to the site frontage and would provide a direct and convenient public transport option for future residents. The proposed improvements to these stops, including upgraded shelter provision and associated accessibility enhancements, would ensure that bus passengers are provided with a high-quality transport provision which meets with modern standards.

Nexus has also stated:

"As the Interim Travel Plan highlights the proposal will host 205 residential dwellings. Due to the size of the development, and to be in line with Nexus' Planning Liaison Policy, the applicant should therefore fund sustainable transport tickets to be used by future residents. The purpose of this measure is to promote public transport uptake, reduce road emissions and improve the sustainability of the proposal. Nexus recommends 2x Pop Pay As You Go (PAYG) Cards per dwelling with £50 of pre-loaded credit each. This offer should be found within the future residents' welcome packs and should be promoted by a future Transport Plan Coordinator."

27 Pop cards will be provided to each dwelling as part of the sustainable transport measures for the development. These cards will be included within the future residents' welcome packs will help to raise awareness of the local bus network, reduce reliance on private car trips, and support a shift towards more sustainable travel behaviour.

28 The implementation and promotion of this measure will be coordinated through the Travel Plan, including by the appointed Travel Plan Coordinator where appropriate.

Trip Generation and Distribution

29 In terms of trip generation, Systra has stated:

"The TRICS site selection parameters utilised by Eddisons are not appropriate. We do not consider that the proposed site has similar location types i.e. that suburban and neighbourhood centres should be removed.

30 Systra have recommended the trip rates in **Table 2**, below:

Mode	Period	Trip Rate		Trips	
		Arr	Dep	Arr	Dep
Vehicle	AM Peak Hour	0.147	0.429	30	88
	PM Peak Hour	0.393	0.198	81	41

Table 2 Proposed Residential Trip Rates and Trips (205 Dwellings)

Consequently, we consider the revised trip rates and resultant trip generation to be more representative of the proposed development.

SYSTRA recommend that given the expected volume of additional trips at both the A183 Mill Road North/B1299 Front Street and the A183 Mill Road North/North Guards junctions that further assessments are required."

31 Although we are of the view that the trip rates included within the TA are entirely appropriate, for completeness, and robustness, we have applied them to our traffic impact analysis. The revised traffic impact analysis including the A183 Mill Lane/B1299 Front Street and A183 Mill Lane/North Guards signalised junctions is shown below.

A183 Mill Lane/Site Access Priority Controlled Junction

32 To assess the operation of the proposed A183 Mill Lane/Site Access priority-controlled junction the computer program JUNCTIONS 11 has been utilised using the proposed site access layout and the 2032 'With Development' Flows.

33 The results of this analysis are summarised below in **Table 3** whilst the full output is contained within **Appendix 1**.

Arm	2032 With Development Flows			
	Weekday AM		Weekday PM	
	RFC	Q	RFC	Q
Site Access	0.19	0	0.10	0
A183 Mill Lane	0.04	0	0.10	0

Table 3 Summary of JUNCTIONS 11 Results for the proposed A183 Mill Lane/Site Access Junction – 2032 With Development Flows

34 As can be seen in Table 3, the proposed A183 Mill Lane/Site Access junction is forecast to operate well within its theoretical capacity.

35 Based on the above, it is concluded that the proposed site access junction can accommodate the traffic likely to be generated by the proposed development.

A183 Mill Lane/B1299 Front Street/North Guards Signalised Junction

36 Capacity assessments of the A183 Mill Lane/B1299 Front Street/North Guards signalised junction have been undertaken using the LINSIG 3 program.

37 Assessments of the junction have been undertaken using the 2025 surveyed flows and the model has been validated to reflect the observed queues at the junction. The queue surveys are contained within **Appendix 2.**

38 The results of the 2025 surveyed flows are summarised within **Table 4** below, with the full results contained within **Appendix 3**.

Movement	2025 Surveyed Flows			
	Weekday AM		Weekday PM	
	Max RFC	Max Queue	Max RFC	Max Queue
East Street (S) Ahead Left	72.9%	10.6	77.7%	14.3
Front Street Left Right	72.7 : 72.7%	9.2	79.9 : 79.9%	8.8
East Street (N) Right Ahead	40.5%	5.3	36.4%	3.8
East Street (NB) Left Ahead	48.5%	9.6	56.8%	11.9
East Street (SB) Ahead Right	37.7%	4.9	36.0%	4.7

Table 4 Summary of LINSIG3 Output for the A183 Mill Lane/B1299 Front Street/North Guards Signalised Junction – 2025 Surveyed Flows

Capacity assessments of the A183 Mill Lane/B1299 Front Street/North Guards signalised crossing have been undertaken using the LINSIG 3 program. The analysis has been also carried out using the 2032 'Base' and 'With Development' flows. The full results are contained within **Appendix 3**.

Movement	2032 Base Flows				2032 'With Dev' Flows			
	Weekday AM		Weekday PM		Weekday AM		Weekday PM	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
East Street (S) Ahead Left	78.2%	11.8	83.2%	16.1	79.8%	12.3	89.0%	18.4
Front Street Left Right	78.0 : 78.0%	10.5	85.5 : 85.5%	10.5	79.3 : 79.3%	11.0	86.6 : 86.6%	11.2
East Street (N) Right Ahead	43.4%	5.8	39.0%	4.2	47.7%	6.8	41.6%	4.6
East Street (NB) Left Ahead	52.1%	10.4	60.8%	12.9	53.3%	10.7	63.9%	13.9
East Street (SB) Ahead Right	41.8%	5.4	39.8%	5.0	44.7%	6.0	42.7%	5.4

Table 5 Summary of LINSIG3 Output for the A183 Mill Lane/B1299 Front Street/North Guards Signalised Junction – 2032 Base and 'With Development' Flows

39 As can be seen from Table 5, the A183 Mill Lane/B1299 Front Street/North Guards signalised junction is forecast to operate within its theoretical capacity in the 2032 Base scenarios. With the addition of the proposed development flows, the junction will continue to operate within its theoretical capacity with minimal increases in the forecast RFC and queuing. The proposals will have a minimal impact on the operation of the signalised junction.

Conclusions

40 This Technical Note 01 has considered the comments raised by South Tyneside Council, Systra and Nexus on the proposed residential development at the A183 Mill Lane in Whitburn.

41 The following conclusions can be drawn from this Note.

- The proposed vehicular access arrangements off the A183 Mill Lane have been designed to accord with the required highway design standards and have been amended to address the comments raised by South Tyneside Council and SYSTRA.

- The access design has been amended to increase the initial carriageway width at the site access, while the proposed pedestrian refuge on the A183 Mill Lane has been increased to a width of 2.7 metres to better accommodate pedestrian and cycle movements.
- The proposed active travel connections into the site from the surrounding highway network will provide safe, attractive and convenient routes for pedestrians and cyclists, supporting integration with the existing local walking and cycling infrastructure.
- The internal layout has been amended to respond to the comments raised by South Tyneside Council, including matters relating to visibility splays, visitor parking distribution, shared footway/cycleway provision and future highway adoption requirements.
- The applicant is willing to make an appropriate financial contribution towards improvements to the existing bus stop facilities on the A183 Mill Lane, with the detailed scope of works to be agreed with South Tyneside Council and Nexus at a later stage.
- Additional bus stops on Lizard Lane are not considered necessary, as the existing A183 Mill Lane bus stops are located adjacent to the site frontage and will be upgraded to provide a high-quality and accessible public transport provision for future residents.
- Pop cards will be provided to each dwelling as part of the Travel Plan measures, helping to promote public transport uptake, reduce reliance on private car trips and support more sustainable travel behaviour from the outset of occupation.
- The requested trip rates have been applied for completeness, and robustness, and the proposed development traffic has been assessed at the A183 Mill Lane/Site Access junction and the A183 Mill Lane/B1299 Front Street/North Guards signalised junction.
- The junction capacity assessments demonstrate that the site access and assessed off-site junctions are forecast to operate within their theoretical capacity, with the proposed development traffic not resulting in a detrimental impact on the operation of the local highway network.

42 In conclusion, the proposed residential development is considered to be acceptable in highways and transport terms. The proposals will provide safe and suitable access for all users, will not result in an unacceptable impact on highway safety or the operation of the

local highway network, and will support sustainable travel in accordance with the objectives of the NPPF.

43 On this basis, there are no highways or transport reasons why planning permission should not be granted.

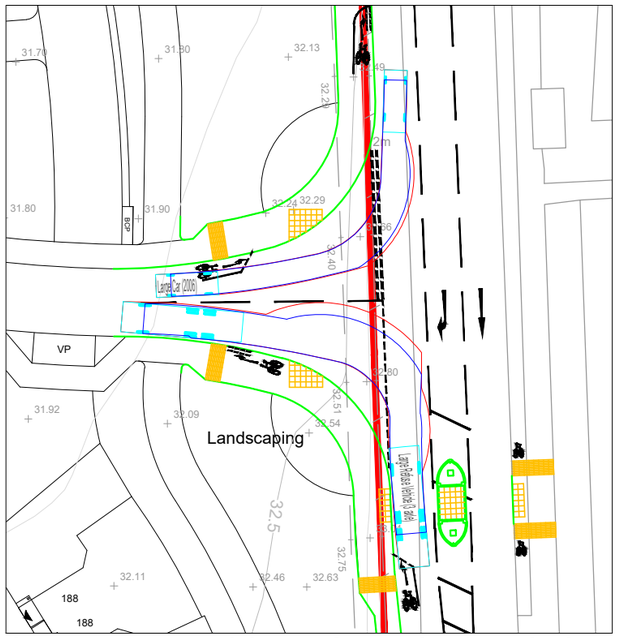
Enclosures

Plan 1	**Proposed Site Access Arrangement**
Plan 2	**Visibility Plan**
Plan 3	**Proposed Site Layout**

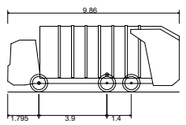
Appendix 1	**JUNCTIONS 11 Output - A183 Mill Lane/Site Access junction.**
Appendix 2	**Queue Survey Data**
Appendix 3	**LINSIG3 Output - A183 Mill Lane/B1299 Front Street/North Guards signalised junction.**

Plans

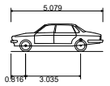
NORTH SOUTH AERIAL VIEW



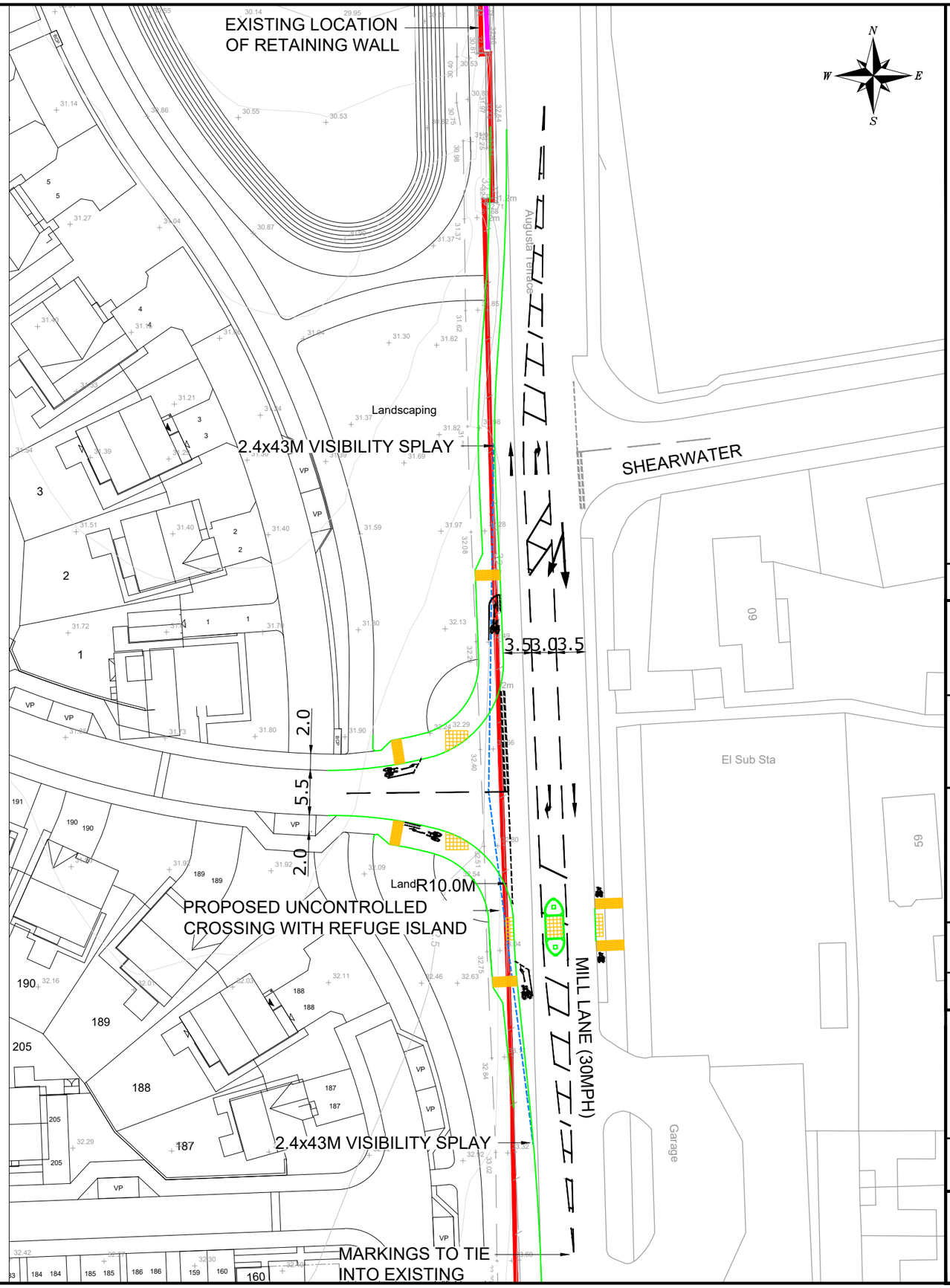
SWEPT PATH ANALYSIS: REFUSE VEHICLE & LARGE CAR



Large Refuse Vehicle (3 axle)	
Overall Length	9.860m
Overall Width	2.450m
Overall Body Height	3.814m
Min Body Ground Clearance	0.366m
Track Width	2.450m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	9.500m



Large Car (2006)	
Overall Length	5.079m
Overall Width	1.872m
Overall Body Height	1.525m
Min Body Ground Clearance	0.310m
Max Track Width	1.831m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	5.900m



NOTES

PLAN 1

THIS IS NOT A CONSTRUCTION DRAWING AND IS FOR INDICATIVE PURPOSES ONLY.
THE DRAWING WILL BE SUBJECT TO CHANGE FOLLOWING LOCAL AUTHORITY REVIEW AND CONFIRMATION OF PUBLIC HIGHWAY AND THIRD PARTY LAND BOUNDARIES.

INDICATIVE SITE BOUNDARY

DENOTES NEW KERBS

LOCAL AUTHORITY: SOUTH TYNESIDE COUNCIL
TOTAL AREA OF SITE: 10.18Ha

SITE LAYOUT NTS

REV	DETAILS	DRAWN	CHECKED	DATE
G	UPDATED SITE LAYOUT	LB	GM	JUL 26
F	AMENDED TO LHA COMMENTS	LB	GM	APR 26
E	PROPOSED SITE LAYOUT UPDATED	SL	PJW	OCT 25
D	PEDESTRIAN CROSSING SHOWN	LB	PJW	JUL 25
C	AMENDED ACCESS	LB	PJW	APR 25
B	SITE ACCESS RELOCATED	LB	PJW	APR 25
A	SITE ACCESS RELOCATED	LB	PJW	APR 25

CLIENT:

STORY HOMES

PROJECT:

KITCHENER, WHITBURN

DRAWING TITLE:

PROPOSED SITE ACCESS PLAN

SCALES:

1:500 @ A3

DRAWN:	CHECKED:	DATE:
LB	JC	AUG 21

Croft Transport Planning & Design
340 Deansgate
Manchester
M3 4LY

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DRAWING NUMBER: 3493-F01

REVISION: G

Eddisons | Incorporating Croft

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NOTES

PLAN 2

THIS IS NOT A CONSTRUCTION DRAWING AND IS FOR INDICATIVE PURPOSES ONLY. THE DRAWING WILL BE SUBJECT TO CHANGE FOLLOWING LOCAL AUTHORITY REVIEW AND CONFIRMATION OF PUBLIC HIGHWAY AND THIRD PARTY LAND BOUNDARIES.

JUNCTION VISIBILITY

FORWARD VISIBILITY

REV	DETAILS	DRAWN	CHECKED	DATE
-	-	-	-	-

CLIENT:

STORY HOMES

PROJECT:

LIZARD LANE, WHITBURN

DRAWING TITLE:

VISIBILITY PLAN

SCALES:

1:1000 @ A1

DRAWN:	CHECKED:	DATE:
SL	PW	OCT 2025

Eddisons
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DRAWING NUMBER: 3493-01

REVISION: B

Eddisons

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N
W E
S

A1
1:1000
0 10 20 40

KITCHENER ROAD
LIZARD LANE
MILL LANE
BNG/POS AREA
Play Area
Shelter
LB
THILL STONE MEWS
Landscaping
Car Park
Shelter
El Sub Sta
Ruin
Whitburn Lodge (PH)
SUDs Basin
BNG/POS AREA
Landscaping
El Sub Sta
WHITE ROCKS GROVE
Garage
Arthur Terrace
Shelter
Marsden View
South View
LILAC AVENUE
Shelter
Marsden Primary School
Lizards View
FARFIELD
A 183
El Sub Sta
LILY CRESCENT
MARSDEN AVEN

Site Boundaries:
Site Planning Boundary

PLAN 3

Affordable Units:
Denotes Rented Social Landlord (RSL) Unit (41 No.)
Denotes Discount Market Value (DMV) Unit (21 No.)
Denotes First Homes (FH) Unit (20 No.)

Visitor Parking:
VP Denotes VP Bay (74 No.)

Bedrooms:
Denotes 1-Bedroom Unit
Denotes 2-Bedroom Unit
Denotes 3-Bedroom Unit
Denotes 4-Bedroom Unit
Denotes 5-Bedroom Unit

Other information:
Denotes Existing Tree Groups
Denotes SuDs Feature

HOUSETYPE SCHEDULE OF ACCOMMODATION

SITE NAME	MILL LANE, WHITBURN	REV.	P3
		REF.	MLLN.SCH.01

REF.	HOUSETYPE	COMPLIANCE	CONFIG.	PARKING	SQ. FT.	RSL NO.	FH NO.	DMV NO.	OM NO.	TOT. SQ. FT
1 BEDROOM RANGE										
BLD	Belford	M4(2) - GF ONLY	1 Bed Apartment	Front Parking	624	8				4992
2 BEDROOM RANGE										
BFD	Branford	M4(2)	2 Bed Semi/Terraced	Front Parking	759	14	3			12903
NFD	Newford	M4(3)	2 Bed Semi Bungalow	Front Parking	777	10				7770
BOW	Bowscale	M4(2)	2 Bed Semi	Front Parking	759		1	2		2277
3 BEDROOM RANGE										
FFD	Fulford	M4(2)	3 Bed Semi/Terraced	Front Parking	926	12	15	2		26854
HAL	Hallin	M4(2)	3 Bed Semi/Terraced	Front Parking	995		1	8		8955
ASD	Ashford	M4(2)	3 Bed Detached	Integ Single Garage	1060				13	13780
MYD	Mayford	M4(2)	3 Bed Semi	Front Parking	1079				14	15106
4 BEDROOM RANGE										
SKI	Skiddaw	M4(2)	4 Bed Semi/Terraced	Front Parking	1359	2		4		5436
RFD	Rushford	M4(2)	4 Bed Semi	Front Parking	1409				14	19726
CFD	Clifford	M4(2)	4 Bed Detached	Integ Single Garage	1360				17	23120
WXD	Wexford	M4(2)	4 Bed Detached	Detached Single Garage	1435				8	11480
LFD	Linford	M4(2)	4 Bed Detached	Integ Single Garage	1536				20	30720
HFD	Hartford	M4(2)	4 Bed Detached	Integ Single Garage	1622				20	32440
5 BEDROOM RANGE										
CND	Cranford	M4(2)	5 Bed Detached	Integ Large Garage	1961				17	33337
TOTAL AFFORDABLE AND OPEN MARKET UNITS						46	20	16	123	
TOTAL UNITS AND SQ. FT.								205		248896

Story HOMES

DEVELOPMENT
MILL LANE, WHITBURN

DRAWING
PROPOSED SITE PLAN

DRAWN BY	DR	DATE	28.05.2026
CHECKED BY	-	SCALE	1:1000 @A1

DWG PACK	DRAWING NUMBER	REVISION
PLN	MLLN.PLN.02	P3

Revisions	Notes	Date
P1	Initial Issue for Planning Submission	07.10.2025
P2	Site Entrance updated. Planning comments incorporated. Affordable Tenures updated (Skiddaw). Cycle sheds and additional Patio added. Accommodation Schedule Updated	08.06.2026

Riverview Business Centre, Amethyst Road, Newcastle Business Park, Newcastle Upon Tyne, NE4 7YL
Tel 0191 226 7260

Appendices

Appendix 1

JUNCTIONS11 Output – A183 Mill Lane/Site Access Junction

Junctions 11

PICADY 11 - Priority Intersection Module

Filename: Site Access-Mill Lane.j11
Path: Z:\projects\3493 Lizard Lane, Whitburn\Picady
Report generation date: 19/06/2026 10:34:21

»2025 | with Development Flows | AM
»2025 | with Development Flows | PM

Summary of junction performance

	AM						PM					
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)
	2025 - with Development Flows											
Stream B-AC	D1	0.2	8.81	0.19	A	1.71	D2	0.1	8.75	0.10	A	0.88
Stream C-AB		0.0	7.54	0.04	A			0.1	8.43	0.10	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

File summary

File Description

Title	
Location	
Site number	
Date	22/10/2025
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EDD\George.Monks
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
5.75						0.85	36.00	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2025	with Development Flows	AM	ONE HOUR	08:00	09:30	15	✓
D2	2025	with Development Flows	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2025 | with Development Flows | AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		1.71	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.71	A

Arms

Arms

Arm	Name	Description	Arm type
A	A183 Augusta Terrace (S)		Major
B	Site Access		Minor
C	Augusta Terrace (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.00		✓	2.20	0.0	✓	4.00

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	2.75	130	87

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	550	0.096	0.242	0.152	0.346
B-C	662	0.097	0.245	-	-
C-B	574	0.213	0.213	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2025	with Development Flows	AM	ONE HOUR	08:00	09:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	332	100.000
B		ONE HOUR	✓	88	100.000
C		ONE HOUR	✓	108	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	14	318
	B	40	0	48
	C	91	17	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	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	0.19	8.81	0.2	A	81	121
C-AB	0.04	7.54	0.0	A	16	23
C-A					84	125
A-B					13	19
A-C					292	438

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	17	0.00	538	0.123	66	0.0	0.1	7.624	A
C-AB	13	3	0.00	521	0.025	13	0.0	0.0	7.085	A
C-A	69	17	0.00			69				
A-B	11	3	0.00			11				
A-C	239	60	0.00			239				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	0.00	524	0.151	79	0.1	0.2	8.084	A
C-AB	15	4	0.00	510	0.030	15	0.0	0.0	7.268	A
C-A	82	20	0.00			82				
A-B	13	3	0.00			13				
A-C	286	71	0.00			286				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	97	24	0.00	506	0.192	97	0.2	0.2	8.799	A
C-AB	19	5	0.00	496	0.038	19	0.0	0.0	7.538	A
C-A	100	25	0.00			100				
A-B	15	4	0.00			15				
A-C	350	88	0.00			350				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	97	24	0.00	506	0.192	97	0.2	0.2	8.807	A
C-AB	19	5	0.00	496	0.038	19	0.0	0.0	7.538	A
C-A	100	25	0.00			100				
A-B	15	4	0.00			15				
A-C	350	88	0.00			350				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	0.00	524	0.151	79	0.2	0.2	8.098	A
C-AB	15	4	0.00	510	0.030	15	0.0	0.0	7.272	A
C-A	82	20	0.00			82				
A-B	13	3	0.00			13				
A-C	286	71	0.00			286				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	17	0.00	538	0.123	66	0.2	0.1	7.643	A
C-AB	13	3	0.00	521	0.025	13	0.0	0.0	7.086	A
C-A	69	17	0.00			69				
A-B	11	3	0.00			11				
A-C	239	60	0.00			239				

2025 | with Development Flows | PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	Two-way	Two-way		0.88	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.88	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2025	with Development Flows	PM	ONE HOUR	17:00	18:30	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	420	100.000
B		ONE HOUR	✓	40	100.000
C		ONE HOUR	✓	362	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	36	384
	B	18	0	22
	C	318	44	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	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	0.10	8.75	0.1	A	37	55
C-AB	0.10	8.43	0.1	A	40	61
C-A					292	438
A-B					33	50
A-C					352	529

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	8	0.00	504	0.060	30	0.0	0.1	7.583	A
C-AB	33	8	0.00	507	0.065	33	0.0	0.1	7.594	A
C-A	239	60	0.00			239				
A-B	27	7	0.00			27				
A-C	289	72	0.00			289				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	9	0.00	484	0.074	36	0.1	0.1	8.034	A
C-AB	40	10	0.00	494	0.080	39	0.1	0.1	7.925	A
C-A	286	71	0.00			286				
A-B	32	8	0.00			32				
A-C	345	86	0.00			345				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	11	0.00	455	0.097	44	0.1	0.1	8.750	A
C-AB	48	12	0.00	476	0.102	48	0.1	0.1	8.423	A
C-A	350	88	0.00			350				
A-B	40	10	0.00			40				
A-C	423	106	0.00			423				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	11	0.00	455	0.097	44	0.1	0.1	8.754	A
C-AB	48	12	0.00	476	0.102	48	0.1	0.1	8.426	A
C-A	350	88	0.00			350				
A-B	40	10	0.00			40				
A-C	423	106	0.00			423				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	9	0.00	484	0.074	36	0.1	0.1	8.040	A
C-AB	40	10	0.00	494	0.080	40	0.1	0.1	7.930	A
C-A	286	71	0.00			286				
A-B	32	8	0.00			32				
A-C	345	86	0.00			345				

18:15 - 18:30

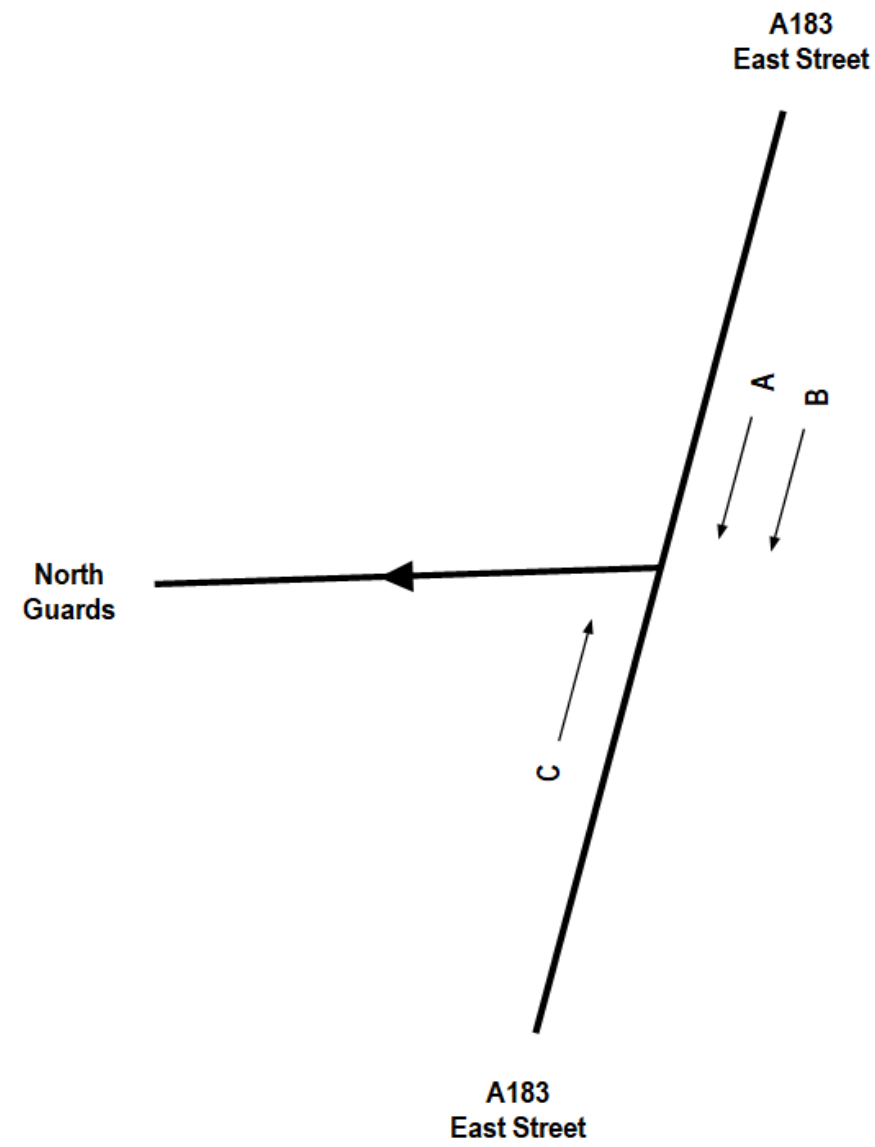
Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	8	0.00	504	0.060	30	0.1	0.1	7.592	A
C-AB	33	8	0.00	507	0.065	33	0.1	0.1	7.602	A
C-A	239	60	0.00			239				
A-B	27	7	0.00			27				
A-C	289	72	0.00			289				

Appendix 2

Queue Survey Data

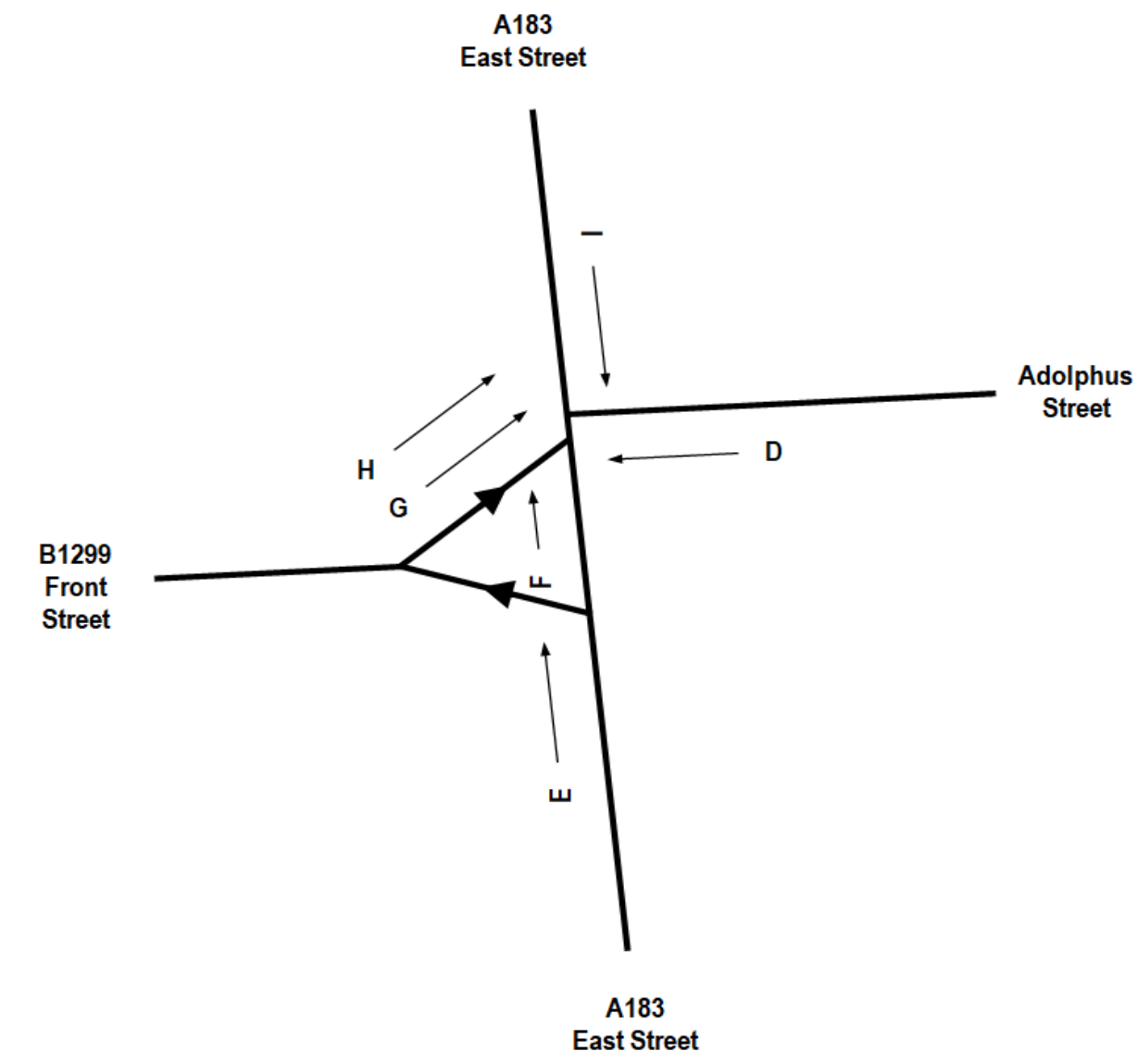
N

JUNCTION 2



N

JUNCTION 3



DRAWING TITLE: **QUEUE REFERENCE**			
JOB TITLE: **25.028 WHITBURN, SUNDERLAND**			
DRAWN BY: CC	DATE: MAY 2025	SCALE: NTS	REF: FIGURE 3

Transport Data Specialists Ltd
W: www.transportds.co.uk
E: enquiries@transportds.co.uk
T: 0777 625 2475 T: 0794 007 1260

Time Beginning	North Guards/A183 East Street, Queues (vehs) - Thursday 8th May 2025			Time Beginning	North Guards/A183 East Street, Queues (vehs) - Thursday 8th May 2025		
	A	B	C		A	B	C
0730	0	0	1	1630	0	6	1
0735	0	0	0	1635	1	6	4
0740	0	0	0	1640	0	1	2
0745	1	4	2	1645	0	2	3
0750	0	0	0	1650	1	0	5
0755	0	6	4	1655	1	1	2
0800	1	3	2	1700	0	0	1
0805	1	1	4	1705	0	0	4
0810	0	3	0	1710	0	4	2
0815	0	3	1	1715	2	5	2
0820	2	0	2	1720	1	1	3
0825	1	1	0	1725	1	3	5
0830	1	4	2	1730	0	1	4
0835	2	2	3	1735	1	1	0
0840	2	1	5	1740	0	1	1
0845	0	11	11	1745	0	3	2
0850	1	8	6	1750	2	1	4
0855	2	17	5	1755	1	3	1
0900	2	14	7	1800	0	2	0
0905	0	6	0	1805	0	2	0
0910	0	0	0	1810	0	8	1
0915	1	3	1	1815	0	0	0
0920	2	4	1	1820	0	9	0
0925	0	1	0	1825	0	4	2
0930	0	0	0	1830	0	3	0

Time Beginning	A183 East Street/Adolphus Street/B1299 Front Street, Queues (vehs) - Thursday 8th May 2025						Time Beginning	A183 East Street/Adolphus Street/B1299 Front Street, Queues (vehs) - Thursday 8th May 2025					
	D	E	F	G	H	I		D	E	F	G	H	I
0730	0	0	0	1	1	0	1630	0	8	0	1	6	6
0735	0	0	0	0	1	0	1635	0	11	0	9	2	3
0740	0	2	0	2	0	0	1640	0	10	0	3	2	6
0745	0	0	0	0	1	1	1645	0	12	0	1	7	2
0750	0	2	0	1	0	0	1650	0	6	0	8	2	7
0755	0	3	0	1	4	6	1655	0	10	0	8	2	3
0800	0	3	0	1	2	1	1700	0	16	0	12	0	5
0805	0	9	0	0	3	2	1705	0	12	0	3	1	2
0810	0	6	0	0	5	1	1710	0	8	0	9	2	5
0815	0	6	0	3	0	7	1715	1	17	0	13	0	5
0820	0	3	0	3	0	3	1720	0	19	0	13	1	4
0825	0	4	0	3	5	7	1725	0	18	0	7	2	6
0830	0	4	0	1	4	4	1730	0	15	0	2	16	0
0835	0	6	0	10	0	5	1735	0	12	0	13	0	3
0840	0	12	0	16	0	4	1740	0	14	0	0	17	3
0845	0	15	0	3	8	7	1745	0	11	0	2	11	7
0850	0	14	0	3	12	2	1750	0	14	0	6	4	4
0855	1	10	0	1	22	0	1755	0	4	0	6	2	0
0900	0	7	0	2	5	7	1800	0	8	0	1	1	4
0905	0	0	0	3	6	0	1805	0	8	0	0	1	1
0910	0	4	0	0	1	0	1810	0	3	0	9	1	2
0915	1	2	0	0	4	2	1815	0	3	0	2	5	0
0920	0	2	0	1	1	0	1820	0	4	0	1	2	0
0925	0	3	0	0	1	2	1825	0	6	0	0	5	3
0930	0	2	0	3	0	1	1830	0	0	0	1	0	0

Appendix 3

Linsig3 Output – A183 Mill Lane/B1299 Front Street/North Guards Signalised Junction

Basic Input Data and Results

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	East Street - B1299 Front Street - N Guards.lsg3x
Author:	
Company:	
Address:	
Linsig Version:	3, 3, 0, 6

Scenarios

Number	Scenario Name	Flow Group	Network Control Plan	Time	Cycle Time (s)	PRC (%)	Delay (pcuHr)
1	2025 Surveyed Flows - AM Peak	2025 Surveyed Flows - AM Peak	Network Control Plan 1	08:00 - 09:00	99	23.4	15.77
2	2025 Surveyed Flows - PM Peak	2025 Surveyed Flows - PM Peak	Network Control Plan 1	16:30 - 17:30	99	12.6	18.38
3	2032 Base Flows - AM Peak	2032 Base Flows - AM Peak	Network Control Plan 1	08:00 - 09:00	99	15.1	17.89
4	2032 Base Flows - PM Peak	2032 Base Flows - PM Peak	Network Control Plan 1	16:30 - 17:30	99	5.2	21.32
5	2032 With Development - AM Peak	2032 With Development - AM Peak	Network Control Plan 1	08:00 - 09:00	99	12.9	18.88
6	2032 With Development - PM Peak	2032 With Development - PM Peak	Network Control Plan 1	16:30 - 17:30	99	1.1	24.03

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min (s)	Cont Min (s)
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Pedestrian		9	9
E	Pedestrian		9	9
F	Ind. Arrow	B	4	4
G	Traffic		7	7
H	Traffic		7	7
I	Pedestrian		10	10
J	Pedestrian		10	10
K	Ind. Arrow	G	4	4

Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K
A		-	8	10	10	7	-	-	-	-	-
B	-		6	10	10	-	-	-	-	-	-
C	5	5		9	9	5	-	-	-	-	-
D	9	9	9		-	9	-	-	-	-	-
E	9	9	9	-		9	-	-	-	-	-
F	8	-	8	10	10		-	-	-	-	-
G	-	-	-	-	-	-		-	9	9	-
H	-	-	-	-	-	-	-		9	9	7
I	-	-	-	-	-	-	10	10		-	10
J	-	-	-	-	-	-	10	10	-		10
K	-	-	-	-	-	-	-	6	7	7	

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	H	Losing	4	4
1	3	B	Losing	6	6
1	3	H	Losing	6	6
1	3	I	Gaining absolute	8	8
1	3	J	Gaining absolute	8	8

Prohibited Stage Change

From Stage \ To Stage	1	2	3	4
1		11	16	8
2	8		10	8
3	10	10		10
4	5	7	9	

Phases in Stage

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

Lane Input Data

Junction: Unnamed Junction												
Lane	**Lane Type**	**Phases**	**Start Disp. (s)**	**End Disp. (s)**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient (%)**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (East Street (S))	U	A	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 4 Ahead Arm 8 Left	Inf 10.00
2/1 (Front Street)	U	C	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 4 Left	6.00
2/2 (Front Street)	U	C	2	3	2.6	Geom	-	4.00	0.00	N	Arm 9 Right	10.00
3/1 (East Street (N))	U	B F	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 8 Right Arm 9 Ahead	16.00 Inf
4/1 (East Street (NB))	U	H	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left Arm 7 Ahead	8.00 Inf
5/1 (N Guards)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (East Street (SB))	O	G K	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 3 Ahead Arm 5 Right	Inf 12.00
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1	U		2	3	60.0	Inf	-	-	-	-	-	-

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)
6/1 (East Street (SB))	5/1 (Right)	1439	0	4/1	1.09	All	2.00	2.00	0.50	2	2.00

Scenario 1: '2025 Surveyed Flows - AM Peak' (FG1: '2025 Surveyed Flows - AM Peak', Plan 1: 'Network Control Plan 1')

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 (East Street (S))	3.80	0.00	Y	Arm 4 Ahead	Inf	83.6 %	1947	1947
				Arm 8 Left	10.00	16.4 %		
2/1 (Front Street)	4.00	0.00	Y	Arm 4 Left	6.00	100.0 %	1612	1612
2/2 (Front Street)	4.00	0.00	N	Arm 9 Right	10.00	100.0 %	1874	1874
3/1 (East Street (N))	3.00	0.00	Y	Arm 8 Right	16.00	16.1 %	1886	1886
				Arm 9 Ahead	Inf	83.9 %		
4/1 (East Street (NB))	3.50	0.00	Y	Arm 5 Left	8.00	18.2 %	1900	1900
				Arm 7 Ahead	Inf	81.8 %		
5/1 (N Guards Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (East Street (SB))	4.00	0.00	Y	Arm 3 Ahead	Inf	69.0 %	1940	1940
				Arm 5 Right	12.00	31.0 %		
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 1

Scenario 2: '2025 Surveyed Flows - PM Peak' (FG2: '2025 Surveyed Flows - PM Peak', Plan 1: 'Network Control

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 (East Street (S))	3.80	0.00	Y	Arm 4 Ahead	Inf	88.8 %	1962	1962
				Arm 8 Left	10.00	11.2 %		
2/1 (Front Street)	4.00	0.00	Y	Arm 4 Left	6.00	100.0 %	1612	1612
2/2 (Front Street)	4.00	0.00	N	Arm 9 Right	10.00	100.0 %	1874	1874
3/1 (East Street (N))	3.00	0.00	Y	Arm 8 Right	16.00	11.1 %	1895	1895
				Arm 9 Ahead	Inf	88.9 %		
4/1 (East Street (NB))	3.50	0.00	Y	Arm 5 Left	8.00	21.2 %	1890	1890
				Arm 7 Ahead	Inf	78.8 %		
5/1 (N Guards Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (East Street (SB))	4.00	0.00	Y	Arm 3 Ahead	Inf	76.3 %	1957	1957
				Arm 5 Right	12.00	23.7 %		
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 2

Scenario 3: '2032 Base Flows - AM Peak' (FG3: '2032 Base Flows - AM Peak', Plan 1: 'Network Control Plan 1')

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 (East Street (S))	3.80	0.00	Y	Arm 4 Ahead	Inf	83.8 %	1948	1948
				Arm 8 Left	10.00	16.2 %		
2/1 (Front Street)	4.00	0.00	Y	Arm 4 Left	6.00	100.0 %	1612	1612
2/2 (Front Street)	4.00	0.00	N	Arm 9 Right	10.00	100.0 %	1874	1874
3/1 (East Street (N))	3.00	0.00	Y	Arm 8 Right	16.00	16.2 %	1886	1886
				Arm 9 Ahead	Inf	83.8 %		
4/1 (East Street (NB))	3.50	0.00	Y	Arm 5 Left	8.00	18.2 %	1900	1900
				Arm 7 Ahead	Inf	81.8 %		
5/1 (N Guards Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (East Street (SB))	4.00	0.00	Y	Arm 3 Ahead	Inf	69.0 %	1940	1940
				Arm 5 Right	12.00	31.0 %		
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 3

Scenario 4: '2032 Base Flows - PM Peak' (FG4: '2032 Base Flows - PM Peak', Plan 1: 'Network Control Plan 1')

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 (East Street (S))	3.80	0.00	Y	Arm 4 Ahead	Inf	88.8 %	1962	1962
				Arm 8 Left	10.00	11.2 %		
2/1 (Front Street)	4.00	0.00	Y	Arm 4 Left	6.00	100.0 %	1612	1612
2/2 (Front Street)	4.00	0.00	N	Arm 9 Right	10.00	100.0 %	1874	1874
3/1 (East Street (N))	3.00	0.00	Y	Arm 8 Right	16.00	11.2 %	1895	1895
				Arm 9 Ahead	Inf	88.8 %		
4/1 (East Street (NB))	3.50	0.00	Y	Arm 5 Left	8.00	21.1 %	1890	1890
				Arm 7 Ahead	Inf	78.9 %		
5/1 (N Guards Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (East Street (SB))	4.00	0.00	Y	Arm 3 Ahead	Inf	76.3 %	1957	1957
				Arm 5 Right	12.00	23.7 %		
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 4

Scenario 5: '2032 With Development - AM Peak' (FG5: '2032 With Development - AM Peak', Plan 1: 'Network

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 (East Street (S))	3.80	0.00	Y	Arm 4 Ahead	Inf	84.1 %	1948	1948
				Arm 8 Left	10.00	15.9 %		
2/1 (Front Street)	4.00	0.00	Y	Arm 4 Left	6.00	100.0 %	1612	1612
2/2 (Front Street)	4.00	0.00	N	Arm 9 Right	10.00	100.0 %	1874	1874
3/1 (East Street (N))	3.00	0.00	Y	Arm 8 Right	16.00	17.5 %	1884	1884
				Arm 9 Ahead	Inf	82.5 %		
4/1 (East Street (NB))	3.50	0.00	Y	Arm 5 Left	8.00	17.8 %	1902	1902
				Arm 7 Ahead	Inf	82.2 %		
5/1 (N Guards Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (East Street (SB))	4.00	0.00	Y	Arm 3 Ahead	Inf	70.2 %	1943	1943
				Arm 5 Right	12.00	29.8 %		
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 5

Scenario 6: '2032 With Development - PM Peak' (FG6: '2032 With Development - PM Peak', Plan 1: 'Network

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 (East Street (S))	3.80	0.00	Y	Arm 4 Ahead	Inf	89.2 %	1963	1963
				Arm 8 Left	10.00	10.8 %		
2/1 (Front Street)	4.00	0.00	Y	Arm 4 Left	6.00	100.0 %	1612	1612
2/2 (Front Street)	4.00	0.00	N	Arm 9 Right	10.00	100.0 %	1874	1874
3/1 (East Street (N))	3.00	0.00	Y	Arm 8 Right	16.00	12.0 %	1894	1894
				Arm 9 Ahead	Inf	88.0 %		
4/1 (East Street (NB))	3.50	0.00	Y	Arm 5 Left	8.00	20.1 %	1894	1894
				Arm 7 Ahead	Inf	79.9 %		
5/1 (N Guards Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (East Street (SB))	4.00	0.00	Y	Arm 3 Ahead	Inf	76.6 %	1958	1958
				Arm 5 Right	12.00	23.4 %		
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1	Infinite Saturation Flow						Inf	Inf

Bonus Green Times

No Bonus Greens are defined For Scenario 6

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2025 Surveyed Flows - AM Peak'	08:00	09:00	01:00	
2: '2025 Surveyed Flows - PM Peak'	16:30	17:30	01:00	
3: '2032 Base Flows - AM Peak'	08:00	09:00	01:00	
4: '2032 Base Flows - PM Peak'	16:30	17:30	01:00	
5: '2032 With Development - AM Peak'	08:00	09:00	01:00	
6: '2032 With Development - PM Peak'	16:30	17:30	01:00	

Traffic Flows, Desired

FG1: '2025 Surveyed Flows - AM Peak'

Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	61	255	57	373
B	142	0	202	45	389
C	265	51	0	142	458
D	0	0	0	0	0
Tot.	407	112	457	244	1220

FG2: '2025 Surveyed Flows - PM Peak'

Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	57	355	96	508
B	145	0	158	42	345
C	297	37	0	104	438
D	0	0	0	0	0
Tot.	442	94	513	242	1291

FG3: '2032 Base Flows - AM Peak'

Desired Flow :

	Destination				
Origin	A	B	C	D	Tot.
A	0	65	274	61	400
B	152	0	217	48	417
C	284	55	0	152	491
D	0	0	0	0	0
Tot.	436	120	491	261	1308

FG4: '2032 Base Flows - PM Peak'

Desired Flow :

Origin	Destination				
	A	B	C	D	Tot.
A	0	61	381	102	544
B	155	0	169	45	369
C	318	40	0	111	469
D	0	0	0	0	0
Tot.	473	101	550	258	1382

FG5: '2032 With Development - AM Peak'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	65	282	61	408
	B	152	0	223	48	423
	C	307	65	0	158	530
	D	0	0	0	0	0
	Tot.	459	130	505	267	1361

FG6: '2032 With Development - PM Peak'
Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	61	403	101	565
	B	155	0	183	46	384
	C	329	45	0	114	488
	D	0	0	0	0	0
	Tot.	484	106	586	261	1437

Scenario 1: '2025 Surveyed Flows - AM Peak' (FG1: '2025 Surveyed Flows - AM Peak', Plan 1: 'Network Control Plan 1')

Stage Timings

Stage	1	2	3	4
Duration	25	4	9	25
Change Point	0	30	45	64

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	East Street (S) Ahead Left	Traffic	25	5	30
B	East Street (N) Right Ahead	Traffic	40	5	45
C	Front Street Left Right	Traffic	26	73	0
D	Pedestrians across	Pedestrian	9	55	64
E	Pedestrians across	Pedestrian	9	55	64
F	East Street (N) Right IGA	Ind. Arrow	8	37	45
G	East Street (SB) Ahead Right	Traffic	70	74	45
H	East Street (NB) Left Ahead	Traffic	59	74	34
I	Pedestrians across	Pedestrian	10	54	64
J	Pedestrians across	Pedestrian	10	54	64
K	East Street (SB) Right IGA	Ind. Arrow	4	41	45

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**72.9%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**72.9%**
1/1	East Street (S) Ahead Left	U	N/A	N/A	A		1	25	-	-	373	1947	511	72.9%
2/1+2/2	Front Street Left Right	U	N/A	N/A	C		1	26	-	-	389	1612:1874	340+195	72.7 : 72.7%
3/1	East Street (N) Right Ahead	U	N/A	N/A	B	F	1	40	8	-	316	1886	781	40.5%
4/1	East Street (NB) Left Ahead	U	N/A	N/A	H		1	59	-	-	559	1900	1152	48.5%
5/1	N Guards	U	N/A	N/A	-		-	-	-	-	244	Inf	Inf	0.0%
6/1	East Street (SB) Ahead Right	O	N/A	N/A	G	K	1	70	4	-	458	1940	1214	37.7%
7/1		U	N/A	N/A	-		-	-	-	-	457	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	-	112	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	-	407	Inf	Inf	0.0%

Basic 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	**-**	**-**	**126**	**13**	**3**	**11.8**	**3.7**	**0.3**	**15.8**	**-**	**-**	**-**	**-**	
Unnamed Junction	**-**	**-**	**126**	**13**	**3**	**11.8**	**3.7**	**0.3**	**15.8**	**-**	**-**	**-**	**-**	
1/1	373	373	-	-	-	3.4	1.3	-	4.8	46.1	9.3	1.3	10.6	
2/1+2/2	389	389	-	-	-	3.4	1.3	-	4.7	43.2	7.9	1.3	9.2	
3/1	316	316	-	-	-	1.4	0.3	-	1.8	20.4	4.9	0.3	5.3	
4/1	559	559	-	-	-	2.9	0.5	-	3.3	21.4	9.1	0.5	9.6	
5/1	244	244	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	458	458	126	13	3	0.7	0.3	0.3	1.2	9.6	4.6	0.3	4.9	
7/1	457	457	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
8/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/1	407	407	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1

PRC for Signalled Lanes (%): 23.4
PRC Over All Lanes (%): 23.4

Total Delay for Signalled Lanes (pcuHr): 15.77
Total Delay Over All Lanes(pcuHr): 15.77

Cycle Time (s): 99

Scenario 2: '2025 Surveyed Flows - PM Peak' (FG2: '2025 Surveyed Flows - PM Peak', Plan 1: 'Network Control Plan 1')

Stage Timings

Stage	1	2	3	4
Duration	32	4	9	18
Change Point	0	37	52	71

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	East Street (S) Ahead Left	Traffic	32	5	37
B	East Street (N) Right Ahead	Traffic	47	5	52
C	Front Street Left Right	Traffic	19	80	0
D	Pedestrians across	Pedestrian	9	62	71
E	Pedestrians across	Pedestrian	9	62	71
F	East Street (N) Right IGA	Ind. Arrow	8	44	52
G	East Street (SB) Ahead Right	Traffic	70	81	52
H	East Street (NB) Left Ahead	Traffic	59	81	41
I	Pedestrians across	Pedestrian	10	61	71
J	Pedestrians across	Pedestrian	10	61	71
K	East Street (SB) Right IGA	Ind. Arrow	4	48	52

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**79.9%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**79.9%**
1/1	East Street (S) Ahead Left	U	N/A	N/A	A		1	32	-	-	508	1962	654	77.7%
2/1+2/2	Front Street Left Right	U	N/A	N/A	C		1	19	-	-	345	1612:1874	250+181	79.9 : 79.9%
3/1	East Street (N) Right Ahead	U	N/A	N/A	B	F	1	47	8	-	334	1895	919	36.4%
4/1	East Street (NB) Left Ahead	U	N/A	N/A	H		1	59	-	-	651	1890	1145	56.8%
5/1	N Guards	U	N/A	N/A	-		-	-	-	-	242	Inf	Inf	0.0%
6/1	East Street (SB) Ahead Right	O	N/A	N/A	G	K	1	70	4	-	438	1957	1216	36.0%
7/1		U	N/A	N/A	-		-	-	-	-	513	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	-	94	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	-	442	Inf	Inf	0.0%

Basic 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	**-**	**-**	**92**	**9**	**2**	**13.3**	**4.8**	**0.2**	**18.4**	**-**	**-**	**-**	**-**	
Unnamed Junction	**-**	**-**	**92**	**9**	**2**	**13.3**	**4.8**	**0.2**	**18.4**	**-**	**-**	**-**	**-**	
1/1	508	508	-	-	-	4.2	1.7	-	5.9	41.7	12.6	1.7	14.3	
2/1+2/2	345	345	-	-	-	3.5	1.9	-	5.4	55.9	6.9	1.9	8.8	
3/1	334	334	-	-	-	1.2	0.3	-	1.5	16.4	3.5	0.3	3.8	
4/1	651	651	-	-	-	3.8	0.7	-	4.5	24.7	11.2	0.7	11.9	
5/1	242	242	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	438	438	92	9	2	0.6	0.3	0.2	1.1	9.4	4.4	0.3	4.7	
7/1	513	513	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
8/1	94	94	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/1	442	442	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1

PRC for Signalled Lanes (%): 12.6
PRC Over All Lanes (%): 12.6

Total Delay for Signalled Lanes (pcuHr): 18.38
Total Delay Over All Lanes(pcuHr): 18.38

Cycle Time (s): 99

Scenario 3: '2032 Base Flows - AM Peak' (FG3: '2032 Base Flows - AM Peak', Plan 1: 'Network Control Plan 1')

Stage Timings

Stage	1	2	3	4
Duration	25	4	9	25
Change Point	0	30	45	64

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	East Street (S) Ahead Left	Traffic	25	5	30
B	East Street (N) Right Ahead	Traffic	40	5	45
C	Front Street Left Right	Traffic	26	73	0
D	Pedestrians across	Pedestrian	9	55	64
E	Pedestrians across	Pedestrian	9	55	64
F	East Street (N) Right IGA	Ind. Arrow	8	37	45
G	East Street (SB) Ahead Right	Traffic	70	74	45
H	East Street (NB) Left Ahead	Traffic	59	74	34
I	Pedestrians across	Pedestrian	10	54	64
J	Pedestrians across	Pedestrian	10	54	64
K	East Street (SB) Right IGA	Ind. Arrow	4	41	45

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**78.2%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**78.2%**
1/1	East Street (S) Ahead Left	U	N/A	N/A	A		1	25	-	-	400	1948	512	78.2%
2/1+2/2	Front Street Left Right	U	N/A	N/A	C		1	26	-	-	417	1612:1874	340+195	78.0 : 78.0%
3/1	East Street (N) Right Ahead	U	N/A	N/A	B	F	1	40	8	-	339	1886	781	43.4%
4/1	East Street (NB) Left Ahead	U	N/A	N/A	H		1	59	-	-	600	1900	1152	52.1%
5/1	N Guards	U	N/A	N/A	-		-	-	-	-	261	Inf	Inf	0.0%
6/1	East Street (SB) Ahead Right	O	N/A	N/A	G	K	1	70	4	-	491	1940	1176	41.8%
7/1		U	N/A	N/A	-		-	-	-	-	491	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	-	120	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	-	436	Inf	Inf	0.0%

Basic 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	**-**	**-**	**135**	**14**	**3**	**12.8**	**4.7**	**0.3**	**17.9**	**-**	**-**	**-**	**-**	
Unnamed Junction	**-**	**-**	**135**	**14**	**3**	**12.8**	**4.7**	**0.3**	**17.9**	**-**	**-**	**-**	**-**	
1/1	400	400	-	-	-	3.8	1.7	-	5.5	49.5	10.1	1.7	11.8	
2/1+2/2	417	417	-	-	-	3.7	1.7	-	5.4	46.5	8.8	1.7	10.5	
3/1	339	339	-	-	-	1.6	0.4	-	2.0	20.8	5.4	0.4	5.8	
4/1	600	600	-	-	-	3.1	0.5	-	3.6	21.9	9.9	0.5	10.4	
5/1	261	261	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	491	491	135	14	3	0.7	0.4	0.3	1.4	10.2	5.0	0.4	5.4	
7/1	491	491	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
8/1	120	120	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/1	436	436	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1

PRC for Signalled Lanes (%): 15.1
PRC Over All Lanes (%): 15.1

Total Delay for Signalled Lanes (pcuHr): 17.89
Total Delay Over All Lanes(pcuHr): 17.89

Cycle Time (s): 99

Scenario 4: '2032 Base Flows - PM Peak' (FG4: '2032 Base Flows - PM Peak', Plan 1: 'Network Control Plan 1')

Stage Timings

Stage	1	2	3	4
Duration	32	4	9	18
Change Point	0	37	52	71

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	East Street (S) Ahead Left	Traffic	32	5	37
B	East Street (N) Right Ahead	Traffic	47	5	52
C	Front Street Left Right	Traffic	19	80	0
D	Pedestrians across	Pedestrian	9	62	71
E	Pedestrians across	Pedestrian	9	62	71
F	East Street (N) Right IGA	Ind. Arrow	8	44	52
G	East Street (SB) Ahead Right	Traffic	70	81	52
H	East Street (NB) Left Ahead	Traffic	59	81	41
I	Pedestrians across	Pedestrian	10	61	71
J	Pedestrians across	Pedestrian	10	61	71
K	East Street (SB) Right IGA	Ind. Arrow	4	48	52

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**85.5%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**85.5%**
1/1	East Street (S) Ahead Left	U	N/A	N/A	A		1	32	-	-	544	1962	654	83.2%
2/1+2/2	Front Street Left Right	U	N/A	N/A	C		1	19	-	-	369	1612:1874	250+181	85.5 : 85.5%
3/1	East Street (N) Right Ahead	U	N/A	N/A	B	F	1	47	8	-	358	1895	919	39.0%
4/1	East Street (NB) Left Ahead	U	N/A	N/A	H		1	59	-	-	697	1890	1145	60.8%
5/1	N Guards	U	N/A	N/A	-		-	-	-	-	258	Inf	Inf	0.0%
6/1	East Street (SB) Ahead Right	O	N/A	N/A	G	K	1	70	4	-	469	1957	1177	39.8%
7/1		U	N/A	N/A	-		-	-	-	-	550	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	-	101	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	-	473	Inf	Inf	0.0%

Basic 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	**-**	**-**	**99**	**10**	**2**	**14.5**	**6.5**	**0.3**	**21.3**	**-**	**-**	**-**	**-**	
Unnamed Junction	**-**	**-**	**99**	**10**	**2**	**14.5**	**6.5**	**0.3**	**21.3**	**-**	**-**	**-**	**-**	
1/1	544	544	-	-	-	4.6	2.4	-	7.0	46.1	13.8	2.4	16.1	
2/1+2/2	369	369	-	-	-	3.7	2.7	-	6.5	63.1	7.8	2.7	10.5	
3/1	358	358	-	-	-	1.3	0.3	-	1.7	16.6	3.9	0.3	4.2	
4/1	697	697	-	-	-	4.2	0.8	-	4.9	25.5	12.1	0.8	12.9	
5/1	258	258	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	469	469	99	10	2	0.7	0.3	0.3	1.3	9.9	4.7	0.3	5.0	
7/1	550	550	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
8/1	101	101	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/1	473	473	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1

PRC for Signalled Lanes (%): 5.2
PRC Over All Lanes (%): 5.2

Total Delay for Signalled Lanes (pcuHr): 21.32
Total Delay Over All Lanes(pcuHr): 21.32

Cycle Time (s): 99

Scenario 5: '2032 With Development - AM Peak' (FG5: '2032 With Development - AM Peak', Plan 1: 'Network Control Plan 1')

Stage Timings

Stage	1	2	3	4
Duration	25	4	9	25
Change Point	0	30	45	64

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	East Street (S) Ahead Left	Traffic	25	5	30
B	East Street (N) Right Ahead	Traffic	40	5	45
C	Front Street Left Right	Traffic	26	73	0
D	Pedestrians across	Pedestrian	9	55	64
E	Pedestrians across	Pedestrian	9	55	64
F	East Street (N) Right IGA	Ind. Arrow	8	37	45
G	East Street (SB) Ahead Right	Traffic	70	74	45
H	East Street (NB) Left Ahead	Traffic	59	74	34
I	Pedestrians across	Pedestrian	10	54	64
J	Pedestrians across	Pedestrian	10	54	64
K	East Street (SB) Right IGA	Ind. Arrow	4	41	45

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**79.8%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**79.8%**
1/1	East Street (S) Ahead Left	U	N/A	N/A	A		1	25	-	-	408	1948	512	79.8%
2/1+2/2	Front Street Left Right	U	N/A	N/A	C		1	26	-	-	423	1612:1874	342+192	79.3 : 79.3%
3/1	East Street (N) Right Ahead	U	N/A	N/A	B	F	1	40	8	-	372	1884	780	47.7%
4/1	East Street (NB) Left Ahead	U	N/A	N/A	H		1	59	-	-	614	1902	1153	53.3%
5/1	N Guards	U	N/A	N/A	-		-	-	-	-	267	Inf	Inf	0.0%
6/1	East Street (SB) Ahead Right	O	N/A	N/A	G	K	1	70	4	-	530	1943	1186	44.7%
7/1		U	N/A	N/A	-		-	-	-	-	505	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	-	130	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	-	459	Inf	Inf	0.0%

Basic 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	**-**	**-**	**140**	**14**	**3**	**13.4**	**5.2**	**0.3**	**18.9**	**-**	**-**	**-**	**-**	
Unnamed Junction	**-**	**-**	**140**	**14**	**3**	**13.4**	**5.2**	**0.3**	**18.9**	**-**	**-**	**-**	**-**	
1/1	408	408	-	-	-	3.9	1.9	-	5.8	50.8	10.4	1.9	12.3	
2/1+2/2	423	423	-	-	-	3.7	1.9	-	5.6	47.6	9.1	1.9	11.0	
3/1	372	372	-	-	-	1.8	0.5	-	2.2	21.5	6.3	0.5	6.8	
4/1	614	614	-	-	-	3.2	0.6	-	3.8	22.0	10.1	0.6	10.7	
5/1	267	267	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	530	530	140	14	3	0.8	0.4	0.3	1.5	10.5	5.6	0.4	6.0	
7/1	505	505	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
8/1	130	130	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/1	459	459	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1

PRC for Signalled Lanes (%): 12.9
PRC Over All Lanes (%): 12.9

Total Delay for Signalled Lanes (pcuHr): 18.88
Total Delay Over All Lanes(pcuHr): 18.88

Cycle Time (s): 99

Scenario 6: '2032 With Development - PM Peak' (FG6: '2032 With Development - PM Peak', Plan 1: 'Network Control Plan 1')

Stage Timings

Stage	1	2	3	4
Duration	31	4	9	19
Change Point	0	36	51	70

Phase Timings

Phase Name	Description	Phase	Green Period 1		
			Total Green	Start Time	End Time
A	East Street (S) Ahead Left	Traffic	31	5	36
B	East Street (N) Right Ahead	Traffic	46	5	51
C	Front Street Left Right	Traffic	20	79	0
D	Pedestrians across	Pedestrian	9	61	70
E	Pedestrians across	Pedestrian	9	61	70
F	East Street (N) Right IGA	Ind. Arrow	8	43	51
G	East Street (SB) Ahead Right	Traffic	70	80	51
H	East Street (NB) Left Ahead	Traffic	59	80	40
I	Pedestrians across	Pedestrian	10	60	70
J	Pedestrians across	Pedestrian	10	60	70
K	East Street (SB) Right IGA	Ind. Arrow	4	47	51

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)	Bonus Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**89.0%**
Unnamed Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	-	**89.0%**
1/1	East Street (S) Ahead Left	U	N/A	N/A	A		1	31	-	-	565	1963	635	89.0%
2/1+2/2	Front Street Left Right	U	N/A	N/A	C		1	20	-	-	384	1612:1874	264+179	86.6 : 86.6%
3/1	East Street (N) Right Ahead	U	N/A	N/A	B	F	1	46	8	-	374	1894	899	41.6%
4/1	East Street (NB) Left Ahead	U	N/A	N/A	H		1	59	-	-	733	1894	1148	63.9%
5/1	N Guards	U	N/A	N/A	-		-	-	-	-	261	Inf	Inf	0.0%
6/1	East Street (SB) Ahead Right	O	N/A	N/A	G	K	1	70	4	-	488	1958	1142	42.7%
7/1		U	N/A	N/A	-		-	-	-	-	586	Inf	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	-	106	Inf	Inf	0.0%
9/1		U	N/A	N/A	-		-	-	-	-	484	Inf	Inf	0.0%

Basic 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	**-**	**-**	**101**	**10**	**2**	**15.5**	**8.2**	**0.3**	**24.0**	**-**	**-**	**-**	**-**	
Unnamed Junction	**-**	**-**	**101**	**10**	**2**	**15.5**	**8.2**	**0.3**	**24.0**	**-**	**-**	**-**	**-**	
1/1	565	565	-	-	-	5.0	3.7	-	8.7	55.3	14.8	3.7	18.4	
2/1+2/2	384	384	-	-	-	3.9	2.9	-	6.8	63.6	8.3	2.9	11.2	
3/1	374	374	-	-	-	1.4	0.4	-	1.8	17.3	4.3	0.4	4.6	
4/1	733	733	-	-	-	4.5	0.9	-	5.4	26.3	13.1	0.9	13.9	
5/1	261	261	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	488	488	101	10	2	0.7	0.4	0.3	1.4	10.4	5.0	0.4	5.4	
7/1	586	586	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
8/1	106	106	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
9/1	484	484	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	

C1

PRC for Signalled Lanes (%): 1.1
PRC Over All Lanes (%): 1.1

Total Delay for Signalled Lanes (pcuHr): 24.03
Total Delay Over All Lanes(pcuHr): 24.03

Cycle Time (s): 99