Development
Transport Planning

TRINITY COLLEGE CAMBRIDGE

HOWLETT WAY, TRIMLEY

Transport Assessment

Volume 1:
Report and Appendices

Project No. 67006

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DOCUMENT CONTROL SHEET

Issue	Date	Description	Author	Checked
1	13/09/18	Draft for comment	RAA	AKJ
2	11/12/18	Final Draft	RAA	AKJ
3	03/12/19	Submission	RAA	AKJ
4	06/12/19	Submission (Amended)	RAA	AKJ
5	18/12/19	Submission (Amended)	RAA	AKJ
6	13/01/20	Submission (Amended)	RAA	AKJ

1.0 INTRODUCTION

1.1 Land south of Howlett Way, Trimley St Martin is an allocated site in the Felixstowe Peninsula Area Action Plan (adopted January 2017) for residential development of about 360 dwellings. This allocation is to be carried forward to the emerging Local Plan under Policy SCLP12/65. The Area Action Plan identifies a number of sites across the Felixstowe Peninsula which will collectively deliver around 1120 residential dwellings. Trinity College Cambridge is seeking planning permission to develop this site in line with this allocation.

1.2 Development Transport Planning Limited (DTPL) have been instructed by Trinity College Cambridge to assess the potential highways implications of this proposed residential development against the background of the significant levels of committed and proposed development both in the locality of Trimley and the wider Felixstowe Peninsula areas.

1.3 DTPL submitted a scoping report to Suffolk County Council (SCC) as Highway Authority outlining the approach to be taken in this transport assessment, and to which the Highway Authority has provided comments. The Highway Authority has agreed that the proposed methodology is generally satisfactory and has also made some suggestions for a potential sensitivity test in addition to requesting assessment of the remote junctions of Maidstone Road with High Street, and Garrison Lane with High Road West. This Transport Assessment follows the approach set out in the Scoping Report and includes the sensitivity test and additional junction assessments as suggested by the highway authority.

1.4 This report contains:

- A description of the site location.
- a review of the local highway network and public transport services;
- a description of the proposed development;
- an appraisal of travel associated with the proposed development;
- an assessment of the expected transport impact of the development
- details of parking demand and provision
- a summary and conclusion

2.0 SITE LOCATION AND LOCAL HIGHWAY NETWORK

Site Location/Description

2.1 The proposed development site is located to the south of Howlett Way and to the west of the A14 Trunk Road. It is allocated in the Felixstowe Peninsula Area Action Plan under Policy FPP7 and a copy of that allocation including a site plan is attached at Appendix A. The western and southern boundaries of the defined allocated site are formed by the rear of the properties fronting onto High Road and by Church Lane, respectively. The allocated site comprises mainly open fields and excludes part of a former poultry farm and the Trimley Old Rectory.

2.2 There is an existing access to the site via a footway crossover onto the roundabout junction at Howlett Way and High Road. This also provides access to the rear of some properties fronting onto High Road. There is access to the former poultry farm between numbers 256 and 258 High Road. Access to the site is also possible from Church Lane.

2.3 A public right of way (PROW) footpath runs adjacent to the eastern border of the site, known as Crows Well Way. This footpath passes the site between Howlett Way, at the northeast corner of the site, and Church Lane at the southeast corner of the site, running roughly southeast through a wooded area which lies to the west of the A14.

2.4 At the northeast boundary, this footpath crosses Howlett Way and continues into the main residential settlement area of Trimley St Martin.

2.5 At the southeast boundary this footpath forks into two bridleways, one of which runs southwest and terminates roughly half way along Church Lane, the other runs southeast from the eastern end of Church Lane and connect with Thurmans Lane before continuing into the main residential settlement area of Trimley St Mary.

2.6 In the wider context, central Felixstowe is around 3.6km southeast of the site and the Port of Felixstowe is a similar distance directly south of the site. Central Ipswich is roughly 13km to the northwest of the site.

Local Highway Network

2.7 Howlett Way is a single carriageway road which connects High Road to the A14 at Junction 59, the Trimley Interchange and to Kirton Road. It is subject to a 40mph speed limit and has street lighting. It is generally about 7.5m wide and has a grass verge and footway along the northern side.

2.8 On the south side there is a wide verge and a footway leading from High Road for a distance of about 70m to a short distance east of the westbound bus stop lay-by, where there is a pedestrian refuge. The eastbound bus stop lay-by is opposite and slightly to the east of the westbound stop.

2.9 The A14 is part of the strategic road network managed by Highways England and provides access to Felixstowe Docks. It connects to the A12 trunk road southeast of Ipswich and continues west to the M6 northeast of Rugby. It is a high standard two-lane dual carriageway, subject to the national speed limit. To the east, the Dock Spur Roundabout provides a connection to the local road network in Felixstowe via Candlet Road.

2.10 High Road, Trimley, connects to the southwestern end of Howlett Way and runs north through Trimley St Martin, where there is a northbound on-slip to the A14, and connects to the old Felixstowe Road which provides a minor route to Ipswich.

2.11 To the south of Howlett Way, High Road runs through Trimley St Mary before crossing the A14 Port of Felixstowe Road into Walton, where it is known as High Street, and on to the centre of Felixstowe. High Road has a mixed character along its length, with residential, retail, schools and employment uses having direct frontage or access to the road. It is subject to a 30mph speed limit, has street lighting and footways on both sides. In Trimley St Mary there are advisory cycle lanes in both directions.

2.12 Parking is generally not restricted on High Road in Trimley St Martin and Trimley St Mary, although there are sections where the road width is insufficient to allow parking on both sides or at all. Where parking does take place this tends to act as a form of traffic calming. There are mini-roundabouts at the two junctions with Faulkeners Way towards the southern end of Trimley St Mary.

Observed Traffic Flows

2.13 Traffic surveys were commissioned at the junctions of Howlett Way with the A14 and Howlett Way with High Road. The observed vehicle flows are shown in Figures 1 and 2 for the morning and evening peak hours respectively.

2.14 In addition, two automatic traffic counts (ATC) were carried out on Howlett Way with a further three ATCs on High Road. These surveys provide traffic flows and speeds over a full week. A plan showing the location of the surveys is attached at Appendix B. Tables showing the observed hourly traffic flows and speeds are also attached at Appendix B.

2.15 The average weekday peak hour and average weekday daily traffic flows and the average and 85th percentile vehicle speeds are shown in Table 2.1 below.

Table 2.1 Location	Direction	AM	PM	Weekday	Average Speed	85th Percentile
A – Howlett Way	Eastbound	430	250	3395	32.8	37.1
	Westbound	284	688	5565	34.3	38.3
B – Howlett Way	Eastbound	428	251	3331	28.8	32.0
	Westbound	284	686	5523	28.8	33.1
1 – High Road	NWbound	533	334	4933	29.6	34.8
	SEbound	312	548	4905	29.6	34.6
2 – High Road	NWbound	406	319	4352	27.9	33.7
	SEbound	322	433	4376	27.5	33.3
3 – High Road	NWbound	363	411	4751	31.5	35.5
	SEbound	454	381	4853	30.4	35.0

2.16 Daily vehicle flows on Howlett Way are slightly less than 9000vph two-way. Westbound flows are noticeably higher than eastbound flows due to the ability of Ipswich bound traffic to join A14 using the northbound slip road from High Road rather than use the Trimley interchange. Conversely all Felixstowe bound traffic must use the Trimley interchange on the return journey.

2.17 Vehicle speeds on Howlett Way are generally below the speed limit of 40mph, particularly at the western end (ATC Site B) where the 85th percentile speed is around 33mph.

2.18 On High Street, the average weekday two-way traffic flows are around 9800 vehicles per day (vpd) at Site 1. South of this point, at Site 2 they are around 8800 and further south at Site 3 are around 9600 vpd. The differences in daily flows at these three points is a consequence of journeys starting and ending within Trimley St Mary.

Historic Traffic Flows on High Road/High Street

2.19 Over the years, a number of developments in the Trimley area have led to repeat traffic surveys on High Road/High Street. In particular, a number of week-long ATC surveys have been undertaken on High Road and High Street in the vicinity of the bridge over the A14 dock Spur Road, between 2008 and 2018. A summary of the observed five-day 24 hour average two-way flows taken from each of these surveys are shown in Table 2.2.

Table 2.2
High Road/High Street Traffic Surveys

Survey Source	Survey Date	5 Day Average Two-Way Daily Flows
Suffolk CC	April 2008	10195
PCC Traffic Information Consultancy	Sept 2009	8708
Transport Data Collection	Jan/Feb 2012	9207
Transport Data Collection	July 2012	9650
Yardy Traffic Engineers Ltd	Sept 2015	9908
Tracsis – Site 3	July 2018	9604

2.20 The daily traffic flows range from a maximum of 10195 in 2008 to a minimum of 8708 in 2009 with surveys between 2012 and 2018 showing flows in the between 9200 and 9900 vpd. There is no clear trend in the data to indicate that flows are increasing or decreasing and the flows indicate that there has been little change in flows over the past 10 years.

Traffic Collision Data

2.21 Traffic collision data was requested from SCC for the area local to the application site during the last 5 years. The most recent data available when this was requested was for the period 01/11/12 to 01/11/17, and 17 collisions were recorded for the roads considered in this report within this period. The data supplied by Suffolk County Council, including location maps and an assessment of the collisions is attached at Appendix C.

2.22 The collision analysis indicates that there is a variety of collision types on the local roads with few clusters or high risk locations. There has been a pattern of collisions between vehicles and cyclists at the Howlett Way junction with High Road and there have been recent changes to the Howlett Way approach which appear to be aimed at reducing the potential for collisions, although the data is not available to draw conclusions yet as to the effect.

2.23 It is not considered that there would be any unusual or significant increased risk to highway safety as a result of the proposed development.

3.0 SITE ACCESSIBILITY

Cycling and Walking

3.1 It is generally accepted that walking is a suitable mode of travel for journeys up to about 2km and that journeys by cycling can easily be made up to about 5kms. The application site is located between the villages of Trimley St Martin and Trimley St Mary and both of these are within walking distance. Each village offers services and facilities which will provide for some of the daily needs of future residents. Felixstowe town centre is about 4.5km away and provides a wider range of these services.

3.2 Trimley St Martin comprises mainly residential development with the Trimley Sports and Social Club and the Hand in Hand PH providing leisure facilities. There is also a local butcher's shop and some local businesses providing employment. Trimley St Martin Primary School is located about 800m from the site on Kirton Road to the north of the A14. There is a convenient pedestrian route to this school via St Martin's Green via a footbridge over the A14 and a footway along Kirton Road.

3.3 Trimley St Mary provides a wider range of services along the High Road over a length of about 1100m between Church Lane and Kingsbury Road. At Church Lane there is a convenience store and post office. South of Church Lane are the two parish churches and the Mariners PH. To the south of Faulkeners Way and about 750 from Church Lane is the Trimley St Mary Primary School with the Tiddlywinks nursery a little further south. At Kingsbury Road there is a fish and chip shop.

3.4 There are further shops in the Walton local centre on High Street around 2200m from Church Lane which is a reasonable cycling distance. This local centre includes a doctor's surgery, pharmacy, hair salons and barbers and two convenience stores. The Felixstowe Academy secondary school is also in Walton within about 2km of the site.

3.5 There are two public rights of way on the edges of the application site with a public footpath along its western side and a bridleway along its southern side. The footpath extends across Howlett Way into the residential are to the north and the bridleway runs south to Thurmans Lane and connects to another bridleway on the east side of A14 and which runs north to Kirton Road and Capel Hall Lane and south to Gulpher Road with a link to High Road via Spriteshall Lane.

3.6 High Road is part of National Cycle Route 51 between Felixstowe and Newmarket and Regional Cycle Route 41 which branches off through Trimley St Martin to Woodbridge. Towards Felixstowe the cycle route has a branch which turns south along Station Road and connects with Nicholas Road and on to Felixstowe Docks. This route provides a traffic-free and lightly trafficked roads alternative to using High Road to reach Felixstowe Town Centre. A copy of the Felixstowe Cycle Route Map is attached at Appendix D.

3.7 The main employment areas in Felixstowe are the town centre and the Port of Felixstowe. These are both about 4km away and within cycling distance. There are other smaller opportunities for employment closer than these main areas including the businesses located at the end of Cordy's Lane, Morrison's supermarket and Felixstowe Academy.

Public Transport

3.8 The nearest bus stops to the site are on the site frontage, towards the western end of Howlett Way and these each have bus shelters. There are also bus stops on High Road, to the north and south of Church Lane, which provide access to additional routes. The stops to the south of Church Lane also have shelters.

3.9 The bus stops on Howlett Way are served by route number 173/174 which operates between Woodbridge and Felixstowe via Kirton and Trimley and provides around 6 trips each way on weekdays and 5 trips each way on Saturdays. On weekdays the first journey to Felixstowe runs from Howlett Way at 08:00, arriving at 08:18 and the first journey to Woodbridge is at 08:37, arriving at 9:00. The latest return journeys are at 17:05 and 17:10. School bus service OC7 also operates from Howlett Way to the Otley Campus of the Easton and Otley College. These routes also call at the bus stops on High Road south of Howlett Way

3.10 The bus stops on High Road are served by routes 75, 76/76A and 77/77A which all operate between Ipswich and Felixstowe which each service number operating a variation of the route. In combination they provide around 4 trips per hour in each direction Monday to Saturday and 2 trips an hour in either direction on Sundays.

3.11 On weekdays, the first journeys from Trimley are at about 7.15 towards Felixstowe arriving at 7.38 and at about 6.15 towards Ipswich arriving at about 6.50. The latest return journeys are at about 10pm and 11.15pm.

3.12 The High Road stops are also served by National Express Coaches service 481 which operates between London and Felixstowe. This provides a single journey to London from the stop at the Hand in Hand PH at 08:44 on weekdays and 09:04 at the weekend. There is a single return journey from London each evening at 18:00.

3.13 School bus service 978 runs from Trimley to Northgate High School at Rushmere in Ipswich. Bus timetables are attached at Appendix E.

3.14 Trimley Railway Station is around a 1300m walk from Church Lane and is on the Ipswich to Felixstowe branch line. On Monday to Friday this provides an hourly service in both directions from 05:24 until 22:48 to Felixstowe and from 05:34 until 23:04 to Ipswich. The service is also hourly on Saturdays with later first trains and it runs two-hourly on Sundays.

3.15 Journeys to Felixstowe take 6 minutes and journeys to Ipswich take around 10 minutes to Derby Road (Ipswich), 15 minutes to Westerfield (north of Ipswich) and generally 26 minutes to Ipswich. Access to the national rail network From Ipswich, regular onward journeys can be made to destinations such as Cambridge, Norwich, London Liverpool Street, Lowestoft, Colchester and Peterborough, and ultimately the wider rail network.

3.16 In summary, the application site is located where it is possible to access a range of local facilities on foot and by cycling. There are bus stops adjacent to the site and others nearby that are served by regular buses to Felixstowe, Woodbridge and Ipswich at times suitable for commuter journeys.

3.17 There are also school bus services and a long distance coach service to London and it is within walking distance of Trimley railway station. The major employment areas of Felixstowe town centre and the Docks are within cycling distance and can be reached by public transport.

4.0 PROPOSED DEVELOPMENT

4.1 The application site is allocated in the Felixstowe Area Action Plan for residential development under Policy FPP7. The policy identifies the capacity of the site as being approximately 360 units and includes requirements for the primary access to be onto Howlett Way, and that there should be no vehicular access onto Church Lane. It also seeks the continuation of, and links to, the public rights of way network.

Proposed Development

4.2 The planning application provides for development of up to 340 dwellings comprising a mix of flats and houses with a range of sizes. It is also proposed to include a new early years facility on the site. Whilst it is not expected that the FPP7 allocation of 360 units would be achieved, this number of dwellings has been assumed for the purpose of assessing the transport effects.

4.3 Vehicular access to the development will be via a new roundabout junction onto Howlett Way. Pedestrian and cycle access will be provided to Howlett Way and to Church Lane. The County Council requires that provision is made for emergency vehicle access and this will be to Church Lane via the pedestrian and cycle paths to this road.

4.4 Within the site there will be a network of residential streets of a scale appropriate to the number of dwellings to be served. The proposed site layout will make provision for pedestrian and cycle movement into, within and through it. Appropriate levels of car parking will be provided including parking on curtilage and communally, in line with the Council's adopted standards.

Proposed Development Access & Servicing

4.5 A single vehicular access into the site is proposed in the form of a new roundabout junction onto Howlett Way. This would take the form of a standard 3-arm priority roundabout with splitter islands at each approach. The circulatory carriageway would be 4.5m in width, with a 4m over-runnable area to ensure adequate turning for larger vehicles is possible where required.

4.6 Forward visibility requirements at such junctions are determined based on the observed prevailing 85th percentile speeds. These can be obtained from the ATC surveys conducted in 2018 taken at locations to either side of the proposed roundabout location.

4.7 ATC 1 was placed to the east of the proposed roundabout location, and the observed 85th percentile speeds were about 37mph eastbound and about 38mph westbound. ATC 2 was placed to the west of the proposed roundabout location, and the observed 85th percentile speeds were about 32mph eastbound and about 33mph westbound.

4.8 The observed westbound 85th percentile speed at ATC 1 was around 38mph (62kph). When applying the wet weather adjustment, the 85th percentile wet weather speed at this approach is around 58kph (36mph). This indicates a required stopping sight distance (SSD) of 90m to DMRB standards based on a Design Speed of 60kph. Since the prevailing speed is below 40mph, it is considered appropriate to apply Manual for Streets (MfS) guidance. This would indicate an SSD requirement of 55m (including bonnet length).

4.9 The observed eastbound 85th percentile speed at ATC 2 was around 32mph (51kph). When applying the wet weather adjustment, the 85th percentile wet weather speed at this approach is around 47kph (29mph). This indicates a required SSD of 70m to DMRB 50kph Design Speed standards. Again, since the prevailing speed is below 40mph, it is considered appropriate to apply MfS guidance. This indicates an SSD requirement of 42m (including bonnet length).

4.10 The proposed roundabout junction has been subject of a Stage 1 Road Safety Audit (RSA) and a copy of this and the Designer's Response is attached at Appendix F. The Stage 1 RSA identified two matters relating to the proposed roundabout for attention at this or following design stages. These matters have been addressed in the Designer's Response and where appropriate changes have been made to the proposed layout as shown in drawing number 67006-TA-002 Rev D.

4.11 The development layout will include pedestrian footways onto Howlett Way alongside the proposed access road. In addition there will be a shared footpath and cycle path leading to the western end of Howlett Way by the High Road roundabout and a footpath connection to Howlett Way to the east of the proposed access roundabout. These facilities are shown on the indicative site layout plan.

5.0 DEVELOPMENT TRAVEL AND ASSESSMENT TRAFFIC FLOWS

Potential Development Travel - Vehicles

5.1 New residential developments will lead to additional travel by all modes, including walking, cycling, by public transport and by car. It is standard practice to assess the potential impact using surveys of existing developments and the TRICS database is commonly used to derive trip rates to be applied to the proposed development.

5.2 This approach was taken for this development and the results were set out in a Scoping Report that was submitted to Suffolk County Council. A copy is attached at Appendix G. The Scoping Report also included a review of residential trip rates previously used for assessment of other developments in the Felixstowe area. It was apparent that the trip rates used in those assessments were generally higher than those derived for the Scoping Report, although they were also derived using TRICS.

5.3 There are a variety of reasons why vehicle trip rates derived from TRICS may be different and each may be valid. In this instance it was agreed with Suffolk County Council that the average of the trip rates from the various transport assessments would be used.

5.4 As these trip rates have been derived based on the Private Houses category of TRICS and do not take account of the proposed mix of flats and houses and inclusion of affordable dwellings, the use of these trip rates ensure a robust assessment.

5.5 The trip rates agreed with Suffolk County Council and the calculated numbers of vehicle trips for a development of up to 360 dwellings are shown in Table 4.1.

Table 4.1	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Average Trip Rates	0.151	0.400	0.552	0.347	0.198	0.544
Calculated Vehicle Trips	54	144	199	125	71	196

5.6 In addition to this residential element of the scheme, it is also proposed to provide a pre-school nursery within the development with capacity for up to 32 children. Trip rates for this land use have been estimated with reference to the TRICS database.

5.7 Multimodal surveys were selected for nurseries in Great Britain, excluding Greater London, with up to 60 pupils in either suburban or neighbourhood centre locations. This returned 3 survey sites ranging from 45 to 50 pupils in size. All 3 sites were used to derive trip rates. The full TRICS data is attached at Appendix H and the predicted vehicle trip rates and trips are shown below in Table 4.2.

Table 4.2	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
TRICS Trip Rates	0.264	0.174	0.438	0.174	0.201	0.375
Calculated Vehicle Trips	8	6	14	6	6	12

5.8 The combined predicted trips for the development are shown in Table 4.3.

Table 4.3	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Calculated Vehicle Trips	63	150	213	130	78	208

Potential Development Travel – Other Modes

5.9 The assessment of travel associated with the proposed development should include consideration of travel by modes other than by car, and trip rates for these 'other modes' would also typically be derived with reference to the TRICS database, preferably using the same source data as was used for derivation of the associated vehicle trip rates.

5.10 However, within this report the residential vehicular trip rates were derived based on the average of residential vehicle trip rates used in other transport assessment reports, as agreed with SCC. This means that there is no associated TRICS source data available, from which the 'other modes' trips for the residential land use might be derived. Therefore, an alternative method for calculating trips by other modes is required for the residential element of this development.

5.11 Census 2011 Journey to Work data provides mode share percentages relative to vehicular trips, and hence these mode share proportions can be used to estimate the numbers of trips by other modes for the proposed residential development based on the predicted vehicular trip volumes as calculated in Table 4.1 above.

5.12 The mode share percentages for the local area have been derived using data for Middle-Layer Super Output Area (MSOA) Suffolk Coastal 012 which includes the site location and hence is appropriate for this purpose.

5.13 The calculation of the number of trips by each mode for a residential development of up to 360 dwellings, based on the Census JtW mode share percentages is attached at Appendix I, and the results are summarised in Table 4.4 below. Car Driver, Car Passenger and Taxi trips have not been shown in this table as these are included in the vehicle trips tables above.

Table 4.4	**AM Peak**			**PM Peak**		
Mode	In	Out	Total	In	Out	Total
On Foot	4	11	15	9	5	15
Bicycle	4	11	15	9	5	15
Bus	2	4	6	4	2	6
Train	1	3	4	3	2	4
Motorcycle	1	4	5	3	2	5
Total	12	33	45	28	16	45

5.14 The proposed nursery land use would also attract trips by other modes. As the Nursery trip rates have been derived directly from TRICS, the ‘other modes’ trips can also be derived directly from the same TRICS data.

5.15 The other modes trips resulting from the 32 child Nursery land use as calculated from the TRICS survey data are summarised below in Table 4.5.

Table 4.5	**AM Peak**			**PM Peak**		
Mode	In	Out	Total	In	Out	Total
On Foot	3	3	6	2	2	4
Bicycle	0	0	0	0	0	0
Bus	1	0	2	0	1	1
Train	0	0	0	0	0	0
Motorcycle	0	0	0	0	0	0
Total	4	4	8	2	3	5

5.16 The 'other modes' trips predicted for the residential development will include trips made for all purposes and the calculation therefore includes trips to nurseries. Combining the predicted nursery other modes trips to those for the residential development is likely to result in an element of 'double counting' of the same journeys.

5.17 However, the predicted other modes trips for the nursery land use have been added to the residential other modes trips without any adjustment and hence ensures a robust assessment. The combined 'other modes' data for the whole development is shown below in Table 4.6.

Table 4.6	**AM Peak**			**PM Peak**		
Mode	In	Out	Total	In	Out	Total
On Foot	7	14	21	11	7	18
Bicycle	4	11	15	9	5	15
Bus	3	4	8	4	3	7
Train	1	3	4	3	2	4
Motorcycle	1	4	5	3	2	5
Total	16	36	53	30	19	49

5.18 Table 4.6 indicates that walking is the largest 'other mode' predicted for the proposed development with around 20 two-way movements in the peak hours. Public transport users would walk from the development to their respective stops, leading to a predicted total of 32 two-way pedestrian movements in the peak hours.

5.19 This additional pedestrian traffic would be divided between the pedestrian access points located on Howlett Way and Church Lane, depending on the desired destination, and would be easily accommodated on the existing local footway network.

5.20 Pedal cycle traffic is predicted at around 15 two-way movements in the peak hours with motorcycle traffic predicted at around 5 two-way movements in the peak hours. Combined, these modes would represent around a single movement every 3 minutes in the peak hours. These volumes would be easily accommodated on local roads.

Travel Plan

5.21 A residential Travel Plan will be put in place for this development to maximise the potential for travel by sustainable modes. A residential Travel Plan aims to promote the use of non-car mode travel by residents of new housing developments by encouraging walking, cycling and public transport through a number of targeted measures and initiatives.

5.22 A Framework Travel Plan document has been included within this Transport Assessment at Appendix J as an exemplar template upon which the Travel Plan can be based, and which ensures that the Travel Plan initiatives and measures are considered from the outset.

5.23 The execution of the Travel Plan can be expected to result in a reduction in single occupant vehicle trips and hence the volume of vehicle trips predicted in the above assessment would be an overestimate. It is difficult to quantify the expected volume of trip reductions at this stage, therefore the assessment of vehicle trips and junction capacities within this report does not consider, or rely upon, any potential reductions which may result from the Travel Plan.

5.24 It can equally be expected that increases in walking, cycling and public transport use would be experienced as a result of the Travel Plan, and these would continue to be easily accommodated locally, as described above.

Trip Distribution and Assignment

5.25 The Census Journey to Work (JtW) data has been used to derive the trip distribution for the residential development. The data allows analysis of commuter trips between home and work locations and enables a calculation of percentages of trips to local and more distant destinations. The use of this information to derive a trip distribution for the development was set out in the Scoping Report and was accepted as reasonable by Suffolk County Council in their response. A brief description of the process is set out below.

5.26 Census 2011 Journey to Work data was obtained using the Suffolk Coastal 012 MSOA as the residential location. Employment destination locations were selected at MSOA level within Suffolk Coastal district; at district level for the remaining eastern region; and at regional level for the remaining UK. This approach ensures the data is used at an appropriate level of detail.

5.27 The data shows that around 76% of all journeys to work originating from this part of Felixstowe are made by car or van, and that around 49% of these journeys are made to work locations within Felixstowe MSOAs with around 51% are to work locations external to Felixstowe. Felixstowe's location on a peninsular dictates that the A14 provides the most appropriate route option to destinations outside of the town.

5.28 This simplifies the distribution of trips with essentially five potential destinations being either one of the four Felixstowe MSOAs or all other destinations being to the west along the A14. The distribution of trips to these five locations is shown in Table 4.7.

Table 4.7	**Distribution**
Trip Destinations	
External to Felixstowe (West)	50.9%
Suffolk Coastal 012	14.8%
Suffolk Coastal 013	4.1%
Suffolk Coastal 014	7.7%
Suffolk Coastal 015	22.5%

5.29 Whilst the distribution can be simplified as shown in Table 4.7, the road network provides alternate options for travel to destinations within the four Felixstowe MSOAs. A higher level of detail is therefore required to determine a more accurate distribution and assignment of trips to these destinations.

5.30 The Census 2011 Workplace Zones have been used to determine the destinations within the Felixstowe MSOAs and allow a more accurate assignment of trips. The percentages of the workplace population that are located in each of the individual workplace zones within each respective MSOA have been used to subdivide the journey to work trips to each of the MSOAs. The full method is described in detail in the Supplementary Technical Note which is part of the submitted scoping report attached at Appendix G.

Trip Assignment

5.31 The car trips to and from the development were assigned to the local road network using the revised distribution obtained using Workplace Zones data as described in the Supplementary Technical Note. The assignment of these trips was undertaken using the Google Maps route planner facility. In each case, the preferred route indicated, which is typically the quickest route, was used to assign trips from the site to the destination.

5.32 In the case of westbound (external) traffic, there are two routes to the A14; via the Trimley Interchange or via High Road through Trimley St Martin to join the A14 a short distance to the west. The position of the proposed development access on Howlett Way means that Trimley Interchange provides the quickest route for the development traffic and this is confirmed by the Google Maps route planner.

5.33 For trips to destinations in Felixstowe, the assignment exercise using Google maps indicated that for the majority of destinations, the quickest route is via the A14 with traffic either continuing east on the A154 Candlet Road or turning south onto the Port of Felixstowe Road at the Dock Spur Roundabout junction.

5.34 Traffic local to the Trimleys, and to Walton, was assigned to High Road via Howlett Way. The results of the trip assignment exercise are set out in the Figures included as part of the Scoping Report at Appendix G. The resultant percentage residential trip distribution and assignment is illustrated in Figure 9 of this report.

5.35 The distribution of trips derived using the Census Data as described above is shown in Table 4.8.

Table 4.8	AM		PM	
	From	To	From	To
High Road (N)	2%	2%	2%	2%
Howlett Way (A14)	94%	94%	94%	94%
High Road (S)	4%	4%	4%	4%

5.36 The net development traffic flows have been assigned to the local road network in line with the above distribution/assignment and the resultant development flows are shown in Figures 10 and 11 for the morning and evening peak hours respectively.

Assignment Sensitivity Test

5.37 In the response to their consideration of the Scoping Report, Suffolk County Council suggested that the use of JtW Census Data for deriving trip distribution and assignments might not reflect the assignment of trips for purposes other than for employment and hence may underestimate the impact on High Road (S).

5.38 The County Council asked that a sensitivity test be carried out to take account of trips for other purposes and hence assess the possible impact on High Road (S) resulting from other repeatable journeys such as school-run trips for example.

5.39 The traffic survey at the Howlett Way junction with High Road includes traffic movements to and from Goslings Way which serves the recent residential development on the former mushroom farm site. The observed turning movement flows to and from Goslings Way provide a trip distribution at this junction for all journey purposes specific to that residential development and which can be modified for the now proposed development and can therefore be used for the purpose of a sensitivity test.

5.40 The observed flows are shown in Figures 1 and 2 and the percentages of traffic turning at the High Road roundabout are shown in Table 4.9.

Table 4.9	AM		PM	
	From	To	From	To
High Road (N)	14%	30%	11%	21%
Howlett Way (A14)	53%	40%	68%	37%
High Road (S)	33%	30%	21%	42%

5.41 The decisions made by drivers as to which route to take from Goslings Way will be influenced by the position of Goslings Way relative to the possible routes. The proximity of Goslings Way to High Road (S) will make that route more attractive than the A14 for more journeys to Felixstowe than will be the case for the proposed development where the proposed access is much closer to the A14.

5.42 Similarly, the proximity to High Road (N) and the option to use the slip road onto A14 make this route more attractive than using the Trimley Interchange to drivers leaving Goslings Way and headed to Ipswich than would be the case for drivers from the proposed development. Consequently the assignment of trips based on the Goslings Way distribution, needs to be adjusted to take account of the proposed development access location to the highway network.

5.43 The adjustments that have been made to the Goslings Way distribution to allow for the proposed development access location are:

- Traffic to and from the site using Howlett Way in the direction of Trimley Interchange has been assigned via Howlett Way (E) to each of the A14 (N), the A14 (S) and Kirton Road based on the observed traffic distribution;
- Traffic using High Road (N) to and from the northwest has been assumed to use the A14 (N) and has been assigned via Howlett Way (E) and the Trimley Interchange. This is added to the A14 (N) traffic mentioned above;
- Traffic to and from the site using High Road (S) towards Walton remains routed to High Road (S) but now via Howlett Way (W).

5.44 The resulting sensitivity test distribution and assignment taking account of these adjustments is shown in Figures 14 and 15 for the morning and evening peak hours respectively.

5.45 The resultant development flows based on the observed turning proportions are shown in Figures 16 and 17 for the morning and evening peak hours respectively.

5.46 The development traffic flows based on the Journey to Work distribution and the Goslings Way distribution are both shown for comparison in Table 4.10 below.

Table 4.10		Journey to Work			Goslings Way		
		In	Out	Total	In	Out	Total
AM	High Road (N)	1	3	4	0	0	0
	Howlett Way (A14)	59	140	199	42	104	146
	High Road (S)	3	6	9	21	45	66
PM	High Road (N)	3	2	5	0	0	0
	Howlett Way (A14)	122	73	195	102	45	147
	High Road (S)	5	3	8	28	33	61

5.47 The comparison confirms that there would be a greater number of development trips on High Road (S) using this sensitivity test distribution.

5.48 It is acknowledged that this sensitivity test assignment shows no traffic on High Road (N) when at least a small number of movements may be expected, as indicated by the JtW distribution. This is not considered relevant to this exercise since the purpose of the sensitivity test assignment is to provide an alternative assessment of the impact the development might have on High Road (S).

5.49 The predicted sensitivity test movements set out in Table 4.10 indicate peak hour two-way development flows on High Road (S) from Howlett Way of between 61vph and 66vph. These flows represent around an additional 1 vehicle per minute and would be unnoticeable against the day to day variation in traffic flows.

5.50 Development traffic impact is normally assessed at a future point in time to take account of the time taken for the development to be constructed and occupied. Typically a period of 5 years after the planning application is made is taken as an appropriate future year. This future year period has been agreed with SCC following submission of the Scoping Report and in this case the future year used for assessment is 2023.

Future Year Forecast Flows

5.51 To obtain the forecast flows for the assessment year of 2023, growth factors have been derived from the DfT traffic growth forecast software, TEMPro version 7.2. Growth factors have been derived for each of the four local MSOA areas for the morning and evening peak hours, and for Urban Principal Roads and Rural Trunk Roads. The average values have then been calculated to be applied as appropriate. The derived car driver growth factors are shown in Table 5.1

Table 5.1	MSOA	AM Peak	PM Peak
Urban Principal Roads 2018-2023	012	1.0542	1.0526
	013	1.0684	1.0693
	014	1.0669	1.0653
	015	1.0685	1.0684
	Average	1.0645	1.0639
Rural Trunk Roads 2018-2023	012	1.0769	1.0753
	013	1.0914	1.0923
	014	1.0898	1.0883
	015	1.0915	1.0914
	Average	1.0874	1.0868

5.52 These average growth factors have then been applied to the 2018 observed flows to derive the 2023 future flows. These future flows are illustrated in Figures 3 & 4 for the morning and evening peak hours respectively.

Committed Developments

5.53 The potential for other developments to take place during the lifetime of a proposed development under consideration is recognised in Transport Assessments by the inclusion of traffic flows arising from committed developments. Committed development refers to planned development proposals which have achieved planning permission.

5.54 Two recent developments at the former Mushroom Farm, served by Goslings Way and land south of Thurmans Lane were completed and occupied prior to the recent traffic surveys and flows arising from those developments are therefore included in the observed flows.

5.55 Additionally, there are a number of residential development applications in Trimley and Felixstowe which are either recently approved, or currently pending approval and each of these has been included as a committed development for the purpose of this report.

5.56 These committed developments taken into account are listed and described briefly below:

a) Walton Green South, High Street, Walton – 190 Dwellings – DC/13/3821/OUT;
b) Land north of Walton High Street, Walton – 385 Dwellings – DC/16/2778/OUT;
c) Land at Candlet Road, Felixstowe – 560 Dwellings – DC/15/1128/OUT;
d) Land South of High Road, Trimley St Martin – 70 Dwellings - DC/16/2119/OUT;
e) Land North of High Road, Trimley St Martin – 69 Dwellings - DC/16/1919/FUL;
f) Land Adjacent to Mill Farm, Trimley St Mary – 50 Dwellings - DC/16/2122/OUT.

5.57 Traffic flows for each of the above developments have been obtained from their respective Transport Assessments. Some of the submitted transport assessments for the smaller developments provide limited information in terms of trip assignments beyond the locality of the application site and it has been necessary in some cases to make assumptions on trip assignment in these cases. The assumptions made are shown in the respective traffic flow figures for each site.

5.58 The flows for each committed development site are shown individually in Figures CDF1 through to CDF12 which are attached at Appendix K. The combined committed development flows are shown in Figures 5 and 6 for the morning and evening peak hours respectively.

5.59 The resultant traffic flows for the future year with the committed development flows and the proposed development flows are shown in Figures 7 and 8 for the morning and evening peak hours respectively.

6.0 DEVELOPMENT TRAVEL EFFECTS – NON-CAR MODES

6.1 This report includes an assessment of the numbers of trips likely to be made by modes other than by car. This includes trips on foot, cycle and public transport and these have been considered in more detail to ensure appropriate means of access.

6.2 Journeys made on foot to and from the development will include trips made entirely on foot end-to-end, which equate to around 20 walk trips in each peak hour, in addition to trips made by people using public transport who would be likely to walk to and/or from their destination stop or station. The number of public transport trips is calculated to be around 12 in each of the peak hours. In total therefore, around 32 walk trips will be made into or out of the development during either peak hour.

6.3 The routes used into and out of the proposed development will depend on the destination and the most likely destinations for walk trips will be Trimley St Mary village centre where most of the local facilities are located. The shortest/most convenient route to these for most parts of the development will be via Church Lane. Access to Church Lane will be provided for pedestrians from the development.

6.4 Church Lane is rural in character and operates as a shared surface with very low traffic movements. It also provides access to a Bridleway and is entirely appropriate for use by pedestrians. Church Lane leads to High Road where there are footways on both sides of the road and which are adequate for pedestrian movement along High Road.

6.5 Pedestrians wishing to walk to Trimley St Martin have a choice of routes via High Road at the western end of Howlett Way or via the footpath which crosses the eastern end of Howlett Way into the St Martins Green residential area. There is likely to be increased pedestrian movement at both of these locations.

6.6 People wishing to use the local bus services would walk to the stops located on High Road or Howlett Way. Most of the bus routes call at the High Road stops and it is expected that most residents of the development would use Church Lane to walk to the bus stops on High Road, south of Church Lane. There are pedestrian footways leading to the southbound bus stop. People seeking to travel northbound would need to cross High Road to the footway on the western side.

6.7 Pedestrian access will be provided within the site to Howlett Way and the westbound bus stop. Those heading for the eastbound stop will need to cross Howlett Way and there is a refuge, conveniently located to that stop, which will assist this crossing movement.

6.8 Cyclists are most likely to use High Road to travel to their destinations in Felixstowe and would be able to use Church Lane, which is very suitable for cycling, and then the cycle lanes on High Road. Cyclists heading towards Ipswich would use High Road to access the National Cycle Route which runs alongside A14.

6.9 A section of the footway on the eastern side of High Road is designated for shared use by cyclists as it approaches the Howlett way roundabout from the north. Cyclists may use the footway and splitter island to cross Howlett Way and re-join High Road south of the roundabout. The proposed development includes a shared footway/cycle path at the western end of Howlett Way to join the cycle route on High Road to the north is likely to increase the number of cyclists making use of this shared footway.

6.10 This assessment identifies likely increases of pedestrian and/or cycle movements across High Road at Church Lane; at the western end of Howlett Way; and at the eastern end of Howlett Way. To provide for these increased movements, it is proposed to carry out improvements at these three locations as described below.

6.11 *High Street at Church Lane* – There is currently no facility to assist pedestrians across High Road in the vicinity of Church Lane. Having considered the potential options it has been concluded that there is insufficient carriageway width to allow for a pedestrian refuge. It is proposed therefore to provide a zebra crossing at this location as shown in drawing number 67006-TA-003.

6.12 This proposed crossing would be located outside the Parish of St Martin and St Mary Trimley Church, just south of Church Lane, and crosses at the point where the southern footway is at its widest to provide the greatest level of pedestrian convenience. The zig-zag line markings associated with the zebra crossing would prohibit stopping by vehicles at the kerb, however the affected lengths of the kerb are already subject to 24 hour waiting restrictions and the zig-zag markings should increase the observance of the restrictions by drivers.

6.13 *Western End of Howlett Way* – On the Howlett Way arm of the Howlett Way/High Road roundabout there is a dropped kerb crossing of the exit which serves the shared footway/cycle path. The carriageway on the north side of the road is quite wide and the angle of the path is such that pedestrians and cyclists wishing to cross must look over their shoulders to see vehicles exiting onto Howlett Way from the northern arm of High Road. The existing geometry of the southbound entry means that drivers looking for a gap in circulating traffic may not be aware of pedestrians and cyclists waiting to cross.

6.14 It is therefore proposed to increase the deflection and reduce the entry width on this approach by building out the kerb on the eastern side. The objective is to reduce vehicle entry speeds and to increase the distance between the entry and adjacent exit giving drivers more time to react to people using the crossing point.

6.15 Additionally, the splitter island would be increased in size and the northern footway would be realigned. These changes will reduce the crossing distance and allow pedestrians and cyclists to approach perpendicular to the carriageway, providing an improved angle from which to observe approaching vehicles. This proposed layout is shown in drawing number 67006-TA-004 Revision B.

6.16 *Eastern End of Howlett Way* - It is proposed to provide a new 2m wide pedestrian refuge island to assist pedestrians across Howlett Way when using the public footpath. This will require a small local widening of the carriageway to provide sufficient width. The carriageway running lanes would be around 3.25m in either direction.

6.17 The existing tarmac footpaths would be extended to cater for the observed existing desire lines, and tactile paving would be provided to increase amenity for the visually impaired. A new section of footway is also proposed providing an additional pedestrian entrance into the site. This proposed arrangement is shown in drawing number 67006-TA-005 Revision B.

6.18 Each of these proposed improvements have been subject of a Stage 1 Road Safety Audit and a copy of the audit and Designer's Response is attached at Appendix F. The drawings attached to this report showing the proposed layouts have been amended to reflect the comments made.

7.0 DEVELOPMENT TRAFFIC IMPACTS – DTPL ASSESSMENT

7.1 The proposed development traffic flows will impact on the capacity of the local road network and the most significant potential impact is at the proposed site access junction and the two roundabouts at either end of Howlett Way. The impact will reduce with distance from the site as drivers turn onto different routes and stop at their destinations. Based on the initial assessment work set out in the Scoping report it was is not considered likely that the development traffic would result in any material impacts beyond these three junctions.

7.2 However, in their response to the Scoping Report, Suffolk County Council requested that capacity assessments also be carried out at the junctions of Maidstone Road with High Street, in Walton, and High Road West with Garrison Lane on the edge of Felixstowe town centre. The results of the impact assessments of these junctions have been set out later in this report.

7.3 The three local roundabout junctions have been assessed using the ARCADY module of the Junctions 9 software package. The two existing junctions have been assessed using the observed traffic flows, representing the existing scenario, and the future year flows with committed development, which represent the do-nothing scenario. These junctions and the proposed new roundabout have also been assessed for the future year with the development, which represents the do-something scenario. The results for each of the three junctions are described below.

Howlett Way/High Road Junction

7.4 This junction is a normal design roundabout originally built with three arms and which has been altered to provide a fourth arm known as Goslings Way, which serves the residential development of the former mushroom farm. The roundabout has been the subject of other minor modifications with hatch marking and kerb-line realignments being used to reduce entry widths to a single lane and to reduce the circulatory carriageway width.

7.5 Further amendments to the geometry of this roundabout junction are proposed following the Stage 1 Road Safety Audit at Appendix F, and the now proposed layout is shown in drawing number 67006-TA-004 Revision B.

7.6 Therefore the existing and future 'do-nothing' operation of the junction has been assessed based on the existing roundabout geometry as appropriate, using the 2018 observed traffic flows and the flows derived for the 2023 'do-nothing' scenario.

7.7 The future 'with-development' operation of the junction has been assessed based on the proposed modified roundabout geometry using the flows derived for the 2023 'do-something' scenario. The full analyses and results summary tables for both the existing and proposed roundabout layouts are attached at Appendix L.

7.8 The results show that for the existing roundabout layout, the Ratio of Flow to Capacity (RFC), which is generally used as a measure of the level of operation of a junction, would reach a maximum of 0.47 in the evening peak hour on Howlett Way in the future year 'do-nothing' scenario.

7.9 For the proposed roundabout layout assessed for the future 'with-development' scenario, the RFC would rise to a maximum of 0.48 in the evening peak hour on the Howlett Way approach to the junction. This is a negligible increase in RFC and demonstrates that neither the addition of development traffic, nor the proposed amendments to the existing roundabout geometry would have a negative impact on the operation of the junction.

7.10 An RFC level of 0.85 is generally viewed as indicating that a junction has adequate capacity to allow for future traffic growth beyond the year of assessment and it is therefore apparent that this junction would continue to operate satisfactorily following the proposed development.

Howlett Way/A14 Junction

7.11 This junction is a large roundabout with significant lengths of circulatory carriageway between the exit and entry arms serving the A14. It has two lane entries on the A14 and Howlett way arms and a single lane entry on Kirton Road. The circulatory carriageways on the overbridges and the exits on all arms have been reduced in width to a single lane using hatch marking.

7.12 The capacity of the junction has been assessed using the 2018 observed traffic flows, the flows derived for the 2023 'do-nothing' scenario and the flows derived for the 2023 'do-something' scenario. The full results of the analysis are shown attached at Appendix M with a summary table.

7.13 These show that the Ratio of Flow to Capacity (RFC), which is generally used as a measure of the level of operation of a junction, would reach a maximum RFC of 0.34 on the A14 (NW) entry to the junction in the evening peak hour with the development traffic. It is therefore apparent that this junction would continue to operate satisfactorily following the proposed development.

Proposed Site Access Junction

7.14 This new junction has been designed with a diameter of 35m using the design principles for a compact roundabout with single lane entries and an over-runnable area around the central island. This design approach seeks to reduce vehicle speeds on entry to and within the junction and is more suitable where pedestrian and cyclist movements need to be accommodated.

7.15 The capacity of this junction has been assessed using the flows derived for the 2023 'do-something' scenarios only. The full analyses are shown attached at Appendix N with a summary table. These show that the RFC would reach a maximum of 0.79 in the evening peak hour on the Howlett Way (E) entry to the junction. The junction would therefore operate satisfactorily.

Summary

7.16 The traffic impact analysis of the development indicates that the proposed site access junction and the existing local junctions would continue to operate with normal levels of service at the future year with committed developments and the proposed development.

8.0 DEVELOPMENT TRAFFIC IMPACTS – SENSITIVITY TEST ASSESSMENT

8.1 As described earlier in this report, following the submission of the Scoping Report, Suffolk County Council requested that an alternative distribution method be used to avoid the potential that the Journey to work data does not represent all journey purposes. The alternative method selected was to use the observed turning proportions to and from Goslings Way, which serves mainly residential development, to derive a different trip distribution and this has been applied to the predicted development flows. The full method is outlined in section 4 of this report and the resulting development flows are shown in Figures 16 and 17 for the morning and evening peak hours respectively.

8.2 The effect of the sensitivity test traffic distribution model is to increase the amount of development traffic assumed to travel through the Howlett Way/High Road junction and to correspondingly reduce traffic flows through the Howlett Way/A14 junction. The same number of vehicle movements will pass through the proposed site access junction, but the distribution between the eastern and western entries will change. Consequently, the traffic impacts have been reassessed for this test scenario at the Howlett Way/High Road roundabout and the proposed new access roundabout.

Howlett Way/High Road Junction

8.3 The junction layout assessed here is that with the proposed modifications arising from the development. The capacity of the junction has been re-assessed using the 2023 sensitivity test scenario only, as illustrated in Figures 18 and 19 for the morning and evening peak hours respectively. The results are included at Appendix O.

8.4 The assessment shows that the maximum RFC would increase to 0.50 on the Howlett Way approach in the evening peak hour using the Sensitivity Test distribution. This is a small increase when compared to the maximum RFC of 0.48 on the same approach in the evening peak hour assessed using the 2011 Census trip distribution. Therefore this junction would continue to operate satisfactorily under this test scenario.

Proposed Site Access Junction

8.5 The capacity of the proposed site access roundabout junction has also been re-assessed based on the 2023 sensitivity test scenario only (Figures 18 and 19). The results are included at Appendix P.

8.6 These show that the maximum RFC would still be experienced in the evening peak hour on the Howlett Way (E) entry to the junction under the sensitivity test, but would be reduced from 0.79 to 0.78 when compared with the 2011 Census trip distribution assessment results. Overall the junction would experience an increase in residual capacity in both peak hours under the sensitivity test scenario. The junction would therefore operate satisfactorily.

Summary

8.7 The traffic impact analysis of the development on local junctions using the sensitivity test distribution indicates that the proposed site access junction and Howlett Way/High Road junction would both experience negligible changes when compared with the 2011 Census trip distribution scenarios and hence would continue to operate with normal levels of service at the future year with committed developments and the proposed development.

9.0 DEVELOPMENT TRAFFIC IMPACTS – WIDER HIGHWAY NETWORK

9.1 In addition to the above sensitivity test, Suffolk County Council have requested that the junctions of Maidstone Road with High Street and High Road West with Garrison Lane also be assessed in detail.

Year 2018 Existing Scenario

9.2 Traffic surveys of turning movements at these junctions were carried out in early November 2018 and the full survey results are attached at Appendix Q. The observed flows for both junctions are summarised in Frame 1 of Figures 20 and 21 for the morning and evening peak hours respectively.

Year 2023 'Do Nothing' Scenario

9.3 These 2018 observed flows have been factored for growth to the future year 2023 using the same TEMPro 7.2 growth factors used throughout this report, and as shown at the bottom of the respective figures, in order to obtain the predicted future year traffic flows.

9.4 The cumulative committed development flows identified local to Trimley are summarised in the attached Figures 5 and 6. Committed development traffic routed towards the A154 Candlet Road and High Street can be obtained directly from these figures. The subsequent assignment of these trips has then been derived based on the following method.

9.5 The Trimley committed development flows passing through the High Street/Maidstone Road priority junction via High Street are not easily quantified since journeys may begin/end prior to this junction. For simplicity it has been assumed that 100% of these committed development trips pass through this junction via the High Street (W) arm. This is therefore expected to be an overestimate. The resultant trips are then assigned based on the observed traffic distribution.

9.6 It is also assumed for simplicity that 100% of predicted High Street (E) trips beyond Maidstone Road reach the Garrison Lane junction via High Road West (W) which is again expected to be an overestimate.

9.7 High Street/High Road West is an alternative route to and from Felixstowe and hence inbound and outbound site traffic is not expected to subsequently route north towards the

A154 and hence trips are distributed 50/50 to the east and the south, approximately mirroring the typical observed east/south distribution at the Dock Spur Roundabout.

9.8 The Trimley committed development flows on the A154 Candlet Road are expected to split at the roundabout junction with Grove Road and Garrison Lane with around 60% of trips routed south via Garrison Lane based on Census 2011 workplace zones data. Since the A14/A154 is an alternate route to High Street/High Road West, it is not expected that trips would continue to High Road West (W) (i.e. back towards Trimley) and hence these trips are distributed to the east and to the south based on the observed traffic distribution.

9.9 For clarity, the Trimley committed development flows are shown in Frame 1 of Figures 22 and 23 for the morning and evening peak hours respectively.

9.10 Additionally, there are a number of developments local to these two junctions in various stages of progression which ought to be considered:

9.11 The land to the south of High Street, Walton (DC/13/3821/OUT) has been constructed and is now known as Walton Gate. It is understood that this development is close to fully occupied and hence the associated traffic movements are considered as accounted for within the recent surveys at Appendix Q;

9.12 The developments at land north of Walton High Street (DC/16/2778/OUT) and land at Candlet Road (DC/15/1128/OUT) are both approved subject to conditions and hence can be considered committed development. The development traffic for these sites can be obtained directly from the relevant traffic flow figures, and these have been attached at Appendix R for reference. These flows are also summarised in Frames 2 and 3 of Figures 22 and 23 for the morning and evening peak hours respectively.

9.13 The combined ‘committed development’ flows are calculated in Frame 4 of Figures 22 and 23 for the morning and evening peak hours respectively, and these have been added to the calculated 2023 ‘Future flows’ to obtain the 2023 ‘do-nothing’ flows as required.

9.14 The resulting 2023 ‘do-nothing’ flows are shown in Frame 2 of Figures 20 and 21 for the morning and evening peak hours respectively.

Predicted Development Flows

9.15 The predicted development flows passing through the High Street/Maidstone Road priority junction via High Street have been determined based on the sensitivity test distribution and have been assigned in a similar manner to the Trimley committed development assignment above.

9.16 The volume of predicted High Street trips which would end/begin before this junction is reached is not easily quantified and hence it has been assumed that 100% of these development trips pass through this junction via the High Street (W) arm. This is therefore expected to be an overestimate. The resultant development trips are then distributed throughout the junction based on the observed traffic distribution.

9.17 There are a number of opportunities between the Maidstone Road junction and Garrison Lane junction for trips to end/begin or divert from High Street/High Road, however for simplicity it is again assumed that 100% of predicted High Street (E) trips beyond Maidstone Road reach the Garrison Lane junction via High Road West (W). This is similarly expected to be an overestimate.

9.18 High Street/High Road trips are not expected to subsequently be assigned to or from the north (i.e. to or from the A154 Candlet Road) and hence these movements are distributed 50/50 to the east and to the south, which approximately reflects the observed east/south distributions at the Dock Spur Roundabout.

9.19 Development trips routed via the A154 Candlet Road within the sensitivity test split at the roundabout junction with Grove Road and Garrison Lane with 60% of trips distributed south via Garrison Lane based on Census 2011 workplace zones data. Inbound/outbound trips on the A154 are not expected to route via High Road West (W) (i.e. back towards Trimley) and hence are distributed to the east and to the south based on the observed traffic distribution.

9.20 The resultant predicted development flows as determined above are shown in Frame 3 of Figures 20 and 21 for the morning and evening peak hours respectively.

Year 2023 Future 'With Development' Scenario

9.21 The Future Year 2023 'With Development' flows are shown in Frame 4 of Figures 20 and 21 for the morning and evening peak hours respectively.

Junction Capacity Assessments

9.22 The two junctions requested for assessment by SCC have been assessed using the appropriate junction modelling software. The priority junction of Maidstone Road with High Street has been assessed using the PICADY module of the Junctions 9 software package, and the signalised junction of Garrison Lane and High Road West has been assessed using LINSIG software.

9.23 These two junctions have been assessed using the observed traffic flows, representing the existing scenario, the 2023 future year 'do-nothing' scenario, and the 2023 future year with the development, which represents the 'do-something' scenario. The results for each of the two junctions are described below.

Maidstone Road/High Street Junction

9.24 This junction is a priority interchange junction with a ghost right turn lane for traffic turning into Maidstone Road from the west. The junction of Gulpher Road with High Street is situated almost directly opposite, however the observed exchange of movements between Maidstone Road and Gulpher Road is small and hence the junction is not observed to operate as a stagger junction. The junction is therefore modelled as a standard priority junction, as it has been for previous assessments.

9.25 The results show that the Ratio of Flow to Capacity (RFC), which is generally used as a measure of the level of operation of a junction, would reach a maximum of 0.40 in the morning peak hour on the Maidstone Road approach to the junction in the future 'do-nothing' scenario, rising to 0.42 in the future 'with development' scenario. This is a small predicted increase.

9.26 An RFC level of 0.85 is generally viewed as indicating that a junction has adequate capacity to allow for future traffic growth beyond the year of assessment and it is therefore apparent that this junction would operate satisfactorily following the proposed development. The full model output and summary results are attached at Appendix S.

Garrison Lane/High Street West Junction

9.27 This junction is a four arm signalised crossroads with High Road West running roughly west to east and Garrison Lane running roughly north to south. Each of the Garrison Lane arms and the High Road West (E) arm have two approach lanes, an 'ahead and left lane' and a 'right turn only' lane. The Garrison Lane arms additionally have storage beyond the stop line for right turning traffic. The High Road West (W) arm has a single approach lane for all movements.

9.28 The LINSIG model used is as per previous assessments which is based on information provided by Suffolk County Council, and cycle times of 110 seconds and 90 seconds have been assumed for the morning and evening peak hours respectively, again as previously assessed. The junction includes a pedestrian phase which is called on demand. For the purposes of this assessment the model has initially been created under the assumption that this would be called in each cycle during the peak hours.

9.29 The LINSIG junction modelling software provides an assessment of the capacity of signalised junctions based on their physical geometry, phasing and timings. The results provide values indicative of performance including: Degree of Saturation (DoS) which is similar to the RFC value used in Junctions 9. A DoS of 100% indicates that traffic flow is equal to capacity and 90% is normally considered the maximum desirable operational level; Mean maximum queue (MMQ) length (in PCUs) represents the maximum queue predicted in a typical cycle, averaged over all the cycles modelled; Practical Reserve Capacity (PRC) indicates the residual capacity of a junction; Total Delay (in PCU/Hr).

9.30 The junction has been assessed against the 2018 observed, 2023 'do-nothing' and 2023 'with development' scenarios. The full model output is attached at Appendix T and for ease of reference the overall junction performance is also summarised in Table 9.1 below.

Table 9.1 Scenario	Degree of Saturation (%)	Highest Mean Maximum Queue (PCU)	PRC (%)	Total Delay (PCU/Hr)
Observed 2018 AM	94.9%	27.2	-5.5%	28.67
Observed 2018 PM	87.3%	12.8	3.1%	22.24
Do Nothing 2023 AM	130.2%	123.5	-44.7%	199.39
Do Nothing 2023 PM	146.7%	91.7	-63.0%	150.68
Do Something 2023 AM	135.6%	141.7	-50.7%	227.74
Do Something 2023 PM	137.0%	84.1	-52.2%	176.18

9.31 From Table 9.1 it is apparent that this junction currently operates above 90% during the morning peak hour based on the assumed pedestrian demand model. In the future 'do-nothing' scenario where background growth and committed development flows are added, the junction is predicted to operate above capacity (i.e. greater than 100% DoS) during both peak hours.

9.32 With the addition of the development trips the predicted DoS levels would rise by around 5.4% in the morning peak hour whilst conversely in the evening peak hour, the DoS levels would decrease by around 9.7% with the addition of development trips. Therefore the proposed development trips appear to have a small impact in the morning peak hour and bring about a small improvement in the evening peak hour overall.

9.33 In order to better understand this effect, the results for each individual arm have been summarised in Tables 9.2, 9.3 and 9.4 below for each of the Observed, Do-Nothing and Do Something scenarios respectively.

Table 9.2 Observed 2018 - With Ped	AM Peak		PM Peak	
	DoS (%)	MMQ	DoS (%)	MMQ
High Road West (E)	40.6%	6.2	82.3%	9.2
Garrison Lane (S)	92.0%	16.8	74.3%	11.4
High Road West (W)	94.5%	27.2	87.3%	12.8
Garrison Lane (N)	94.9%	6.5	81.4%	6.7

Table 9.3 Do Nothing 2023 - With Ped	AM Peak		PM Peak	
	DoS (%)	MMQ	DoS (%)	MMQ
High Road West (E)	128.2%	60.5	80.2%	10.1
Garrison Lane (S)	93.8%	23.8	89.9%	18.9
High Road West (W)	130.2%	123.5	146.5%	91.7
Garrison Lane (N)	125.8%	23	146.7%	52.5

Table 9.4 Do Something 2023 - With Ped	AM Peak		PM Peak	
	DoS (%)	MMQ	DoS (%)	MMQ
High Road West (E)	131.5%	65.8	128.6%	59.1
Garrison Lane (S)	95.3%	25.4	86.8%	17.9
High Road West (W)	135.6%	141.7	137.0%	84.1
Garrison Lane (N)	134.6%	26.5	126.4%	37.8

9.34 From comparison of the above Tables it is clear that between the observed and do-nothing scenarios in both peak hours, the impact is varied. For example, the High Road West (E) arm increases significantly in both DoS (by a factor of 3) and MMQ (by a factor of 10) in the morning peak hour whilst in the evening peak hour on the same arm a slight decrease is observed in the DoS and only a small increase in the MMQ.

9.35 This outcome is expected to be the result of the proportional changes in traffic volume to each arm resulting from the addition of committed development flows. The proportional increases in the morning peak hour are around 10% west, 20% east, 60% north, and 40% south when compared with the observed traffic flows. The proportional changes in the evening peak hour are similar although slightly higher increases of 20% west and 70% north are predicted. It is the variance in these proportional increases which results in the varied impacts on the individual arms of the junction.

9.36 When comparing the results following addition of the development traffic, it is clear that the morning peak hour predicts small increases in DoS and MMQ on all arms, whereas in the evening peak hour, decreases are seen on all arms with the exception of High Road West (E). Therefore overall the junction experiences small increases in DoS & MMQ in the morning peak and generally small decreases in DoS & MMQ in the evening peak hour. The change resulting from development traffic is therefore expected to be negligible.

9.37 However, it should be noted that these assessments have assumed that the pedestrian phase would be called each cycle and that is very often not the case, even at peak times. The analysis of the junction overall would show lower levels of saturation if it were modelled without this assumption. As an example, the junction has also been modelled without any pedestrian phase. The results of which are included at Appendix U and summarised in Table 9.5 below.

Table 9.5 Scenario	Degree of Saturation (%)	Highest Mean Maximum Queue (PCU)	PRC (%)	Total Delay (PCU/Hr)
Observed 2018 AM	73.0%	18.5	23.4%	18.69
Observed 2018 PM	59.8%	9.6	50.5%	12.3
Do Nothing 2023 AM	99.4%	36.8	-10.4%	38.7
Do Nothing 2023 PM	87.4%	14.8	3.0%	19.75
Do Something 2023 AM	105.0%	53.4	-16.6%	55.39
Do Something 2023 PM	91.9%	15.6	-2.1%	22.15

9.38 These results show that saturation levels are lower in each respective scenario when modelled without the pedestrian phase, as expected. The DoS under the observed 2018 traffic flows is predicted to be under the 90% threshold in both peak hours, but with the addition of growth and committed development flows, the junction is close to capacity in the morning peak hour and reaching the maximum desirable level in the evening peak hour. The further addition of development traffic increases the DoS in the morning peak hour to 5% over theoretical capacity, whilst in the evening peak hour the DoS is slightly over the desirable threshold of 90%, but still within theoretical capacity.

9.39 For further comparison, the individual arm results are shown for the morning and evening peak hours in Tables 9.6, 9.7 and 9.8 for the observed, do-nothing and do something scenarios respectively.

Table 9.6 Observed 2018 AM - No Ped	AM Peak		PM Peak	
	DoS (%)	MMQ	DoS (%)	MMQ
High Road West (E)	65.9%	8.6	48.2%	6.3
Garrison Lane (S)	72.5%	12.5	59.8%	9.6
High Road West (W)	73.0%	18.5	59.6%	9.1
Garrison Lane (N)	48.8%	5.6	52.5%	4.6

Table 9.7 Do Nothing 2023 AM - No Ped	AM Peak		PM Peak	
	DoS (%)	MMQ	DoS (%)	MMQ
High Road West (E)	64.5%	9.2	51.5%	7
Garrison Lane (S)	86.8%	20.3	76.0%	14.8
High Road West (W)	99.4%	36.8	84.1%	13.5
Garrison Lane (N)	90.7%	10.6	87.4%	10

Table 9.8 Do Something 2023 AM - No Ped	AM Peak		PM Peak	
	DoS (%)	MMQ	DoS (%)	MMQ
High Road West (E)	60.9%	9	54.3%	7.4
Garrison Lane (S)	88.1%	21.1	77.8%	15.5
High Road West (W)	105.0%	53.4	89.4%	15.6
Garrison Lane (N)	94.6%	11	91.9%	10.3

9.40 As before, whilst the overall traffic increases with each scenario, there are small improvements indicated on some arms in specific peak hours resulting from traffic balancing within the junction as flows increase to a greater degree on specific approaches.

9.41 In general, the addition of development traffic typically results in small increases in the DoS and MMQ although High Road West (E) shows a small improvement in the morning peak hour and Garrison Lane (S) remains almost unchanged in both peak hours. Again, the change in operation of the junction resulting from the development traffic is expected to be negligible.

9.42 In summary, the junction is shown to operate at or in excess of theoretical capacity in either of the two models with the addition of growth and committed development (i.e the do-nothing scenario). Therefore regardless of which of the two models is used, the junction is predicted to reach capacity without the addition of the proposed development traffic.

9.43 The overall capacity of the junction would be affected by the frequency with which pedestrian phases are called and the actual operation of the junction is expected to lie between the two models presented, i.e. where the pedestrian phase is called intermittently.

9.44 In either case, the greatest level of additional traffic resulting from the proposed development would be 48 two-way trips in the morning peak hour and 45 in the evening peak hour on High Road West (W) which equates to less than 1 additional vehicle per minute in either peak hour. Therefore the impact of the predicted development traffic at this junction is shown to be negligible and may also result in small performance improvements on some arms at peak times.

9.45 It should also be acknowledged that the Howlett Way development flows shown to reach these junctions are calculated based on a number of simplifying assumptions which are expected to result in overestimation of the actual traffic volumes, and that reductions in vehicle trips resulting from the execution of the residential travel plan have also not been applied to the predicted development trips in any of these assessments.

9.46 Additionally, both models have assumed the existing junction cycle times throughout for ease of comparison. It can be expected that optimising the cycle times for the revised flows would result in improved junction operation overall.

9.47 Therefore, it can be expected that the actual impact of the development on these junctions would be significantly less than the already negligible impact predicted by these models.

10.0 POLICY CONSIDERATIONS

10.1 The Suffolk Coastal District Local Plan comprises the *Core Strategy (July 2013)*; the *Site Allocations and Area Specific Policies DPD;* the *Peninsula Area Action Plan;* and the saved policies of the *Suffolk Coastal local Plan*. A review of the Local Plan is under way.

10.2 National policy is set out in the *National Planning Policy Framework* which was first published in March 2012; revised in July 2018 and updated in February 2019.

National Planning Policy Framework (February 2019)

10.3 The updated revised National Planning Policy Framework was published in February 2019 and sets out the national planning policies for England. This document replaces the first NPPF published in March 2012. It confirms the purpose of the planning system is to contribute to the achievement of sustainable development and reiterates the three overarching objectives relating to the economy, the community and the environment.

10.4 NPPF 2019 states that the purpose of the planning system is to contribute to the achievement of sustainable development and that at the heart of the Framework is a presumption in favour of sustainable development.

10.5 In considering development proposals the Framework maintains its previous advice that development should only be prevented or refused on highway grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

10.6 Within this context, applications for development should:

a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas: and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

10.7 The framework confirms the need for significant developments to provide a travel plan and for the application to be supported by a transport assessment.

10.8 The proposed development meets the aims of achieving sustainable travel by ensuring access by all forms of public transport, including by public transport, cycling and walking. It provides for movement by pedestrians and cyclists with high quality provision within the development and improvements outside the site which will in particular mitigate the effects of the development and address existing deficiencies in provision local to the site.

10.9 The Transport Assessment identifies the effects of the development and demonstrates that these would not have a severe impact on the local road network capacity.

The Suffolk Coastal District Local Plan – Core Strategy (CS)

10.10 Objective 1 of the Core Strategy is '*To deliver sustainable communities through better integrated and sustainable patterns of land use, movement, activity and development.* This objective is supported by Strategic policy SP1 which sets out several strategies which aim to achieve sustainable development. These include the following strategies relating to transport, including:

(b) *relate new housing development to employment services, transport and infrastructure. To achieve this a defined Settlement Hierarchy, itself based on sustainability principles, has been created and applied;* and

(g) *reduce the overall need to travel but where travel is necessary, to better manage the transport network to enable it to function efficiently.*

10.11 Policy SP1A of the CS restates the Presumption in Favour of Sustainable Development and confirms that the council will take a positive approach when considering development proposals. Further it states that planning applications that accord with the Local Plan will be approved without delay.

10.12 The Transport Policies of the CS are strategic in nature and aim to support Objective 8 of the CS, which is '*To enhance the transport network across the district*'. Policy SP10 relates to the strategic road network comprising the A14 and A12 and Policy SP11 relate to making the best use of the road and rail networks by maximising opportunities for local journeys to be made by means other than the private motor car.

10.13 The spatial strategy of the CS identifies the Eastern Ipswich Plan Area and Felixstowe, Walton and the Trimley villages as the two Major Centres in the district. This is the highest settlement type in the identified hierarchy and the SC indicates that 51% of the proposed housing growth is to be accommodated in these two locations.

10.14 Policy SP21 refers to Felixstowe, Walton and the Trimley villages and identifies the need to reverse the population imbalance and to expand the employment base.

10.15 The proposed development is located in one of the Major Centres identified in the CS and supports the spatial strategy adopted by the Council.

10.16 The CS includes Transport related Development Management Policies including DM19 on Parking Standards which requires development to conform to these as set out in a Supplementary Planning Document. Currently the Suffolk Advisory Parking Standards dating from April 2002 are the adopted standards for parking in new development.

10.17 Parking provision for the development has not been assessed at this outline application stage and will be dependent upon the sizes of dwellings that will be defined at the reserved matters stage. However it is intended that the development will accord with the adopted standards that apply when these details are considered for approval.

10.18 Policy DM20 seeks the implementation of Travel Plans for new development that would have significant transport implications.

10.19 It is intended that the development will include a Travel Plan and a Travel Plan Framework is attached at Appendix O setting out the types of measures that will be included as part of that.

Felixstowe Peninsula Area Action Plan (FPAAP)

10.20 The FPAAP was adopted in January 2017 and provides more detailed policies and guidance for the development of the area southeast of the A12/A14 junction and includes the villages of Trimley St Martin and Trimley St Mary.

10.21 The application site is identified in the FPAAP in Policy FPP7 for development for approximately 360 residential units. The Policy and the accompanying text set out various requirements and conditions for development of the site. Those related to transport matters include:

- Primary vehicular access onto Howlett Way;
- No vehicular access onto Church Lane;
- Continuation of and links to existing public Rights of way Network;

10.22 Howlett Way and Church Lane provide the only public highway direct frontage to the site and as required by Policy FPP7 vehicular access is proposed only to Howlett Way. Access is also proposed to Church Lane for pedestrians and cyclists. However, it is a requirement of Suffolk County Council that provision is made for an alternative means of access for use in emergencies. This emergency vehicle access is proposed to be onto Church Lane via one or more of the pedestrian/cycle access points.

10.23 It should be noted that use of the emergency points of access would be required only in the event that access to the development via Howlett Way was not possible due to an unforeseen emergency event. By definition such events would rarely, if ever, occur and if such an event were to happen then use of the emergency route would be supervised and controlled by the emergency services.

11.0 SUMMARY AND CONCLUSION

11.1 Trinity College Cambridge proposes to develop land south of Howlett Way, Trimley St Martin for up to 340 residential dwellings with a nursery and public open space. The proposed development reflects the allocation of the site in the Felixstowe Peninsula Area Action Plan (FPAAP) for residential development.

11.2 It is proposed to provide a single vehicular access to the site from a new roundabout on Howlett Way. This is in line with the requirements set out in the FPAAP for development of the site.

11.3 There are existing public rights of way to the site including a footpath from the eastern end of Howlett Way and a bridle path extending east from Church Lane. These rights of way meet at the southeastern corner of the site and a bridle path continues south to Thurmans Lane.

11.4 Howlett Way and High Road are both bus routes and there are bus stops on both roads close to the site and within easy access of the proposed residential development. Trimley railway station is about 1300m from the site and provides train services to Felixstowe and Ipswich. Trimley St Martin and Trimley St Mary provide a number of accessible local facilities including two primary schools, two nurseries, a convenience store and post office, a butcher and two public houses. There are further local facilities in Walton and a wide range of amenity is available in Felixstowe town centre.

11.5 Average residential vehicle trip rates for the development were agreed with Suffolk County Council as suitable for the assessment of the development. Nursery trip rates were derived using TRICS data. Development trips were distributed and assigned to the local road network using Census 2011 Journey to Work data and the Google maps journey planner. This indicated that the vast majority of development traffic would likely use the A14.

11.6 Assessment of the impact of the development traffic on the local road network indicated that the local junctions would continue to operate well within capacity and the development would have no material adverse impacts.

11.7 Suffolk County Council has suggested that the use of Journey to Work data might not reflect journeys made for other reasons and requested that a sensitivity test be made based on an alternative trip assignment method.

11.8 An alternative assignment has been derived using the turning movement proportions to and from Goslings Way which provides access to a recently completed residential development. The observed turning movements from Goslings Way at this junction were applied to the calculated traffic flows from the proposed development and a revised assessment of the resultant traffic impact was made using this alternative assignment.

11.9 This sensitivity test assessment also showed that the local junctions would continue to operate well within capacity and that there would be no material adverse impacts. The effects of the proposed improvements to the northern arm of the Howlett Way roundabout are very small and would not result in any material impact upon the capacity of the junction.

11.10 Additionally, Suffolk County Council requested that two junctions remote from the development site be assessed in detail. The results of those capacity assessments indicate that the proposed development would have only a negligible impact on their operation based on the sensitivity test distributions.

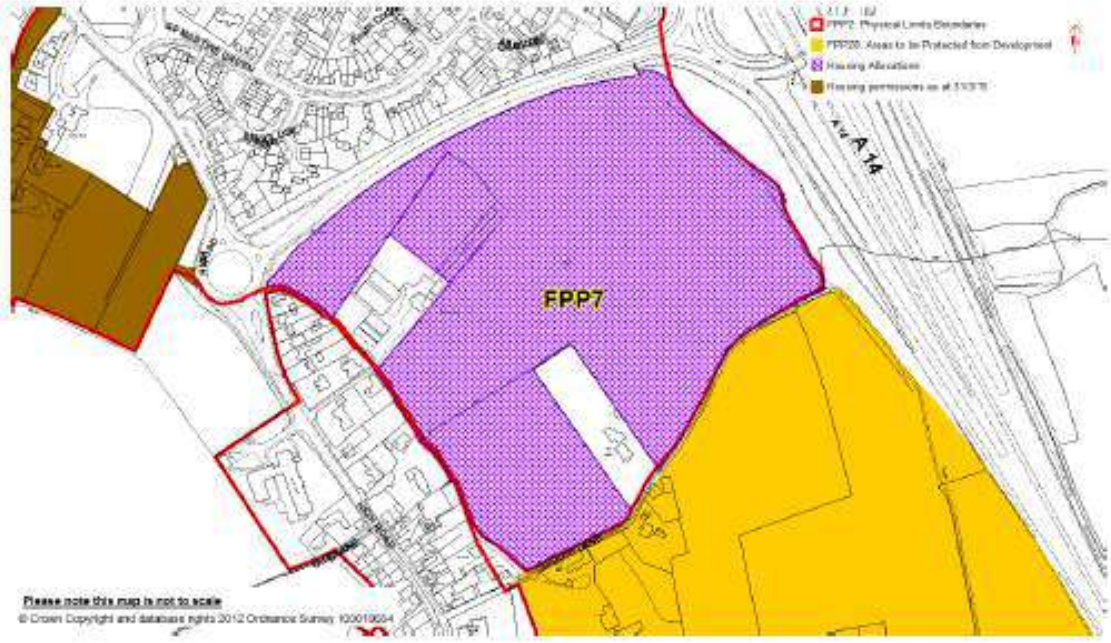
11.11 The proposed development will accord with relevant national and local policies, including the recently published National Planning Policy Framework. It will not result in a severe level of highway impact and there are no highways reasons why the development should not be permitted.

APPENDICES

APPENDIX A

Land off Howlett Way, Trimley St Martin

Site Area: 10.64ha



3.99 Howlett Way provides access from the A14 to the communities of Trimley St Martin and Trimley St Mary. The site is centrally located to the villages of Trimley St Martin and Trimley St Mary and provides further opportunity for organic and evolutionary growth as outlined by Core Strategy Policy SP21.

3.100 Land off Howlett Way is a large site within the Felixstowe Peninsula and it is anticipated that over 360 dwellings could be provided. Public consultation responses highlight a need for dwellings targeted at the retirement market. Housing opportunities for younger people and families will also be expected on the site as this will redress the population imbalance as outlined in Core Strategy Policy SP21.

3.101 The site includes part of the "Old Poultry Farm" with existing residential properties to the north and west of the site, the A14 to the east and agricultural fields to the south. Residential development adjacent to this site is predominately one or two storeys in height and the Council expects a similar scale of development to come forward on this site.

3.102 The Council's Environmental Protection Team have advised that an Air Quality Assessment would be required alongside any future planning application to assess the cumulative impacts of the developments in Trimley St Martin and Trimley St Mary. The site also shares a boundary with the A14 and it is essential that landscape buffers are provided to reduce the noise impact on this boundary. Currently mature trees provide a buffer but it may be appropriate to extend this buffer to further reduce the impact.

3.103 Suffolk County Council as highway authority have identified that the access onto Howlett Way needs to be considered through a transport assessment as part of any future planning application. No vehicular access could be gained from Church Lane as this is only appropriate for walking and cycling routes to improve connections to the rest of the village and existing communities. Bridleway 5 and Footpaths 23 and 26 serve this site and it will be essential that the future development of this site provides appropriate linkages to these established routes, thus improving the connectivity of the site with the surrounding areas as well as providing opportunity to create circular walks, encouraging access away from the Special Protection Areas. Surface improvements to the Public Rights of Way and potential extensions to link into the wider network will be supported.

3.104 The site is known to be of archaeological interest. Suffolk County Council require an archaeological assessment to be undertaken at an appropriate stage prior to the granting of outline, technical details or full planning permission. It is a large area to the northeast of the historic settlement core of Trimley (TYN 060) and includes a rectangular pillbox based on the 'Suffolk Square' design (TYN 024). Any new development at this site should allow for preservation of archaeological interests in situ where appropriate.

3.105 The Suffolk Coastal Leisure Strategy and the evidence base supporting that document identifies that all new development which results in an increase in the number of dwellings should contribute towards the provision of open space. Open space provision can take many different forms and facilities can differ from site to site but may include parks and gardens, amenity green space, allotments, play areas, footpaths or dog walking areas.

Developers will be required to consider local needs and requirements as part of their proposals alongside the nationally published standards of 2.4ha per 1000 population as detailed in Core Strategy Policy SP16.

3.106 Anglian Water have identified that a water mains crosses this site and therefore any future development will need to ensure that access to this is maintained through an appropriate design and layout.

3.107 Historic England has expressed concern about the potential impact of residential development on the Grade II listed churches and the Old Rectory, a Grade II Listed Building, situated at the south of the site. They advise that the setting of these buildings should be protected and any development in close proximity needs to be of a high quality and sympathetic to the character of the area and the existing Listed Buildings.

Policy FPP7: Land off Howlett Way, Trimley St Martin

10.64ha of land at Howlett Way, as shown on the Policies Map, is identified for approximately 360 residential units with on site open space. Development will be expected to accord with the following criteria:

- **Primary vehicular access onto Howlett Way only,**
- **No vehicular access onto Church Lane,**
- **Continuation of and links to existing Public Rights of Way Network,**
- **Retain the existing hedgerows which border the site to maintain character of the area,**
- **Affordable housing provision to be in line with Core Strategy Policy DM2,**
- **A range of housing types and tenures provided in keeping with surrounding area and in line with Core Strategy Table 3.6,**
- **Development to be of a high quality and sympathetic to the character and setting of the listed churches and The Old Rectory,**
- **Site design and layout to take into account the water mains crossing the site,**
- **On site open space and play facilities to meet needs identified in the SCDC Leisure Strategy,**
- **Archaeological assessment required with particular consideration for the existing pillbox,**
- **Air Quality assessment required,**
- **Provision of on-site early years setting.**

APPENDIX B

CAD FILE NAME : R:\PROJECTS\67006 HOWLETT WAY, TRIMLEY\TECH\ACAD\DRAWINGS\67006-001 REV C.DWG
CTB FILE NAME : acad.ctb
PLOTTED DATE : 19-Jul-2018

FIGURE TITLE
ATC Location Plan

JOB TITLE
Howlett Way, Trimley

SCALES @ A3 SIZE
NTS

FIGURE NUMBER

REV.

Development Transport Planning
Kingswick House, Kingswick Drive, Sunninghill, Berkshire, SL5 7BH
Tel: 01344 292366 Email: admin@developmenttp.co.uk

Tracsis plc
Traffic and Data Services

Client: Development Transport Planning
Project: 3984-LON-JB Howlett Way, Trimley
Site: A - Howlett Way (West of A1
Start Date: 19/04/2018

Eastbound

Time	Eastbound								
	Mon 23-Apr	Tue 24-Apr	Wed 25-Apr	Thu 19-Apr	Fri 20-Apr	Sat 21-Apr	Sun 22-Apr	5 Day Avg	7 Day Avg
00:00	7	34	1	3	5	15	22	10	12
01:00	4	34	1	6	2	7	7	9	9
02:00	3	46	4	3	5	4	9	12	11
03:00	6	49	6	6	6	3	4	15	11
04:00	12	49	11	18	15	8	10	21	18
05:00	30	26	32	37	33	17	22	32	28
06:00	118	117	97	107	107	56	45	109	92
07:00	225	246	258	253	233	85	41	243	192
08:00	431	432	430	446	411	150	91	430	342
09:00	207	190	242	213	209	229	181	212	210
10:00	194	181	160	163	206	238	231	181	196
11:00	166	177	169	184	186	215	181	176	183
12:00	189	199	222	239	216	247	215	213	218
13:00	185	187	214	214	239	195	203	208	205
14:00	194	197	199	219	202	189	180	202	197
15:00	244	247	238	258	286	163	162	255	228
16:00	232	248	278	278	231	205	172	253	235
17:00	228	243	264	278	238	177	173	250	229
18:00	184	215	180	216	203	149	143	200	184
19:00	145	131	98	144	145	104	104	133	124
20:00	107	100	103	100	71	83	69	96	90
21:00	83	58	57	77	63	54	31	68	60
22:00	69	39	31	38	46	44	39	45	44
23:00	52	11	14	15	21	39	7	23	23
07-19	2679	2762	2854	2961	2860	2242	1973	2823	2619
06-22	3132	3168	3209	3389	3246	2539	2222	3229	2986
06-00	3253	3218	3254	3442	3313	2622	2268	3296	3053
00-00	3315	3456	3309	3515	3379	2676	2342	3395	3142

Tracsis plc
Traffic and Data Services

Client: Development Transport Planning
Project: 3984-LON-JB Howlett Way, Trimley
Site: A - Howlett Way (West of A1
Start Date: 19/04/2018

	Westbound								
Time	Mon 23-Apr	Tue 24-Apr	Wed 25-Apr	Thu 19-Apr	Fri 20-Apr	Sat 21-Apr	Sun 22-Apr	5 Day Avg	7 Day Avg
00:00	12	161	21	20	22	35	54	47	46
01:00	0	149	4	10	9	13	24	34	30
02:00	3	166	6	9	10	14	18	39	32
03:00	4	210	4	6	4	9	9	46	35
04:00	5	188	10	9	5	11	10	43	34
05:00	11	15	16	21	12	15	26	15	17
06:00	76	96	94	94	86	47	31	89	75
07:00	212	221	238	218	216	72	53	221	176
08:00	284	265	310	287	276	148	99	284	238
09:00	257	252	256	264	250	287	175	256	249
10:00	235	234	229	270	278	328	259	249	262
11:00	273	242	253	299	311	377	321	276	297
12:00	362	328	443	336	368	456	373	367	381
13:00	314	313	310	325	363	388	338	325	336
14:00	295	280	291	329	319	319	340	303	310
15:00	380	384	382	438	435	327	287	404	376
16:00	456	473	456	482	512	390	314	476	440
17:00	739	716	645	678	663	396	289	688	589
18:00	465	449	438	486	438	273	261	455	401
19:00	250	277	292	348	300	231	198	293	271
20:00	369	166	204	201	178	140	139	224	200
21:00	441	133	157	154	108	85	96	199	168
22:00	316	111	114	114	106	102	56	152	131
23:00	204	31	37	54	73	73	19	80	70
07-19	4272	4157	4251	4412	4429	3761	3109	4304	4056
06-22	5408	4829	4998	5209	5101	4264	3573	5109	4769
06-00	5928	4971	5149	5377	5280	4439	3648	5341	4970
00-00	5963	5860	5210	5452	5342	4536	3789	5565	5165

Tracsis plc
Traffic and Data Services

Client: Development Transport Planning
Project: 3984-LON-JB Howlett Way, Trimley
Site: B - Howlett Way (East of High Rd Rbt)
Start Date: 19/04/2018

Eastbound

Time	Eastbound								
	Mon 23-Apr	Tue 24-Apr	Wed 25-Apr	Thu 19-Apr	Fri 20-Apr	Sat 21-Apr	Sun 22-Apr	5 Day Avg	7 Day Avg
00:00	7	15	1	3	5	13	22	6	9
01:00	4	10	1	6	2	7	6	5	5
02:00	3	11	4	3	5	4	9	5	6
03:00	6	15	6	6	6	3	4	8	7
04:00	12	16	11	18	15	8	10	14	13
05:00	30	26	32	37	32	17	21	31	28
06:00	117	116	99	108	107	54	44	109	92
07:00	221	247	255	253	230	86	41	241	190
08:00	424	431	431	443	413	146	90	428	340
09:00	202	185	236	211	205	229	179	208	207
10:00	189	174	159	163	208	238	229	179	194
11:00	166	177	167	181	183	214	182	175	181
12:00	190	204	218	241	216	248	217	214	219
13:00	188	187	212	213	234	194	200	207	204
14:00	190	201	197	217	203	188	179	202	196
15:00	241	244	235	254	282	160	161	251	225
16:00	235	251	270	279	226	202	170	252	233
17:00	232	245	265	279	232	180	177	251	230
18:00	183	211	180	220	199	146	140	199	183
19:00	144	129	99	141	146	105	105	132	124
20:00	96	100	102	96	74	82	67	94	88
21:00	66	58	56	76	62	53	31	64	57
22:00	51	40	31	38	47	44	40	41	42
23:00	19	11	14	15	22	39	6	16	18
07-19	2661	2757	2825	2954	2831	2231	1965	2806	2603
06-22	3084	3160	3181	3375	3220	2525	2212	3204	2965
06-00	3154	3211	3226	3428	3289	2608	2258	3262	3025
00-00	3216	3304	3281	3501	3354	2660	2330	3331	3092

Tracsis plc
Traffic and Data Services

Client: Development Transport Planning
Project: 3984-LON-JB Howlett Way, Trimley
Site: B - Howlett Way (East of High Rd Rbt)
Start Date: 19/04/2018

	Westbound								
Time	Mon 23-Apr	Tue 24-Apr	Wed 25-Apr	Thu 19-Apr	Fri 20-Apr	Sat 21-Apr	Sun 22-Apr	5 Day Avg	7 Day Avg
00:00	13	147	21	21	23	33	53	45	44
01:00	0	130	4	10	8	13	25	30	27
02:00	3	138	6	9	10	14	17	33	28
03:00	4	180	4	6	4	9	10	40	31
04:00	5	166	10	9	5	10	10	39	31
05:00	11	15	15	22	12	14	26	15	16
06:00	76	95	92	94	86	48	31	89	75
07:00	208	219	241	217	217	72	52	220	175
08:00	284	273	308	280	273	146	90	284	236
09:00	259	248	251	262	243	284	175	253	246
10:00	239	236	226	270	285	328	249	251	262
11:00	274	243	256	299	314	376	319	277	297
12:00	362	330	438	335	360	460	374	365	380
13:00	312	313	305	326	362	380	339	324	334
14:00	291	281	291	327	322	331	331	302	311
15:00	375	385	382	434	434	323	288	402	374
16:00	449	474	456	477	511	390	312	473	438
17:00	742	713	644	674	659	392	286	686	587
18:00	459	448	440	496	438	277	263	456	403
19:00	254	281	292	345	297	230	197	294	271
20:00	358	165	206	200	186	140	139	223	199
21:00	433	134	160	156	107	85	98	198	168
22:00	297	111	115	113	107	103	56	149	129
23:00	182	32	36	53	72	74	18	75	67
07-19	4254	4163	4238	4397	4418	3759	3078	4294	4044
06-22	5375	4838	4988	5192	5094	4262	3543	5097	4756
06-00	5854	4981	5139	5358	5273	4439	3617	5321	4952
00-00	5890	5757	5199	5435	5335	4532	3758	5523	5129

Tracsis plc
Traffic and Data Services

Client: Development Transport Planning
Project: 3984-LON-JB Howlett Way, Trimley
Site: A - Howlett Way (West of A14)
Start Date: 19/04/2018

Eastbound				
Day	Avg	85th	95th	% >40
Monday	33	37.2	39.8	5%
Tuesday	32.6	36.6	39.3	4%
Wednesday	32.9	36.9	39.3	4%
Thursday	32.9	37.4	40	5%
Friday	32.9	37.3	40	5%
Saturday	32.7	36.9	39.8	4%
Sunday	32.9	37.3	39.8	5%
5day	32.8	37.1	39.7	4%
7day	32.8	37.1	39.7	4%

Westbound				
Day	Avg	85th	95th	% >40
Monday	33.8	37.8	40.5	6%
Tuesday	33.8	37.9	40.7	7%
Wednesday	34.5	38.2	40.8	7%
Thursday	34.5	38.5	41.2	8%
Friday	34.6	38.4	41.3	8%
Saturday	34.7	38.7	41.6	9%
Sunday	34.6	38.6	41.6	9%
5day	34.2	38.2	40.9	7%
7day	34.3	38.3	41.1	8%

Tracsis plc
Traffic and Data Services

Client: Development Transport Planning
Project: 3984-LON-JB Howlett Way, Trimley
Site: B-Howlett Way (East of High Rd Rbt)
Start Date: 19/04/2018

Eastbound				
Day	Avg	85th	95th	% >40
Monday	28.9	32	34.4	0%
Tuesday	28.9	31.9	34.1	0%
Wednesday	28.8	31.9	34	0%
Thursday	28.8	32.1	34.2	0%
Friday	28.8	32	34.4	0%
Saturday	28.9	32	34.5	1%
Sunday	28.8	32.1	34.6	1%
5day	28.8	32	34.2	0%
7day	28.8	32	34.3	0%

Westbound				
Day	Avg	85th	95th	% >40
Monday	28.1	32.6	35	0%
Tuesday	28.3	32.7	35.1	0%
Wednesday	28.9	32.9	35.4	0%
Thursday	29.2	33.6	36.1	1%
Friday	29.4	33.6	36	1%
Saturday	29.8	33.8	36.3	1%
Sunday	29.8	33.7	36.3	1%
5day	28.8	33.1	35.5	0%
7day	29	33.3	35.7	1%

23177		FELIXSTOWE		Site No: 23177001 Channel: Northwestbound		Location	Site 1, High Road, Felixstowe (TG Pole OS 147)		
TIME PERIOD	Tue 03/07/18	Wed 04/07/18	Thu 05/07/18	Fri 06/07/18	Sat 07/07/18	Sun 08/07/18	Mon 09/07/18	5-Day Av	7-Day Av
Week Begin: 03-Jul-18									
00:00	**9**	14	14	14	24	20	10	12	15
01:00	**6**	10	3	6	15	24	8	7	10
02:00	**5**	4	3	5	11	10	7	5	6
03:00	**10**	10	7	13	7	6	14	11	10
04:00	**16**	16	18	27	21	14	21	20	19
05:00	**70**	61	72	60	42	24	61	65	56
06:00	**184**	183	170	162	75	60	193	178	147
07:00	**417**	432	395	360	129	83	368	394	312
08:00	**543**	542	565	509	222	141	508	533	433
09:00	**291**	291	282	297	327	248	297	292	290
10:00	**243**	264	269	286	388	322	294	271	295
11:00	**302**	279	298	290	348	343	263	286	303
12:00	**334**	277	344	348	373	388	287	318	336
13:00	**355**	373	345	322	338	283	306	340	332
14:00	**282**	296	302	322	314	279	299	300	299
15:00	**333**	341	358	429	154	289	350	362	322
16:00	**383**	365	363	316	123	273	341	354	309
17:00	**313**	329	321	369	241	291	340	334	315
18:00	**282**	276	290	307	248	239	274	286	274
19:00	**130**	203	234	190	199	188	199	191	192
20:00	**79**	153	168	143	155	145	143	137	141
21:00	**91**	133	131	127	137	90	126	122	119
22:00	**105**	61	87	93	96	43	64	82	78
23:00	**33**	28	30	52	46	16	21	33	32
12H,7-19	**4078**	**4065**	**4132**	**4155**	**3205**	**3179**	**3927**	**4071**	**3820**
16H,6-22	**4562**	**4737**	**4835**	**4777**	**3771**	**3662**	**4588**	**4700**	**4419**
18H,6-24	**4700**	**4826**	**4952**	**4922**	**3913**	**3721**	**4673**	**4815**	**4530**
24H,0-24	**4816**	**4941**	**5069**	**5047**	**4033**	**3819**	**4794**	**4933**	**4646**
Am	**08:00**	**08:00**	**08:00**	**08:00**	**10:00**	**11:00**	**08:00**	**-**	**-**
Peak	**543**	**542**	**565**	**509**	**388**	**343**	**508**	**533**	**485**
Pm	**16:00**	**13:00**	**16:00**	**15:00**	**12:00**	**12:00**	**15:00**	**-**	**-**
Peak	**383**	**373**	**363**	**429**	**373**	**388**	**350**	**380**	**380**

23177		FELIXSTOWE		Site No: 23177001 Channel: Southeastbound		Location	Site 1, High Road, Felixstowe (TG Pole OS 147)		
TIME PERIOD	Tue 03/07/18	Wed 04/07/18	Thu 05/07/18	Fri 06/07/18	Sat 07/07/18	Sun 08/07/18	Mon 09/07/18	5-Day Av	7-Day Av
Week Begin: 03-Jul-18									
00:00	**15**	23	16	23	35	42	12	18	24
01:00	**8**	6	4	8	20	29	10	7	12
02:00	**9**	4	3	9	9	13	4	6	7
03:00	**0**	3	6	4	8	5	7	4	5
04:00	**5**	4	6	6	11	10	7	6	7
05:00	**26**	26	26	27	17	11	20	25	22
06:00	**77**	84	85	91	48	30	76	83	70
07:00	**212**	245	226	204	70	52	208	219	174
08:00	**293**	322	315	302	170	100	330	312	262
09:00	**256**	254	254	247	238	179	244	251	239
10:00	**258**	245	276	269	299	290	244	258	269
11:00	**296**	317	267	287	332	313	300	293	302
12:00	**327**	342	319	326	391	336	296	322	334
13:00	**321**	315	339	322	366	334	316	323	330
14:00	**310**	343	342	344	318	282	297	327	319
15:00	**358**	393	394	401	200	311	393	388	350
16:00	**403**	426	416	418	187	296	370	407	359
17:00	**585**	557	553	527	250	231	517	548	460
18:00	**384**	415	390	380	234	233	426	399	352
19:00	**182**	264	293	281	234	187	244	253	241
20:00	**101**	194	209	202	155	173	156	172	170
21:00	**104**	138	139	152	119	81	122	131	122
22:00	**123**	108	96	117	86	60	63	101	93
23:00	**51**	58	46	65	65	50	43	53	54
12H,7-19	**4003**	**4174**	**4091**	**4027**	**3055**	**2957**	**3941**	**4047**	**3750**
16H,6-22	**4467**	**4854**	**4817**	**4753**	**3611**	**3428**	**4539**	**4686**	**4353**
18H,6-24	**4641**	**5020**	**4959**	**4935**	**3762**	**3538**	**4645**	**4840**	**4500**
24H,0-24	**4704**	**5086**	**5020**	**5012**	**3862**	**3648**	**4705**	**4905**	**4577**
Am	**11:00**	**08:00**	**08:00**	**08:00**	**11:00**	**11:00**	**08:00**	**-**	**-**
Peak	**296**	**322**	**315**	**302**	**332**	**313**	**330**	**313**	**316**
Pm	**17:00**	**17:00**	**17:00**	**17:00**	**12:00**	**12:00**	**17:00**	**-**	**-**
Peak	**585**	**557**	**553**	**527**	**391**	**336**	**517**	**548**	**495**

23177		FELIXSTOWE		Site No: 23177002 Channel: Northwestbound		Location	Site 2, High Road, Felixstowe (Railings)		
TIME PERIOD	Tue 03/07/18	Wed 04/07/18	Thu 05/07/18	Fri 06/07/18	Sat 07/07/18	Sun 08/07/18	Mon 09/07/18	5-Day Av	7-Day Av
Week Begin: 03-Jul-18									
00:00	**9**	14	11	13	24	26	11	12	15
01:00	**4**	8	1	8	15	22	10	6	10
02:00	**6**	3	2	4	10	13	6	4	6
03:00	**6**	11	4	7	7	7	13	8	8
04:00	**12**	14	13	20	17	16	13	14	15
05:00	**52**	40	47	41	28	22	42	44	39
06:00	**137**	137	115	102	56	49	130	124	104
07:00	**305**	313	283	246	89	61	277	285	225
08:00	**425**	427	416	373	171	113	389	406	331
09:00	**261**	271	238	244	269	209	252	253	249
10:00	**244**	235	236	238	330	275	262	243	260
11:00	**283**	266	255	266	289	307	253	265	274
12:00	**340**	270	295	314	331	349	282	300	312
13:00	**317**	335	289	259	303	260	276	295	291
14:00	**301**	271	263	295	271	267	286	283	279
15:00	**303**	317	329	353	149	289	337	328	297
16:00	**365**	334	337	296	125	269	343	335	296
17:00	**319**	300	311	325	228	249	338	319	296
18:00	**266**	267	259	280	236	226	247	264	254
19:00	**131**	202	233	177	208	181	188	186	189
20:00	**83**	150	166	150	147	156	141	138	142
21:00	**82**	141	135	125	127	85	126	122	117
22:00	**111**	63	85	98	94	44	68	85	80
23:00	**31**	24	32	53	44	18	22	32	32
12H,7-19	**3729**	**3606**	**3511**	**3489**	**2791**	**2874**	**3542**	**3575**	**3363**
16H,6-22	**4162**	**4236**	**4160**	**4043**	**3329**	**3345**	**4127**	**4146**	**3915**
18H,6-24	**4304**	**4323**	**4277**	**4194**	**3467**	**3407**	**4217**	**4263**	**4027**
24H,0-24	**4393**	**4413**	**4355**	**4287**	**3568**	**3513**	**4312**	**4352**	**4120**
Am	**08:00**	**08:00**	**08:00**	**08:00**	**10:00**	**11:00**	**08:00**	**-**	**-**
Peak	**425**	**427**	**416**	**373**	**330**	**307**	**389**	**406**	**381**
Pm	**16:00**	**13:00**	**16:00**	**15:00**	**12:00**	**12:00**	**16:00**	**-**	**-**
Peak	**365**	**335**	**337**	**353**	**331**	**349**	**343**	**347**	**345**

23177		FELIXSTOWE		Site No: 23177002 Channel: Southeastbound		Location	Site 2, High Road, Felixstowe (Railings)		
TIME PERIOD	Tue 03/07/18	Wed 04/07/18	Thu 05/07/18	Fri 06/07/18	Sat 07/07/18	Sun 08/07/18	Mon 09/07/18	5-Day Av	7-Day Av
Week Begin: 03-Jul-18									
00:00	**14**	16	11	18	26	36	12	14	19
01:00	**3**	6	3	9	19	26	9	6	11
02:00	**8**	2	3	6	7	14	3	4	6
03:00	**1**	4	4	2	9	5	6	3	4
04:00	**4**	6	6	4	10	12	8	6	7
05:00	**22**	22	22	20	16	7	19	21	18
06:00	**69**	65	79	74	40	31	73	72	62
07:00	**195**	233	203	189	74	45	179	200	160
08:00	**322**	338	327	297	170	99	328	322	269
09:00	**271**	253	264	257	243	193	249	259	247
10:00	**250**	258	251	254	298	313	237	250	266
11:00	**293**	308	237	266	285	296	309	283	285
12:00	**293**	291	288	290	310	313	270	286	294
13:00	**304**	284	286	268	304	277	302	289	289
14:00	**291**	301	296	298	281	243	266	290	282
15:00	**340**	359	318	324	168	272	349	338	304
16:00	**348**	356	339	345	169	258	338	345	308
17:00	**472**	438	435	414	227	217	405	433	373
18:00	**314**	366	327	319	219	221	382	342	307
19:00	**171**	233	266	255	216	171	212	227	218
20:00	**85**	170	162	163	140	155	139	144	145
21:00	**98**	109	129	126	108	71	102	113	106
22:00	**97**	88	80	97	84	53	57	84	79
23:00	**46**	51	35	56	55	36	36	45	45
12H,7-19	**3693**	**3785**	**3571**	**3521**	**2748**	**2747**	**3614**	**3637**	**3383**
16H,6-22	**4116**	**4362**	**4207**	**4139**	**3252**	**3175**	**4140**	**4193**	**3913**
18H,6-24	**4259**	**4501**	**4322**	**4292**	**3391**	**3264**	**4233**	**4321**	**4037**
24H,0-24	**4311**	**4557**	**4371**	**4351**	**3478**	**3364**	**4290**	**4376**	**4103**
Am	**08:00**	**08:00**	**08:00**	**08:00**	**10:00**	**10:00**	**08:00**	**-**	**-**
Peak	**322**	**338**	**327**	**297**	**298**	**313**	**328**	**322**	**318**
Pm	**17:00**	**17:00**	**17:00**	**17:00**	**12:00**	**12:00**	**17:00**	**-**	**-**
Peak	**472**	**438**	**435**	**414**	**310**	**313**	**405**	**433**	**398**

23177		FELIXSTOWE		Site No: 23177003 Channel: Northwestbound		Location	Site 3, High Road, Felixstowe (TG Pole OS 12)		
TIME PERIOD	Tue 03/07/18	Wed 04/07/18	Thu 05/07/18	Fri 06/07/18	Sat 07/07/18	Sun 08/07/18	Mon 09/07/18	5-Day Av	7-Day Av
Week Begin: 03-Jul-18									
00:00	**10**	16	14	14	27	29	9	13	17
01:00	**6**	9	0	6	20	23	8	6	10
02:00	**4**	4	3	4	11	15	5	4	7
03:00	**5**	7	5	6	6	10	7	6	7
04:00	**10**	10	6	9	13	11	10	9	10
05:00	**33**	24	32	27	15	16	23	28	24
06:00	**88**	87	80	66	33	30	81	80	66
07:00	**203**	224	196	188	68	35	199	202	159
08:00	**352**	377	396	338	148	111	352	363	296
09:00	**274**	248	230	265	269	180	260	255	247
10:00	**253**	255	265	275	369	290	287	267	285
11:00	**338**	284	307	298	352	357	286	303	317
12:00	**417**	324	338	363	402	354	316	352	359
13:00	**388**	321	303	322	324	295	326	332	326
14:00	**330**	316	349	350	313	293	343	338	328
15:00	**418**	397	387	425	182	297	393	404	357
16:00	**423**	393	385	361	153	301	405	393	346
17:00	**404**	403	405	408	268	268	436	411	370
18:00	**306**	299	336	310	255	242	273	305	289
19:00	**145**	249	257	215	217	209	230	219	217
20:00	**102**	188	217	184	177	171	165	171	172
21:00	**98**	180	184	155	126	98	154	154	142
22:00	**132**	83	98	112	105	60	80	101	96
23:00	**35**	22	31	63	48	28	27	36	36
12H,7-19	**4106**	**3841**	**3897**	**3903**	**3103**	**3023**	**3876**	**3925**	**3678**
16H,6-22	**4539**	**4545**	**4635**	**4523**	**3656**	**3531**	**4506**	**4550**	**4276**
18H,6-24	**4706**	**4650**	**4764**	**4698**	**3809**	**3619**	**4613**	**4686**	**4408**
24H,0-24	**4774**	**4720**	**4824**	**4764**	**3901**	**3723**	**4675**	**4751**	**4483**
Am	**08:00**	**08:00**	**08:00**	**08:00**	**10:00**	**11:00**	**08:00**	**-**	**-**
Peak	**352**	**377**	**396**	**338**	**369**	**357**	**352**	**363**	**363**
Pm	**16:00**	**17:00**	**17:00**	**15:00**	**12:00**	**12:00**	**17:00**	**-**	**-**
Peak	**423**	**403**	**405**	**425**	**402**	**354**	**436**	**418**	**407**

23177		FELIXSTOWE		Site No: 23177003 Channel: Southeastbound		Location	Site 3, High Road, Felixstowe (TG Pole OS 12)		
TIME PERIOD	Tue 03/07/18	Wed 04/07/18	Thu 05/07/18	Fri 06/07/18	Sat 07/07/18	Sun 08/07/18	Mon 09/07/18	5-Day Av	7-Day Av
Week Begin: 03-Jul-18									
00:00	**16**	21	10	15	32	33	9	14	19
01:00	**6**	7	5	10	12	20	8	7	10
02:00	**5**	2	2	3	12	17	7	4	7
03:00	**1**	3	6	3	6	5	6	4	4
04:00	**5**	5	6	7	9	10	11	7	8
05:00	**30**	28	31	31	19	9	25	29	25
06:00	**67**	82	70	89	45	35	90	80	68
07:00	**233**	275	249	220	105	58	215	238	194
08:00	**457**	459	438	438	240	111	476	454	374
09:00	**372**	321	373	359	327	253	321	349	332
10:00	**331**	304	303	294	396	366	298	306	327
11:00	**318**	356	293	320	356	340	358	329	334
12:00	**335**	308	272	281	308	328	306	300	305
13:00	**336**	332	319	295	341	294	319	320	319
14:00	**376**	311	340	348	266	263	310	337	316
15:00	**385**	363	344	359	160	300	385	367	328
16:00	**340**	350	344	336	159	272	355	345	308
17:00	**375**	372	404	381	259	239	375	381	344
18:00	**345**	376	349	346	231	245	356	354	321
19:00	**184**	242	280	259	217	207	234	240	232
20:00	**85**	188	182	165	148	148	130	150	149
21:00	**102**	109	119	143	125	87	112	117	114
22:00	**106**	75	75	99	90	54	49	81	78
23:00	**43**	41	31	52	48	37	29	39	40
12H,7-19	**4203**	**4127**	**4028**	**3977**	**3148**	**3069**	**4074**	**4082**	**3804**
16H,6-22	**4641**	**4748**	**4679**	**4633**	**3683**	**3546**	**4640**	**4668**	**4367**
18H,6-24	**4790**	**4864**	**4785**	**4784**	**3821**	**3637**	**4718**	**4788**	**4486**
24H,0-24	**4853**	**4930**	**4845**	**4853**	**3911**	**3731**	**4784**	**4853**	**4558**
Am	**08:00**	**08:00**	**08:00**	**08:00**	**10:00**	**10:00**	**08:00**	**-**	**-**
Peak	**457**	**459**	**438**	**438**	**396**	**366**	**476**	**454**	**433**
Pm	**15:00**	**18:00**	**17:00**	**17:00**	**13:00**	**12:00**	**15:00**	**-**	**-**
Peak	**385**	**376**	**404**	**381**	**341**	**328**	**385**	**386**	**371**

23177	FELIXSTOWE	Site No: 23177001	Location	Site 1, High Road, Felixstowe (TG Pole OS 147)

Northwestbound			
Day	Avg	85th	% >30
Tue 03-Jul-18	29.0	34.5	35%
Wed 04-Jul-18	29.6	34.9	41%
Thu 05-Jul-18	29.8	34.8	42%
Fri 06-Jul-18	29.8	34.9	42%
Sat 07-Jul-18	29.4	34.9	40%
Sun 08-Jul-18	29.8	35	43%
Mon 09-Jul-18	29.7	34.7	39%
5day	29.6	34.76	40%
7day	29.6	34.8143	40%

Southeastbound			
Day	Avg	85th	% >30
Tue 03-Jul-18	29.5	34.6	37%
Wed 04-Jul-18	29.6	34.6	38%
Thu 05-Jul-18	29.7	34.6	39%
Fri 06-Jul-18	30.1	34.9	43%
Sat 07-Jul-18	30.4	35.1	47%
Sun 08-Jul-18	30.1	35.1	45%
Mon 09-Jul-18	29.2	34.3	34%
5day	29.62	34.6	38%
7day	29.8	34.74	40%

23177	FELIXSTOWE	Site No: 23177001	Location	Site 2, High Road, Felixstowe (Railings)

Northwestbound			
Day	Avg	85th	% >30
Tue 03-Jul-18	27.6	33.6	26.2%
Wed 04-Jul-18	27.7	33.7	27.1%
Thu 05-Jul-18	27.5	33.3	24.3%
Fri 06-Jul-18	28.2	33.8	28.2%
Sat 07-Jul-18	30.0	34.9	41.7%
Sun 08-Jul-18	29.5	34.7	38.6%
Mon 09-Jul-18	28.4	33.9	30.0%
5day	27.9	33.7	27.1%
7day	28.4	34.0	30.9%

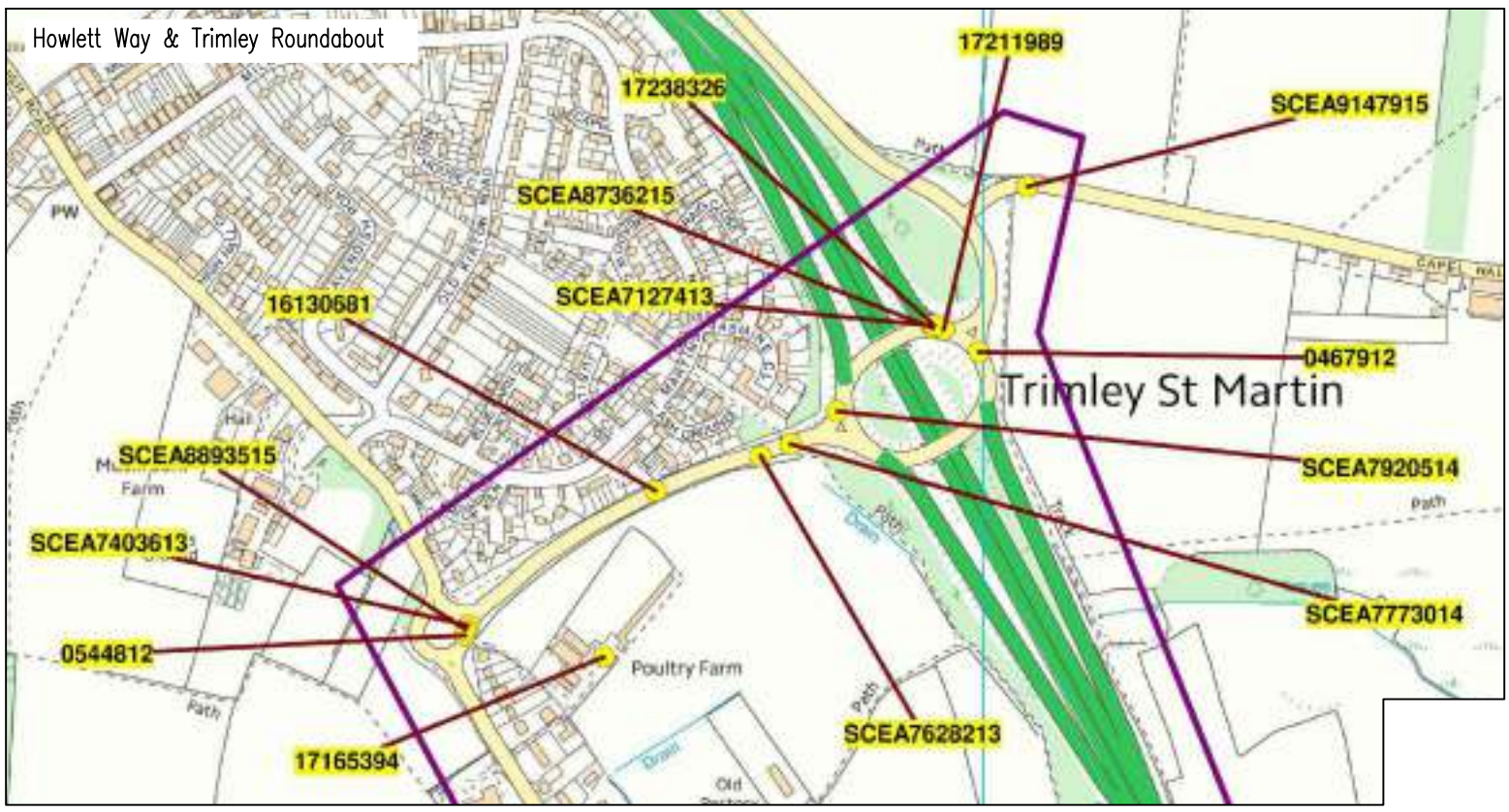
Southeastbound			
Day	Avg	85th	% >30
Tue 03-Jul-18	27.2	33.3	24.5%
Wed 04-Jul-18	27.4	33.2	24.1%
Thu 05-Jul-18	27.6	33.2	23.9%
Fri 06-Jul-18	28	33.7	27.9%
Sat 07-Jul-18	29.7	34.7	39.6%
Sun 08-Jul-18	29.5	34.6	38.0%
Mon 09-Jul-18	27.4	33.1	23.4%
5day	27.52	33.3	24.8%
7day	28.11	33.69	28.8%

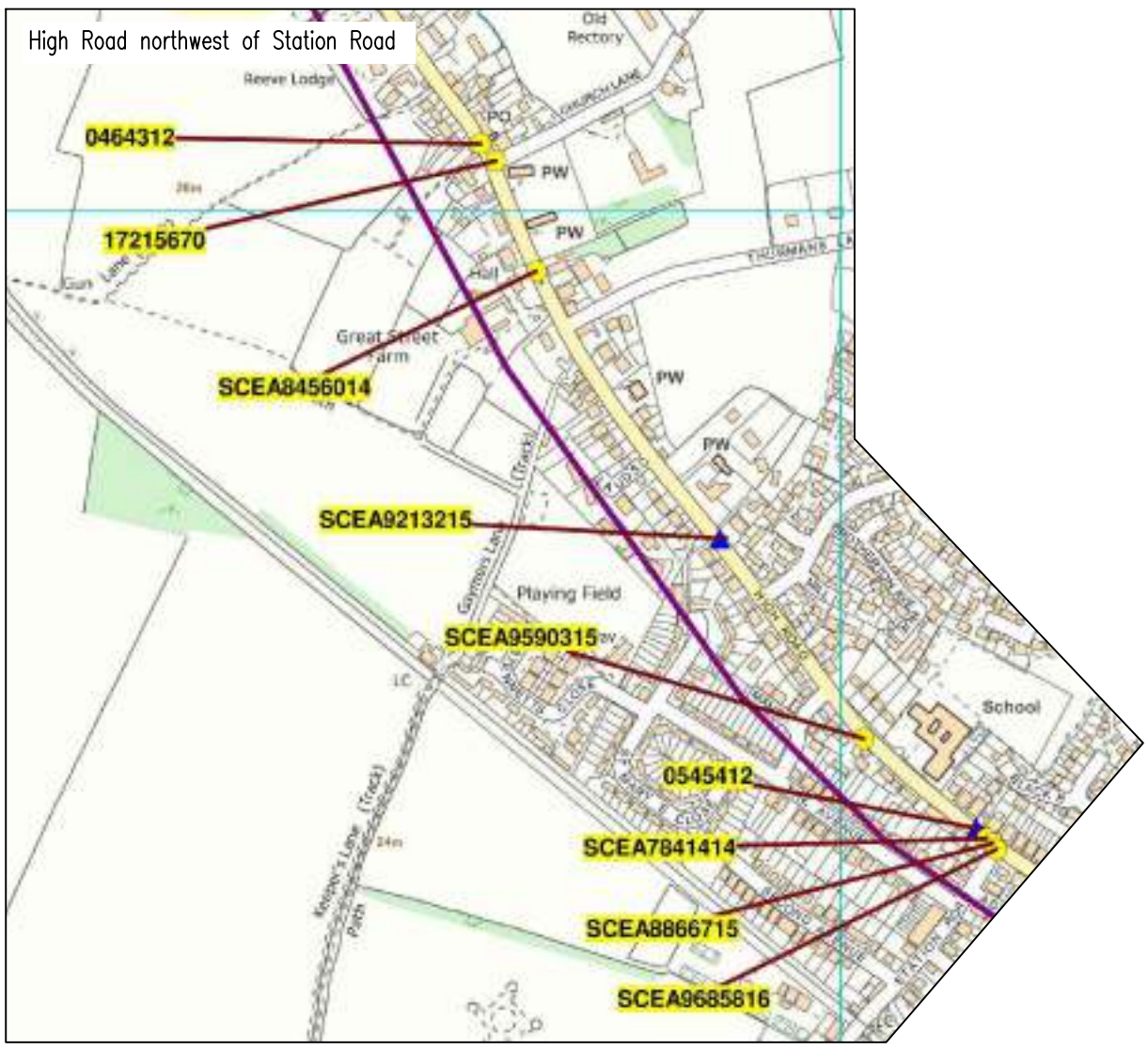
23177	FELIXSTOWE	Site No: 23177001	Location	Site 3, High Road, Felixstowe (TG Pole OS 12)

Northwestbound			
Day	Avg	85th	% >30
Tue 03-Jul-18	31.6	35.5	57.4%
Wed 04-Jul-18	31.4	35.4	55.3%
Thu 05-Jul-18	31.3	35.4	54.9%
Fri 06-Jul-18	31.4	35.5	53.8%
Sat 07-Jul-18	31.9	35.7	59.5%
Sun 08-Jul-18	31.9	35.8	60.1%
Mon 09-Jul-18	31.6	35.5	56.2%
5day	31.5	35.5	55.5%
7day	31.6	35.5	56.8%

Southeastbound			
Day	Avg	85th	% >30
Tue 03-Jul-18	31	35.4	52.0%
Wed 04-Jul-18	30.4	35.1	44.4%
Thu 05-Jul-18	30.1	34.9	41.7%
Fri 06-Jul-18	30	34.8	40.5%
Sat 07-Jul-18	30.5	35.3	46.8%
Sun 08-Jul-18	30.8	35.6	53.1%
Mon 09-Jul-18	30.5	35.1	48.5%
5day	30.4	35.06	45.4%
7day	30.47	35.17	46.7%

APPENDIX C





Colour-coding by SEVERITY
Total Accidents (46)

★	Fatal	(0)
▲	Serious	(3)
●	Slight	(43)

D O I (0)

Suffolk County Council

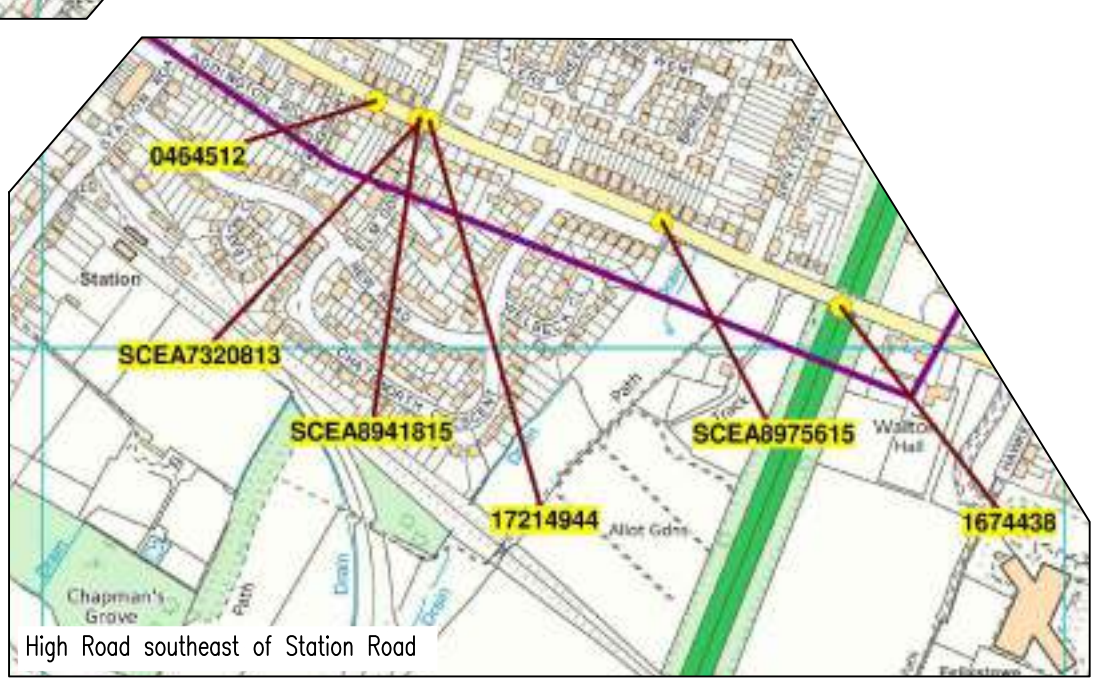


FIGURE TITLE: Accident Data Plan

JOB TITLE: Howlett Way, Trimley

SCALES @ A3 SIZE: NTS

FIGURE NUMBER: Appendix C

REV.

Development Transport Planning
Kingswick House, Kingswick Drive, Sunninghill, Berkshire, SL5 7BH
Tel: 01344 292366 Email: admin@developmenttp.co.uk

1.0 CONSIDERATION OF COLLISION DATA

1.1 Collision data has been obtained for the roads local to the development site. The area of search included Howlett Way, The junction of Howlett Way and the A14 (Jctn 59), The junction of Howlett Way with High Road, and the section of High Road between Howlett Way and Thurman's Lane. The search area also included a section of the A14 between Jctn 59 and Thurman's Lane, however no collisions were recorded during the search period.

1.2 The data was provided by Suffolk County Council. It covers the five year period from 01/11/12 to 01/11/17 inclusive and provides detailed information about collisions resulting in personal injury.

1.3 The data has been reviewed and categorised and a summary of the collisions is set out below. A tabulation of the approximate collision locations, severity and year is also attached. That showed that overall there were 17 collisions resulting in injury on public roads within the area of search over the five year period. Of these 17, all resulted in slight injuries with a total of 18 casualties overall. No collisions resulted in killed or seriously injured casualties (KSI).

2.0 DESCRIPTION OF COLLISIONS

2.1 The following section summarises the number and type of collisions for the junctions and links.

Junction 59 of the A14 (with Howlett Way & Kirton Road)

2.2 There were six collisions at this junction during the five year period, each of which resulted in slight injury to a single casualty. Four of the six involved vehicles entering the roundabout and colliding with vehicles already on the roundabout, which is indicative of a failure to give way. The circulating vehicles in three of these incidents were pedal cycles.

2.3 The remaining two collisions involved vehicles running into the rear of vehicles in front that had slowed or stopped at the give way line.

Howlett Way

2.4 There were 2 collisions on Howlett Way during the five year period. These resulted in slight injury to a total of 2 casualties. Both collisions involved westbound vehicles having left the A14 roundabout junction and losing control before leaving the road and colliding with a tree. The recorded road conditions in both cases were wet/damp. Such collisions may be the result of excessive speed and/or poor road surface conditions (such as water, petrol or mud on road).

Roundabout Junction of High Road & Howlett Way

2.5 There were 5 collisions at this junction during the five year period although the plot of collision locations shows one of these (Ref. 16130681) to be located on Howlett Way and one (Ref. 17165394) not to be located on any highway. These resulted in slight injury to a total of 5 casualties.

2.6 All five collisions involved vehicles entering the roundabout and colliding with pedal cycles already on the roundabout. The collision descriptions indicate that on occurred on the northern entry to the roundabout and four occurred on the eastern side of the roundabout and involved a car entering the roundabout from Howlett Way. Of these three involved a collision with a cyclist on the roundabout and one was a collision with a cyclist entering on the same arm as the car.

2.7 It is apparent that improvements have been made to the Howlett Way entry to the roundabout to reduce the entry width and change the angle of entry to provide drivers with a better view of circulating traffic.

2.8 The date of these works is not known, but they were completed prior to July 2017 when they appeared to be quite recently completed. It is not possible to assess what effect these works may have had on the incidence of collisions.

High Road, Trimley St Mary

2.9 The record of collisions has been assessed along the length of High Road from Howlett Way to the bridge over the A14 at Walton. This length has been broken into sections for ease of analysis and to reflect the presence of junctions.

2.10 *Howlett Way to Station Road* - There were 5 collisions on this section of High Road during the five year period. These resulted in slight injury to a total of 5 casualties and serious injury to 1 casualty.

2.11 The first of these involved a cyclist travelling north and turning to cross the road to the far kerb in collision with a moped travelling in the same direction. The second collision involved a car emerging from a junction and turning left onto High Road colliding with a cyclist travelling south on High Road. The third involved a collision between two cars, driven by elderly men and travelling in opposite directions resulting in slight injury to both drivers.

2.12 The collision that resulted in a serious injury occurred to the north of the northern junction with Faulkeners Way when a car travelling south overtook a cyclist travelling in the same direction and did not leave sufficient space. The cyclist was forced to mount the footway and collided with a post.

2.13 The final collision involved a cyclist travelling south on the footway in collision with a car leaving a garage forecourt and turning right onto High Road to travel south.

2.14 *High Road junction with Station Road* – There were 4 collisions at this junction. One of these involved a car in collision with a pedestrian who stepped into the road and resulted in serious injury to the pedestrian. Two collisions involved vehicles in collision with either a vehicle turning right or a vehicle that had stopped behind a vehicle turning right. The last involved a vehicle turning right into Station Road and colliding with an oncoming vehicle. These three collisions resulted in slight injuries.

2.15 *Station Road to A14 Overbridge* – There were six accidents along this section of High Road. The first involved a vehicle hitting two pedestrians who were standing in the road. Each received a slight injury.

2.16 One accident involved a vehicle colliding with a traffic island after overtaking a stationary lorry close to the mini-roundabout junction with Faulkeners Way. The driver sustained a slight injury. Another collision at this junction involved a motorcycle in collision with a car which had just turned right out of Faulkeners Way. A third incident involved a motorcycle skidding on the wet road as it approached the Faulkeners Way mini-roundabout resulting in slight injury to the rider.

2.17 Another collision occurred to the north of Spriteshall Lane when a car collided with a pedal cycle at a point where the road is described as narrowing due to a traffic island. The cyclist sustained a slight injury. A further collision occurred slightly further south and a car collided with the rear of another car which was turning right into a car park. The driver of the first car received a slight injury.

3.0 SUMMARY

3.1 The collision reports for the area around the application site have been examined to determine whether there are any recurring factors that indicate an unusual level of risk, which might be affected by the proposed development.

3.2 The assessment indicates that the recorded accidents are generally due to a variety of factors with no particular patterns emerging. The exception to this summary is the recurrence of a number of collisions with pedal cycles at the Howlett Way/High Road roundabout. There have been relatively recent works to this junction which are aimed at reducing vehicle approach and entry speeds on the most affected arm.

3.3 It is not considered that the proposed development would have any undue impact on the levels of accident risk on the local road network.

AUTHOR	CHECKED	REVIEWED	APPROVED	DATE
RAA	AKJ	AKJ	AKJ	20/08/2018

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

0467912 10/11/2012 Saturday Time 0850 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight: no street lighting
Special Conditions None Road Type Roundabout

V1 WAS RETURNING HOME DRIVING A FAMILIAR ROUTE. AS THEY TOOK THE OFF SLIP, THEY SLOWED AT THE JUNCTION AND DIDN'T SEE THE APPROACHING CYCLIST WHO HE SUBSEQUENTLY HIT CAUSING HIM TO FALL OFF HIS BIKE.

THE CYCLIST SUFFERED SLIGHT INJURIES

Occurred on ON THE ROUNDABOUT AT THE JUNCTION 59 LEADING TOWARDS TRIMLEY ST. MARTIN

Causation

	Factor:	Participant:	Confidence:
1st:	Junction restart	Vehicle 1	Possible
2nd:	Failed to look properly	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Starting
No skidding, jack-knifing or overturning
First point of impact Offside Age of Driver 61 Breath test Negative
Vehicle direction NW to SW
Journey Purpose: 6 Foreign registered vehicle: Not foreign registered vehicle

Vehicle Reference 2 Pedal Cycle Going ahead other
No skidding, jack-knifing or overturning
First point of impact Nearside Age of Driver 25 Breath test Not requested
Vehicle direction NE to SW
Journey Purpose: 6 Foreign registered vehicle: Not foreign registered vehicle

Casualty Reference: 1 Age: 25 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

17211989 29/07/2017 Saturday Time 1220 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Dual 2 lanes
V1 EXITS A DUAL CARRIAGEWAY AND TRUNKS UP THE OFFSLIP TO A ROUNDABOUT. AS V1 APPROACHES THE JUNCTION AT THE TOP OF THE SLIP ROAD IT SLOWS BUT FAILS TO SEE V2 ALREADY ON THE ROUNDABOUT WHO HAS
ULLS OUT KNOCKING D2 FROM THEIR VEHICLE.

Occurred on J59 A14 AT JN WITH KIRTON ROAD

Causation

	Factor:	Participant:	Confidence:
1st:	Disobeyed Give Way or Stop sign or markings	Vehicle 1	Very Likely
2nd:	Failed to look properly	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 75 Breath test Negative
Vehicle direction NW to SE

Journey Purpose: Other/Not known

Vehicle Reference 2 Pedal Cycle Going ahead other
Overturned
First point of impact Nearside Age of Driver 48 Breath test Not applicable
Vehicle direction SW to NE

Journey Purpose: Other/Not known

Casualty Reference: 1 Age: 48 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

17238326 24/10/2017 Tuesday Time 1930 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Roundabout
V002 HAS STOPPED TA ROUNDABOUT WAITING FOR GAP IN TRAFFIC TO ENTER ROUNDABOUT. V001 HAS COLLIDED INTO THE REAR OF V002.

Occurred on OFF SLIP ROUNDABOUT A14

Causation

	Factor:	Participant:	Confidence:
1st:	Vegetation	Vehicle 1	Possible
2nd:	Illness or disability, mental or physical	Vehicle 1	Possible
3rd:	Junction restart	Vehicle 1	
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 64 Breath test Negative
Vehicle direction SE to NW

Journey Purpose: Commuting to/from work

Vehicle Reference 2 Car Going ahead but held up
No skidding, jack-knifing or overturning
First point of impact Back Age of Driver 57 Breath test Negative
Vehicle direction SE to NW

Journey Purpose: Other/Not known

Casualty Reference: 1 Age: 57 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012** **and** **01/11/2017** (60) months

Selection: **Notes:**

Selected using Pre-defined Query : Trimley

SCEA8736215 17/01/2015 Saturday Time 1448 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Wet/Damp Daylight
Special Conditions None Road Type Roundabout

V1 LEAVING A14 AT EASTBOUND OFFSLIP HAS ARRIVED AT ROUNDABOUT JUNCTION WITH SETTING SUN TO RIGHT V2 CYCLIST WEARING BLACK CLOTHING USING ROUNDABOUT HAS COLLIDED WITH OFFSIDE OF VAN AS IT EMERGED ONTO ROUNDABOUT VERY MINOR SCRATCH TO VAN CYCLIST KNOCK
ED TO FLOOR WITH BUMPS AND BRUISES

Occurred on A14 ROUNDABOUT AT JUNCTION WITH C355 KIRTON ROAD TRIMLEY ST MARTIN

Causation

	Factor:	Participant:	Confidence:
1st:	Dazzling sun	Vehicle 1	Very Likely
2nd:	Other	Vehicle 2	Very Likely
3rd:			
4th:			
5th:			
6th:			

BLACK CLOTHING ON CYCLIST

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Offside Age of Driver 42 Breath test Negative
Vehicle direction N to S

Journey Purpose: 6

Vehicle Reference 2 Pedal Cycle Going ahead other
Skidded
First point of impact Front Age of Driver 21 Breath test Not applicable
Vehicle direction W to E

Journey Purpose: 6

Casualty Reference: 1 Age: 21 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

SCEA7127413 05/02/2013 Tuesday Time 0800 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight: no street lighting
Special Conditions None Road Type Single 3 lanes

V1 HAD TAKEN THE OFFSLIP APPORACHING THE ROUNDABOUT DID NOT SEE V2 COMING ROUND THE ROUNDABOUT. V1 SAW V2 LATE, LOCKED BRAKES AND SKIDDED OUT ONTO THE ROUNDABOUT COLLIDING WITH THE TRAILER BEING TOWED BY V2

V2 DRIVER SUFFERED SLIGHT INJURIES

Occurred on AT THE ROUNDABOUT AT THE END OF THE A14 OFF SLIP AT KIRTON

Causation

	Factor:	Participant:	Confidence:
1st:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
2nd:	Fatigue	Vehicle 1	Very Likely
3rd:	Failed to look properly	Vehicle 1	
4th:			
5th:			
6th:			

Vehicle Reference 1 Van or Goods 3.5 tonnes mgw and under Going ahead other
Skidded
First point of impact Front Age of Driver 20 Breath test Negative
Vehicle direction NW to SE

Journey Purpose: Journey as part of work Foreign registered vehicle: Not foreign registered vehicle

Vehicle Reference 2 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Nearside Age of Driver 46 Breath test Negative
Vehicle direction SW to NE

Journey Purpose: Journey as part of work Foreign registered vehicle: Not foreign registered vehicle

Casualty Reference: 1 Age: 46 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012** **and** **01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

SCEA7920514 20/03/2014 Thursday Time 0900 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 3 lanes
V1 COLLIDED WITH REAR OF V2 AS V1 THOUGHT V2 HAD PULLED AWAY AT R/BOUT

Occurred on TRIMLEY AND KIRTON SLIP ROAD AT R/BOUT FOR A14 FLYOVER

Causation

	Factor:	Participant:	Confidence:
1st:	Junction overshoot	Vehicle 1	Very Likely
2nd:	Failed to look properly	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Starting
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 71 Breath test Driver not contacted
Vehicle direction S to N

Journey Purpose: 6

Vehicle Reference 2 Car Going ahead but held up
No skidding, jack-knifing or overturning
First point of impact Back Age of Driver 65 Breath test Driver not contacted
Vehicle direction S to N

Journey Purpose: 6

Casualty Reference: 1 Age: 65 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**

Selected using Pre-defined Query : Trimley

SCEA7773014 22/01/2014 Wednesday Time 1316 Vehicles 1 Casualties 1 Slight
Fine without high winds Road surface Wet/Damp Daylight
Special Conditions Road surface defective Road Type Single 2 lanes
V1 HAS LEFT A14 INTERCHANGE HEADING TOWARDS TRIMLEY ST MARTIN. SLIPPERY ROAD SURFACE HAS CAUSED DRIVER TO LOSE CONTROL AND STRIKE A TREET HAVING SPUN. DRIVER TRAPPED INSIDE FIRE SERVICE ATTENDED

Occurred on HOWLETT WAY COMING OFF SLIP ROAD FROM A14 TRIMLEY ST MARTIN

Causation

	Factor:	Participant:	Confidence:
1st:	Poor or defective road surface	Vehicle 1	Very Likely
2nd:	Deposit on road (eg oil, mud, chippings)	Vehicle 1	Possible
3rd:	Slippery road (due to weather)	Vehicle 1	Possible
4th:	Exceeding speed limit	Vehicle 1	Possible
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
Skidded
First point of impact Offside Age of Driver 27 Breath test Negative
Vehicle direction E to W

Journey Purpose: Commuting to/from work

Casualty Reference: 1 Age: 27 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**

Selected using Pre-defined Query : Trimley

SCEA7628213 25/11/2013 Monday Time 1202 Vehicles 1 Casualties 1 Slight
Fine without high winds Road surface Wet/Damp Daylight: no street lighting
Special Conditions Oil or Diesel Road Type Single 2 lanes
V1 HAS NEGOTIATED THE ROUNDABOUT AND HAS LOST CONTROL COLLIDING WITH A TREE TO THE NEARSIDE BEFORE COMING TO REST IN A DITCH. V1 DRIVER SUFFERED SLIGHT INJURIES

Occurred on ON HOWLETT WAY APPROX 95 METRES FROM A14 TRIMLEY ST. MARTIN INTERCHANGE

Causation

	Factor:	Participant:	Confidence:
1st:			
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead left bend
Skidded
First point of impact Nearside Age of Driver 25 Breath test Negative
Vehicle direction NE to SW

Journey Purpose: 6 Foreign registered vehicle: Not foreign registered vehicle

Casualty Reference: 1 Age: 25 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

16130681 01/11/2016 Tuesday Time 1040 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
V2 WAS ON THE ROUNDABOUT V1 PULLED ONTO THE ROUNDABOUT KNOCKING V2 OFF.

Occurred on ROUNDABOUT HIGH ROAD UNSPECIFIED ROAD OR LOCATION HOWLETT WAY

Causation

	Factor:	Participant:	Confidence:
1st:			
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 86 Breath test Negative
Vehicle direction N to S

Journey Purpose: Other/Not known

Vehicle Reference 2 Pedal Cycle Turning right
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 63 Breath test
Vehicle direction S to E

Journey Purpose: Other/Not known

Casualty Reference: 1 Age: 63 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

SCEA8893515 20/03/2015 Friday Time 1620 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Roundabout
V1 HAS APPROACHED R/BOUT AND DUE TO SUN HAS NOT SEEN V2 CYCLIST AND COLLIDES WITH REAR WHEEL AT ENTERS THE R/BOUT

Occurred on HIGH ROAD R/BOUT WITH HOWLETT WAY TRIMLEY ST MARTIN

Causation

	Factor:	Participant:	Confidence:
1st:	Dazzling sun	Vehicle 1	Very Likely
2nd:	Failed to look properly	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Starting
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 60 Breath test Negative
Vehicle direction NE to SW

Journey Purpose: Commuting to/from work

Vehicle Reference 2 Pedal Cycle Going ahead other
No skidding, jack-knifing or overturning
First point of impact Back Age of Driver 51 Breath test Not requested
Vehicle direction NW to SE

Journey Purpose: Other/Not known

Casualty Reference: 1 Age: 51 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

SCEA7403613 05/09/2013 Thursday Time 1717 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight:street lights present
Special Conditions None Road Type Roundabout
V2 CYCLIST NEGOTIATING THE ROUNDABOUT WHEN V1 DRIVER ENTERED THE ROUNDABOUT AND COLLIDED WITH THE REAR OF THE BICYCLE CAUSING THE CYCLIST TO SUFFER SLIGHT INJURIES

Occurred on ON THE ROUNDABOUT AT THE JUNCTIONS OF HIGH ROAD AND HOWLETT WAY

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Dazzling sun	Vehicle 1	Very Likely
3rd:	Road layout (eg bend, hill crest)	Vehicle 1	Very Likely
4th:	Road layout (eg bend, hill crest)	Vehicle 2	Very Likely
5th:	Cyclist wearing dark clothing at night	Vehicle 2	Possible
6th:	Other	Vehicle 2	Possible

Vehicle Reference 1 Car Starting
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 58 Breath test Negative
Vehicle direction NE to SE
Journey Purpose: Commuting to/from work Foreign registered vehicle: Not foreign registered vehicle

Vehicle Reference 2 Pedal Cycle Going ahead other
No skidding, jack-knifing or overturning
First point of impact Back Age of Driver 59 Breath test Not requested
Vehicle direction NW to SE
Journey Purpose: Commuting to/from work Foreign registered vehicle: Not foreign registered vehicle

Casualty Reference: 1 Age: 59 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

0544812 17/12/2012 Monday Time 0820 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Wet/Damp Daylight:street lights present
Special Conditions None Road Type Roundabout
V1 APPORACHING THE ROUNDABOUT HAS LOOKED RIGHT AND BELIEIVING IT TO BE ALL CLEAR HAS ENTERED THE ROUNDABOUT. V2 CYCLIST IS KNOCKED FROM HER BIKE

V2 CYCLIST SUFFERED SLIGHT INJURIES

Occurred on ON THE ROUNDABOUT AT THE JUNCTIONS OF HIGH ROAD AND HOWLETT WAY

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Passing too close to cyclist, horse rider or pedestrian	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Van or Goods 3.5 tonnes mgw and under Turning left
No skidding, jack-knifing or overturning
First point of impact Nearside Age of Driver 55 Breath test Negative
Vehicle direction NE to S

Journey Purpose: Journey as part of work Foreign registered vehicle: Not foreign registered vehicle

Vehicle Reference 2 Pedal Cycle Turning left
No skidding, jack-knifing or overturning
First point of impact Offside Age of Driver 37 Breath test Not requested
Vehicle direction NE to S

Journey Purpose: Commuting to/from work Foreign registered vehicle: Not foreign registered vehicle

Casualty Reference: 1 Age: 37 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

17165394 27/02/2017 Monday Time 0757 Vehicles 2 Casualties 1 Slight
Raining without high winds Road surface Wet/Damp Daylight
Special Conditions None Road Type Single 2 lanes
VEC 2 PEDAL CYCLE. HEADING TOWARDS FELIXSTOWE FROM TRIMLEY ST MARTIN. ENTERED ROUNDABOUT AND REGAN TO CYCLE ROUND. VEC 1 APPROACHED ROUNDABOUT FROM THE DIRECTION OF THE KIRTUN ROUNDABOUT. HEADING TOWARDS TRIMLEY, VEL 1 HAS SLOWED DOWN AT ROUNDABOUT, ? FO
R ONCOMING TRAFFIC AND NOT SEEING ANYTHING HAS CONTINUED FORWARDS. VEC 1 HAS THEN COLLIDED WITH 2 CAUSING RIDER OF 2 TO FALL OFF.

Occurred on HIGH ROAD UNSPECIFIED ROAD OR LOCATION

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Cyclist wearing dark clothing at night	Vehicle 2	Very Likely
3rd:	Rain, sleet, snow, or fog	Vehicle 1	
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Offside Age of Driver 27 Breath test Negative
Vehicle direction S to W

Journey Purpose: Journey as part of work

Vehicle Reference 2 Pedal Cycle Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 16 Breath test
Vehicle direction E to W

Journey Purpose: Pupil riding to/from school

Casualty Reference: 1 Age: 16 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

0464312 09/11/2012 Friday Time 1910 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Darkness: street lights present and lit
Special Conditions None Road Type Single 2 lanes

V2 CYCLING IN DARK CLOTHING BUT WITH REAR LIGHT FROM TRIMLEY ST MARY TWDS TRIMLEY ST MARTIN ALONG HIGH ROAD CLOSE TO WELCOME HALL. V2 WENT TO CROSS ROAD TO POST OFFICE ON OTHER SIDE OF ROAD, AS DOING SO COLLIDED WITH MOPED/MOTORBIKE (V1). V1 STOPP
ED TO CHECK CYLIST OK THEN CONTINUED, CYCLIST HAS CUT TO BACK OF HEAD AND GRAZE TO RGT ELBOW. V1 DIRECTION OF TRAVEL U/K

Occurred on TRIMLEY HIGH ROAD OUTSIDE WELCOME HALL, TRIMLEY ST MARY

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 2	Possible
2nd:	Cyclist entering road from pavement	Vehicle 2	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Motor Cycle over 50 cc and up to 125cc Going ahead other
No skidding, jack-knifing or overturning
First point of impact Nearside Age of Driver 20 Breath test Driver not contacted
Vehicle direction SE to NW
Journey Purpose: 6 Foreign registered vehicle: Not foreign registered vehicle

Vehicle Reference 2 Pedal Cycle Turning right
No skidding, jack-knifing or overturning
First point of impact Offside Age of Driver 20 Breath test Not applicable
Vehicle direction SE to E
Journey Purpose: 6 Foreign registered vehicle: Not foreign registered vehicle

Casualty Reference: 1 Age: 20 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

17215670 15/08/2017 Tuesday Time 1745 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
V2 TRAVELLING ALONG ROAD COMING UP TO A JUNCTION AND V1 PULLED OUT OF THE JUNCTION TO TURN RIGHT WITHOUT GIVING WAY. V2 HAS HAD TO SLAM ON THE BRAKES BUT HAS COLLIDED WITH VEHICLE AS A RESULT, ENDING UP ON THE BONNET OF V1. V2 IS NON-REPAIRABLE AND D2 SU
STAINED INJURY.

Occurred on HIGH ROAD AT JN WITH CHURCH LANE

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Possible
2nd:	Disobeyed Give Way or Stop sign or markings	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Turning right
No skidding, jack-knifing or overturning
First point of impact Offside Age of Driver 27 Breath test Driver not contacted
Vehicle direction NE to SW

Journey Purpose: 6

Vehicle Reference 2 Pedal Cycle Going ahead other
Overturned
First point of impact Front Age of Driver 56 Breath test Not applicable
Vehicle direction NW to SE

Journey Purpose: 6

Casualty Reference: 1 Age: 56 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

SCEA8456014 09/10/2014 Thursday Time 1515 Vehicles 2 Casualties 2 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
V1 HAS BEEN DRIVEN INTO THE PATH OF ONCOMING V2 AND A COLLISION HAS OCCURED

Occurred on HIGH ROAD TRIMLEY

Causation

	Factor:	Participant:	Confidence:
1st:	Poor turn or manoevre	Vehicle 1	Very Likely
2nd:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 75 Breath test Negative
Vehicle direction NW to SE

Journey Purpose: Other/Not known

Casualty Reference: 1 Age: 75 Male Driver/rider Severity: Slight

Vehicle Reference 2 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 75 Breath test Negative
Vehicle direction SE to NW

Journey Purpose: Other/Not known

Casualty Reference: 2 Age: 75 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

SCEA9213215 18/06/2015 Thursday Time 1320 Vehicles 2 Casualties 1 Serious
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
BOTH VEHICLES ON HIGH ROAD HEADED SOUTH TOWARDS FAULKENERS WAY WHEN V1 DROVE PASSED V2 TOO CLOSE FORCED V2 TO MOUNT FOOTPATH AND HIT A POLE

Occurred on TRIMLEY ST MARY, HIGH ROAD APPROX 75 MTRS NORTH WEST OF FAULKENERS WAY

Causation

	Factor:	Participant:	Confidence:
1st:	Passing too close to cyclist, horse rider or pedestrian	Vehicle 001	Very Likely
2nd:	Swerved	Vehicle 002	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Goods vehicle - unknown weight Going ahead other
No skidding, jack-knifing or overturning
First point of impact Did not impact Age of Driver 27 Breath test Driver not contacted
Vehicle direction NW to SE

Journey Purpose: Journey as part of work

Vehicle Reference 2 Pedal Cycle Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 16 Breath test Not applicable
Vehicle direction NW to SE

Journey Purpose: Other/Not known

Casualty Reference: 1 Age: 16 Male Driver/rider Severity: Serious

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

SCEA9590315 01/12/2015 Tuesday Time 0800 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
V1 ON GARAGE FORECOURT PULLED OUT ACROSS FOOTPATH WHEN V2 RIDING ON FOOTPATH HEADED SOUTH EAST HIT V1

Occurred on TRIMLEY ST MARY, HIGH ROAD J/W GARAGE

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Vehicle travelling along pavement	Vehicle 002	Very Likely
3rd:	Failed to judge other persons path or speed	Vehicle 002	
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Starting
No skidding, jack-knifing or overturning
First point of impact Nearside Age of Driver Breath test Driver not contacted
Vehicle direction SW to SE

Journey Purpose: 6

Vehicle Reference 2 Pedal Cycle Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 12 Breath test Not applicable
Vehicle direction NW to SE

Journey Purpose: 6

Casualty Reference: 1 Age: 12 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

0545412 27/12/2012 Thursday Time 1125 Vehicles 1 Casualties 2 Serious
Raining without high winds Road surface Wet/Damp Daylight:street lights present
Special Conditions None Road Type Single 2 lanes
V1 DRIVING IN RAIN, SEES PEDESTRAIN TO NEARSIDE LOOKS AT V1 THEN STEPS INTO THE ROAD.

PEDESTRIAN SUFFERED A BROKEN RIGHT ARM AND OTHER SLIGHT INJURIES AND WAS DETAINED AT IPSWICH HOSPITAL

Occurred on ON HIGH ROAD APPROX 25 METRES NORTHWEST OF STATION ROAD

Causation

	Factor:	Participant:	Confidence:
1st:	Disability or illness, mental or physical	Casualty 1	Very Likely
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Did not impact Age of Driver 64 Breath test Negative
Vehicle direction NW to SE

Journey Purpose: 6 Foreign registered vehicle: Not foreign registered vehicle

Casualty Reference: 1 Age: 26 Male Pedestrian Severity: Serious
Pedestrian Direction: Unknown
Pedestrian Injured in the Course of 'On th Road' Work: Not Applicable

Casualty Reference: 2 Age: 64 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

SCEA7841414 22/02/2014 Saturday Time 1405 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
V2 HAS STOPPED BEHIND ANOTHER VEH WHO WAS WAITING TO TURN RIGHT INTO STATION ROAD. V1 HAS NOT REACTED IN TIME TO THE STATIONARY VEHS AND HAS COLLIDED WITH THE REAR OF V2

Occurred on J/W HIGH ROAD AND STATION ROAD TRIMLEY

Causation

	Factor:	Participant:	Confidence:
1st:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 22 Breath test Not requested
Vehicle direction NW to SE

Journey Purpose: Other/Not known

Vehicle Reference 2 Car Going ahead but held up
No skidding, jack-knifing or overturning
First point of impact Offside Age of Driver 30 Breath test Not requested
Vehicle direction NW to SE

Journey Purpose: Other/Not known

Casualty Reference: 1 Age: 64 Female Passenger Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

SCEA8866715 13/03/2015 Friday Time 0905 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
V2 DRVING ALONG HIGH ROAD INDICATED AND STOPPED TO TURN RIGHT INTO STATION ROAD AND WAS HIT FROM BEHIND

Occurred on HIGH ROAD J/WITH STATION ROAD TRIMLEY

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:			
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver Breath test Driver not contacted
Vehicle direction NW to SE

Journey Purpose: 6

Vehicle Reference 2 Car Stopping
No skidding, jack-knifing or overturning
First point of impact Back Age of Driver 31 Breath test Driver not contacted
Vehicle direction NW to SW

Journey Purpose: Taking pupil to/from school

Casualty Reference: 1 Age: 31 Male Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

SCEA9685816 08/01/2016 Friday Time 1120 Vehicles 2 Casualties 3 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
V1 ON HIGH ROAD HEADED SOUTH EAST WHEN AT J/W STATION ROAD TURNED RIGHT ACROSS PATH OF V2 ON HIGH ROAD HEADED NORTH WEST COLLISION OCCURRED

Occurred on TRIMLEY ST MARY, HIGH ROAD J/W STATION ROAD

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 001	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 001	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Van or Goods 3.5 tonnes mgw and under Turning right
No skidding, jack-knifing or overturning
First point of impact Nearside Age of Driver 61 Breath test Negative
Vehicle direction NW to SW

Journey Purpose: Journey as part of work

Casualty Reference: 1 Age: 61 Male Driver/rider Severity: Slight

Vehicle Reference 2 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 27 Breath test Negative
Vehicle direction SE to NW

Journey Purpose: Other/Not known

Casualty Reference: 2 Age: 27 Male Driver/rider Severity: Slight

Casualty Reference: 3 Age: 23 Male Passenger Severity: Slight

Accidents between dates **01/11/2012** **and** **01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

0464512 09/11/2012 Friday Time 1000 Vehicles 1 Casualties 2 Slight
Fine without high winds Road surface Dry Daylight: no street lighting
Special Conditions None Road Type Single 2 lanes
MR AND MRS MARTIN WERE STANDING OUTSIDE THEIR ADDRESS LOOKING AT A BROKEN MIRROR ON THEIR VEHICLE WHEN A LADY, TRYING TO GET PAST THEM CLIPPED MRS MARTIN'S FOOT WITH HER TYRE AND NEARSIDE HIT MR MARTIN'S LOWER ARM.
MR AND MRS MARTIN SUFFERED SLIGHT INJURIES

Occurred on OUTSIDE OF NO. 63 HIGH ROAD

Causation

	Factor:	Participant:	Confidence:
1st:	Dangerous action in carriageway	Casualty 1	Possible
2nd:	Dangerous action in carriageway	Casualty 2	Possible
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Overtaking stat vehicle O/S
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 40 Breath test Driver not contacted
Vehicle direction SE to NW

Journey Purpose: 6 Foreign registered vehicle: Not foreign registered vehicle

Casualty Reference: 1 Age: 62 Male Pedestrian Severity: Slight
0
Pedestrian Injured in the Course of 'On th Road' Work: Not Applicable

Casualty Reference: 2 Age: 55 Female Pedestrian Severity: Slight
0
Pedestrian Injured in the Course of 'On th Road' Work: Not Applicable

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

SCEA7320813 01/08/2013 Thursday Time 0907 Vehicles 1 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight:street lights present
Special Conditions None Road Type Roundabout
V1 TRAVELLING NORTHWEST DROVER AROUND A DUST CART THEN WENT OVER RAISED MINI-ROUNDABOUT AND DROVE STRAIGHT INTO TRAFFIC ISLAND WHICH HAS A RAISED KERB.

V1 DRIVER SUFFERED SLIGHT INJURIES

Occurred on AT THE JUNCTION OF HIGH ROAD AND FAULKENERS WAY

Causation

	Factor:	Participant:	Confidence:
1st:	Poor turn or manoevre	Vehicle 1	Very Likely
2nd:	Loss of control	Vehicle 1	Very Likely
3rd:	Failed to judge other persons path or speed	Vehicle 1	
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Overtaking nearside
No skidding, jack-knifing or overturning
First point of impact Nearside Age of Driver 78 Breath test Negative
Vehicle direction SE to NW

Journey Purpose: 6 Foreign registered vehicle: Not foreign registered vehicle

Casualty Reference: 1 Age: 78 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

SCEA8941815 07/04/2015 Tuesday Time 2120 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Darkness: street lights present and lit
Special Conditions None Road Type Roundabout
V1 M/CYCLE HEADING TOWARDS MINI R/BOUT WHEN HE STRUCK V2 WHO HAD TURNED RIGHT ON R/BOUT AND HEADING TOWARDS V1

Occurred on HIGH ROAD R/BOUT WITH FAULKENERS WAY TRIMLEY ST MARY

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 2	Possible
3rd:	Inexperienced or learner driver/rider	Vehicle 1	
4th:			
5th:			
6th:			

Vehicle Reference 1 Motor Cycle over 50 cc and up to 125cc Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 17 Breath test Negative
Vehicle direction NW to SE

Journey Purpose: Other/Not known

Casualty Reference: 1 Age: 17 Male Driver/rider Severity: Slight

Vehicle Reference 2 Car Turning right
No skidding, jack-knifing or overturning
First point of impact Offside Age of Driver 41 Breath test Negative
Vehicle direction NE to NW

Journey Purpose: Other/Not known

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: Selected using Pre-defined Query :

Notes: Trimley

17214944 24/07/2017 Monday Time 2155 Vehicles 1 Casualties 1 Slight
Raining without high winds Road surface Wet/Damp Darkness: street lights present and lit
Special Conditions None Road Type Single 2 lanes
V1 TRAVELLING ALONG ROAD APPROACHED ROUNDABOUT TO GIVE WAY, APPLIED BRAKE. FRONT WHEEL LOCKED AND VEHICLE SKIDDED ACROSS ROUNDABOUT. WEATHER - RAIN AND ROAD CONDITIONS WET, WITNESS IN VEHICLE BEHIND STOPPED AT SCENE.

Occurred on HIGH ROAD AT JN WITH FAULKNERS WAY

Causation

	Factor:	Participant:	Confidence:
1st:	Slippery road (due to weather)	Vehicle 1	Very Likely
2nd:	Poor turn or manoevre	Vehicle 1	Possible
3rd:	Rain, sleet, snow, or fog	Vehicle 1	Very Likely
4th:	Defective or missing mirrors	Vehicle 1	Very Likely
5th:			
6th:			

Vehicle Reference 1 Motor Cycle over 50 cc and up to 125cc Going ahead other
Skidded and overturned
First point of impact Did not impact Age of Driver 18 Breath test Negative
Vehicle direction W to E

Journey Purpose: Other/Not known

Casualty Reference: 1 Age: 18 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

SCEA8975615 18/04/2015 Saturday Time 1635 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
V2 P/CYCLE COMES TO A NARROWING OF THE ROAD DUE TO TRAFFIC ISLAND AND V1 APPROACHES SAME PART OF ROAD AND CLIPS V2 WITH WING MIRROR KNOCKING RIDER OFF

Occurred on HIGH ROAD FELIXSTOWE

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to judge other persons path or speed	Vehicle 1	Possible
2nd:	Passing too close to cyclist, horse rider or pedestrian	Vehicle 1	Very Likely
3rd:	Failed to judge other persons path or speed	Vehicle 2	
4th:			
5th:			
6th:			

Vehicle Reference 1 Van or Goods 3.5 tonnes mgw and under Going ahead other
No skidding, jack-knifing or overturning
First point of impact Nearside Age of Driver 45 Breath test Negative
Vehicle direction E to W

Journey Purpose: Other/Not known

Vehicle Reference 2 Pedal Cycle Going ahead other
No skidding, jack-knifing or overturning
First point of impact Offside Age of Driver 55 Breath test Not requested
Vehicle direction E to W

Journey Purpose: 6

Casualty Reference: 1 Age: 55 Female Driver/rider Severity: Slight

Accidents between dates **01/11/2012 and 01/11/2017** (60) months

Selection: **Notes:**
Selected using Pre-defined Query : Trimley

1674438 19/05/2016 Thursday Time 1003 Vehicles 2 Casualties 1 Slight
Fine without high winds Road surface Dry Daylight
Special Conditions None Road Type Single 2 lanes
2 VEHICLE RTC WITH LOW LEVEL INJURY. V1 WAS EBING DRIVEN BY ELDERLY FEMALE WHO HAS DRIVEN INTO REAR OF V2 WHO WAS SIGNALLY TO TURN RIGHT INTO A CARPARK ON A STRAIGHT PIECE OF ROAD. COLLISION OCCURED AT LOW SPEED. MINOR SEATBELT INJURY TO V1.

Occurred on TRIMLEY HIGH ROAD UNSPECIFIED ROAD OR LOCATION

Causation

	Factor:	Participant:	Confidence:
1st:	Distraction outside vehicle	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Vehicle Reference 1 Car Going ahead other
No skidding, jack-knifing or overturning
First point of impact Front Age of Driver 83 Breath test Negative
Vehicle direction W to E

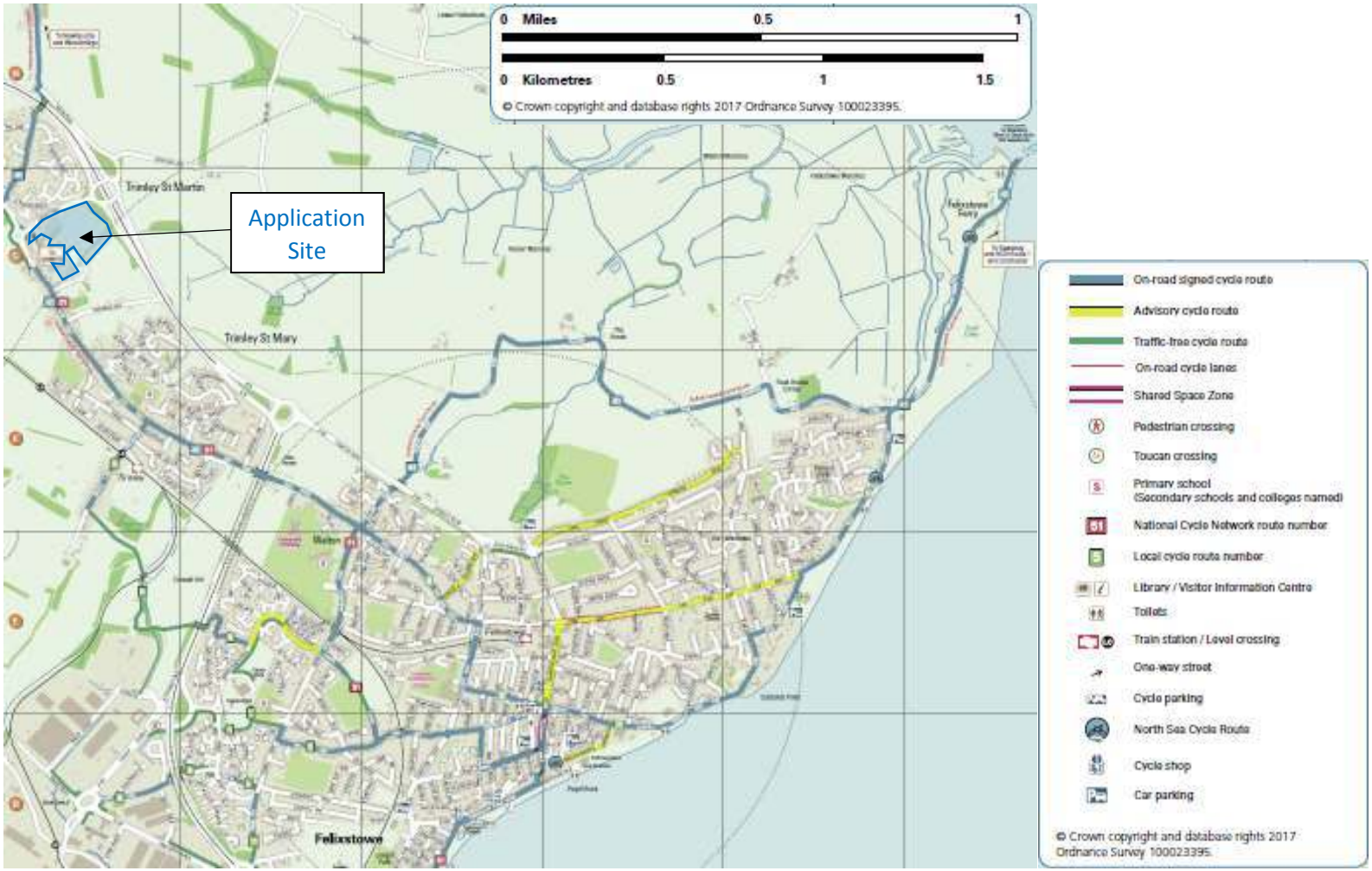
Journey Purpose: 6

Casualty Reference: 1 Age: 83 Female Driver/rider Severity: Slight

Vehicle Reference 2 Car Waiting to turn right
No skidding, jack-knifing or overturning
First point of impact Back Age of Driver 76 Breath test Negative
Vehicle direction W to E

Journey Purpose: 6

APPENDIX D


0 Miles 0.5 1
0 Kilometres 0.5 1 1.5
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Application Site
Trimley St Martin
Trimley St Mary
Felixstowe
On-road signed cycle route
Advisory cycle route
Traffic-free cycle route
On-road cycle lanes
Shared Space Zone
Pedestrian crossing
Toucan crossing
Primary school
(Secondary schools and colleges named)
National Cycle Network route number
Local cycle route number
Library / Visitor Information Centre
Toilets
Train station / Level crossing
One-way street
Cycle parking
North Sea Cycle Route
Cycle shop
Car parking
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APPENDIX E

173/174 Woodbridge - Kirton - Trimley - Felixstowe

Timetable valid from 30/10/2017

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service	173	173	173	174	173	174	173	173
Operator	IB	IB	IB	IB	IB	IB	IB	SN
Service Restrictions	NSch	Sch				Sch	NSch	
Notes	1	1	1	1	1	1	1	1
Woodbridge, Turban Centre (S-bound)	—	0735	0905	1125	1325	—	1555	1710
Woodbridge, Duke of York (W-bound)	—	0738	0908	1128	1328	—	1558	1713
Martlesham, opp Water Bridge	—	0741	0911	1131	1331	—	1601	1718
Kesgrave, o/s High School	—	|	|	|	|	1545	|	|
Martlesham Heath, o/s Tesco	—	|	0914	1134	1334	1554	1604	|
Martlesham Heath, Eagle Way (W-bound)	—	0743	0917	1137	1337	1557	1607	|
Martlesham Heath, opp Valiant Road	—	0745	|	|	1339	|	|	|
Martlesham Heath, adj Anson Road	—	|	|	|	|	|	|	1721
Brightwell, opp Post Box	—	0750	0922	|	1344	|	1612	1725
Bucklesham, School (S-bound)	—	0752	0924	|	1346	|	1614	1727
Waldringfield, adj Golf Course	—	|	|	1145	|	1605	|	|
Waldringfield, opp Mill Road	—	|	|	1150	|	1609	|	|
Newbourne, opp Fox	—	|	|	1155	|	1615	|	|
Newbourne, opp Jacksons Road	—	|	|	1158	|	1618	|	|
Kirton, adj Rectory Lane	—	|	0930	1205	1352	|	1620	|
Kirton, opp Croxton Close	—	|	0931	1206	1353	|	1621	|
Falkenham, opp Back Road	—	|	0932	1207	1354	|	1622	|
Kirton, adj Bus Shelter	0757	0757	|	|	|	1623	|	1732
Trimley St Martin, o/s Bus Shelter	0800	0800	0936	1213	1400	1628	1628	1736
Trimley St Mary, o/s Punchard Way	0805	0805	0940	1217	1404	1632	1632	1740
Walton, Felixstowe Academy (SW-bound)	|	0808	|	|	|	|	|	|
Walton, opp Half Moon	0808	0811	0943	1220	1407	1635	1635	1743
Felixstowe, o/s Cinema	0816	0819	0948	1226	1412	1644	1644	1748
Felixstowe, o/s Great Eastern Square	0818	0821	0950	1228	1415	1646	1646	1749
Old Felixstowe, opp Beatrice Avenue	—	—	0952	1230	1417	1648	1648	—

Saturdays

173	173	174	173	173
IB	IB	IB	IB	IB
1	1	1	1	1
—	0905	1125	1325	1555
—	0908	1128	1328	1558
—	0911	1131	1331	1601
—	|	|	|	|
—	0914	1134	1334	1604
—	0917	1137	1337	1607
—	|	|	1339	|
—	|	|	|	|
—	0922	|	1344	1612
—	0924	|	1346	1614
—	|	1145	|	|
—	|	1150	|	|
—	|	1155	|	|
—	|	1158	|	|
—	0930	1205	1352	1620
—	0931	1206	1353	1621
—	0932	1207	1354	1622
0757	|	|	|	|
0800	0936	1213	1400	1628
0805	0940	1217	1404	1632
|	|	|	|	|
0808	0943	1220	1407	1635
0816	0948	1226	1412	1644
0818	0950	1228	1415	1646
—	0952	1230	1417	1648

Sundays

no service

Spring Bank Holiday (Monday 28th May)

no service

Service Restrictions:
NSch - Not School Days
Sch - School Days Only

Notes:
1 - Sponsored by Suffolk County Council
IB - Ipswich Buses
SN - Suffolk Norse

173/174 Felixstowe - Trimley - Kirton - Woodbridge

Timetable valid from 30/10/2017

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service	173	173	173	173	173	173
Operator	IB	IB	IB	IB	IB	IB
Service Restrictions				NSch	Sch	
Notes	1	1	1	1	1	1
Old Felixstowe, opp Beatrice Avenue	—	0955	1232	1450	1450	1705
Old Felixstowe, opp Rosemary Avenue	—	0956	1233	1451	1451	1706
Felixstowe, opp Great Eastern Square	—	0958	1237	1455	1455	1710
Felixstowe, o/s Great Eastern Square	0825	|	|	|	|	|
Felixstowe, o/s Conkers	|	1000	1239	1457	1457	1712
Walton, adj Half Moon	0829	1007	1244	1506	1506	1721
Walton, Felixstowe Academy (SW-bound)	|	|	|	|	1511	|
Trimley St Mary, opp Punchard Way	0833	1009	1247	1514	1514	1725
Trimley St Martin, adj Bus Shelter	0837	1013	1251	1518	1518	1729
Falkenham, adj Back Road	|	1017	1255	|	|	|
Kirton, adj Croxton Close	|	1019	1257	|	|	|
Kirton, o/s White Horse	0842	1021	1259	1523	1523	1735
Bucklesham, School (N-bound)	0846	1026	1304	1528	1528	1740
Brightwell, o/s Post Box	0849	1029	1307	1530	1530	1743
Martlesham Heath, Eagle Way (W-bound)	|	1033	1312	1534	1534	1747
Kesgrave, adj Dobbs Lane	|	|	|	|	1537	|
Grange Farm, opp Fentons Way	|	|	|	|	1540	|
Martlesham Heath, opp Valiant Road	|	1035	|	1536	—	|
Martlesham Heath, o/s Tesco	|	1038	1315	|	—	1750
Martlesham Heath, adj Bowling Centre	0853	|	|	|	—	|
Martlesham, adj Water Bridge	0855	1041	1318	1539	—	1753
Woodbridge, Duke of York (E-bound)	0858	1044	1321	1542	—	1756
Woodbridge, Turban Centre (N-bound)	0900	1047	1324	1545	—	1759

Saturdays

173	173	173	173	173
IB	IB	IB	IB	IB
1	1	1	1	1
—	0955	1232	1450	1705
—	0956	1233	1451	1706
—	0958	1237	1455	1710
0825	|	|	|	|
|	1000	1239	1457	1712
0829	1007	1244	1506	1721
|	|	|	|	|
0833	1009	1247	1514	1725
0837	1013	1251	1518	1729
|	1017	1255	|	|
|	1019	1257	|	|
0842	1021	1259	1523	1735
0846	1026	1304	1528	1740
0849	1029	1307	1530	1743
|	1033	1312	1534	1747
|	|	|	|	|
|	|	|	|	|
|	1035	|	1536	|
|	1038	1315	|	1750
0853	|	|	|	|
0855	1041	1318	1539	1753
0858	1044	1321	1542	1756
0900	1047	1324	1545	1759

Sundays

no service

Spring Bank Holiday (Monday 28th May)

no service

Service Restrictions: **NSch** - Not School Days
Sch - School Days Only

Notes: **1** - Sponsored by Suffolk County Council
IB - Ipswich Buses

481 London - Felixstowe

National Express

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Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service Restrictions	1	1	2	2	3	3	3		2	3	3
Notes	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1
Victoria, Belgravia, Victoria Coach Station (N-bound)	1100	—	1100	—	—	1100	—	1800	2000	2000	—
London, Waterloo, County Hall (Stop F)	|	—	|	—	—	|	—	1815p	2010p	2010p	—
City of London, Aldgate, Mansell Street (Stop S)	|	—	|	—	—	|	—	1830p	2020p	2020p	—
London, Mile End, Mile End (Stop D)	|	1135	|	1145	1145	|	—	1845p	2030p	2030p	—
London, Stratford, Stratford Bus Station (Stop C)	1145p	|	1155p	|	|	1155p	—	1900p	2040p	2040p	—
Brentwood, High Street (Stop B)	|	|	|	|	|	|	—	1940	|	|	—
London, Romford, Romford Market (Stop G)	1215s	1215p	1230s	1230p	1230p	1230s	—	|	|	|	—
Chelmsford, Chelmsford City Centre, Bus Station (Stand 1)	1245	1245s	1300	1300s	1300s	1300s	1300	2005	2140	2140s	2140
Witham, Witham Town Centre, o/s The George	|	|	|	|	1320s	1320s	|	|	|	2200s	|
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	1325	1325s	1340	1340s	1340s	1340s	1340	2045	2220	2220	2220s
Capel St Mary, o/s White Horse	1350s	1350s	1405s	1405s	1405s	1405s	1405s	2125s	|	|	|
Ipswich, opp Cardinal Park Cinema	1405	1405	1420	1420	1420	1420	1420	2140	2250	2250	2250
Trimley St Martin, o/s Bus Shelter	—	—	—	—	—	—	—	2201	—	—	—
Trimley St Mary, adj The Drift	—	—	—	—	—	—	—	2204	—	—	—
Felixstowe, Walton, opp Half Moon	—	—	—	—	—	—	—	2207	—	—	—
Felixstowe, opp Great Eastern Square	—	—	—	—	—	—	—	2210	—	—	—

Saturdays

Service Restrictions	4	4	5	6	5	6	5	4	4	6	7	6	4	5	6	5
Notes	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1
Victoria, Belgravia, Victoria Coach Station (N-bound)	1100	—	—	—	—	1100	1100	1100	—	1800	1800	2000	2000	2000	—	—
London, Waterloo, County Hall (Stop F)	|	—	—	—	—	|	|	|	—	|	1815p	|	2010p	2010p	—	—
City of London, Aldgate, Mansell Street (Stop S)	|	—	—	—	—	|	|	|	—	|	1825p	|	2020p	2020p	—	—
London, Mile End, Mile End (Stop D)	|	1135	—	—	1135	|	|	|	1145	|	1835p	|	2030p	2030p	—	—
London, Stratford, Stratford Bus Station (Stop C)	1145p	|	—	—	|	1145p	1145p	1155p	|	1845p	1845p	2040p	2040p	2040p	—	—
Brentwood, High Street (Stop B)	|	|	—	—	|	|	|	|	1925	1925	|	|	|	—	—
London, Romford, Romford Market (Stop G)	1215s	1215p	—	—	1215p	1215	1215s	1230s	1230p	|	|	|	|	|	—	—
Chelmsford, Chelmsford City Centre, Bus Station (Stand 1)	1245	1245s	1245	1245	1245s	1245s	1245s	1300	1300s	1950	1950	2140s	2140	2140s	2140	2140
Witham, Witham Town Centre, o/s The George	|	|	|	|	1305s	1305s	1305s	|	|	|	2200s	|	2200s	|	|
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	1325	1325s	1325	1325s	1325s	1325	1325s	1340	1340s	2030	2030	2220s	2220	2220	2220	2220s
Capel St Mary, o/s White Horse	1350s	1350s	1350s	1350s	1350s	1350s	1350s	1405s	1405s	2110s	2110s	|	|	|	|	|
Ipswich, opp Cardinal Park Cinema	1405	1405	1405	1405	1405	1405	1405	1420	1420	2125	2125	2250	2250	2250	2250	2250
Trimley St Martin, o/s Bus Shelter	—	—	—	—	—	—	—	—	—	2146	2146	—	—	—	—	—
Trimley St Mary, adj The Drift	—	—	—	—	—	—	—	—	—	2149	2149	—	—	—	—	—
Felixstowe, Walton, opp Half Moon	—	—	—	—	—	—	—	—	—	2152	2152	—	—	—	—	—
Felixstowe, opp Great Eastern Square	—	—	—	—	—	—	—	—	—	2155	2155	—	—	—	—	—

Sundays

Service Restrictions	8	8	9	10	9	10	9	8	8	10	11	10	8	9	10	9
Notes	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1
Victoria, Belgravia, Victoria Coach Station (N-bound)	1100	—	—	—	—	1100	1100	1100	—	1800	1800	2000	2000	2000	—	—
London, Waterloo, County Hall (Stop F)	|	—	—	—	—	|	|	|	—	|	1815p	|	2010p	2010p	—	—
City of London, Aldgate, Mansell Street (Stop S)	|	—	—	—	—	|	|	|	—	|	1825p	|	2020p	2020p	—	—
London, Mile End, Mile End (Stop D)	|	1135	—	—	1135	|	|	|	1145	|	1835p	|	2030p	2030p	—	—
London, Stratford, Stratford Bus Station (Stop C)	1145p	|	—	—	|	1145p	1145p	1155p	|	1845p	1845p	2040p	2040p	2040p	—	—
Brentwood, High Street (Stop B)	|	|	—	—	|	|	|	|	1925	1925	|	|	|	—	—
London, Romford, Romford Market (Stop G)	1215s	1215p	—	—	1215p	1215	1215s	1230s	1230p	|	|	|	|	|	—	—
Chelmsford, Chelmsford City Centre, Bus Station (Stand 1)	1245	1245s	1245	1245	1245s	1245s	1245s	1300	1300s	1950	1950	2140s	2140	2140s	2140	2140
Witham, Witham Town Centre, o/s The George	|	|	|	|	1305s	1305s	1305s	|	|	|	2200s	|	2200s	|	|
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	1325	1325s	1325	1325s	1325s	1325	1325s	1340	1340s	2030	2030	2220s	2220	2220	2220	2220s
Capel St Mary, o/s White Horse	1350s	1350s	1350s	1350s	1350s	1350s	1350s	1405s	1405s	2110s	2110s	|	|	|	|	|
Ipswich, opp Cardinal Park Cinema	1405	1405	1405	1405	1405	1405	1405	1420	1420	2125	2125	2250	2250	2250	2250	2250
Trimley St Martin, o/s Bus Shelter	—	—	—	—	—	—	—	—	—	2146	2146	—	—	—	—	—
Trimley St Mary, adj The Drift	—	—	—	—	—	—	—	—	—	2149	2149	—	—	—	—	—
Felixstowe, Walton, opp Half Moon	—	—	—	—	—	—	—	—	—	2152	2152	—	—	—	—	—
Felixstowe, opp Great Eastern Square	—	—	—	—	—	—	—	—	—	2155	2155	—	—	—	—	—

Spring Bank Holiday (Monday 28th May)

Notes	NX1	NX1	
Victoria, Belgravia, Victoria Coach Station (N-bound)	1100	—	▸▸▸
London, Mile End, Mile End (Stop D)	|	1135	
London, Stratford, Stratford Bus Station (Stop C)	1145p	|	more
London, Romford, Romford Market (Stop G)	1215s	1215p	trips
Chelmsford, Chelmsford City Centre, Bus Station (Stand 1)	1245	1245s	below
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	1325	1325s	
Capel St Mary, o/s White Horse	1350s	1350s	
Ipswich, opp Cardinal Park Cinema	1405	1405	▸▸▸

Service Restrictions:
1 - only 25.5.18
2 - from 25.5.18 to 29.5.18
3 - not 25.5.18, 29.5.
4 - only 26.5.18
5 - not 26.5.18, 28.7.
6 - only 28.7.18
7 - not 28.7.18
8 - only 27.5.18
9 - not 27.5.18, 29.7.
10 - only 29.7.18
11 - not 29.7.18

Notes:
NX1 - Book at nationalexpress.com or 08717 818 181 (13p/min + network charges)
p - picks up only
s - sets down only

481 London - Felixstowe

National Express

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Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Spring Bank Holiday (Monday 28th May)

	NX1	NX1
Victoria, Belgravia, Victoria Coach Station (N-bound)	1800	2000
London, Waterloo, County Hall (Stop F)	1815p	2010p
City of London, Aldgate, Mansell Street (Stop S)	1825p	2020p
London, Mile End, Mile End (Stop D)	1835p	2030p
London, Stratford, Stratford Bus Station (Stop C)	1845p	2040p
Brentwood, High Street (Stop B)	1925	|
Chelmsford, Chelmsford City Centre, Bus Station (Stand 1)	1950	2140
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	2030	2220
Capel St Mary, o/s White Horse	2110s	|
Ipswich, opp Cardinal Park Cinema	2125	2250
Trimley St Martin, o/s Bus Shelter	2146	—
Trimley St Mary, adj The Drift	2149	—
Felixstowe, Walton, opp Half Moon	2152	—
Felixstowe, opp Great Eastern Square	2155	—

Notes: **NX1** - Book at nationalexpress.com or 08717 818 181 (13p/min + network charges)
p - picks up only
s - sets down only

481 Felixstowe - London

National Express

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Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service Restrictions		3	2	3	1				3	1	1
Notes		NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1
Felixstowe, o/s Great Eastern Square		—	—	—	—	0835	—	—	—	—	—
Felixstowe, Walton, adj Half Moon		—	—	—	—	0838	—	—	—	—	—
Trimley St Mary, opp The Drift		—	—	—	—	0841	—	—	—	—	—
Trimley St Martin, opp Hand in Hand		—	—	—	—	0844	—	—	—	—	—
Ipswich, opp Cardinal Park Cinema	arr	—	—	—	—	0905	—	—	—	—	—
Ipswich, opp Cardinal Park Cinema	dep	—	0610	0610	0655	0915	1450	—	—	—	1505
Capel St Mary, opp Motel		—	|	|	|	0925p	1500p	—	—	—	1515p
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	arr	—	0640	0640	0725	|	1525	—	—	—	1540
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	dep	—	0645	0645	0730	|	1530	—	—	—	1545
Witham, Witham Town Centre, opp The George		0705	|	|	|	|	|	—	1550	—	|
Chelmsford, Chelmsford City Centre, Bus Station (Stand 1)		0725p	0725	0725s	0810	1015	1610	—	|	—	1625
Brentwood, High Street (Stop F)		|	|	|	|	1040	|	—	|	—	|
London, Romford, Romford Market (Stop H)		|	|	|	|	|	1640s	1640	1640s	1655	1655s
London, Stratford, Stratford Centre (Stop E)		0845s	0845s	0845s	0905s	1120s	1720s	1720s	1720s	1730s	1730s
London, Mile End, Mile End (Stop C)		0900s	0900s	0900s	0915s	1135s	1735s	|	1735s	|	1745s
London, City of London, Minories (H)		0915s	0915s	0915s	0925s	1145s	|	|	|	|	|
London, Waterloo, Waterloo Station (Stop S-bound)		0935s	0935s	0935s	0935s	1205s	|	|	|	|	|
London, Victoria, Victoria Coach Station Arrivals (Arr)		0950	0950	0950	0950	1220	1820	1820	1820	1820	1820

Saturdays

Service Restrictions		4	6	6	5	4	5	6	7	4	4	6	6	7	5	7
Notes		NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1
Felixstowe, o/s Great Eastern Square		—	—	—	—	—	—	0855	0855	—	—	—	—	—	—	—
Felixstowe, Walton, adj Half Moon		—	—	—	—	—	—	0858	0858	—	—	—	—	—	—	—
Trimley St Mary, opp The Drift		—	—	—	—	—	—	0901	0901	—	—	—	—	—	—	—
Trimley St Martin, opp Hand in Hand		—	—	—	—	—	—	0904	0904	—	—	—	—	—	—	—
Ipswich, opp Cardinal Park Cinema	arr	—	—	—	—	—	—	0920	0920	—	—	—	—	—	—	—
Ipswich, opp Cardinal Park Cinema	dep	0610	—	0655	—	0655	0655	0930	0930	1450	—	—	1505	—	—	1505
Capel St Mary, opp Motel		|	—	|	—	|	|	0940p	0940p	1500p	—	—	1515p	—	—	1515p
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	arr	0640	—	0725	—	0725	0725	|	|	1525	—	—	1540	—	—	1540
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	dep	0645	—	0730	—	0730	0730	|	|	1530	—	—	1545	—	—	1545
Witham, Witham Town Centre, opp The George		|	0750	|	0750	|	|	|	|	—	1605	|	—	1605	|
Chelmsford, Chelmsford City Centre, Bus Station (Stand 1)		0725	0810p	0810s	0810p	0810	0810s	1030	1030	1610	—	|	1625	—	|	1625
Brentwood, High Street (Stop F)		|	|	|	|	|	|	1055	1055	|	—	|	—	|	|
London, Romford, Romford Market (Stop H)		|	|	|	|	|	|	|	|	1640s	1640	1655	1655s	1655	1655s	1655s
London, Stratford, Stratford Centre (Stop E)		0845s	0905s	0905s	0905s	0905s	0905s	1135s	1135s	1720s	1720s	1730s	1730s	1730s	1730s	1730s
London, Mile End, Mile End (Stop C)		0900s	|	|	0915s	0915s	0915s	|	1145s	1735s	|	|	|	|	1745s	1745s
London, City of London, Minories (H)		0915s	|	|	0925s	0925s	0925s	|	1155s	|	|	|	|	|	|
London, Waterloo, Waterloo Station (Stop S-bound)		0935s	|	|	0935s	0935s	0935s	|	1205s	|	|	|	|	|	|
London, Victoria, Victoria Coach Station Arrivals (Arr)		0950	0950	0950	0950	0950	0950	1220	1220	1820	1820	1820	1820	1820	1820	1820

Sundays

Service Restrictions		8	10	10	9	8	9	10	11	8	8	10	10	11	9	11
Notes		NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1	NX1
Felixstowe, o/s Great Eastern Square		—	—	—	—	—	—	0855	0855	—	—	—	—	—	—	—
Felixstowe, Walton, adj Half Moon		—	—	—	—	—	—	0858	0858	—	—	—	—	—	—	—
Trimley St Mary, opp The Drift		—	—	—	—	—	—	0901	0901	—	—	—	—	—	—	—
Trimley St Martin, opp Hand in Hand		—	—	—	—	—	—	0904	0904	—	—	—	—	—	—	—
Ipswich, opp Cardinal Park Cinema	arr	—	—	—	—	—	—	0920	0920	—	—	—	—	—	—	—
Ipswich, opp Cardinal Park Cinema	dep	0610	—	0655	—	0655	0655	0930	0930	1450	—	—	1505	—	—	1505
Capel St Mary, opp Motel		|	—	|	—	|	|	0940p	0940p	1500p	—	—	1515p	—	—	1515p
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	arr	0640	—	0725	—	0725	0725	|	|	1525	—	—	1540	—	—	1540
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)	dep	0645	—	0730	—	0730	0730	|	|	1530	—	—	1545	—	—	1545
Witham, Witham Town Centre, opp The George		|	0750	|	0750	|	|	|	|	—	1605	|	—	1605	|
Chelmsford, Chelmsford City Centre, Bus Station (Stand 1)		0725	0810p	0810s	0810p	0810	0810s	1030	1030	1610	—	|	1625	—	|	1625
Brentwood, High Street (Stop F)		|	|	|	|	|	|	1055	1055	|	—	|	—	|	|
London, Romford, Romford Market (Stop H)		|	|	|	|	|	|	|	|	1640s	1640	1655	1655s	1655	1655s	1655s
London, Stratford, Stratford Centre (Stop E)		0845s	0905s	0905s	0905s	0905s	0905s	1135s	1135s	1720s	1720s	1730s	1730s	1730s	1730s	1730s
London, Mile End, Mile End (Stop C)		0900s	|	|	0915s	0915s	0915s	|	1145s	1735s	|	|	|	|	1745s	1745s
London, City of London, Minories (H)		0915s	|	|	0925s	0925s	0925s	|	1155s	|	|	|	|	|	|
London, Waterloo, Waterloo Station (Stop S-bound)		0935s	|	|	0935s	0935s	0935s	|	1205s	|	|	|	|	|	|
London, Victoria, Victoria Coach Station Arrivals (Arr)		0950	0950	0950	0950	0950	0950	1220	1220	1820	1820	1820	1820	1820	1820	1820

Service Restrictions:

1 - only 25.5.18
2 - from 25.5.18 to 29.5.18
3 - not 25.5.18, 29.5.
4 - only 26.5.18
5 - not 26.5.18, 28.7.
6 - only 28.7.18
7 - not 28.7.18
8 - only 27.5.18
9 - not 27.5.18, 29.7.
10 - only 29.7.18
11 - not 29.7.18

Notes:

NX1 - Book at nationalexpress.com or 08717 818 181 (13p/min + network charges)
p - picks up only
s - sets down only

481 Felixstowe - London

National Express

The information on this timetable is expected to be valid until at least 30th May 2018. Where we know of variations, before or after this date, then we show these at the top of each affected column in the table.

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Spring Bank Holiday (Monday 28th May)

	Notes		NX1	NX1	NX1	NX1
Felixstowe, o/s Great Eastern Square			—	0855	—	—
Felixstowe, Walton, adj Half Moon			—	0858	—	—
Trimley St Mary, opp The Drift			—	0901	—	—
Trimley St Martin, opp Hand in Hand			—	0904	—	—
Ipswich, opp Cardinal Park Cinema		arr	—	0920	—	—
Ipswich, opp Cardinal Park Cinema		dep	0655	0930	—	1505
Capel St Mary, opp Motel			|	0940p	—	1515p
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)		arr	0725	|	—	1540
Colchester, Colchester Town Centre, Stanwell Street (Stop Ba)		dep	0730	|	—	1545
Chelmsford, Chelmsford City Centre, Bus Station (Stand 1)			0810	1030	—	1625
Brentwood, High Street (Stop F)			|	1055	—	|
London, Romford, Romford Market (Stop H)			|	|	1655	1655s
London, Stratford, Stratford Centre (Stop E)			0905s	1135s	1730s	1730s
London, Mile End, Mile End (Stop C)			0915s	1145s	|	1745s
London, City of London, Minories (H)			0925s	1155s	|	|
London, Waterloo, Waterloo Station (Stop S-bound)			0935s	1205s	|	|
London, Victoria, Victoria Coach Station Arrivals (Arr)			0950	1220	1820	1820

Notes: **NX1** - Book at nationalexpress.com or 08717 818 181 (13p/min + network charges)
p - picks up only
s - sets down only

75/76/76A/77/77A Ipswich - The Trimleys - Felixstowe

First in Norfolk & Suffolk

Timetable valid from 02/07/2017

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service	75	75	77	77	75	75	77	75	76	75	77	75	76	75	77	75	76	75
Service Restrictions			Sch	NSch														
Ipswich, Old Cattle Market Bus Station (A)	0645	0725	—	—	0755	0825	—	0900	—	0930	—	1000	—	1030	—	1100	—	1130
Ipswich, Old Cattle Market Bus Station (B)			0740	0740			0845		0915		0945		1015		1045		1115	
Ipswich, Viaduct (E-bound)	0650	0731			0803	0833		0907		0937		1007		1037		1107		1137
California, Ipswich Hospital (1)	0659	0740			0813	0843		0916		0946		1016		1046		1116		1146
Rose Hill, o/s Aldi			0749	0749			0854		0924		0954		1024		1054		1124	
Priory Heath, adj Cranwell Crescent			0753	0753			0858		0928		0958		1028		1058		1128	
Priory Heath, adj Waitrose			0758	0758			0902		0932		1002		1032		1102		1132	
Warren Heath, adj Pearse Way	0705	0748	0800	0800	0823	0853	0904	0924	0934	0954	1004	1024	1034	1054	1104	1124	1134	1154
Trimley St Martin, adj St Martins Green	0717	0800	0812	0812	0837	0905	0915	0936	0945	1006	1015	1036	1045	1106	1115	1136	1145	1206
Ransomes Europark, adj Courtyard Hotel																		
Trimley St Martin, o/s Bus Shelter																		
Walton, Felixstowe Academy (SW-bound)			0815															
Felixstowe, opp Great Eastern Square	0726	0812	0825	0824	0849	0917	0927	0948	0957	1018	1027	1048	1057	1118	1127	1148	1157	1218
Felixstowe, o/s Great Eastern Square									1005				1105				1205	
Old Felixstowe, opp Beatrice Avenue									1006				1106				1206	
Old Felixstowe, adj Looe Road									1008				1108				1208	
Old Felixstowe, adj Buttermere Green									1012				1112				1212	
Old Felixstowe, opp Margery Girling House									—				—				—	
Old Felixstowe, adj Beatrice Avenue									—				—				—	
Felixstowe, opp Lidl			0830	0829			0933		—		1033		—		1133		—	
Felixstowe Dock, o/s Landguard Fort			0837	0836			0940		—		1040		—		1140		—	
Felixstowe, adj Ordnance House			—	—			—		—		—		—		—		—	
Felixstowe, adj Anne Street	0732	0818	—	—	0855	0923	—	0956	—	1026	—	1056	—	1126	—	1156	—	1226
Grange Farm, adj Crossgate Field	0738	0825	—	—	0902	0930	—	1003	—	1033	—	1103	—	1133	—	1203	—	1233
Felixstowe, adj Surrey Road	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mondays to Fridays

Service	77	75	76	75	77	75	76	75	77	75	76	76	75	75	77	75	76	75
Service Restrictions											Sch	NSch	Sch	NSch				
Ipswich, Old Cattle Market Bus Station (A)	—	1200	—	1230	—	1300	—	1330	—	1400	—	—	1430	1430	—	1505	—	1535
Ipswich, Old Cattle Market Bus Station (B)	1145		1215		1245		1315		1345		1420	1420			1450		1520	
Ipswich, Viaduct (E-bound)		1207		1237		1307		1337		1407			1437	1437		1512		1542
California, Ipswich Hospital (1)		1216		1246		1316		1346		1416			1446	1446		1521		1551
Rose Hill, o/s Aldi	1154		1224		1254		1324		1354		1429	1429			1459		1529	
Priory Heath, adj Cranwell Crescent	1158		1228		1258		1328		1358		1433	1433			1503		1533	
Priory Heath, adj Waitrose	1202		1232		1302		1332		1402		1437	1437			1507		1537	
Warren Heath, adj Pearse Way	1204	1224	1234	1254	1304	1324	1334	1354	1404	1424	1439	1439	1454	1454	1509	1529	1539	1559
Trimley St Martin, adj St Martins Green	1215	1236	1245	1306	1315	1336	1345	1406	1415	1436	1450	1450	1506	1506	1520	1541	1550	1611
Ransomes Europark, adj Courtyard Hotel																		
Trimley St Martin, o/s Bus Shelter																		
Walton, Felixstowe Academy (SW-bound)											1455		1511					
Felixstowe, opp Great Eastern Square	1227	1248	1257	1318	1327	1348	1357	1418	1427	1448	1503	1502	1520	1518	1532	1553	1602	1623
Felixstowe, o/s Great Eastern Square			1305				1405				1511	1510					1610	
Old Felixstowe, opp Beatrice Avenue			1306				1406				1512	1511					1611	
Old Felixstowe, adj Looe Road			1308				1408				1514	1513					1613	
Old Felixstowe, adj Buttermere Green			1312				1412				1518	1517					1617	
Old Felixstowe, opp Margery Girling House			—				—				—	—					—	
Old Felixstowe, adj Beatrice Avenue			—				—				—	—					—	
Felixstowe, opp Lidl	1233		—		1333		—		1433		—	—			1538		—	
Felixstowe Dock, o/s Landguard Fort	1240		—		1340		—		1440		—	—			1545		—	
Felixstowe, adj Ordnance House	—		—		—		—		—		—	—			—		—	
Felixstowe, adj Anne Street	—	1256	—	1326	—	1356	—	1426	—	1456	—	—	1528	1526	—	1601	—	1631
Grange Farm, adj Crossgate Field	—	1303	—	1333	—	1403	—	1433	—	1503	—	—	1535	1533	—	1608	—	1638
Felixstowe, adj Surrey Road	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mondays to Fridays

Service	77	75	76	75	77A	75	76A	75	77	75	75	75	75	75	75	75
Notes																*
Ipswich, Old Cattle Market Bus Station (A)	—	1610	—	1640	—	1710	—	1745	—	1815	1845	1915	2015	2115	2215	2315
Ipswich, Old Cattle Market Bus Station (B)	1555		1625		1655		1730		1800							
Ipswich, Viaduct (E-bound)		1619		1649		1719		1753		1823	1852	1921	2021	2121	2221	2321
California, Ipswich Hospital (1)		1628		1658		1728		1802		1832	1900	1929	2029	2129	2229	2329
Rose Hill, o/s Aldi	1604		1635		1705		1740		1809							
Priory Heath, adj Cranwell Crescent	1608		1640		1710		1745		1813							
Priory Heath, adj Waitrose	1612		1644						1816							
Warren Heath, adj Pearse Way	1614	1638	1646	1708		1738		1810	1818	1839	1906	1935	2035	2135	2235	2335
Trimley St Martin, adj St Martins Green	1625	1650	1658	1720		1750		1822	1830	1851	1918	1947	2047	2147	2247	2347
Ransomes Europark, adj Courtyard Hotel					1718		1751									
Trimley St Martin, o/s Bus Shelter					1729		1801									
Walton, Felixstowe Academy (SW-bound)																
Felixstowe, opp Great Eastern Square	1637	1702	1710	1732	1739	1802	1811	1834	1842	1901	1928	1956	2056	2156	2256	2356
Felixstowe, o/s Great Eastern Square			1718				1818									
Old Felixstowe, opp Beatrice Avenue			1719				1819									
Old Felixstowe, adj Looe Road			1721				1821									
Old Felixstowe, adj Buttermere Green			1725				1825									
Old Felixstowe, opp Margery Girling House			—				1828									
Old Felixstowe, adj Beatrice Avenue			—				1836									
Felixstowe, opp Lidl	1643		—		1744		—		1847							
Felixstowe Dock, o/s Landguard Fort	1650		—		1750		—		1853							
Felixstowe, adj Ordnance House	—		—		—		—		—		1934	2000	2100	2200	2300	0000
Felixstowe, adj Anne Street	—	1710	—	1740	—	1810	—	1841	—	1908	1937	2003	2103	2203	2303	0003
Grange Farm, adj Crossgate Field	—	1717	—	1747	—	1817	—	1847	—	1914	1943	2009	2109	2209	2309	0009
Felixstowe, adj Surrey Road	—	—	—	—	—	—	—	1852	—	—	1948	—	—	—	2314	0014

Service Restrictions: **NSch** - Not School Days
Sch - School Days Only

Notes: * - Part or all of this journey operates in the morning of the following day

Suffolk 02/07/2017

Please use stops adjacent or opposite Beatrice Avenue on Colneis Road for Grove Medical Centre.

75/76/76A/77/77A Ipswich - The Trimleys - Felixstowe

First in Norfolk & Suffolk

Timetable valid from 02/07/2017

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Saturdays

Service	75	75	77	75		75	76	75	77		77	75	76	75	77	75	75	75
Ipswich, Old Cattle Market Bus Station (A)	0700	0730	—	0800		00	—	30	—		—	1700	—	1730	—	1815	1845	1915
Ipswich, Old Cattle Market Bus Station (B)			0745				15		45		1645		1715		1745			
Ipswich, Viaduct (E-bound)	0707	0737		0807		07		37				1707		1737		1823	1852	1921
California, Ipswich Hospital (1)	0716	0746		0816		16		46				1716		1746		1832	1900	1929
Rose Hill, o/s Aldi			0754				24		54		1654		1724		1753			
Priory Heath, adj Cranwell Crescent			0758				28		58		1658		1728		1757			
Priory Heath, adj Waitrose			0802				32		02		1702		1732		1800			
Warren Heath, adj Pearse Way	0724	0754	0804	0824		24	34	54	04		1704	1724	1734	1754	1805	1839	1906	1935
Trimley St Martin, adj St Martins Green	0736	0806	0815	0836		36	45	06	15		1715	1736	1745	1806	1816	1851	1918	1947
Ransomes Europark, adj Courtyard Hotel																		
Trimley St Martin, o/s Bus Shelter																		
Walton, Felixstowe Academy (SW-bound)																		
Felixstowe, opp Great Eastern Square	0748	0818	0827	0848		48	57	18	27		1727	1748	1757	1818	1826	1901	1928	1956
Felixstowe, o/s Great Eastern Square							05						1805					
Old Felixstowe, opp Beatrice Avenue							06						1806					
Old Felixstowe, adj Looe Road							08						1808					
Old Felixstowe, adj Buttermere Green							12						1812					
Old Felixstowe, opp Margery Girling House							—						1816					
Old Felixstowe, adj Beatrice Avenue							—						1820					
Felixstowe, opp Lidl			0833				—		33		1733		—		1832			
Felixstowe Dock, o/s Landguard Fort			0840				—		40		1740		—		1839			
Felixstowe, adj Ordnance House			—				—		—		—		—		—		1934	2000
Felixstowe, adj Anne Street	0756	0826	—	0856		56	—	26	—		—	1756	—	1826	—	1908	1937	2003
Grange Farm, adj Crossgate Field	0803	0833	—	0903		03	—	33	—		—	1803	—	1833	—	1914	1943	2009
Felixstowe, adj Surrey Road	—	—	—	—		—	—	—	—		—	—	—	1838	—	—	1948	—

then at these mins past each hour — until

Saturdays

Service	75	75	75	75
Notes				*
Ipswich, Old Cattle Market Bus Station (A)	2015	2115	2215	2315
Ipswich, Old Cattle Market Bus Station (B)				
Ipswich, Viaduct (E-bound)	2021	2121	2221	2321
California, Ipswich Hospital (1)	2029	2129	2229	2329
Rose Hill, o/s Aldi				
Priory Heath, adj Cranwell Crescent				
Priory Heath, adj Waitrose				
Warren Heath, adj Pearse Way	2035	2135	2235	2335
Trimley St Martin, adj St Martins Green	2047	2147	2247	2347
Ransomes Europark, adj Courtyard Hotel				
Trimley St Martin, o/s Bus Shelter				
Walton, Felixstowe Academy (SW-bound)				
Felixstowe, opp Great Eastern Square	2056	2156	2256	2356
Felixstowe, o/s Great Eastern Square				
Old Felixstowe, opp Beatrice Avenue				
Old Felixstowe, adj Looe Road				
Old Felixstowe, adj Buttermere Green				
Old Felixstowe, opp Margery Girling House				
Old Felixstowe, adj Beatrice Avenue				
Felixstowe, opp Lidl				
Felixstowe Dock, o/s Landguard Fort				
Felixstowe, adj Ordnance House	2100	2200	2300	0000
Felixstowe, adj Anne Street	2103	2203	2303	0003
Grange Farm, adj Crossgate Field	2109	2209	2309	0009
Felixstowe, adj Surrey Road	—	—	2314	0014

Sundays

75		75	77		77	75	75	75	75
0900		00	—		—	1715	1815	2015	2215
			30		1630				
0907		07				1722	1822	2022	2222
0916		16				1729	1829	2029	2229
			39		1639				
			43		1643				
			47		1647				
0924		24	49		1649	1735	1835	2035	2235
0936		36	00		1700	1746	1846	2046	2246
0948		48	12		1712	1755	1855	2055	2255
			18		1718				
			25		1725				
			—		—	1800	1900	2100	2300
0956		56	—		—	1805	1905	2105	2305
1003s		03s	—		—	1811s	1911s	2111s	2311s
—		—	—		—	—	—	—	2316s

then at these mins past each hour — until

Notes: **s** - sets down only

***** - Part or all of this journey operates in the morning of the following day

Please use stops adjacent or opposite Beatrice Avenue on Colneis Road for Grove Medical Centre.

75/76/76A/77/77A Felixstowe - The Trimleys - Ipswich

First in Norfolk & Suffolk

Timetable valid from 02/07/2017

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service	75	75	75	75	77A	75	75	76A	76A	75	77	75	76	75	77	75	76	75
Service Restrictions						NSch	Sch	NSch	Sch									
Old Felixstowe, opp Beatrice Avenue	—	—	—	—	—	—	—	0747	0747	—	—	—	0907	—	—	—	—	—
Old Felixstowe, adj Buttermere Green	—	—	—	—	—	—	—	0752	0752	—	—	—	0914	—	—	—	1014	—
Old Felixstowe, opp Margery Girling House	—	—	—	—	—	—	—	0756	0756	—	—	—	0919	—	—	—	1019	—
Old Felixstowe, adj Beatrice Avenue	—	—	—	—	—	—	—	0800	0800	—	—	—	0922	—	—	—	1022	—
Felixstowe, opp Great Eastern Square	—	—	—	—	—	—	—	0802	0802	—	—	—	0925	—	—	—	1025	—
Felixstowe, opp Surrey Road	0553	0623	0652	0709	—	—	—			—	—	—		—	—	—		—
Felixstowe, adj Anne Street	0555	0625	0654	0711	—	0732	0732			0818	—	0855		0923	—	0955		1023
Grange Farm, adj Crossgate Field	0601	0631	0700	0719	—	0741	0741			0826	—	0906		0933	—	1006		1033
Felixstowe, adj Ordnance House	|	|	|	|	—	|	|	|	|	|	—	|	|	|	—	|	|	|
Felixstowe Dock, adj Landguard Fort	|	|	|	|	0723	|	|	|	|	|	0848	|	|	|	0948	|	|	|
Felixstowe, adj Lidl	|	|	|	|	0733	|	|	|	|	|	0855	|	|	|	0955	|	|	|
Felixstowe, o/s Great Eastern Square	0610	0640	0710	0730	0740	0755	0755	0810	0810	0840	0905	0920	0935	0950	1005	1020	1035	1050
Walton, Felixstowe Academy (SW-bound)	|	|	|	|	|	|	0801	|	0816	|	|	|	|	|	|	|	|	|
Trimley St Martin, opp St Martins Green	0619	0649	0722	0742	0751	0806	0809	0821	0824	0851	0916	0931	0946	1001	1016	1031	1046	1101
Warren Heath, opp Pearse Way	0631	0701	0734	0754	|	0820	0823	|	|	0903	0928	0943	0958	1013	1028	1043	1058	1113
California, Ipswich Hospital (1)	0636	0706	0740	0803	|	0828	0831	|	|	0911	|	0951	|	1021	|	1051	|	1121
Ipswich, Viaduct (W-bound)	0642	0712	0747	0810	|	0836	0839	|	|	0918	|	0958	|	1028	|	1058	|	1128
Warren Heath, adj Euro Retail Park	|	|	|	|	|	|	|	|	|	|	0929	|	0959	|	1029	|	1059	|
Priory Heath, opp Waitrose	|	|	|	|	|	|	|	|	|	|	0930	|	1000	|	1030	|	1100	|
Ransomes Europark, opp Courtyard Hotel	|	|	|	|	0801	|	|	0832	0835	|	|	|	|	|	|	|	|	|
Ransomes Europark, adj Courtyard Hotel	|	|	|	|	0802	|	|	0833	0836	|	|	|	|	|	|	|	|	|
Priory Heath, opp Cranwell Crescent	|	|	|	|	0807	|	|	0838	0841	|	0934	|	1004	|	1034	|	1104	|
Rose Hill, opp Aldi	|	|	|	|	0811	|	|	0842	0845	|	0938	|	1008	|	1038	|	1108	|
Ipswich, Tower Ramparts Bus Station (FF)	0646	0716	0755	0823	0825	0852	0855	0855	0858	0928	0951	1005	1021	1035	1051	1105	1121	1135
Ipswich, Old Cattle Market Bus Station (A)	0651	0721	0800	0828	|	0857	0900	|	|	0933	|	1010	|	1040	|	1110	|	1140
Ipswich, Old Cattle Market Bus Station (B)	—	—	—	—	0830	—	—	0900	0903	—	0956	—	1026	—	1056	—	1126	—

Mondays to Fridays

Service	77	75	76	75	77	75	76	75	77	75	76	75	77	75	76	75	75	77
Service Restrictions																NSch	Sch	
Old Felixstowe, opp Beatrice Avenue	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Old Felixstowe, adj Buttermere Green	—	—	1114	—	—	—	1214	—	—	—	1314	—	—	—	1414	—	—	—
Old Felixstowe, opp Margery Girling House	—	—	1119	—	—	—	1219	—	—	—	1319	—	—	—	1419	—	—	—
Old Felixstowe, adj Beatrice Avenue	—	—	1122	—	—	—	1222	—	—	—	1322	—	—	—	1422	—	—	—
Felixstowe, opp Great Eastern Square	—	—	1125	—	—	—	1225	—	—	—	1325	—	—	—	1425	—	—	—
Felixstowe, opp Surrey Road	—	—	|	—	—	—	|	—	—	|	|	—	—	—	|	—	—	—
Felixstowe, adj Anne Street	—	1055	|	1123	—	1155	|	1223	—	1255	|	1323	—	1356	|	1426	1426	—
Grange Farm, adj Crossgate Field	—	1106	|	1133	—	1206	|	1233	—	1306	|	1333	—	1406	|	1436	1436	—
Felixstowe, adj Ordnance House	—	|	|	|	—	|	|	|	—	|	|	|	—	|	|	|	|	—
Felixstowe Dock, adj Landguard Fort	1048	|	|	|	1148	|	|	|	1248	|	|	|	1348	|	|	|	|	1448
Felixstowe, adj Lidl	1055	|	|	|	1155	|	|	|	1255	|	|	|	1355	|	|	|	|	1455
Felixstowe, o/s Great Eastern Square	1105	1120	1135	1150	1205	1220	1235	1250	1305	1320	1335	1350	1405	1420	1435	1450	1450	1505
Walton, Felixstowe Academy (SW-bound)	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	1455	|
Trimley St Martin, opp St Martins Green	1116	1131	1146	1201	1216	1231	1246	1301	1316	1331	1346	1401	1416	1431	1446	1501	1504	1516
Warren Heath, opp Pearse Way	1128	1143	1158	1213	1228	1243	1258	1313	1328	1343	1358	1413	1428	1443	1458	1513	1516	1528
California, Ipswich Hospital (1)	|	1151	|	1221	|	1251	|	1321	|	1351	|	1421	|	1451	|	1521	1524	|
Ipswich, Viaduct (W-bound)	|	1158	|	1228	|	1258	|	1328	|	1358	|	1428	|	1458	|	1528	1531	|
Warren Heath, adj Euro Retail Park	1129	|	1159	|	1229	|	1259	|	1329	|	1359	|	1429	|	1459	|	|	1529
Priory Heath, opp Waitrose	1130	|	1200	|	1230	|	1300	|	1330	|	1400	|	1430	|	1500	|	|	1530
Ransomes Europark, opp Courtyard Hotel	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Ransomes Europark, adj Courtyard Hotel	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Priory Heath, opp Cranwell Crescent	1134	|	1204	|	1234	|	1304	|	1334	|	1404	|	1434	|	1504	|	|	1534
Rose Hill, opp Aldi	1138	|	1208	|	1238	|	1308	|	1338	|	1408	|	1438	|	1508	|	|	1538
Ipswich, Tower Ramparts Bus Station (FF)	1151	1205	1221	1235	1251	1305	1321	1335	1351	1405	1421	1435	1451	1505	1521	1535	1538	1551
Ipswich, Old Cattle Market Bus Station (A)	|	1210	|	1240	|	1310	|	1340	|	1410	|	1440	|	1510	|	1540	1543	|
Ipswich, Old Cattle Market Bus Station (B)	1156	—	1226	—	1256	—	1326	—	1356	—	1426	—	1456	—	1526	—	—	1556

Mondays to Fridays

Service	75	76	75	77	75	76	75	77	75	76	75	77	75	75	75	75	75
Old Felixstowe, opp Beatrice Avenue	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Old Felixstowe, adj Buttermere Green	—	1519	—	—	—	1619	—	—	—	1726	—	—	—	—	—	—	—
Old Felixstowe, opp Margery Girling House	—	1524	—	—	—	1624	—	—	—	1730	—	—	—	—	—	—	—
Old Felixstowe, adj Beatrice Avenue	—	1527	—	—	—	1627	—	—	—	1733	—	—	—	—	—	—	—
Felixstowe, opp Great Eastern Square	—	1530	—	—	—	1630	—	—	—	1735	—	—	—	—	—	—	—
Felixstowe, opp Surrey Road	—	|	—	—	—	|	—	—	|	—	—	—	—	—	—	—	—
Felixstowe, adj Anne Street	1456	|	1526	—	1601	|	1631	—	1710	|	1740	—	1810	1908	2003	2103	2203
Grange Farm, adj Crossgate Field	1506	|	1536	—	1611	|	1641	—	1718	|	1748	—	1818	1918	2013	2113	2213
Felixstowe, adj Ordnance House	|	|	|	—	|	|	|	—	|	|	|	—	1824	1924	2019	2119	2219
Felixstowe Dock, adj Landguard Fort	|	|	|	1553	|	|	|	1653	|	|	|	1754	|	|	|	|	|
Felixstowe, adj Lidl	|	|	|	1600	|	|	|	1700	|	|	|	1800	|	|	|	|	|
Felixstowe, o/s Great Eastern Square	1520	1540	1550	1610	1625	1640	1653	1710	1730	1745	1800	1810	1830	1930	2025	2125	2225
Walton, Felixstowe Academy (SW-bound)	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Trimley St Martin, opp St Martins Green	1531	1551	1601	1621	1636	1651	1703	1721	1740	1755	1810	1820	1839	1938	2033	2133	2233
Warren Heath, opp Pearse Way	1543	1603	1613	1633	1648	1703	1715	1733	1752	1807	1822	1832	1851	1949	2044	2144	2244
California, Ipswich Hospital (1)	1551	|	1621	|	1656	|	1725	|	1802	|	1829	|	1857	1955	2050	2150	2250
Ipswich, Viaduct (W-bound)	1558	|	1628	|	1703	|	1732	|	1809	|	1836	|	1904	2001	2056	2156	2256
Warren Heath, adj Euro Retail Park	|	1604	|	1634	|	1704	|	1734	|	1808	|	1833	|	|	|	|	|
Priory Heath, opp Waitrose	|	1605	|	1635	|	1705	|	1735	|	1809	|	1834	|	|	|	|	|
Ransomes Europark, opp Courtyard Hotel	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Ransomes Europark, adj Courtyard Hotel	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|
Priory Heath, opp Cranwell Crescent	|	1609	|	1639	|	1709	|	1739	|	1813	|	1838	|	|	|	|	|
Rose Hill, opp Aldi	|	1613	|	1643	|	1713	|	1743	|	1817	|	1842	|	|	|	|	|
Ipswich, Tower Ramparts Bus Station (FF)	1605	1626	1637	1656	1712	1726	1741	1756	1816	1830	1842	1853	1908	2005	2100	2200	2300
Ipswich, Old Cattle Market Bus Station (A)	1610	|	1642	|	1717	|	1746	|	1821	|	1847	|	1913	2009	2104	2204	2304
Ipswich, Old Cattle Market Bus Station (B)	—	1631	—	1701	—	1731	—	1801	—	1835	—	1858	—	—	—	—	—	

Service Restrictions: **NSch** - Not School Days
Sch - School Days Only

Suffolk 02/07/2017

Please use stops adjacent or opposite Beatrice Avenue on Colneis Road for Grove Medical Centre.

75/76/76A/77/77A Felixstowe - The Trimleys - Ipswich

First in Norfolk & Suffolk

Timetable valid from 02/07/2017

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Saturdays

Service	75	75	77	75	76	75	77	75	76		76	75	77	75		75	76	75
Old Felixstowe, opp Beatrice Avenue	—	—	—	—	0808	—	—	—	—		—	—	—	—		—	—	—
Old Felixstowe, adj Buttermere Green	—	—	—	—	0814	—	—	—	0914		14	—	—	—		—	1714	—
Old Felixstowe, opp Margery Girling House	—	—	—	—	0819	—	—	—	0919		19	—	—	—		—	1719	—
Old Felixstowe, adj Beatrice Avenue	—	—	—	—	0822	—	—	—	0922		22	—	—	—		—	1722	—
Felixstowe, opp Great Eastern Square	—	—	—	—	0825	—	—	—	0925		25	—	—	—		—	1725	—
Felixstowe, opp Surrey Road	0615	0713	—	—		—	—	—				—	—	—		—		—
Felixstowe, adj Anne Street	0617	0715	—	0756		0826	—	0856				26	—	56		1656		1726
Grange Farm, adj Crossgate Field	0622	0720	—	0806		0836	—	0906				36	—	06		1706		1736
Felixstowe, adj Ordnance House			—				—						—					
Felixstowe Dock, adj Landguard Fort			0748				0848						48					
Felixstowe, adj Lidl			0755				0855			then			55					
Felixstowe, o/s Great Eastern Square	0630	0730	0805	0820	0835	0850	0905	0920	0935	at	35	50	05	20		1720	1735	1750
Walton, Felixstowe Academy (SW-bound)										these								
Trimley St Martin, opp St Martins Green	0637	0738	0816	0831	0846	0901	0916	0931	0946	mins	46	01	16	31	until	1731	1746	1801
Warren Heath, opp Pearse Way	0649	0750	0828	0843	0858	0913	0928	0943	0958	past	58	13	28	43		1743	1758	1813
California, Ipswich Hospital (1)	0656	0758		0851		0921		0951		each		21		51		1751		1821
Ipswich, Viaduct (W-bound)	0702	0804		0858		0928		0958		hour		28		58		1758		1828
Warren Heath, adj Euro Retail Park			0829		0859		0929		0959		59		29				1759	
Priory Heath, opp Waitrose			0830		0900		0930		1000		00		30				1800	
Ransomes Europark, opp Courtyard Hotel																		
Ransomes Europark, adj Courtyard Hotel																		
Priory Heath, opp Cranwell Crescent			0834		0904		0934		1004		04		34				1804	
Rose Hill, opp Aldi			0838		0908		0938		1008		08		38				1808	
Ipswich, Tower Ramparts Bus Station (FF)	0707	0811	0851	0905	0921	0935	0951	1005	1021		21	35	51	05		1805	1821	1835
Ipswich, Old Cattle Market Bus Station (A)	0712	0816		0910		0940		1010				40		10		1810		1840
Ipswich, Old Cattle Market Bus Station (B)	—	—	0856	—	0926	—	0956	—	1026		26	—	56	—		—	1826	—

Saturdays

Service	77	75	75	75	75	75
Old Felixstowe, opp Beatrice Avenue	—	—	—	—	—	—
Old Felixstowe, adj Buttermere Green	—	—	—	—	—	—
Old Felixstowe, opp Margery Girling House	—	—	—	—	—	—
Old Felixstowe, adj Beatrice Avenue	—	—	—	—	—	—
Felixstowe, opp Great Eastern Square	—	—	—	—	—	—
Felixstowe, opp Surrey Road	—	—	—	—	—	—
Felixstowe, adj Anne Street	—	1756	1908	2003	2103	2203
Grange Farm, adj Crossgate Field	—	1806	1918	2013	2113	2213
Felixstowe, adj Ordnance House	—	1812	1924	2019	2119	2219
Felixstowe Dock, adj Landguard Fort	1748					
Felixstowe, adj Lidl	1755					
Felixstowe, o/s Great Eastern Square	1805	1818	1930	2025	2125	2225
Walton, Felixstowe Academy (SW-bound)						
Trimley St Martin, opp St Martins Green	1816	1827	1938	2033	2133	2233
Warren Heath, opp Pearse Way	1828	1839	1949	2044	2144	2244
California, Ipswich Hospital (1)		1845	1955	2050	2150	2250
Ipswich, Viaduct (W-bound)		1852	2001	2056	2156	2256
Warren Heath, adj Euro Retail Park	1829					
Priory Heath, opp Waitrose	1830					
Ransomes Europark, opp Courtyard Hotel						
Ransomes Europark, adj Courtyard Hotel						
Priory Heath, opp Cranwell Crescent	1834					
Rose Hill, opp Aldi	1838					
Ipswich, Tower Ramparts Bus Station (FF)	1851	1856	2005	2100	2200	2300
Ipswich, Old Cattle Market Bus Station (A)		1901	2009	2104	2204	2304
Ipswich, Old Cattle Market Bus Station (B)	1856	—	—	—	—	—

Sundays

75	77		77	75		75	77	75	75	75
—	—		—	—		—	—	—	—	—
—	—		—	—		—	—	—	—	—
—	—		—	—		—	—	—	—	—
—	—		—	—		—	—	—	—	—
—	—		—	—		—	—	—	—	—
—	—		—	—		—	—	—	—	—
0901	—		—	—		—	—	—	—	—
0903	—		—	56		1656	—	1805	1905	2105
0906	—		—	06		1706	—	1813	1913	2113
	—		—				—	1819	1919	2119
	0933		33				1733			
	0940		40				1740			
0920	0950		50	20		1720	1750	1825	1925	2125
0931	1001	then	01	31		1731	1801	1833	1933	2133
0943	1013	at	13	43		1743	1813	1844	1944	2144
0951		these		51		1751		1850	1950	2150
0958		mins		58	until	1758		1856	1956	2156
	1014	past	14				1814			
	1015	each	15				1815			
		hour								
	1019		19				1819			
	1023		23				1823			
1005	1036		36	05		1805	1836	1905	2005	2205
1010				10		1810		1909	2009	2209
—	1041		41	—		—	1841	—	—	—

Suffolk 02/07/2017

Please use stops adjacent or opposite Beatrice Avenue on Colneis Road for Grove Medical Centre.

978 Northgate High School - Trimley - Felixstowe

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service Restrictions	Sch
Notes	1
Rushmere, Northgate School (Entrance)	**1520**
Rushmere, o/s St Albans School	**1530**
California, opp Heath Road Hospital	**1534**
St Augustines, nr Church	**1538**
Warren Heath, nr Trinity Park	**1540**
Nacton, opp The Street	**1544**
Trimley St Martin, adj Hand in Hand	**1549**
Trimley St Mary, opp Three Mariners	**1551**
Walton, opp Half Moon	**1554**
Felixstowe, opp Leopold Road	**1556**
Felixstowe, o/s Great Eastern Square	**1600**
Old Felixstowe, adj Buttermere Green	**1605**
Old Felixstowe, opp Margery Girling House	**1610**
Old Felixstowe, adj Looe Road	**1612**

Saturdays

no service

Sundays

no service

Service Restrictions: **Sch** - School Days Only

Notes: **1** - Sponsored by Suffolk County Council

978 Felixstowe - Trimley - Northgate High School

First in Norfolk & Suffolk

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service Restrictions	Sch
Notes	1
Old Felixstowe, adj Buttermere Green	**0750**
Old Felixstowe, opp Margery Girling House	**0755**
Old Felixstowe, adj Looe Road	**0757**
Felixstowe, opp Great Eastern Square	**0800**
Felixstowe, adj Leopold Road	**0803**
Walton, adj Half Moon	**0809**
Trimley St Mary, adj Three Mariners	**0814**
Trimley St Martin, opp Hand in Hand	**0817**
Nacton, adj The Street	**0823**
Warren Heath, opp Trinity Park	**0826**
St Augustines, adj St Augustines Gardens	**0830**
Rushmere, adj Hospital	**0836**
Rushmere, Northgate School (Entrance)	**0842**

Saturdays

no service

Sundays

no service

Service Restrictions: **Sch** - School Days Only

Notes: **1** - Sponsored by Suffolk County Council

OC7 Felixstowe - Woodbridge - Otley College

Beestons

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service Restrictions	Col
Felixstowe, adj Coach Park	**0745**
Felixstowe, adj Church	**0746**
Felixstowe, o/s Cinema	**0748**
Felixstowe, o/s Great Eastern Square	**0750**
Walton, adj Half Moon	**0753**
Trimley St Mary, adj Three Mariners	**0756**
Trimley St Martin, adj Bus Shelter	**0759**
Kirton, o/s White Horse	**0803**
Bucklesham, School (N-bound)	**0810**
Martlesham Heath, Eagle Way (W-bound)	**0814**
Woodbridge, Duke of York (E-bound)	**0820**
Woodbridge, adj Framfield Medical Centre	**0821**
Woodbridge, opp Deben Pool	**0823**
Woodbridge, adj Museum	**0826**
Woodbridge, adj Naunton Road	**0830**
Grundisburgh, adj The Dog	**0839**
Otley, College (Side Entrance)	**0850**

Saturdays

no service

Sundays

no service

Spring Bank Holiday (Monday 28th May)

no service

Service Restrictions: **Col** - Otley College Days Only

OC7 Otley College - Woodbridge - Felixstowe

Beestons

Direction of stops: where shown (eg: W-bound) this is the compass direction towards which the bus is pointing when it stops

Mondays to Fridays

Service Restrictions	Col
Otley, College (Side Entrance)	1640
Grundisburgh, opp The Dog	1651
Woodbridge, opp Naunton Road	1700
Woodbridge, opp Museum	1703
Woodbridge, adj Deben Pool	1710
Woodbridge, opp Framfield Medical Centre	1711
Woodbridge, Duke of York (W-bound)	1713
Martlesham Heath, Eagle Way (W-bound)	1719
Bucklesham, School (S-bound)	1723
Kirton, adj Bus Shelter	1730
Trimley St Martin, o/s Bus Shelter	1734
Trimley St Mary, opp Three Mariners	1737
Walton, opp Half Moon	1740
Felixstowe, opp Great Eastern Square	1743
Felixstowe, o/s Conkers	1745
Felixstowe, opp Church	1747
Felixstowe, adj Coach Park	1750

Saturdays

no service

Sundays

no service

Spring Bank Holiday (Monday 28th May)

no service

Service Restrictions: **Col** - Otley College Days Only

APPENDIX F

safer roads for everyone

Howlett Way, Trimley, Felixstowe, Suffolk

Road Safety Audit Stage 1

on behalf of
Development Transport Planning Limited

TMS reference no: 14568

THE CHARTERED INSTITUTION OF HIGHWAYS & TRANSPORTATION

INSTITUTE OF HIGHWAY ENGINEERS

ISO 9001 REGISTERED

Unit 1b, Sovereign Court 2,
University of Warwick Science Park,
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Howlett Way, Trimley, Felixstowe, Suffolk

Road Safety Audit Stage 1

1. Introduction

1.1 This report describes a Stage 1 Road Safety Audit carried out at Howlett Way, Trimley, Felixstowe, Suffolk, on behalf of Development Transport Planning Limited. The audit was carried out on 25th October 2018 in the offices of TMS Consultancy.

1.2 The audit team members were as follows:-

Audit Team Leader

Phil Cook – BSc, CEng, MICE, MCIHT, FIHE
Highways England Approved RSA Certificate of Competency
Director, TMS Consultancy

Audit Team Member

Richard Cook - BA (Hons)
Graduate Engineer, TMS Consultancy

1.3 The audit comprised an examination of the documents listed in **Appendix A**. The Road Safety Audit was undertaken in accordance with the Brief provided by Andy Jenkinson, Development Transport Planning Limited. The site was visited by the Audit Team on 2nd October 2018 at 15.15. The weather was sunny and dry. Traffic flows were medium. Pedestrian and cycle flows were low.

1.4 The terms of reference of the audit are as described in HD 19/15. The team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the design to any other criteria.

1.5 All of the problems described in this report are considered by the audit team to require action in order to improve the safety of the scheme and minimise accident occurrence. The locations of specific problems are referenced on the plan in **Appendix B**.

1.6 The scheme consists of a proposed new roundabout on Howlett way to serve a development of up to 360 dwellings. The scheme also includes improvements to the highway both on Howlett Way and High Road.

2. Items resulting from this Stage 1 Audit

2.1 PROBLEM

Location – Proposed Roundabout, Howlett Way

Summary: Risk of excess speed related collisions causing injury to vehicle occupants

The entry path curvature exceeds 70m for both west bound and east bound vehicles on the proposed roundabout on Howlett Way. As this is a 40mph urban road DMRB TD 16/07 recommends that the entry path radius should not exceed 70m. The proposed layout could lead to vehicles entering the roundabout at excess speed and loss of control/speed related collisions may occur. It is noted that the 85th percentile speeds for Howlett way both eastbound and westbound are between 30-35mph.

RECOMMENDATION
The entry path for the eastern and western arms should be re-aligned as to not exceed the recommended 70m radius.

2.2 PROBLEM

Location – Existing roundabout, High Road

Summary: Risk of circulatory collisions causing injury to vehicle occupants

The give way markings on the northern and eastern arms of the existing roundabout on High Road are not in line with the hatching on the circulatory. This may lead to confusion for users who may then 'overshoot' the give way line and enter the circulatory. This could lead to collisions between vehicles on the circulatory and those waiting at the arms of the roundabout.

RECOMMENDATION
The give way lines should be amended to be in line with the hatching on the circulatory or the hatching removed.

2.3 PROBLEM

Location – Existing roundabout, High Road

Summary: Risk of hazard to pedestrians

There is signage located at the proposed improvements to the pedestrian crossing of the eastern arm of the existing roundabout on High Road. It is not noted on the plans where these signs will be located in relation to the improvements to the crossing. If they are not located in a suitable location then they may cause a hazard to pedestrians, especially those who are visually or mobility impaired.

RECOMMENDATION
It should be made clear as to where the signs will be located/relocated, and they should be so in a place where they do not pose a hazard to pedestrians.

2.4 PROBLEM

Location – Proposed Roundabout, Howlett Way

Summary: Risk of darkness related collisions causing injury to vehicle occupants

It is not noted on the plans whether there will be any additional lighting provided at the location of the proposed roundabout. If the roundabout is not adequately lit, then there is a risk of darkness related collisions potentially causing injury to the vehicle occupants.

RECOMMENDATION
Street lighting should be provided.

2.5 PROBLEM

Location – Proposed zebra crossing

Summary: Risk of injury to visually impaired users

The arrangement for the tactile paving stems at the proposed zebra crossing on High Road is incorrect with the required 'L' shape reversed. This may cause confusion for visually impaired users, potentially resulting in injury to them.

RECOMMENDATION
The stems for the tactile paving should be amended so the recommended orientation for 'L' arrangement.

2.6 PROBLEM

Location – Proposed pedestrian crossing, eastern end of Howlett Way

Summary: Risk of vehicle collisions causing injury to occupants and pedestrians

There appears to be bollards on the refuge but it is not clear what type they are. Without keep left bollards a driver may not see the refuge island, potentially causing injury to the vehicle occupants and pedestrians using the crossing. This risk is much greater during the hours of darkness.

RECOMMENDATION
Keep left bollards should be located at each end of the refuge island.

2.7 PROBLEM

Location - Proposed pedestrian crossing, eastern end of Howlett Way

Summary: Risk of vehicle vs pedestrian collisions causing injury to pedestrians.

There is limited visibility to the right, due to vegetation, for pedestrians heading northbound at the proposed pedestrian crossing. This block in visibility could mean that a pedestrian may not see an oncoming vehicle when using the crossing, increasing the risk of a vehicle vs pedestrian collision, potentially causing injury to the pedestrian.

RECOMMENDATION
The vegetation should be cut back or removed to allow for an adequate visibility splay for pedestrians using the crossing.

2.8 PROBLEM

Location – Proposed pedestrian crossing, eastern end of Howlett Way

Summary: Risk of hazard to pedestrians

There is a pedestrian desire line from the southside of the footway, at the proposed pedestrian crossing, leading into the development. At this location there is not adequate provisions made for pedestrians, especially those who are visually or mobility impaired. Due to the increased footfall which will be generated by the development these provisions may cause a hazard to pedestrians, especially those who are mobility of visually impaired.

RECOMMENDATION
Disabled friendly ramps and steps should be provided at this location as to allow for the safe use for pedestrians, especially those who are visually or mobility impaired.

3. Audit Team Statement

We certify that the terms of reference of the road safety audit are as described in HD 19/15.

Audit Team Leader

Phil Cook – BSc, CEng, MICE, MCIHT, FIHE
Highways England Approved RSA Certificate of Competency
Director, TMS Consultancy

Signed 

Date 26th October 2018

Audit Team Member

Richard Cook - BA (Hons)
Graduate Engineer, TMS Consultancy

Signed 

Date 26th October 2018

TMS Consultancy
Unit 1b, Sovereign Court 2,
University of Warwick Science Park
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Appendix A

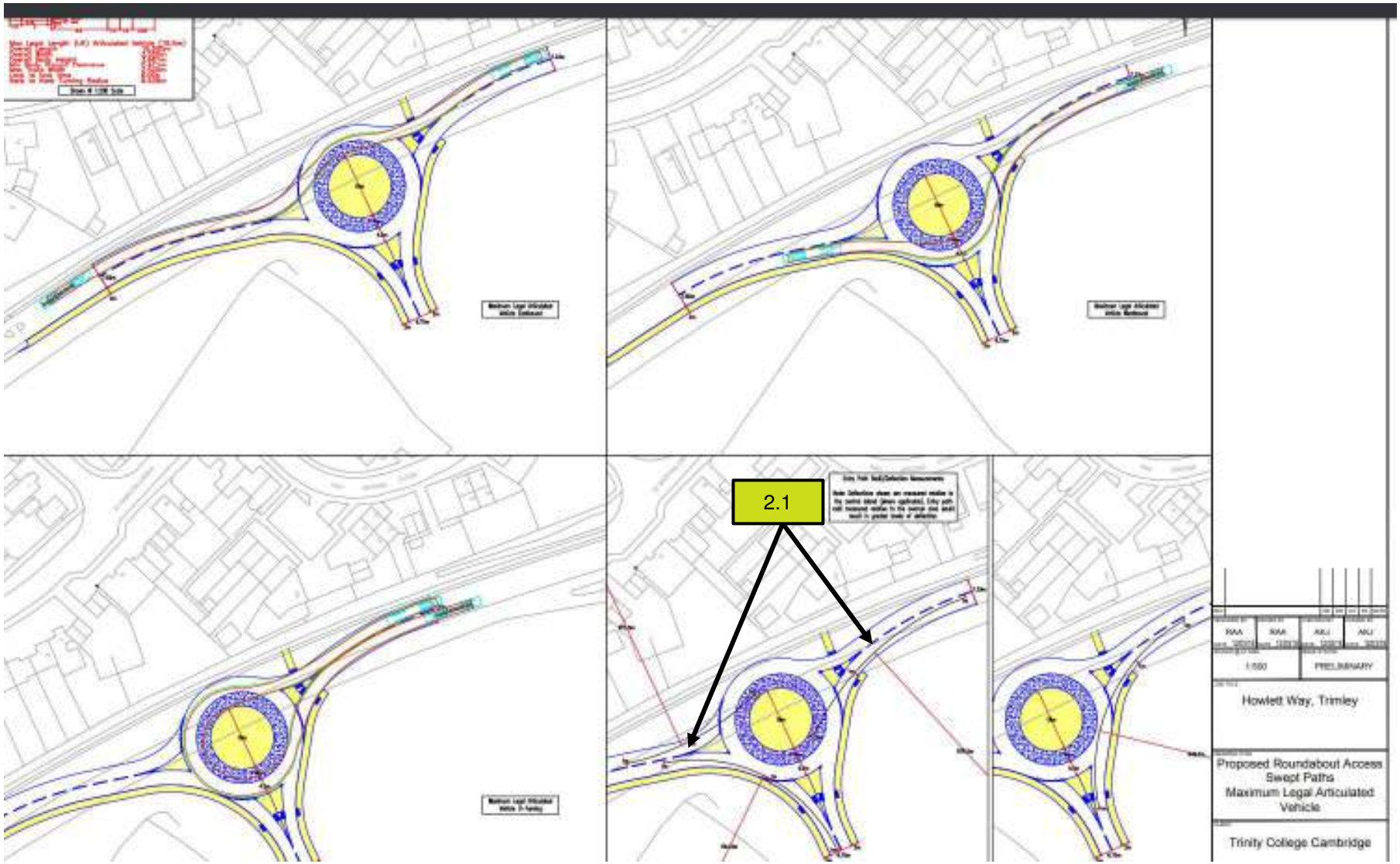
Documents Examined:

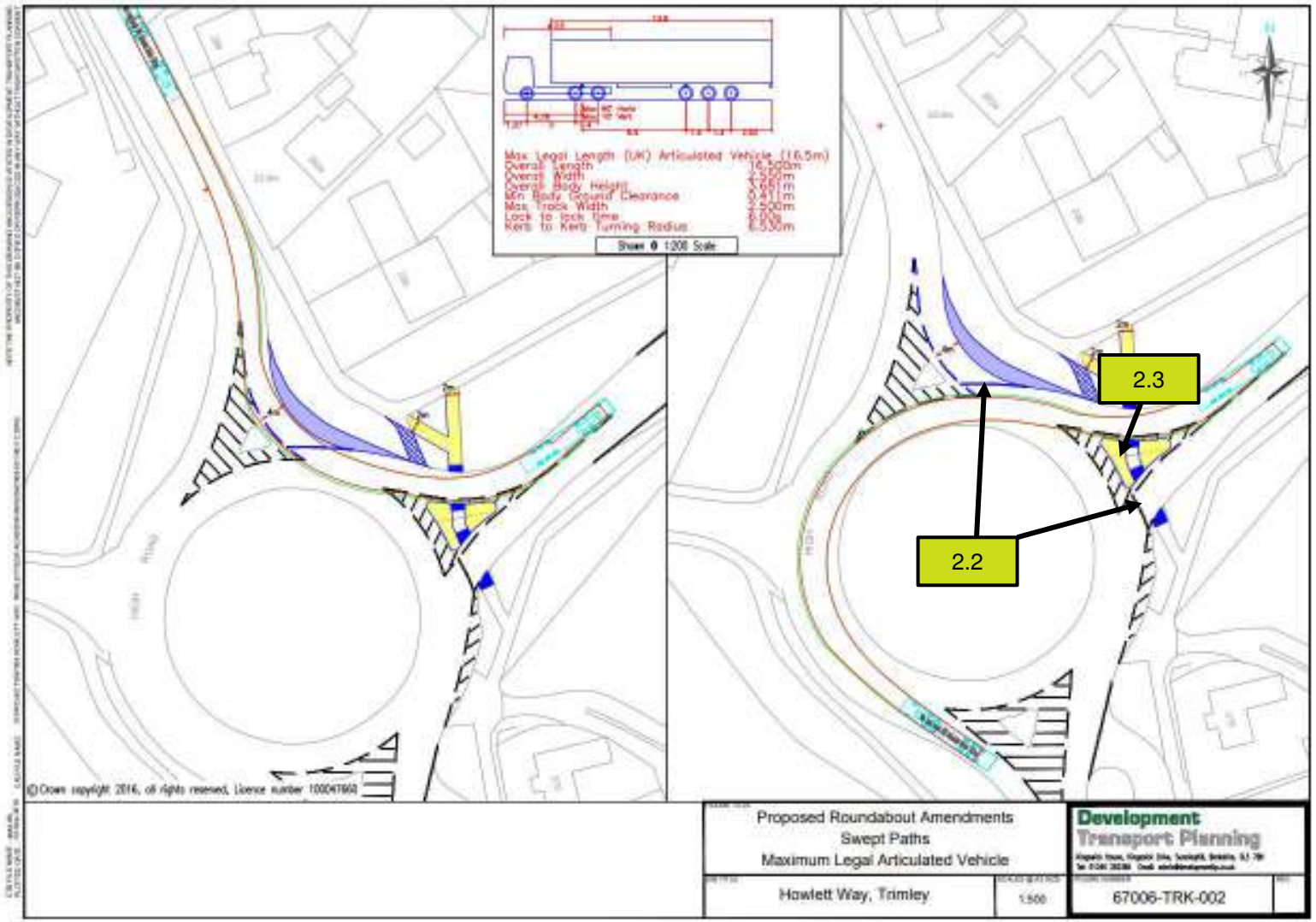
- 3984-LON-JB_Howlett_Way,_Trimley_-_ATC_A_-_Howlett_Way.xlsx
- 3984-LON-JB_Howlett_Way,_Trimley_-_ATC_B_-_Howlett_Way.xlsx
- 67006-001-Local_Site.pdf
- 67006-TA-002_Rev_B_-_Proposed_Roundabout.pdf
- 67006-TA-003_-_Zebra_Crossing.pdf
- 67006-TA-004_Rev_A_-_Rbt_Amendments.pdf
- 67006-TA-005_-_Refuge_Island.pdf
- 67006-TRK-001_-_Access_RBT_Tracks.pdf
- 67006-TRK-002_-_High_Rd_RBT_Tracks.pdf
- C2_-_Trimley_Interchange_Junction_Interpreted_Listing.pdf
- C3_-_Howlett_Way_Interpreted_Listing.pdf
- C4_-_Howlett_Way_Roundabout_Interpreted_Listing.pdf
- C5_High_Road_Howlett_Way_to_Station_Road_Interpreted_Listing.pdf
- RSA1 (Prelim Design) Audit Brief - DTPL Howlett Way.docx
- Site 1 - 23177 Felixstowe ATC Data - Nth of Park View.xls
- Site 1.JPG

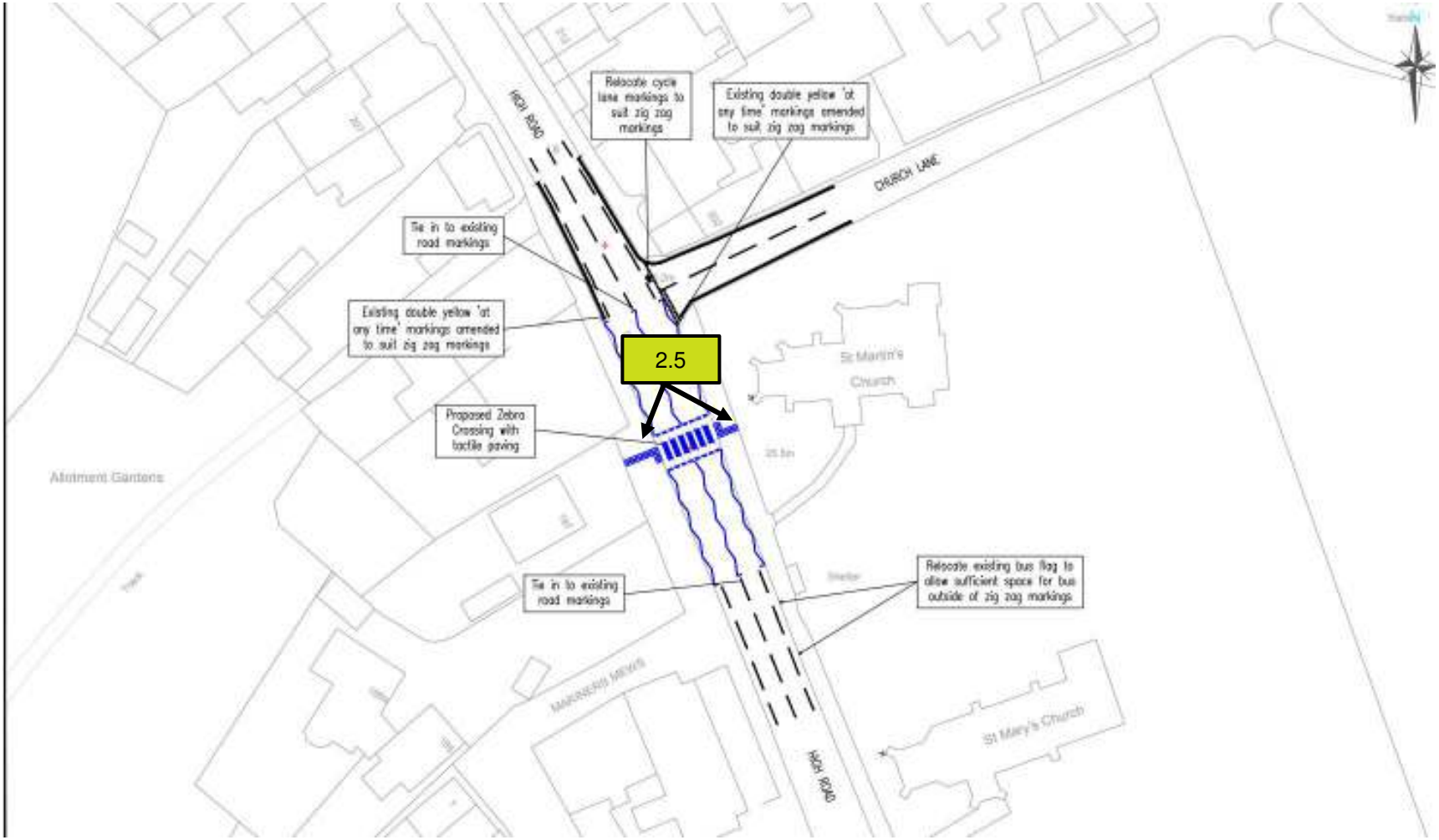
Appendix B

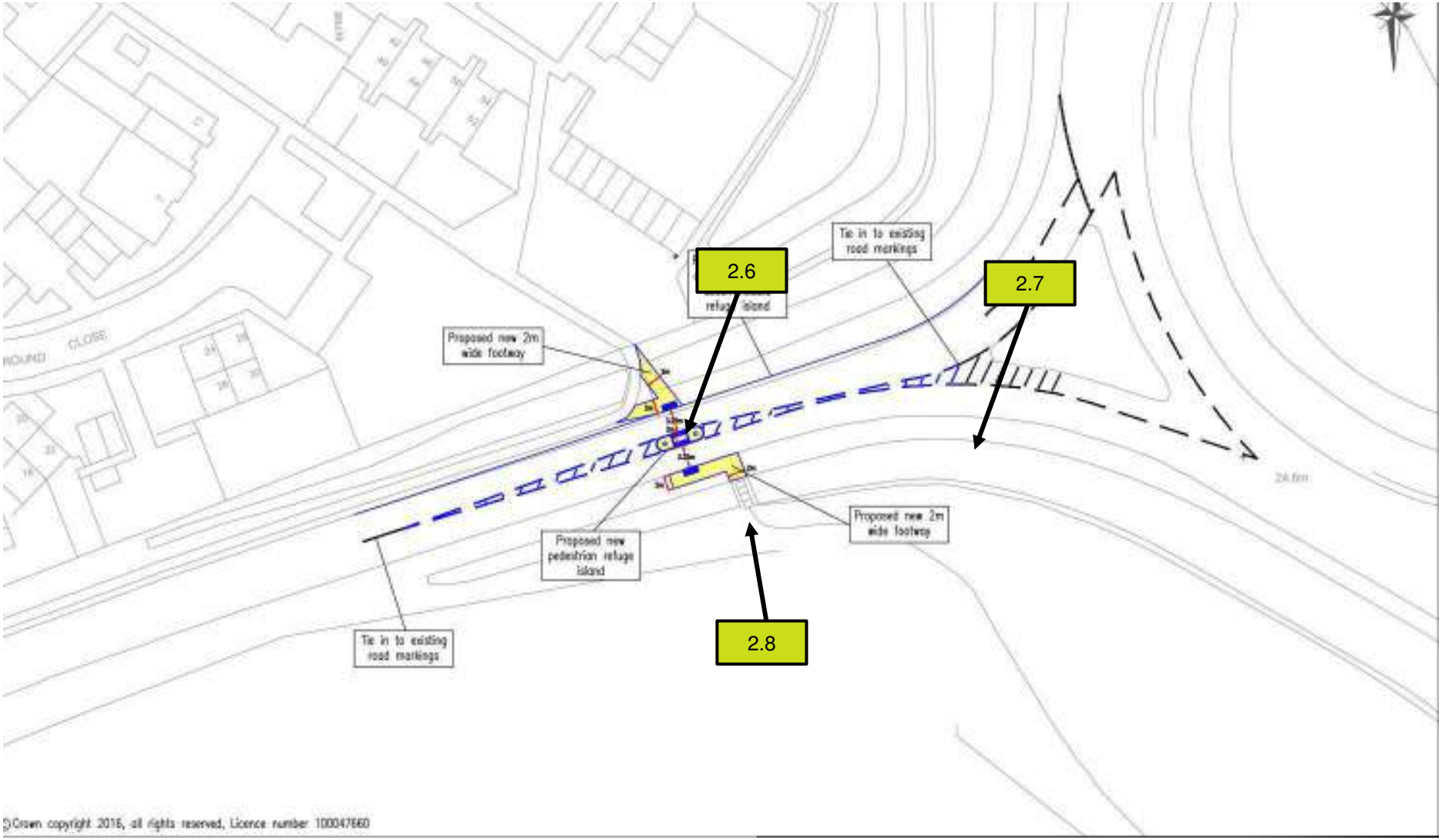
Please refer to the following page for a plan illustrating the locations of the problems identified as part of this audit (location numbers refer to paragraph numbers in the report).

The location of the scheme is shown below:


2.1
Howlett Way, Trimley
Proposed Roundabout Access
Swept Paths
Maximum Legal Articulated
Vehicle
Trinity College Cambridge


Max Legal Length (UK) Articulated Vehicle (16.5m)
Overall Length 16.500m
Overall Width 2.550m
Overall Body Height 4.000m
Min Body Ground Clearance 0.431m
Max Track Width 2.500m
Lock to lock Time 6.00s
Kerb to Kerb Turning Radius 6.530m
Drawn @ 1:200 Scale
2.3
2.2
© Crown copyright 2016, all rights reserved, Licence number 100047960
Proposed Roundabout Amendments
Swept Paths
Maximum Legal Articulated Vehicle
Howlett Way, Trimley
1:500
Development
Transport Planning
67006-TRK-002


HIGH ROAD
Relocate cycle lane markings to suit zig zag markings
Existing double yellow 'at any time' markings amended to suit zig zag markings
CHURCH LANE
Tie in to existing road markings
Existing double yellow 'at any time' markings amended to suit zig zag markings
2.5
St Martin's Church
Proposed Zebra Crossing with tactile paving
Allotment Gardens
Tie in to existing road markings
Relocate existing bus flag to allow sufficient space for bus outside of zig zag markings
St Mary's Church
HIGH ROAD


2.6
2.7
2.8
Tie in to existing road markings
Proposed new 2m wide footway
Proposed new pedestrian refuge island
Proposed new 2m wide footway
Tie in to existing road markings
©Crown copyright 2016, all rights reserved, Licence number 100047660

TMS Designers Response Template

ROAD SAFETY AUDIT STAGE 1

Scheme Title	Howlett Way, Trimley, Felixstowe, Suffolk
Client	Development Transport Planning Ltd
TMS RSA Report Ref No:	**TMS 14568**
Road Safety Audit Team	PC/RCk

Problem Identified (Paragraph No)	**Problem Accepted** (YES/NO)	**Recommendation Accepted** (YES/NO)	**Alternative measure** (describe)
2.1	No	No	DMRB TD16/07 advises that at small Normal and at Compact roundabouts where overrun areas are provided the entry path radius should be measured relative to the perimeter of the overrun area. These deflection paths are all below 70m and are shown on Drawing 67006-TA-002 Rev C.
2.2	No	Uncertain	This is an existing feature of the roundabout following improvements carried out by the highway authority. It is considered that the choice of how the give way line should be marked is a matter for Suffolk CC to decide.
2.3	Yes	Yes	The next stage of the design process will include consideration of signage at the roundabout and what amendments may need to be made including appropriate relocation.
2.4	Yes	Yes	The next stage of the design process will include consideration of street lighting at the roundabout and appropriate improvements will be provided in consultation with the highway authority.
2.5	Yes	Yes	See revised Drawing Number 67006-TA-003 Rev A.
2.6	Yes	Yes	It is intended that the refuge island will be to a standard detail design which will include 'Keep Left' bollards.
2.7	Yes	Yes	This is an existing crossing point and the refuge will improve pedestrian safety when crossing Howlett Way. Cutting back of the vegetation will be included as part of the implementation of the refuge.
2.8	Yes	Yes	An additional length of footway will be provided along Howlett Way as shown on Drawing Number 67006-TA-005 Rev A.

Signed	A K Jenkinson
Job Title	Director
Date	26th October 2018

The completed Designers' Response Form should be issued to the Overseeing Authority for their comments

Please provide a copy of the completed Designers' Response Form to Jan Alcock at TMS info@tmsconsultancy.co.uk (for our information only)

APPENDIX G

Development
Transport Planning

TRINITY COLLEGE CAMBRIDGE

HOWLETT WAY, TRIMLEY

Transport Assessment Scoping Report

Project No. 67006

March 2018

Kingswick House
Kingswick Drive
Ascot
Berkshire
SL5 7BH

CONTENTS..... Page

APPENDICES

FIGURES

DOCUMENT CONTROL SHEET

Issue	Date	Description	Author	Checked
1	13/03/2018	Draft for comment	RAA	AKJ

1.0 INTRODUCTION

1.1 The Felixstowe Peninsula Area Action Plan (2017) identifies a number of sites across the Felixstowe Peninsula which will collectively deliver around 1120 units.

1.2 Trinity College Cambridge (TCC) proposes to develop land off Howlett Way, Trimley St Martin for residential use. Suffolk Coastal District Council (SCDC) has identified the site for residential development within the Felixstowe Peninsula Area Action Plan (adopted January 2017) policy reference FPP7, with an indicative capacity of 'in excess of' 360 dwellings.

1.3 There are a number of proposed residential development sites located in Trimley St Martin and Trimley St Mary, as well as the wider Felixstowe area, with planning applications at varying stages of progression. These include land at Mushroom Farm, High Road (C/13/0219) and land south of Thurmans Lane (DC/16/1107/FUL), which is the western part of allocated site FPP8, both of which are completed.

1.4 Additional local development sites include Land at High Road, Trimley (DC/16/1919/FUL), Land south of High Road, Trimley (DC/16/2119/OUT, policy FPP6 site) and Land adjacent to Mill Farm, Trimley (DC/16/2122/OUT), which is the eastern part of allocated site FPP8. These applications are currently awaiting a decision.

1.5 Trinity College Cambridge has appointed DTPL to advise on the highways and transportation aspects of the proposed development, and to prepare a Transport Assessment report to accompany the application. This scoping report will form the basis for discussion with Suffolk County Council (SCC) and Highways England (HE) to agree the parameters to be used in the Transport Assessment.

2.0 EXISTING AND FUTURE TRAFFIC FLOWS

2.1 For the purposes of assessing traffic impact and calculations of junction capacity, traffic surveys will be commissioned in early 2018 by DTPL at the following locations:

- Turning movement count at High Road/Howlett Way roundabout;
- Turning movement count at A14/Howlett Way roundabout;
- Automatic traffic count on Howlett Way.

2.2 Additionally, local and strategic road networks in Felixstowe have a number of permanent traffic counters. Data from these would also be used where appropriate.

Future Year Forecast Flows

2.3 The basis for assessment would be a future year forecast of traffic flows in 2023 which is five years after the date of the planning application which will be submitted in 2018. The observed flows will be multiplied by factors derived from TEMPro version 7.2 for the local area which comprises Census middle layer output areas (MSOA) 012, 013, 014 and 015. The derived growth factors for car driver are shown in Table 3.1

Table 3.1	MSOA	AM Peak	PM Peak
Urban Principal Roads 2018-2024	012	1.0636	1.0631
	013	1.0781	1.0814
	014	1.0759	1.0765
	015	1.0785	1.0813
	Average	1.0740	1.0756
Rural Trunk Roads 2018-2024	012	1.0865	1.0860
	013	1.1013	1.1047
	014	1.0991	1.0996
	015	1.1017	1.1046
	Average	1.0972	1.1017

3.0 COMMITTED DEVELOPMENTS

3.1 The potential for other developments to take place during the lifetime of a proposed development under consideration is recognised in Transport Assessments by the inclusion of traffic flows arising from committed developments.

3.2 Traffic flows arising from recently completed developments in the local area would typically be included within any subsequent traffic surveys, although this would depend on the level of occupation of the development at the time the survey was undertaken.

3.3 The development at Land at Mushroom Farm (C/13/0129) is now fully occupied and hence represents an existing development. Traffic arising from this development site will be collected in DTPL's proposed traffic surveys and would form part of the existing traffic flow data. Turning counts at the roundabout junction of Howlett Way and High Road would also allow for identification of flows specific to this development for comparison.

3.4 The development at Land south of Thurman's Lane (DC/16/1107/FUL) is now also constructed with only 1 property left to be sold and traffic relating to it will also be collected in the traffic surveys

3.5 The committed developments which are not yet occupied are:

a) Walton Green South, High Street, Walton – 190 Dwellings – DC/13/3821/OUT
b) Land north of Walton High Street, Walton – 385 Dwellings – DC/16/2778/OUT
c) Land at Candlet Road, Felixstowe – 560 Dwellings – DC/15/1128/OUT

3.6 Traffic flows for each of the above developments will be obtained from their respective approved Transport Assessments and included within the traffic impact assessment.

4.0 PROPOSED DEVELOPMENT TRAVEL

4.1 It is proposed to develop the land at Howlett Way, Trimley for residential use which has been assessed as having potential for in excess of 360 dwellings and for the purpose of this scoping report, this number has been assumed.

4.2 Any new residential development will lead to additional travel by all modes, including walking, cycling by public transport and by car. It is standard practice to assess the potential impact using surveys of existing developments and the TRICS database is commonly use to derive trip rates to be applied to the proposed development. This approach has been taken for this proposed development and the process of derivation is described below.

4.3 The TRICS category for Private Houses was used as the starting point for the derivation of trip rates. The development will include up to 30% of homes designated as affordable and such properties normally result in lower vehicle trip rates. However, for the purpose of assessment of the development it is proposed to make no adjustment to take account of the affordable units.

4.4 The site selection process excluded surveys in Greater London and Ireland and included only sites in suburban and edge of town locations. The minimum size was selected as 50 dwellings to remove small developments that may not be representative of the large scale development proposed. This selection process resulted in 19 surveys on weekdays of which one was automatically removed as a duplicate survey. The remaining 18 were reviewed to ensure that the developments were consistent with that proposed here.

4.5 The review showed that nine sites included percentages of flats ranging between about 8% and 23%. It is possible that the development may include a number of flats but the exact composition is not yet known. To assess the effects of including sites with flats in the selection for the derivation of vehicle trip rates, these have been calculated both with and without the site with flats.

4.6 The TRICS output is attached at Appendix A and the peak hour rates are summarised in Table 5.1 below.

Table 5.1	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Houses (No Flats)	0.094	0.338	0.432	0.296	0.152	0.448
All Sites	0.129	0.388	0.517	0.330	0.167	0.497

4.7 Table 5.1 shows that the vehicle trip rates excluding the sites with flats are lower than with the site with flats included. This result is somewhat counter-intuitive as it would be expected that houses would be more likely occupied by families and would generate more travel as a result.

4.8 As a check that the vehicle trip rates shown in Table 5.1 are realistic and appropriate, a review has been made of the Transport Assessments submitted as part of recent planning applications for residential developments in the area. These are set out in Table 5.2.

Table 5.2	AM Peak			PM Peak		
Development	In	Out	Total	In	Out	Total
Thurmans Lane (W)	0.157	0.392	0.549	0.336	0.197	0.533
North of High Road	0.159	0.391	0.551	0.333	0.203	0.536
Mill Farm, Trimley	0.147	0.409	0.556	0.353	0.166	0.519
North of Candlet Road	0.142	0.408	0.550	0.365	0.224	0.589
Averages	0.151	0.400	0.552	0.347	0.198	0.544

4.9 Comparison of Tables 5.1 and 5.2 shows that the vehicle trip rates used in the submitted Transport Assessments which have been accepted by Suffolk County Council as appropriate are all higher than those derived as part of this Scoping Report. These differences are likely to be due to changes in the data available on the TRICS database and the selection processes used in each case. It is not the purpose of this report to review in detail the data used in other reports and no attempt has been made to identify specific reasons for the differences.

4.10 However, it is necessary to decide upon a specific vehicle trip rate for use in the TA report. Given there is a range of similar vehicle trip rates that have previously been found acceptable by Suffolk CC for residential developments and that there is no reason to prefer the vehicle trip rates used for any of these previous development over the others it has been decided to use the average of the vehicle trip rates presented in Table 5.2.

4.11 These are higher than those derived in this scoping report using TRICS, but further ensure that the Transport Assessment will be robust. The vehicle movements that would arise for a development of 360 dwellings are shown in Table 5.3 for the higher of the Scoping Report derived trip rates and the average of those used for the other sites.

Table 5.3	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
SR Trip Rates	46	140	186	119	60	161
Average Trip Rates	54	144	199	125	71	196

Trip Rates for other Travel Modes

4.12 The assessment of travel associated with the proposed development will include travel by modes other than by car and trip rates for these modes can be derived using TRICS. The non-vehicle trips have been calculated using the Trip rates derived in this Scoping Report using the TRICS output which includes sites with a proportion of flats.

4.13 The derived trip rates and calculated numbers of trips are shown in Table 5.4.

Table 5.4	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Walking	0.030	0.141	0.171	0.077	0.035	0.082
	11	51	62	28	13	31
Cycling	0.002	0.012	0.014	0.013	0.009	0.022
	1	4	5	5	3	8
Public Transport	0.001	0.016	0.017	0.013	0.002	0.015
	0	6	6	5	1	6

4.14 The number of public transport trips shown is very low and by way of comparison, the mode share for journeys to work from Census 2011, attached at Appendix B has been examined. That shows that for residents in the vicinity of the site, about 4.3% of journeys to work were made by public transport, including taxis. The percentage of trips made by car driver was 76%. The ratio of public transport to car trips is about 1 to 17

4.15 The TRICS data indicates a ratio of about 1 to 33 and so appears to underestimate the public transport trips and that the likely number would be double that calculated using the derived trip rates. For the purposes of assessing the potential impact of trips by public transport it will be assumed that there would be 12 such trips in the peak hours.

5.0 TRIP DISTRIBUTION AND ASSIGNMENT

5.1 It is standard practice to use Census Journey to Work (JtW) data to derive trip distributions for residential development using a specific residential origin location and workplace destinations across the UK. Accordingly Census 2011 Journey to Work data has been obtained for the Suffolk Coastal 012 Middle Layer Super Output Area (MSOA).

5.2 Employment destination locations have been selected at MSOA level within the Suffolk Coastal district area; at district level for the remainder of the eastern region; and at regional level for the remainder of the UK in order to obtain data at an appropriate level of detail.

5.3 As this data is to be used to determine a vehicle trip distribution, only work destinations with at least one trip by car or van have been included. The remaining data retains 3913 trips out of a total of 3915 trips (by any mode), hence this dataset includes over 99.9% of all workplace trips and 100% of all 'car or van' trips made from the origin MSOA. This reduced dataset is attached at Appendix B.

5.4 This data shows that around 76% of all journeys to work originating from this part of Felixstowe are made by car or van, and that around 49% of these 'car or van' journeys are made to work locations within the four Felixstowe MSOAs whilst around 51% are to work locations external to Felixstowe.

5.5 In general, Felixstowe is contained within four MSOA areas which are Suffolk Coastal 012, 013, 014 and 015 respectively. These MSOAs and their respective boundaries are shown in Frame 1 of Appendix C for clarity.

5.6 The position of Felixstowe being located on a peninsular between two rivers means that only the A14 provides a main road route to destinations outside of the town. There are some minor roads leading to the north, in particular Kirton Road but for destinations other than the few villages south of the River Deben, the A14 provides a quicker option.

5.7 This simplifies the distribution of trips with essentially five potential destinations being either one of the four Felixstowe MSOAs or to the west along A14. The distribution of trips to these five locations is shown in Table 6.1.

Table 6.1 **Employment Areas**	**Total Distribution**
External to Felixstowe (West)	50.9%
Suffolk Coastal 012	14.8%
Suffolk Coastal 013	4.1%
Suffolk Coastal 014	7.7%
Suffolk Coastal 015	22.5%

5.8 Whilst the distribution can be simplified as shown in Table 6.1, the road network provides different options for travel to each of the four Felixstowe MSOAs. Therefore, a higher level of detail is required to determine a more accurate distribution and consequently an accurate assignment of trips.

5.9 As it is not possible to use a finer level of Output Area, the Census 2011 Workplace Zones have been used with the Workplace Population data providing a means to determine likely destination areas within the MSOAs. Full details of this geography type can be found on the Office for National Statistics website.

5.10 The workplace zones which correspond to each of the MSOAs are shown in Frame 3 at Appendix C.

5.11 The percentages of the workplace population that are located in each of the individual workplace zones within each respective MSOA have been used to subdivide the journey to work trips to each of the MSOAs. The full method is described in detail in a supplementary Technical Note at Appendix D.

5.12 The resultant traffic distributions are shown in Table 6.2 below.

Table 6.2 Place of Work	MSOA Number	Driving a car or van	% Car	Workplace Zone Grouped Area	Workplace Zone Workforce Population %	Local Car Trip Distribution
Suffolk Coastal 012	E02006298	443	14.8%	Port of Felixstowe (west)	55.8%	8.3%
				Trimley St Mary (north & south)	17.1%	2.5%
				Kirton & Falkenham	12.2%	1.8%
				Trimley St Martin	14.9%	2.2%
Suffolk Coastal 013	E02006299	121	4.1%	Felixstowe & Old Felixstowe	100.0%	4.1%
Suffolk Coastal 014	E02006300	230	7.7%	Walton High Street	21.5%	1.7%
				Port of Felixstowe (southeast)	78.5%	6.0%
Suffolk Coastal 015	E02006301	672	22.5%	Felixstowe & Old Felixstowe	62.9%	14.2%
				Port of Felixstowe (southeast)	37.1%	8.3%

Trip Assignment

5.13 It is possible to assign the car trips to and from the development to the local road network using the distribution in Table 6.2. The assignment of these trips was undertaken using the Google Maps route planner facility which provides route details for a specified origin and destination. In each case, a preferred route is indicated by the tool, which is typically the quickest route, based on the distance and prevailing road conditions such as speed limits and congestion.

5.14 In the case of westbound (external) traffic, there are only two potential routes, The A14 and High Road through Trimley St Martin which joins the A14 a short distance to the west. However the Google Maps route planner indicates that reaching the A14 via the Trimley interchange junction is the quicker route. There is no access from A14 to High Road and inbound trips from the A14 can only be made via Trimley interchange.

5.15 It is therefore expected that all westbound traffic is routed via junction 59 of the A14 and hence travels via the eastern section of Howlett Way and the northwest section of the A14.

5.16 For commuting trips to destinations within Felixstowe, the assignment exercise demonstrated that for the majority of destinations, traffic would typically take the A14 in the southeast direction with traffic either continuing east on the A154 Candlet Road or turning south onto the Port of Felixstowe Road at the Dock Spur Roundabout junction depending on the ultimate destination.

5.17 Consequently the majority of Felixstowe traffic would also be routed via Trimley interchange and travel via the eastern section of Howlett Way, but in these cases assigned to the southeast section of the A14 and then assigned either east or south at the Dock Spur roundabout accordingly.

5.18 The assignment exercise also demonstrated that traffic local to the Trimleys, and a small proportion of traffic to Walton, would be assigned to the western section of Howlett Way and then either to the north or south on High Road accordingly. The full assignment exercise is attached at Appendix E.

5.19 The resultant percentage residential trip distribution and assignment is illustrated in the Figure SR1.

5.20 The net development traffic flows have been assigned to the local road network in line with the above distribution/assignment and the resultant development flows are shown in Figures SR2 and SR3 for the morning and evening peak hours respectively.

6.0 PARKING & SERVICING

6.1 This is an outline application and will be accompanied by an illustrative site layout plan. It is proposed that vehicular and cycle parking/storage provision will be provided to local standards as required and subject of a planning condition.

6.2 Suitable access and turning for larger vehicles such as refuse collection vehicles will be provided such that vehicles would be able to turn as required with reversing and carry distance maximum guidelines observed. Bin storage and collection areas would be provided as required.

7.0 TRAVEL PLAN

7.1 It is proposed that a residential travel plan will be prepared for implementation as part of the proposed development.

APPENDIX A

Calculation Reference: AUDIT-743701-180223-0236

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	**SOUTH EAST**		
	HC	HAMPSHIRE	1 days
	KC	KENT	1 days
	SC	SURREY	1 days
	WS	WEST SUSSEX	2 days
03	**SOUTH WEST**		
	DV	DEVON	2 days
04	**EAST ANGLIA**		
	NF	NORFOLK	1 days
06	**WEST MIDLANDS**		
	SH	SHROPSHIRE	2 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	NE	NORTH EAST LINCOLNSHIRE	1 days
	NY	NORTH YORKSHIRE	3 days
	SY	SOUTH YORKSHIRE	1 days
09	**NORTH**		
	CB	CUMBRIA	1 days
	DH	DURHAM	1 days
11	**SCOTLAND**		
	FA	FALKIRK	1 days

Secondary Filtering selection:

Parameter: Number of dwellings
Actual Range: 50 to 805 (units:)
Range Selected by User: 50 to 805 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/09 to 27/11/17

Selected survey days:

Monday	5 days
Tuesday	2 days
Wednesday	2 days
Thursday	6 days
Friday	3 days

Selected survey types:

Manual count	18 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	11
Edge of Town	7

Selected Location Sub Categories:

Residential Zone	14
No Sub Category	4

Secondary Filtering selection:

Use Class:

C3	18 days

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	7 days
10,001 to 15,000	5 days
15,001 to 20,000	2 days
20,001 to 25,000	2 days

Secondary Filtering selection (Cont.):

Population within 5 miles:

5,001 to 25,000	3 days
25,001 to 50,000	3 days
50,001 to 75,000	1 days
75,001 to 100,000	7 days
100,001 to 125,000	2 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	14 days

Travel Plan:

Yes	3 days
No	15 days

PTAL Rating:

No PTAL Present	18 days

LIST OF SITES relevant to selection parameters

1 **CB-03-A-04** **SEMI DETACHED** **CUMBRIA**
MOORCLOSE ROAD
SALTERBACK
WORKINGTON
Edge of Town
No Sub Category
Total Number of dwellings: 82
Survey date: FRIDAY 24/04/09 Survey Type: MANUAL

2 **DH-03-A-01** **SEMI DETACHED** **DURHAM**
GREENFIELDS ROAD

BISHOP AUCKLAND
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 50
Survey date: TUESDAY 28/03/17 Survey Type: MANUAL

3 **DV-03-A-02** **HOUSES & BUNGALOWS** **DEVON**
MILLHEAD ROAD

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 116
Survey date: FRIDAY 25/09/15 Survey Type: MANUAL

4 **DV-03-A-03** **TERRACED & SEMI DETACHED** **DEVON**
LOWER BRAND LANE

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 70
Survey date: MONDAY 28/09/15 Survey Type: MANUAL

5 **FA-03-A-02** **MIXED HOUSES** **FALKIRK**
ROSEBANK AVENUE & SPRINGFIELD DRIVE

FALKIRK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 161
Survey date: WEDNESDAY 29/05/13 Survey Type: MANUAL

6 **HC-03-A-19** **HOUSES & FLATS** **HAMPSHIRE**
CANADA WAY

LIPHOOK
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 62
Survey date: MONDAY 27/11/17 Survey Type: MANUAL

7 **KC-03-A-03** **MIXED HOUSES & FLATS** **KENT**
HYTHE ROAD
WILLESBOROUGH
ASHFORD
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 51
Survey date: THURSDAY 14/07/16 Survey Type: MANUAL

8 **NE-03-A-02** **SEMI DETACHED & DETACHED** **NORTH EAST LINCOLNSHIRE**
HANOVER WALK

SCUNTHORPE
Edge of Town
No Sub Category
Total Number of dwellings: 432
Survey date: MONDAY 12/05/14 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9 **NF-03-A-02** **HOUSES & FLATS** **NORFOLK**
DEREHAM ROAD

NORWICH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 98
Survey date: MONDAY 22/10/12 Survey Type: MANUAL

10 **NY-03-A-06** **BUNGALOWS & SEMI DET.** **NORTH YORKSHIRE**
HORSEFAIR

BOROUGHBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 115
Survey date: FRIDAY 14/10/11 Survey Type: MANUAL

11 **NY-03-A-09** **MIXED HOUSING** **NORTH YORKSHIRE**
GRAMMAR SCHOOL LANE

NORTHALLERTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 52
Survey date: MONDAY 16/09/13 Survey Type: MANUAL

12 **NY-03-A-10** **HOUSES AND FLATS** **NORTH YORKSHIRE**
BOROUGHBRIDGE ROAD

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

13 **SC-03-A-04** **DETACHED & TERRACED** **SURREY**
HIGH ROAD

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

14 **SH-03-A-04** **TERRACED** **SHROPSHIRE**
ST MICHAEL'S STREET

SHREWSBURY
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 108
Survey date: THURSDAY 11/06/09 Survey Type: MANUAL

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

16 **SY-03-A-01** **SEMI DETACHED HOUSES** **SOUTH YORKSHIRE**
A19 BENTLEY ROAD
BENTLEY RISE
DONCASTER
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 54
Survey date: WEDNESDAY 18/09/13 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

17 **WS-03-A-04** **MIXED HOUSES** **WEST SUSSEX**
HILLS FARM LANE
BROADBRIDGE HEATH
HORSHAM
Edge of Town
Residential Zone
Total Number of dwellings: 151
Survey date: THURSDAY 11/12/14 Survey Type: MANUAL

18 **WS-03-A-06** **MIXED HOUSES** **WEST SUSSEX**
ELLIS ROAD
S BROADBRIDGE HEATH
WEST HORSHAM
Edge of Town
Residential Zone
Total Number of dwellings: 805
Survey date: THURSDAY 02/03/17 Survey Type: MANUAL

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.071	18	145	0.284	18	145	0.355
08:00 - 09:00	18	145	0.129	**18**	**145**	**0.388**	**18**	**145**	**0.517**
09:00 - 10:00	18	145	0.151	18	145	0.166	18	145	0.317
10:00 - 11:00	18	145	0.125	18	145	0.159	18	145	0.284
11:00 - 12:00	18	145	0.136	18	145	0.151	18	145	0.287
12:00 - 13:00	18	145	0.159	18	145	0.151	18	145	0.310
13:00 - 14:00	18	145	0.155	18	145	0.160	18	145	0.315
14:00 - 15:00	18	145	0.148	18	145	0.179	18	145	0.327
15:00 - 16:00	18	145	0.250	18	145	0.176	18	145	0.426
16:00 - 17:00	18	145	0.265	18	145	0.161	18	145	0.426
17:00 - 18:00	**18**	**145**	**0.330**	18	145	0.167	18	145	0.497
18:00 - 19:00	18	145	0.277	18	145	0.170	18	145	0.447
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.196			2.312			4.508

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.002	18	145	0.002	18	145	0.004
08:00 - 09:00	18	145	0.001	18	145	0.002	18	145	0.003
09:00 - 10:00	18	145	0.003	18	145	0.002	18	145	0.005
10:00 - 11:00	18	145	0.002	18	145	0.003	18	145	0.005
11:00 - 12:00	18	145	0.001	18	145	0.001	18	145	0.002
12:00 - 13:00	18	145	0.002	18	145	0.002	18	145	0.004
13:00 - 14:00	18	145	0.001	18	145	0.001	18	145	0.002
14:00 - 15:00	18	145	0.002	18	145	0.002	18	145	0.004
15:00 - 16:00	**18**	**145**	**0.005**	**18**	**145**	**0.004**	**18**	**145**	**0.009**
16:00 - 17:00	18	145	0.002	18	145	0.003	18	145	0.005
17:00 - 18:00	18	145	0.002	18	145	0.001	18	145	0.003
18:00 - 19:00	18	145	0.001	18	145	0.001	18	145	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.024			0.024			0.048

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.000	18	145	0.000	18	145	0.000
08:00 - 09:00	18	145	0.001	18	145	0.000	18	145	0.001
09:00 - 10:00	**18**	**145**	**0.002**	18	145	0.002	**18**	**145**	**0.004**
10:00 - 11:00	18	145	0.002	18	145	0.002	18	145	0.004
11:00 - 12:00	18	145	0.002	**18**	**145**	**0.002**	18	145	0.004
12:00 - 13:00	18	145	0.001	18	145	0.001	18	145	0.002
13:00 - 14:00	18	145	0.002	18	145	0.002	18	145	0.004
14:00 - 15:00	18	145	0.001	18	145	0.002	18	145	0.003
15:00 - 16:00	18	145	0.001	18	145	0.001	18	145	0.002
16:00 - 17:00	18	145	0.001	18	145	0.000	18	145	0.001
17:00 - 18:00	18	145	0.000	18	145	0.000	18	145	0.000
18:00 - 19:00	18	145	0.000	18	145	0.000	18	145	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.013			0.012			0.025

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.000	18	145	0.000	18	145	0.000
08:00 - 09:00	18	145	0.000	18	145	0.000	18	145	0.000
09:00 - 10:00	18	145	0.000	18	145	0.000	18	145	0.000
10:00 - 11:00	18	145	0.000	18	145	0.000	18	145	0.000
11:00 - 12:00	**18**	**145**	**0.001**	**18**	**145**	**0.001**	**18**	**145**	**0.002**
12:00 - 13:00	18	145	0.000	18	145	0.000	18	145	0.000
13:00 - 14:00	18	145	0.000	18	145	0.000	18	145	0.000
14:00 - 15:00	18	145	0.000	18	145	0.000	18	145	0.000
15:00 - 16:00	18	145	0.000	18	145	0.000	18	145	0.000
16:00 - 17:00	18	145	0.000	18	145	0.000	18	145	0.000
17:00 - 18:00	18	145	0.000	18	145	0.000	18	145	0.000
18:00 - 19:00	18	145	0.000	18	145	0.000	18	145	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.001			0.001			0.002

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.004	18	145	0.010	18	145	0.014
08:00 - 09:00	18	145	0.002	**18**	**145**	**0.012**	18	145	0.014
09:00 - 10:00	18	145	0.001	18	145	0.005	18	145	0.006
10:00 - 11:00	18	145	0.003	18	145	0.005	18	145	0.008
11:00 - 12:00	18	145	0.003	18	145	0.003	18	145	0.006
12:00 - 13:00	18	145	0.003	18	145	0.003	18	145	0.006
13:00 - 14:00	18	145	0.004	18	145	0.004	18	145	0.008
14:00 - 15:00	18	145	0.003	18	145	0.003	18	145	0.006
15:00 - 16:00	18	145	0.008	18	145	0.005	18	145	0.013
16:00 - 17:00	18	145	0.010	18	145	0.008	18	145	0.018
17:00 - 18:00	**18**	**145**	**0.013**	18	145	0.009	**18**	**145**	**0.022**
18:00 - 19:00	18	145	0.008	18	145	0.003	18	145	0.011
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.062			0.070			0.132

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.087	18	145	0.343	18	145	0.430
08:00 - 09:00	18	145	0.151	**18**	**145**	**0.566**	**18**	**145**	**0.717**
09:00 - 10:00	18	145	0.172	18	145	0.210	18	145	0.382
10:00 - 11:00	18	145	0.148	18	145	0.197	18	145	0.345
11:00 - 12:00	18	145	0.164	18	145	0.191	18	145	0.355
12:00 - 13:00	18	145	0.192	18	145	0.186	18	145	0.378
13:00 - 14:00	18	145	0.194	18	145	0.202	18	145	0.396
14:00 - 15:00	18	145	0.185	18	145	0.232	18	145	0.417
15:00 - 16:00	18	145	0.386	18	145	0.214	18	145	0.600
16:00 - 17:00	18	145	0.368	18	145	0.217	18	145	0.585
17:00 - 18:00	**18**	**145**	**0.430**	18	145	0.223	18	145	0.653
18:00 - 19:00	18	145	0.343	18	145	0.227	18	145	0.570
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.820			3.008			5.828

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.020	18	145	0.047	18	145	0.067
08:00 - 09:00	18	145	0.030	**18**	**145**	**0.141**	18	145	0.171
09:00 - 10:00	18	145	0.046	18	145	0.052	18	145	0.098
10:00 - 11:00	18	145	0.045	18	145	0.047	18	145	0.092
11:00 - 12:00	18	145	0.032	18	145	0.027	18	145	0.059
12:00 - 13:00	18	145	0.042	18	145	0.034	18	145	0.076
13:00 - 14:00	18	145	0.033	18	145	0.039	18	145	0.072
14:00 - 15:00	18	145	0.044	18	145	0.052	18	145	0.096
15:00 - 16:00	**18**	**145**	**0.126**	18	145	0.058	**18**	**145**	**0.184**
16:00 - 17:00	18	145	0.082	18	145	0.044	18	145	0.126
17:00 - 18:00	18	145	0.077	18	145	0.048	18	145	0.125
18:00 - 19:00	18	145	0.047	18	145	0.035	18	145	0.082
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.624			0.624			1.248

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.001	**18**	**145**	**0.008**	18	145	0.009
08:00 - 09:00	18	145	0.001	18	145	0.008	18	145	0.009
09:00 - 10:00	18	145	0.001	18	145	0.006	18	145	0.007
10:00 - 11:00	18	145	0.002	18	145	0.004	18	145	0.006
11:00 - 12:00	18	145	0.002	18	145	0.002	18	145	0.004
12:00 - 13:00	18	145	0.003	18	145	0.004	18	145	0.007
13:00 - 14:00	18	145	0.005	18	145	0.002	18	145	0.007
14:00 - 15:00	18	145	0.003	18	145	0.003	18	145	0.006
15:00 - 16:00	18	145	0.007	18	145	0.003	18	145	0.010
16:00 - 17:00	18	145	0.006	18	145	0.003	18	145	0.009
17:00 - 18:00	**18**	**145**	**0.011**	18	145	0.002	**18**	**145**	**0.013**
18:00 - 19:00	18	145	0.005	18	145	0.000	18	145	0.005
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.047			0.045			0.092

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.000	**18**	**145**	**0.008**	**18**	**145**	**0.008**
08:00 - 09:00	18	145	0.000	18	145	0.002	18	145	0.002
09:00 - 10:00	18	145	0.000	18	145	0.001	18	145	0.001
10:00 - 11:00	18	145	0.000	18	145	0.000	18	145	0.000
11:00 - 12:00	18	145	0.000	18	145	0.000	18	145	0.000
12:00 - 13:00	18	145	0.000	18	145	0.000	18	145	0.000
13:00 - 14:00	18	145	0.000	18	145	0.000	18	145	0.000
14:00 - 15:00	18	145	0.000	18	145	0.000	18	145	0.000
15:00 - 16:00	18	145	0.000	18	145	0.001	18	145	0.001
16:00 - 17:00	18	145	0.000	18	145	0.000	18	145	0.000
17:00 - 18:00	18	145	0.002	18	145	0.000	18	145	0.002
18:00 - 19:00	**18**	**145**	**0.003**	18	145	0.000	18	145	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.005			0.012			0.017

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.000	**18**	**145**	**0.000**	18	145	0.000
08:00 - 09:00	18	145	0.000	18	145	0.000	18	145	0.000
09:00 - 10:00	18	145	0.000	18	145	0.000	18	145	0.000
10:00 - 11:00	18	145	0.000	18	145	0.000	18	145	0.000
11:00 - 12:00	18	145	0.000	18	145	0.000	18	145	0.000
12:00 - 13:00	18	145	0.000	18	145	0.000	18	145	0.000
13:00 - 14:00	18	145	0.000	18	145	0.000	18	145	0.000
14:00 - 15:00	18	145	0.000	18	145	0.000	18	145	0.000
15:00 - 16:00	**18**	**145**	**0.001**	18	145	0.000	**18**	**145**	**0.001**
16:00 - 17:00	18	145	0.000	18	145	0.000	18	145	0.000
17:00 - 18:00	18	145	0.000	18	145	0.000	18	145	0.000
18:00 - 19:00	18	145	0.000	18	145	0.000	18	145	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.001			0.000			0.001

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.001	**18**	**145**	**0.016**	**18**	**145**	**0.017**
08:00 - 09:00	18	145	0.001	18	145	0.010	18	145	0.011
09:00 - 10:00	18	145	0.001	18	145	0.007	18	145	0.008
10:00 - 11:00	18	145	0.002	18	145	0.005	18	145	0.007
11:00 - 12:00	18	145	0.002	18	145	0.003	18	145	0.005
12:00 - 13:00	18	145	0.003	18	145	0.004	18	145	0.007
13:00 - 14:00	18	145	0.005	18	145	0.002	18	145	0.007
14:00 - 15:00	18	145	0.003	18	145	0.003	18	145	0.006
15:00 - 16:00	18	145	0.008	18	145	0.004	18	145	0.012
16:00 - 17:00	18	145	0.006	18	145	0.004	18	145	0.010
17:00 - 18:00	**18**	**145**	**0.013**	18	145	0.002	18	145	0.015
18:00 - 19:00	18	145	0.008	18	145	0.000	18	145	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.053			0.060			0.113

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	18	145	0.112	18	145	0.415	18	145	0.527
08:00 - 09:00	18	145	0.184	**18**	**145**	**0.729**	**18**	**145**	**0.913**
09:00 - 10:00	18	145	0.220	18	145	0.273	18	145	0.493
10:00 - 11:00	18	145	0.197	18	145	0.253	18	145	0.450
11:00 - 12:00	18	145	0.202	18	145	0.224	18	145	0.426
12:00 - 13:00	18	145	0.240	18	145	0.227	18	145	0.467
13:00 - 14:00	18	145	0.236	18	145	0.246	18	145	0.482
14:00 - 15:00	18	145	0.235	18	145	0.290	18	145	0.525
15:00 - 16:00	18	145	0.529	18	145	0.281	18	145	0.810
16:00 - 17:00	18	145	0.466	18	145	0.273	18	145	0.739
17:00 - 18:00	**18**	**145**	**0.533**	18	145	0.281	18	145	0.814
18:00 - 19:00	18	145	0.406	18	145	0.266	18	145	0.672
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.560			3.758			7.318

Parameter summary

Trip rate parameter range selected:	50 - 805 (units:)
Survey date date range:	01/01/09 - 27/11/17
Number of weekdays (Monday-Friday):	18
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

APPENDIX B

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
usual residence	E02006298 : Suffolk Coastal 012 (2011 super output area - middle layer)

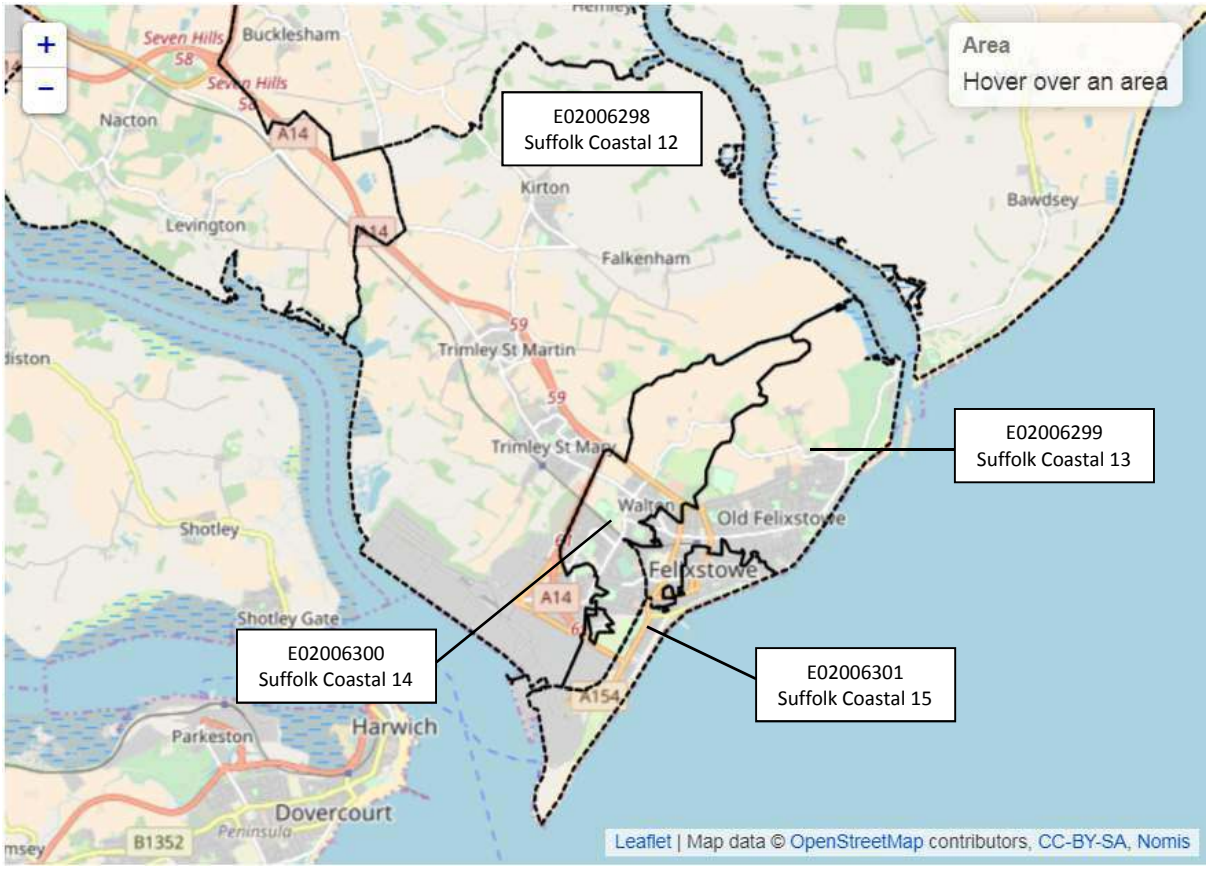
place of work		All categories: Method of travel to work (2001 specification)	Work mainly at or from home	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Taxi	Motorcycle, scooter or moped	Driving a car or van	Passenger in a car or van	Bicycle	On foot	Other method of travel to work	% Car
Ipswich	E41000223	879	0	0	24	41	2	10	740	49	6	7	0	24.8%
Suffolk Coastal 015	E02006301	923	0	1	5	25	2	26	672	53	80	56	3	22.5%
Suffolk Coastal 012	E02006298	660	0	0	0	2	2	14	443	32	60	106	1	14.8%
Suffolk Coastal 014	E02006300	331	0	0	0	4	3	7	230	15	26	45	1	7.7%
Suffolk Coastal 010	E02006296	189	0	0	0	0	0	7	163	10	7	1	1	5.5%
Suffolk Coastal 013	E02006299	180	0	0	1	8	2	2	121	18	22	6	0	4.1%
Babergh	E41000221	105	0	0	1	1	0	1	95	2	4	1	0	3.2%
Mid Suffolk	E41000224	83	0	0	1	1	0	0	71	7	3	0	0	2.4%
Suffolk Coastal 008	E02006294	69	0	0	0	0	0	0	64	3	1	1	0	2.1%
Suffolk Coastal 011	E02006297	72	0	0	0	4	0	3	62	3	0	0	0	2.1%
Colchester	E41000103	46	0	0	2	0	0	0	41	1	1	1	0	1.4%
Suffolk Coastal 005	E02006291	29	0	0	0	0	0	1	26	2	0	0	0	0.9%
Suffolk Coastal 007	E02006293	32	0	0	0	0	0	0	26	1	2	3	0	0.9%
Tendring	E41000108	27	0	0	0	0	0	0	26	1	0	0	0	0.9%
Waveney	E41000227	34	0	0	2	3	0	0	21	1	2	4	1	0.7%
St Edmundsbury	E41000225	21	0	0	1	0	0	0	20	0	0	0	0	0.7%
Suffolk Coastal 006	E02006292	23	0	0	0	0	0	1	19	2	0	1	0	0.6%
Suffolk Coastal 002	E02006288	19	0	0	0	0	0	1	15	1	1	1	0	0.5%
South East	E12000008	18	0	0	2	0	0	0	14	1	0	1	0	0.5%
Suffolk Coastal 009	E02006295	15	0	0	0	0	0	1	12	1	1	0	0	0.4%
Braintree	E41000099	14	0	0	0	0	0	1	12	0	1	0	0	0.4%
Suffolk Coastal 004	E02006290	18	0	0	0	0	0	0	11	1	4	2	0	0.4%
Norwich	E41000180	15	0	0	2	1	0	0	10	0	1	1	0	0.3%
London	E12000007	33	0	0	22	0	0	0	8	0	2	1	0	0.3%
Suffolk Coastal 003	E02006289	8	0	0	0	1	0	0	6	0	0	1	0	0.2%
Suffolk Coastal 001	E02006287	6	0	0	0	0	0	0	5	0	0	1	0	0.2%
Breckland	E41000175	6	0	0	0	1	0	0	5	0	0	0	0	0.2%
Uttlesford	E41000109	5	0	0	0	0	0	0	5	0	0	0	0	0.2%
Forest Heath	E41000222	4	0	0	0	0	0	0	4	0	0	0	0	0.1%
South Norfolk	E41000181	7	0	0	0	0	1	0	4	0	0	1	1	0.1%
Chelmsford	E41000102	3	0	0	0	0	0	0	3	0	0	0	0	0.1%
Great Yarmouth	E41000177	3	0	0	0	0	0	0	3	0	0	0	0	0.1%
King's Lynn and West Norfolk	E41000178	3	0	0	0	0	0	0	3	0	0	0	0	0.1%
South Cambridgeshire	E41000064	3	0	0	0	0	0	0	3	0	0	0	0	0.1%
Thurrock	E41000034	4	0	0	0	0	0	0	3	1	0	0	0	0.1%
East Midlands	E12000004	4	0	0	0	1	0	0	3	0	0	0	0	0.1%
South West	E12000009	7	0	0	1	0	0	0	3	0	0	2	1	0.1%
Basildon	E41000098	2	0	0	0	0	0	0	2	0	0	0	0	0.1%
Broadland	E41000176	2	0	0	0	0	0	0	2	0	0	0	0	0.1%
West Midlands	E12000005	2	0	0	0	0	0	0	2	0	0	0	0	0.1%
Broxbourne	E41000127	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Cambridge	E41000060	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
East Hertfordshire	E41000129	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Epping Forest	E41000104	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
St Albans	E41000132	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Watford	E41000135	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
North West	E12000002	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Northern Ireland	N92000002	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Scotland	S92000003	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Totals		3,913	0	1	64	93	12	75	2,987	205	224	243	9	100.0%

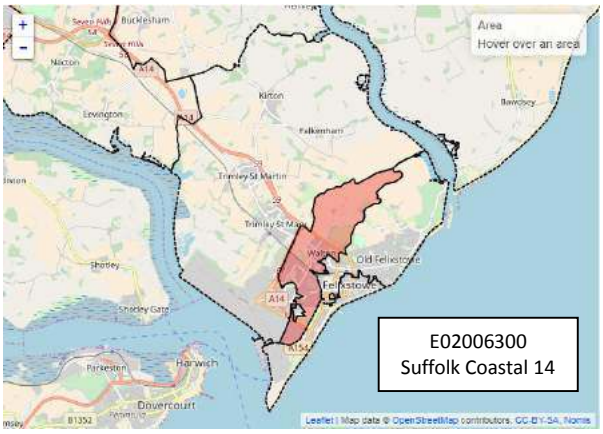
NOTE: Destinations with zero car trips removed

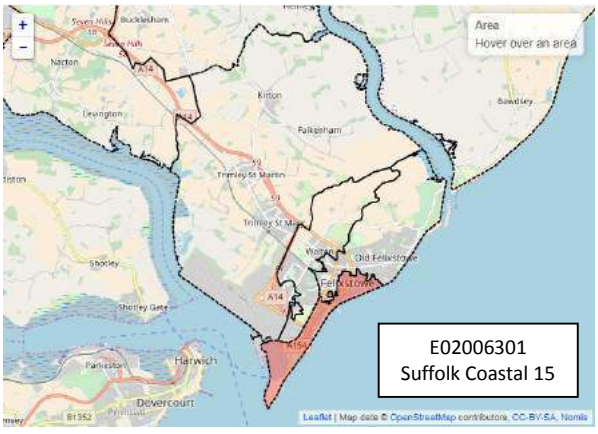
In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.

APPENDIX C

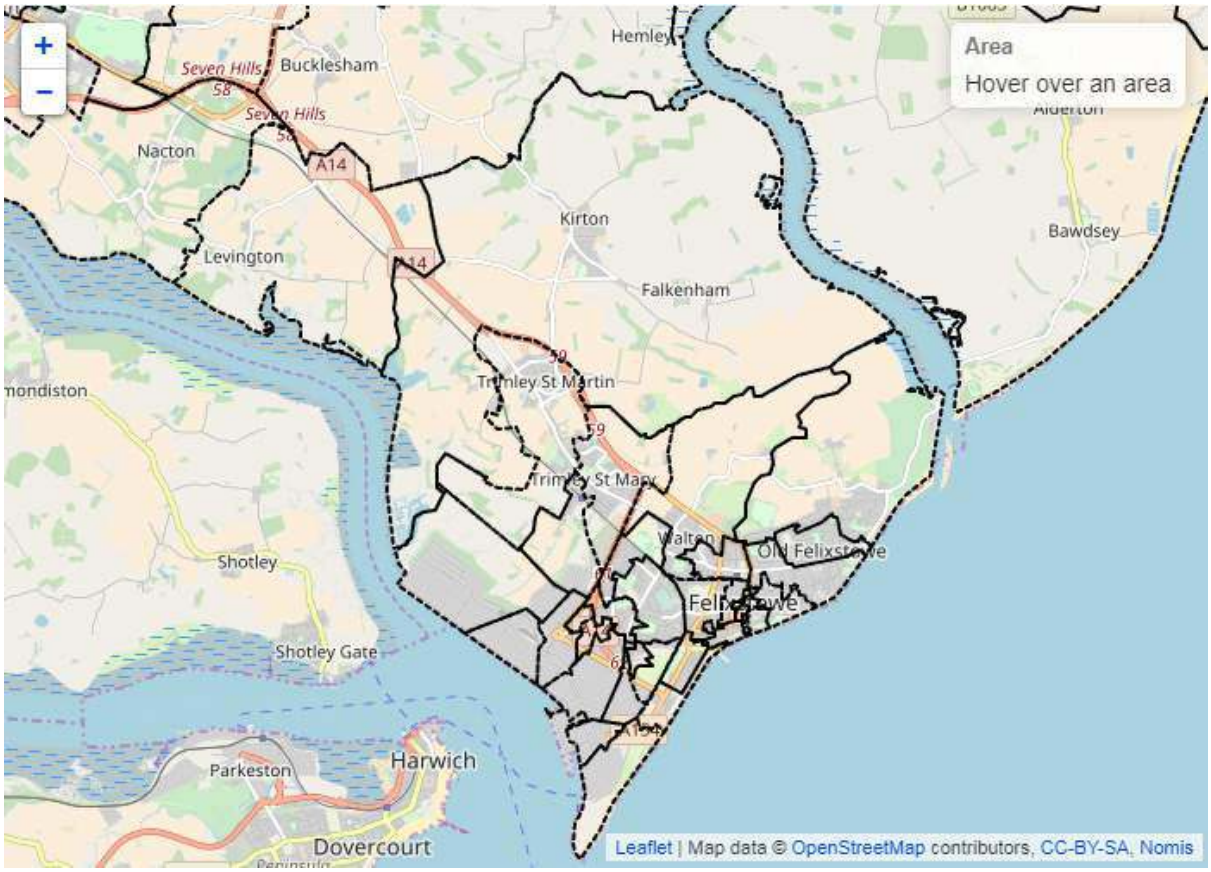
Frame 1 – Nomis Census 2011 MSOA Area Boundaries

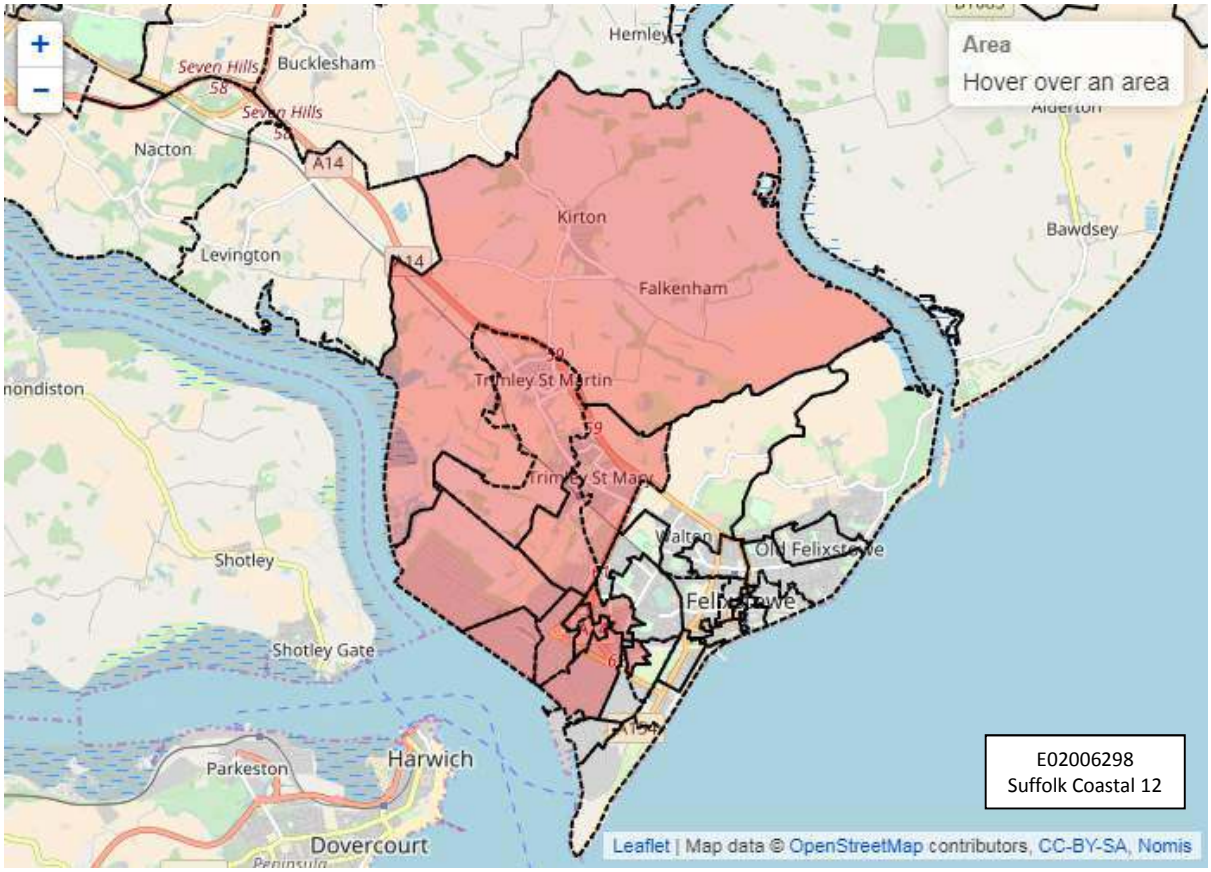




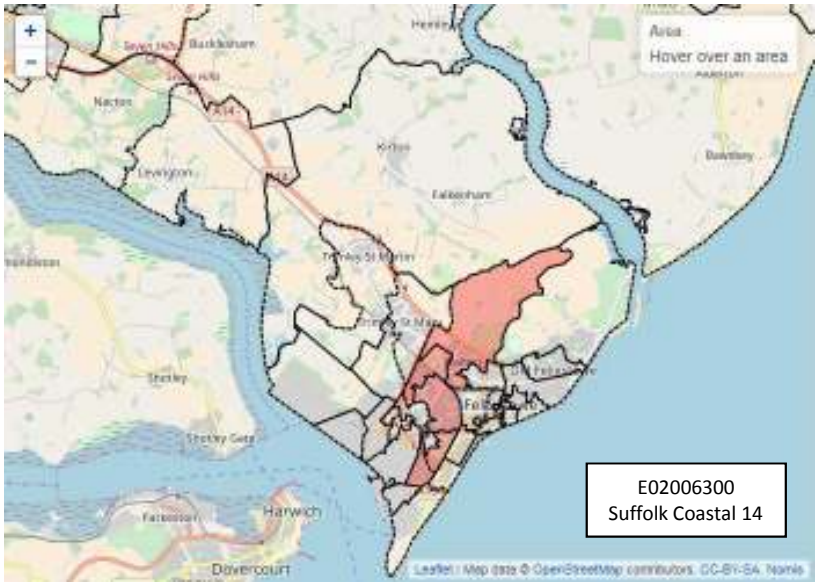


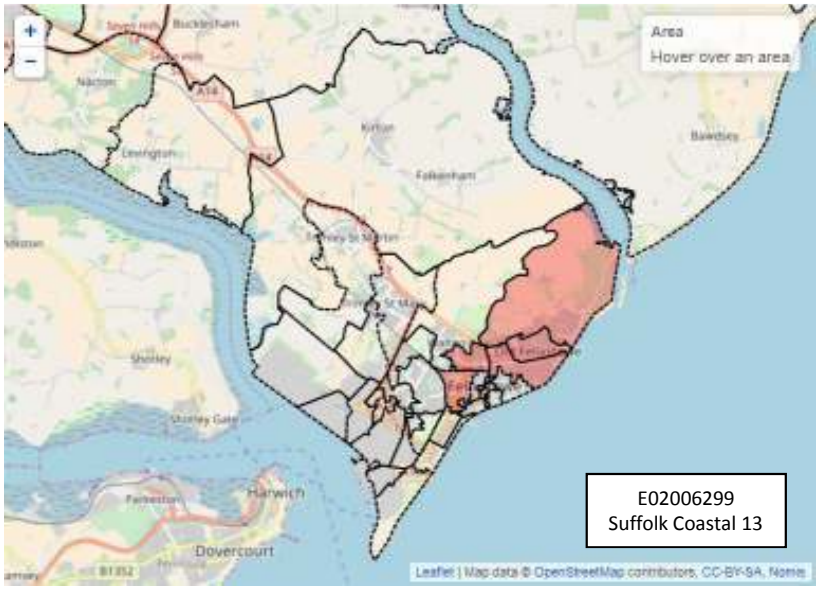
Frame 2 – Nomis Census 2011 Workplace Zone Area Boundaries

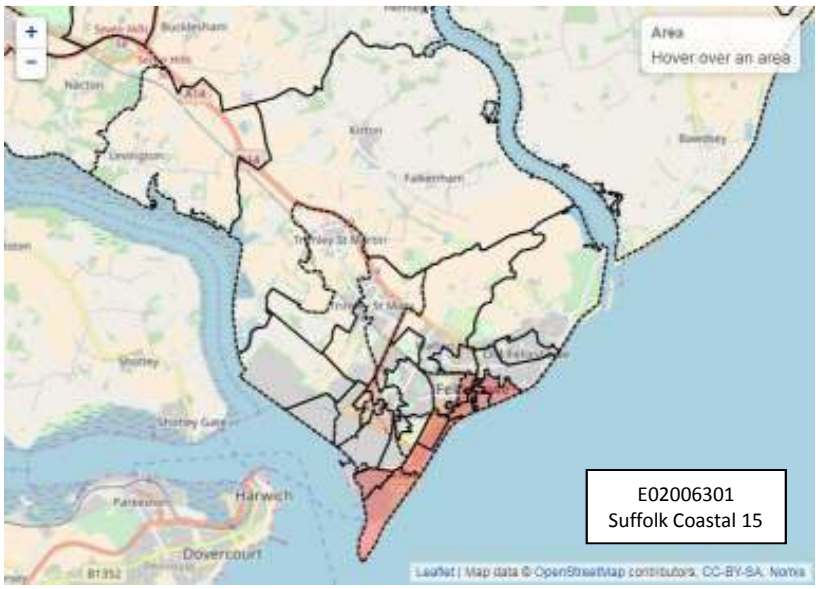




Frame 3 – Nomis Census 2011 Workplace Zone Area Boundaries







APPENDIX D

Development
Transport Planning

TRINITY COLLEGE CAMBRIDGE

HOWLETT WAY, TRIMLEY

Scoping Report Technical Note

Workplace Zone Distribution

Project No. 67006

March 2018

Kingswick House
Kingswick Drive
Ascot
Berkshire
SL5 7BH

CONTENTS..... Page

APPENDICES

DOCUMENT CONTROL SHEET

Issue	Date	Description	Author	Checked
1	13/03/2018	Draft for comment	RAA	AKJ

1.0 INTRODUCTION

1.1 Trinity College Cambridge (TCC) proposes to develop land off Howlett Way, Trimley St Martin, Felixstowe for residential use. Development Transport Planning Ltd (DTPL) have been appointed to prepare a Transport Assessment (TA) to accompany the application.

1.2 A Scoping Report (SR) has been prepared in advance of the TA to form the basis for discussion with Suffolk County Council (SCC) and Highways England (HE) and to agree the parameters to be used within the TA.

1.3 A significant element of the SR is based upon the use of Census 2011 journey to work data which has been used to inform the distribution and assignment upon which the application site traffic impact would be assessed.

1.4 Due to the configuration of the local geography and highway network, an additional step was required to establish trip distributions at an appropriate level of detail, and this additional step required the use of Census 2011 Workplace Population data at Workplace Zone level.

1.5 This Technical Note (TN) has been prepared as an Appendix to the SR to provide a more detailed explanation of the process undertaken to derive detailed trip distributions within the Felixstowe area using a combination of Census 2011 Journey to Work Data at middle layer super output area (MSOA) level and Workplace Population data at Workplace Zone level.

2.0 DERIVATION OF TRIP DISTRIBUTION

2.1 Census 2011 Journey to Work (JTW) data has been used to derive a trip distribution for commuting vehicle trips originating from the application site based on the "car or van driver" mode of travel. A single Middle Layer Super Output Area (MSOA) has been used as the origin MSOA which is listed as Suffolk Coastal 012. The full process was outlined in the associated Scoping Report. The dataset is reproduced at Appendix A for reference.

2.2 This data showed that around 51% of car or van trips are to work locations external to Felixstowe. These can only be distributed to the west, due to the local geography and highway network.

2.3 Therefore around 49% of 'car or van' journeys are made to work locations within the four Felixstowe MSOAs, which are Suffolk Coastal 012, 013, 014 and 015 respectively. These MSOAs and their respective boundaries are shown in Frame 1 of Appendix B for clarity.

2.4 The resultant JTW distribution is shown in Table 2.1 below.

Table 2.1 **Employment Areas**	**Total Distribution**
External to Felixstowe (West)	50.9%
Suffolk Coastal 012	14.8%
Suffolk Coastal 013	4.1%
Suffolk Coastal 014	7.7%
Suffolk Coastal 015	22.5%

2.5 The distribution of external trips to the west is considered to be at an appropriate level of detail due to the limited route options into and out of Felixstowe. Conversely, when considering the traffic distributions obtained for the four Felixstowe MSOA boundaries, it is deemed necessary to obtain a higher level of detail in order to arrive at a useful local distribution. This is because these MSOA areas are large and do not correlate well with the settlement/employment areas and highway network within Felixstowe. This is particularly true of the 'home location' origin MSOA Suffolk Coastal 012.

2.6 It is therefore proposed to use Census 2011 Workplace Population data to obtain a distribution at a finer 'local' level of detail. Census 2011 Workplace Population data includes statistics of 'workplace and usual residence by method of travel to work' which is presented at the more detailed 'Workplace Zones' level.

2.7 Workplace Zones are a new output geography level first introduced in the 2011 Census which are described as being '*more suitable for disseminating workplace-based statistics and outputs*'. Workplace Zones align to the existing output area hierarchy and are constrained to middle layer super output areas (MSOA). Full details of this geography type can be found on the Office for National Statistics website.

2.8 The workplace population data provides the number of workers within each individual workplace zone. By obtaining this data for all workplace zones that are contained within each respective MSOA it is therefore possible to calculate a percentage of the total MSOA's workforce found in each workplace zone. These percentages can then be used to subdivide the journey to work trips within each MSOA boundary area and hence provide a more detailed level of distribution as required.

2.9 When obtaining the workplace population data, selecting 'Suffolk Coastal' as the geography indicates 49 workplace zones within the district of Suffolk Coastal as a whole. The workplace zone boundaries covering the Felixstowe area are shown in Frame 2 of Appendix B for clarity.

2.10 Of these zones, 11 correspond to the MSOA Suffolk Coastal 012 area, which is the residential point of origin, and these are also highlighted in Frame 2 of Appendix B.

2.11 For clarity, the workplace zone areas corresponding with each of the remaining MSOA areas Suffolk Coastal 013, 014 and 015 respectively are shown in Frame 3 of Appendix B. It is considered that workplace population data should be obtained separately for each of these four Felixstowe MSOA areas

2.12 The first destination MSOA to consider is Suffolk Coastal 012 (the residential point of origin). This is a large MSOA covering 5 distinct settlement/employment areas which include Trimley St Mary, Trimley St Martin, Kirton, Falkenham and the western section of the Port of Felixstowe. The application site is centrally located to these 5 areas and hence it can be expected that the journeys to work within this MSOA would be split between these discrete destination areas.

2.13 The workplace population data for the 11 workplace zones (contained within this MSOA) was selected for car drivers only whose usual residence is either within the same workplace zone and/or within the same MSOA area (in this case Suffolk Coastal 012). Making these selections provides the number of workers who both drive and live locally (i.e. within the MSOA) only, which reflects the proposed situation as required. The full data is attached at Appendix C, which lists the workplace population numbers and the local workforce percentage (calculated relative to the MSOA as a whole) for each of the 11 workplace zones within the MSOA.

2.14 Since there are limited vehicular routes available in the local area, it is considered that the above workplace population/zone data can be simplified. Based on the local highway network and geography, it is considered that these 11 workplace zones can be grouped into four distinct workplace zone 'destination' areas within the MSOA, these are Kirton & Falkenham, Trimley St Martin, Trimley St Mary and the western part of the Port of Felixstowe.

2.15 The allocation of individual workplace zones to these grouped areas can be seen in the column 'workplace zone grouped areas' at Appendix C. For clarity, these grouped areas are also labelled on the boundary plans in Frame 2 at Appendix B, which illustrates the location of these areas relative to the MSOA boundary.

2.16 Also included at Appendix C is a summary table which shows the total percentage of the workplace population contained within each workplace zone 'grouped' area. This summary table is reproduced below in Table 2.2 for ease of reference.

Table 2.2 **Workplace Zone Grouped Area**	**Total Workforce Population %**
Port of Felixstowe (west)	55.8%
Trimley St Mary (north & south)	17.1%
Kirton & Falkenham	12.2%
Trimley St Martin	14.9%

2.17 These relative total percentages of the workforce population contained within each grouped area can then be applied to the JTW data trip distribution for the MSOA area Suffolk Coastal 012 to calculate 'local car trip' distribution percentages for each workplace zone grouped area within the MSOA, as shown in Table 2.3 below.

Table 2.3 **Place of Work**	**MSOA Number**	**Driving a car or van**	**% Car**	**Workplace Zone Grouped Area**	**Total Workforce Population %**	**Local Car Trip Distribution**
Suffolk Coastal 012	E02006298	443	14.8%	Port of Felixstowe (west)	55.8%	8.3%
				Trimley St Mary (n & s)	17.1%	2.5%
				Kirton & Falkenham	12.2%	1.8%
				Trimley St Martin	14.9%	2.2%

2.18 Therefore, local car trip distribution values have been calculated which correspond with the significant workplace destinations within the MSOA Suffolk Coastal 012 as required.

2.19 The remaining three MSOA boundary areas within Felixstowe are similarly unhelpful in establishing useful distributions due to their respective boundaries including multiple settlement/employment destinations which may be reached by significantly differing routes.

2.20 Through sensitivity testing using the Google Maps route planner facility, it was identified that trips to and from these remaining Felixstowe MSOAs (from the origin location) predominantly focus on the A14 south-eastbound with traffic either continuing east on the A14 towards Felixstowe and Old Felixstowe or turning south at the Dock Spur roundabout junction towards the Port of Felixstowe.

2.21 The route planner also indicated that only trips to and from work destinations on Walton High Street were likely to use High Road as a preferred route.

2.22 It should be noted that a recent planning application for land north of High Street, Walton (DC/16/2778/OUT decision pending) proposes to include a new link road connecting the A154 Candlet Road to Walton High Street at a location east of the A14 Port of Felixstowe Road.

2.23 It is expected that construction of this proposed link road would result in variations to the local assignment, in particular it is expected that motorists travelling to the Walton area would no longer choose to take High Road given the option of what is expected to be a faster route. It is also expected that a proportion of trips to the Walton Lower Street area might also use this new route in favour of the A14 Port of Felixstowe Road.

2.24 Since this proposed link road is subject to approval, the distribution for the remaining MSOA areas described below has been derived based on the existing road network only. Therefore there remain the three key workplace destinations of Walton High Street, Felixstowe & Old Felixstowe and The Port of Felixstowe.

2.25 The corresponding workplace zones for each of the remaining three MSOAs can be seen in Frame 3 of Appendix B and the workplace population data for each respective MSOA can be found at Appendix D.

2.26 It is acknowledged that workplace population data for these MSOAs represents work trips originating from within their respective destination workplace zones and/or MSOA, and hence they do not originate from the ‘residential origin’ MSOA (unlike the data used for MSOA 012). These local workforce population values represent the most accurate local data available and hence the resultant proportional distribution remains appropriate for the purposes of this exercise.

2.27 Upon viewing the workplace zones contained within the boundary of the MSOA Suffolk Coastal 013 it was determined that all zones correspond to the same distribution and hence 100% of all trips to this MSOA would be considered as the general area of Felixstowe & Old Felixstowe.

2.28 Upon viewing the workplace zones contained within the boundary of the MSOA Suffolk Coastal 014 it was determined that the distribution would be split between the two workplace destinations of the Port of Felixstowe (southeast) or Walton High Street. As before, the workplace zones were grouped into Workplace Zone Grouped Areas and a Total Workforce Population percentage was calculated for each area.

2.29 The resultant distributions for the MSOA Suffolk Coastal 014 are shown below in Table 2.4.

Table 2.4 **Workplace Zone Grouped Area**	**Total Workforce Population %**
Port of Felixstowe (southeast)	78.5%
Walton High Street	21.5%

2.30 Once again, these relative total percentages of the workforce population contained within each grouped area can then be applied to the JTW data trip distribution for the MSOA area Suffolk Coastal 014 to calculate 'local car trip' distribution percentages for each workplace zone grouped area within the MSOA, as shown in Table 2.5 below.

Table 2.5 **Place of Work**	**MSOA Number**	**Driving a car or van**	**% Car**	**Workplace Zone Grouped Area**	**Workplace Zone Workforce Population %**	**Local Car Trip Distribution**
Suffolk Coastal 014	E02006300	230	7.7%	Walton High Street	21.5%	1.7%
				Port of Felixstowe (southeast)	78.5%	6.0%

2.31 Upon viewing the workplace zones contained within the boundary of the MSOA Suffolk Coastal 015 it was determined that the distribution would be split between the two workplace destinations of the Port of Felixstowe (southeast) or Felixstowe & Old Felixstowe. As before, the workplace zones were grouped into Workplace Zone Grouped Areas and a Total Workforce Population percentage was calculated for each area.

2.32 The resultant distributions for the MSOA Suffolk Coastal 015 are shown below in Table 2.6.

Table 2.6 **Workplace Zone Grouped Area**	**Total Workforce Population %**
Port of Felixstowe (southeast)	37.1%
Felixstowe & Old Felixstowe	62.9%

2.33 Once more, these relative total percentages of the workforce population contained within each grouped area can then be applied to the JTW data trip distribution for the MSOA area Suffolk Coastal 015 to calculate 'local car trip' distribution percentages for each workplace zone grouped area within the MSOA, as shown in Table 2.7 below.

Table 2.7 **Place of Work**	**MSOA Number**	**Driving a car or van**	**% Car**	**Workplace Zone Grouped Area**	**Workplace Zone Workforce Population %**	**Local Car Trip Distribution**
Suffolk Coastal 015	E02006301	672	22.5 %	Felixstowe & Old Felixstowe	62.9%	14.2%
				Port of Felixstowe (southeast)	37.1%	8.3%

2.34 The full resulting distributions from the application site are attached at Appendix E.

APPENDIX A

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
usual residence	E02006298 : Suffolk Coastal 012 (2011 super output area - middle layer)

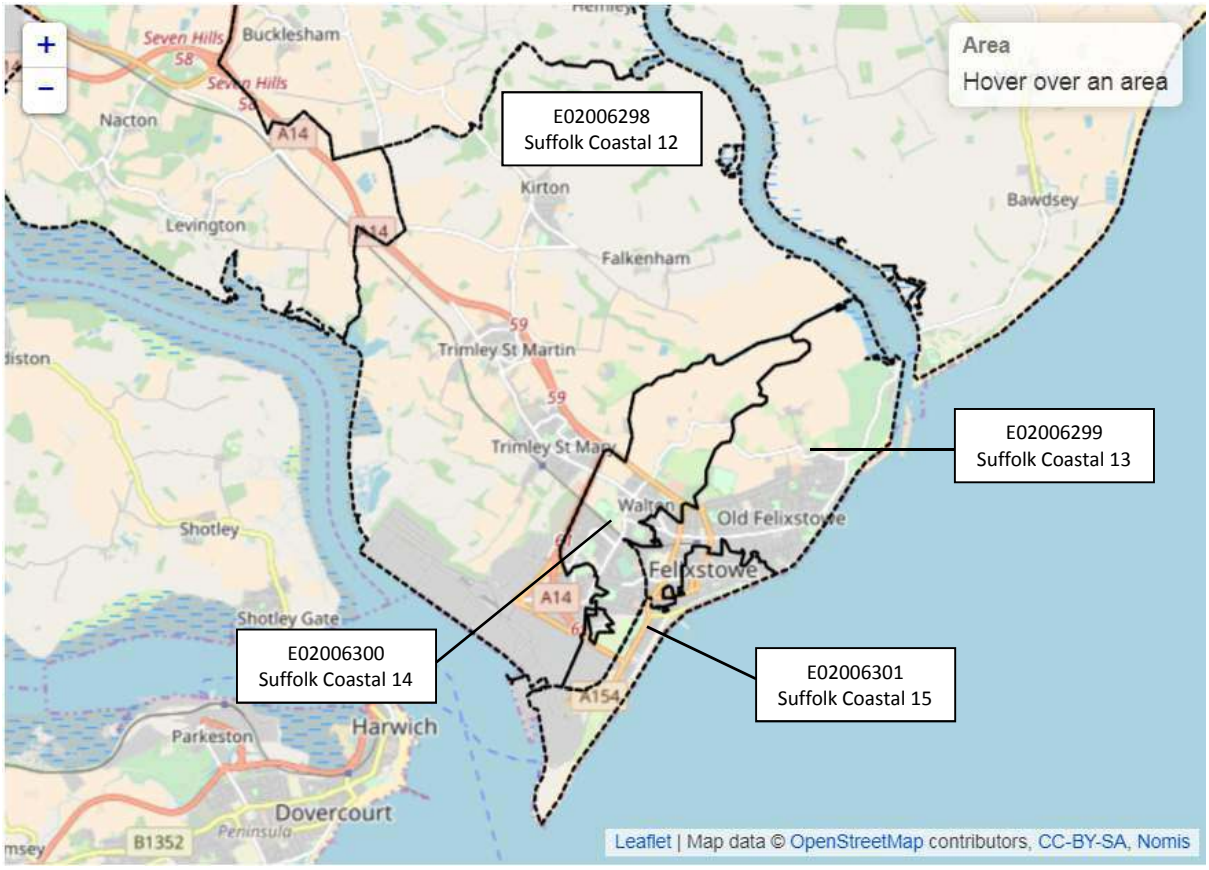
place of work		All categories: Method of travel to work (2001 specification)	Work mainly at or from home	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Taxi	Motorcycle, scooter or moped	Driving a car or van	Passenger in a car or van	Bicycle	On foot	Other method of travel to work	% Car
Ipswich	E41000223	879	0	0	24	41	2	10	740	49	6	7	0	24.8%
Suffolk Coastal 015	E02006301	923	0	1	5	25	2	26	672	53	80	56	3	22.5%
Suffolk Coastal 012	E02006298	660	0	0	0	2	2	14	443	32	60	106	1	14.8%
Suffolk Coastal 014	E02006300	331	0	0	0	4	3	7	230	15	26	45	1	7.7%
Suffolk Coastal 010	E02006296	189	0	0	0	0	0	7	163	10	7	1	1	5.5%
Suffolk Coastal 013	E02006299	180	0	0	1	8	2	2	121	18	22	6	0	4.1%
Babergh	E41000221	105	0	0	1	1	0	1	95	2	4	1	0	3.2%
Mid Suffolk	E41000224	83	0	0	1	1	0	0	71	7	3	0	0	2.4%
Suffolk Coastal 008	E02006294	69	0	0	0	0	0	0	64	3	1	1	0	2.1%
Suffolk Coastal 011	E02006297	72	0	0	0	4	0	3	62	3	0	0	0	2.1%
Colchester	E41000103	46	0	0	2	0	0	0	41	1	1	1	0	1.4%
Suffolk Coastal 005	E02006291	29	0	0	0	0	0	1	26	2	0	0	0	0.9%
Suffolk Coastal 007	E02006293	32	0	0	0	0	0	0	26	1	2	3	0	0.9%
Tendring	E41000108	27	0	0	0	0	0	0	26	1	0	0	0	0.9%
Waveney	E41000227	34	0	0	2	3	0	0	21	1	2	4	1	0.7%
St Edmundsbury	E41000225	21	0	0	1	0	0	0	20	0	0	0	0	0.7%
Suffolk Coastal 006	E02006292	23	0	0	0	0	0	1	19	2	0	1	0	0.6%
Suffolk Coastal 002	E02006288	19	0	0	0	0	0	1	15	1	1	1	0	0.5%
South East	E12000008	18	0	0	2	0	0	0	14	1	0	1	0	0.5%
Suffolk Coastal 009	E02006295	15	0	0	0	0	0	1	12	1	1	0	0	0.4%
Braintree	E41000099	14	0	0	0	0	0	1	12	0	1	0	0	0.4%
Suffolk Coastal 004	E02006290	18	0	0	0	0	0	0	11	1	4	2	0	0.4%
Norwich	E41000180	15	0	0	2	1	0	0	10	0	1	1	0	0.3%
London	E12000007	33	0	0	22	0	0	0	8	0	2	1	0	0.3%
Suffolk Coastal 003	E02006289	8	0	0	0	1	0	0	6	0	0	1	0	0.2%
Suffolk Coastal 001	E02006287	6	0	0	0	0	0	0	5	0	0	1	0	0.2%
Breckland	E41000175	6	0	0	0	1	0	0	5	0	0	0	0	0.2%
Uttlesford	E41000109	5	0	0	0	0	0	0	5	0	0	0	0	0.2%
Forest Heath	E41000222	4	0	0	0	0	0	0	4	0	0	0	0	0.1%
South Norfolk	E41000181	7	0	0	0	0	1	0	4	0	0	1	1	0.1%
Chelmsford	E41000102	3	0	0	0	0	0	0	3	0	0	0	0	0.1%
Great Yarmouth	E41000177	3	0	0	0	0	0	0	3	0	0	0	0	0.1%
King's Lynn and West Norfolk	E41000178	3	0	0	0	0	0	0	3	0	0	0	0	0.1%
South Cambridgeshire	E41000064	3	0	0	0	0	0	0	3	0	0	0	0	0.1%
Thurrock	E41000034	4	0	0	0	0	0	0	3	1	0	0	0	0.1%
East Midlands	E12000004	4	0	0	0	1	0	0	3	0	0	0	0	0.1%
South West	E12000009	7	0	0	1	0	0	0	3	0	0	2	1	0.1%
Basildon	E41000098	2	0	0	0	0	0	0	2	0	0	0	0	0.1%
Broadland	E41000176	2	0	0	0	0	0	0	2	0	0	0	0	0.1%
West Midlands	E12000005	2	0	0	0	0	0	0	2	0	0	0	0	0.1%
Broxbourne	E41000127	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Cambridge	E41000060	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
East Hertfordshire	E41000129	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Epping Forest	E41000104	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
St Albans	E41000132	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Watford	E41000135	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
North West	E12000002	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Northern Ireland	N92000002	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Scotland	S92000003	1	0	0	0	0	0	0	1	0	0	0	0	0.0%
Totals		3,913	0	1	64	93	12	75	2,987	205	224	243	9	100.0%

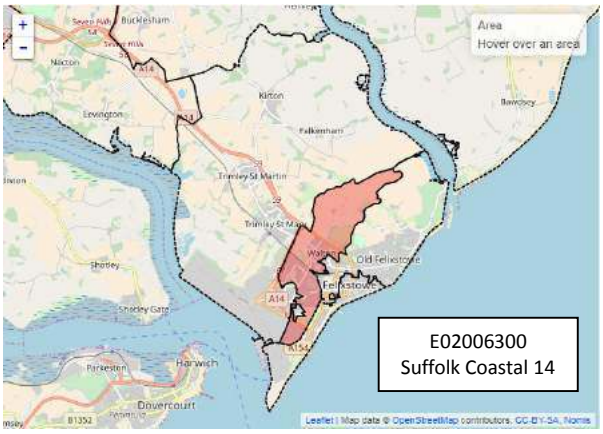
NOTE: Destinations with zero car trips removed

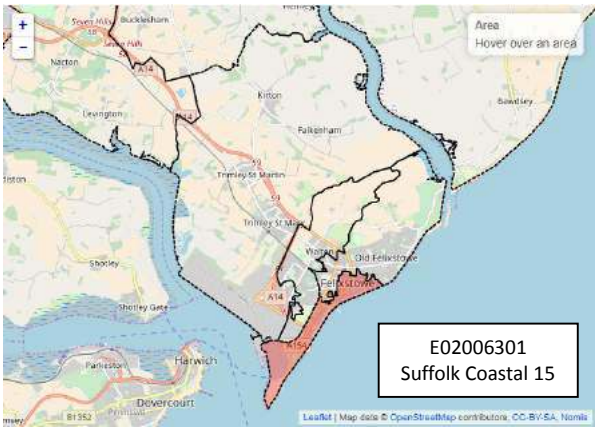
In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.

APPENDIX B

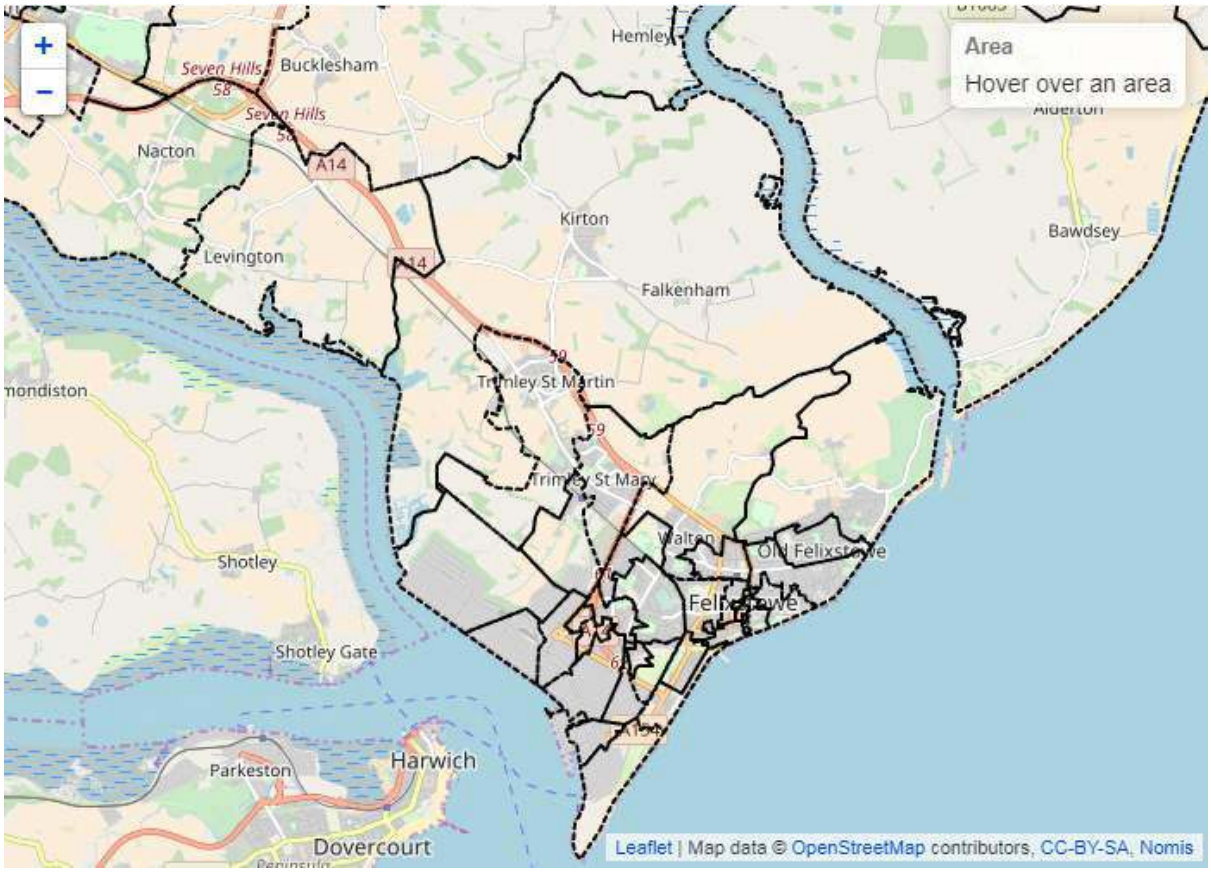
Frame 1 – Nomis Census 2011 MSOA Area Boundaries

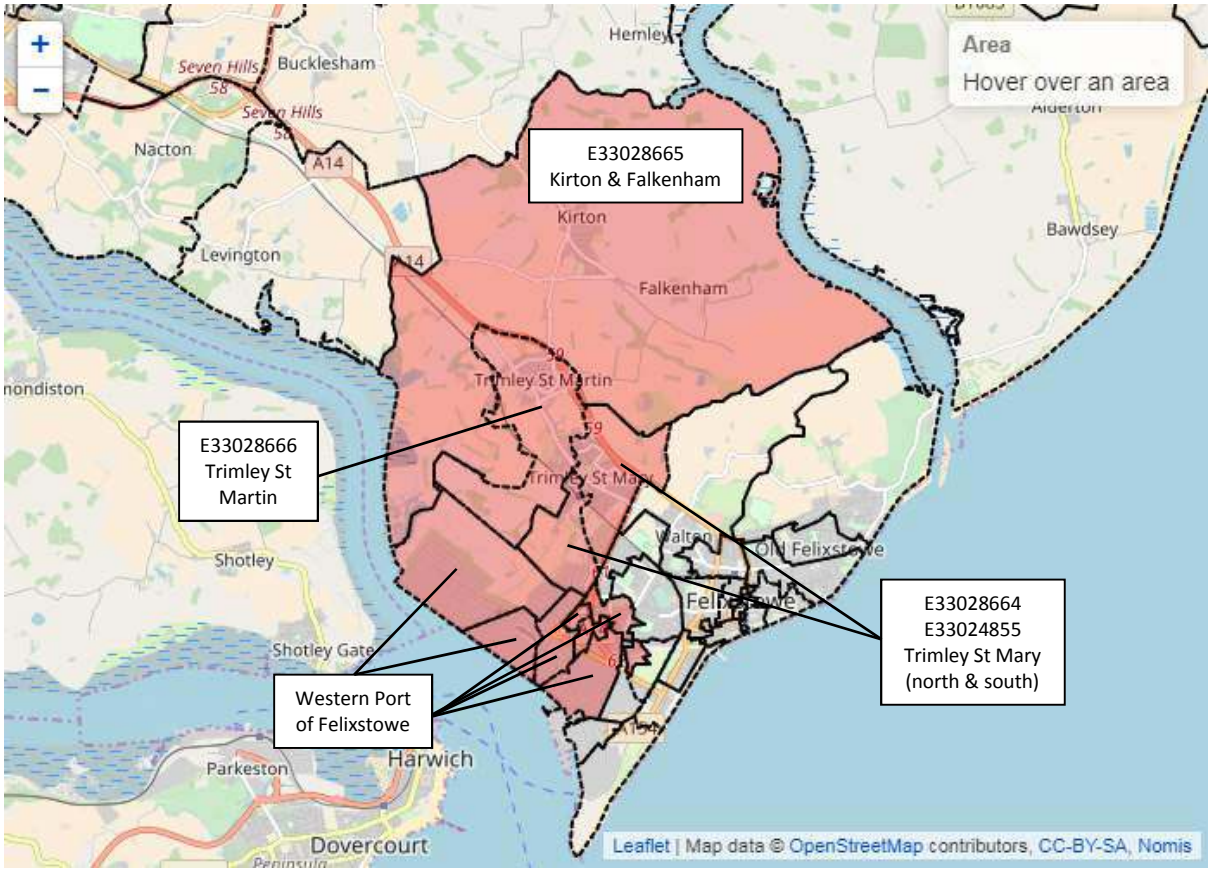




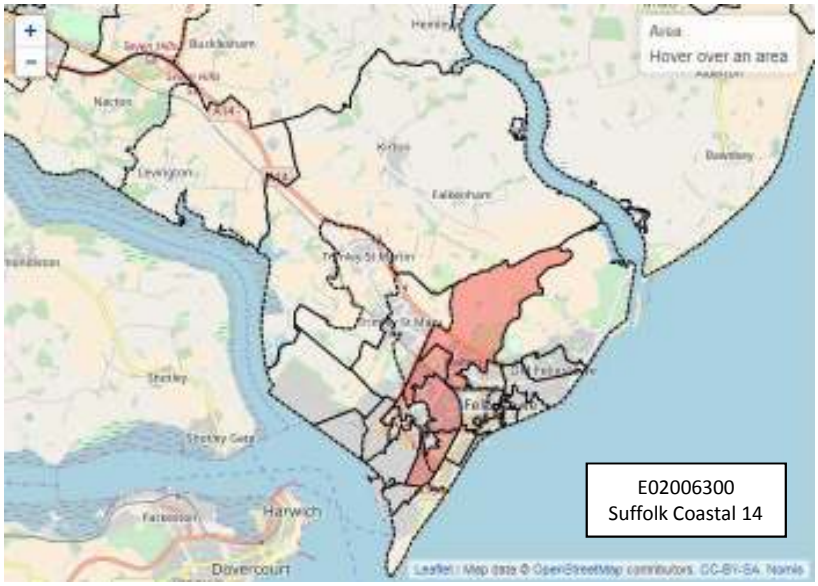


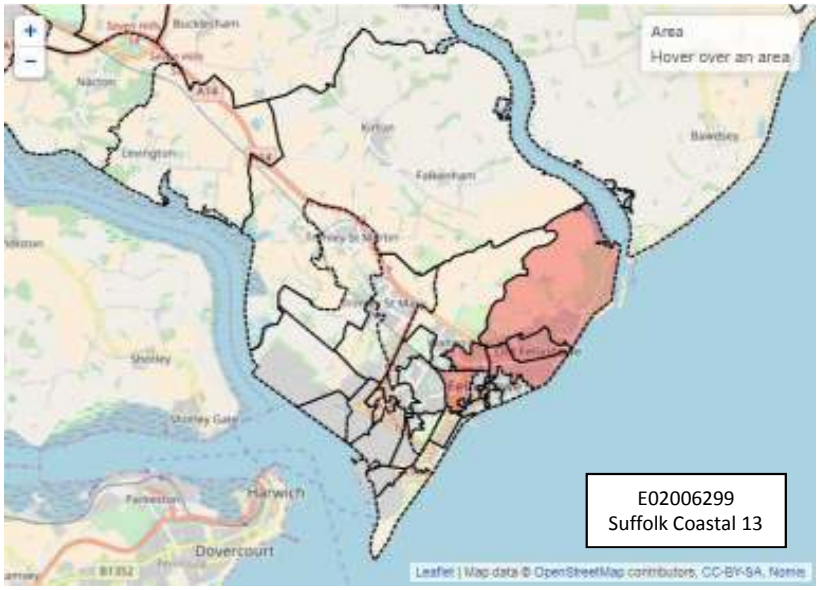
Frame 2 – Nomis Census 2011 Workplace Zone Area Boundaries

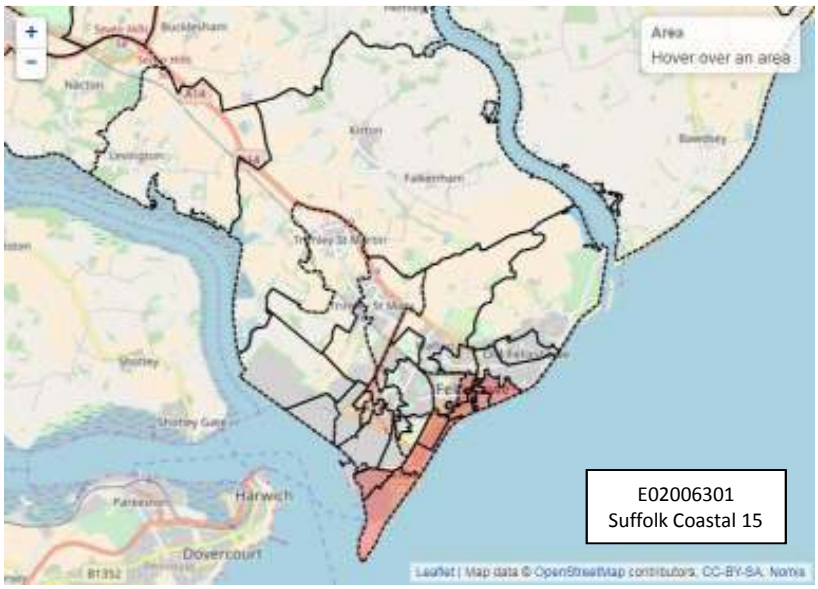




Frame 3 – Nomis Census 2011 Workplace Zone Area Boundaries







APPENDIX C

WP7103EW - Workplace and usual residence by method of travel to work (2001 specification) (Workplace population)

population All usual residents aged 16 and over in employment in the area the week before the census
units Persons
date 2011
method of trav Driving a car or van

2011 census workplace zone		Workplace Zone Grouped Area	All categories: Usual residence	Lives in the workplace zone	Lives outside the workplace zone but within the middle layer super output area	Combined Local Workforce	Local Workforce %
E33024840	E33024840	Port of Felixstowe (west)	463	6	41	47	6.9%
E33024841	E33024841		335	20	50	70	10.2%
E33024842	E33024842		524	0	66	66	9.7%
E33024843	E33024843		375	0	32	32	4.7%
E33024844	E33024844		196	0	34	34	5.0%
E33024854	E33024854		294	1	45	46	6.7%
E33024855	E33024855	Trimley St Mary South	204	11	19	30	4.4%
E33028664	E33028664	Trimley St Mary North	136	74	13	87	12.7%
E33028665	E33028665	Kirton & Falkenham	149	73	10	83	12.2%
E33028666	E33028666	Trimley St Martin	137	88	14	102	14.9%
E33028667	E33028667	Port of Felixstowe (west)	436	38	48	86	12.6%
Totals			3,249	311	372	683	100%

Table 2.2

Workplace Zone Grouped Area	Total Workforce Population %
Port of Felixstowe (west)	55.8%
Trimley St Mary (north & south)	17.1%
Kirton & Falkenham	12.2%
Trimley St Martin	14.9%

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lo
These workplace zones correspond to MSOA Suffolk Coastal 012

APPENDIX D

WP7103EW - Workplace and usual residence by method of travel to work (2001 specification) (Workplace population)

population All usual residents aged 16 and over in employment in the area the week before the census
units Persons
date 2011
method of tra Driving a car or van

2011 census workplace zone		Workplace Zone Grouped Area	All categories: Usual residence	Lives in the workplace zone	Lives outside the workplace zone but within the middle layer super output area	Combined Local Workforce	Local Workforce %
E33028668	E33028668	Felixstowe & Old Felixstowe	225	41	32	73	23.8%
E33028669	E33028669		150	50	24	74	24.1%
E33028670	E33028670		235	40	26	66	21.5%
E33028671	E33028671		102	50	11	61	19.9%
E33028672	E33028672		139	22	11	33	10.7%
Totals			851	203	104	307	100%

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particula
These workplace zones correspond to MSOA Suffolk Coastal 013

WP7103EW - Workplace and usual residence by method of travel to work (2001 specification) (Workplace population)

population All usual residents aged 16 and over in employment in the area the week before the census
units Persons
date 2011
method of trav Driving a car or van

2011 census workplace zone		Workplace Zone Grouped Area	All categories: Usual residence	Lives in the workplace zone	Lives outside the workplace zone but within the middle layer super output area	Combined Local Workforce	Local Workforce %
E33024845	E33024845	Port of Felixstowe (southeast)	212	6	29	35	12.1%
E33024846	E33024846		454	0	44	44	15.2%
E33028673	E33028673		217	42	13	55	19.0%
E33028674	E33028674		238	62	31	93	32.2%
E33028675	E33028675	Walton High St	171	53	9	62	21.5%
Totals			1,292	163	126	289	100%

Table 6.4

Workplace Zone Grouped Area	Total Workforce Population %
Port of Felixstowe (southeast)	78.5%
Walton High Street	21.5%

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the These workplace zones correspond to MSOA Suffolk Coastal 014

WP7103EW - Workplace and usual residence by method of travel to work (2001 specification) (Workplace population)

population All usual residents aged 16 and over in employment in the area the week before the census
units Persons
date 2011
method of tra\ Driving a car or van

2011 census workplace zone		Workplace Zone Grouped Area	All categories: Usual residence	Lives in the workplace zone	Lives outside the workplace zone but within the middle layer super output area	Combined Local Workforce	Local Workforce %
E33024835	E33024835	Port of Felixstowe (southeast)	313	10	15	25	6.1%
E33024836	E33024836	Port of Felixstowe (southeast)	2,116	0	86	86	21.1%
E33024837	E33024837	Felixstowe & Old Felixstowe	140	0	11	11	2.7%
E33024838	E33024838		199	3	14	17	4.2%
E33024839	E33024839		116	5	6	11	2.7%
E33028676	E33028676	Port of Felixstowe (southeast)	440	16	24	40	9.8%
E33028677	E33028677	Felixstowe & Old Felixstowe	291	22	22	44	10.8%
E33028678	E33028678		306	12	23	35	8.6%
E33028679	E33028679		234	52	12	64	15.7%
E33028680	E33028680		310	14	23	37	9.1%
E33028681	E33028681		157	31	6	37	9.1%
Totals			4,622	165	242	407	100%

Table 6.5

Workplace Zone Grouped Area	Total Workforce Population %
Port of Felixstowe (southeast)	37.1%
Felixstowe & Old Felixstowe	62.9%

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geog
These workplace zones correspond to MSOA Suffolk Coastal 015

APPENDIX E

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
usual residence	E02006298 : Suffolk Coastal 012 (2011 super output area - middle layer)

Place of Work	MSOA Number	Driving a car or van	% Car	Workplace Zone Grouped Area	Workplace Zone Workforce Population %	Local Car Trip Distribution
Suffolk Coastal 012	E02006298	443	14.8%	Port of Felixstowe (west)	55.8%	8.3%
				Trimley St Mary (north & south)	17.1%	2.5%
				Kirton & Falkenham	12.2%	1.8%
				Trimley St Martin	14.9%	2.2%
Suffolk Coastal 013	E02006299	121	4.1%	Felixstowe & Old Felixstowe	100.0%	4.1%
Suffolk Coastal 014	E02006300	230	7.7%	Walton High Street	21.5%	1.7%
				Port of Felixstowe (southeast)	78.5%	6.0%
Suffolk Coastal 015	E02006301	672	22.5%	Felixstowe & Old Felixstowe	62.9%	14.2%
				Port of Felixstowe (southeast)	37.1%	8.3%
Suffolk Coastal 001	E02006287	5	0.2%			50.9%
Suffolk Coastal 002	E02006288	15	0.5%			
Suffolk Coastal 003	E02006289	6	0.2%			
Suffolk Coastal 004	E02006290	11	0.4%			
Suffolk Coastal 005	E02006291	26	0.9%			
Suffolk Coastal 006	E02006292	19	0.6%			
Suffolk Coastal 007	E02006293	26	0.9%			
Suffolk Coastal 008	E02006294	64	2.1%			
Suffolk Coastal 009	E02006295	12	0.4%			
Suffolk Coastal 010	E02006296	163	5.5%			
Suffolk Coastal 011	E02006297	62	2.1%			
North West	E12000002	1	0.0%			
East Midlands	E12000004	3	0.1%			
West Midlands	E12000005	2	0.1%			
London	E12000007	8	0.3%			
South East	E12000008	14	0.5%			
South West	E12000009	3	0.1%			
Thurrock	E41000034	3	0.1%			
Cambridge	E41000060	1	0.0%			
South Cambridgeshire	E41000064	3	0.1%			
Basildon	E41000098	2	0.1%			
Braintree	E41000099	12	0.4%			
Chelmsford	E41000102	3	0.1%	N/A	N/A	
Colchester	E41000103	41	1.4%			
Epping Forest	E41000104	1	0.0%			
Tendring	E41000108	26	0.9%			
Uttlesford	E41000109	5	0.2%			
Broxbourne	E41000127	1	0.0%			
East Hertfordshire	E41000129	1	0.0%			
St Albans	E41000132	1	0.0%			
Watford	E41000135	1	0.0%			
Breckland	E41000175	5	0.2%			
Broadland	E41000176	2	0.1%			
Great Yarmouth	E41000177	3	0.1%			
King's Lynn and West Norfolk	E41000178	3	0.1%			
Norwich	E41000180	10	0.3%			
South Norfolk	E41000181	4	0.1%			
Babergh	E41000221	95	3.2%			
Forest Heath	E41000222	4	0.1%			
Ipswich	E41000223	740	24.8%			
Mid Suffolk	E41000224	71	2.4%			
St Edmundsbury	E41000225	20	0.7%			
Waveney	E41000227	21	0.7%			
Northern Ireland	N92000002	1	0.0%			
Scotland	S92000003	1	0.0%			
Totals		2,987	100%			100%

NOTE: Destinations with zero car trips removed

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts wil

APPENDIX E

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

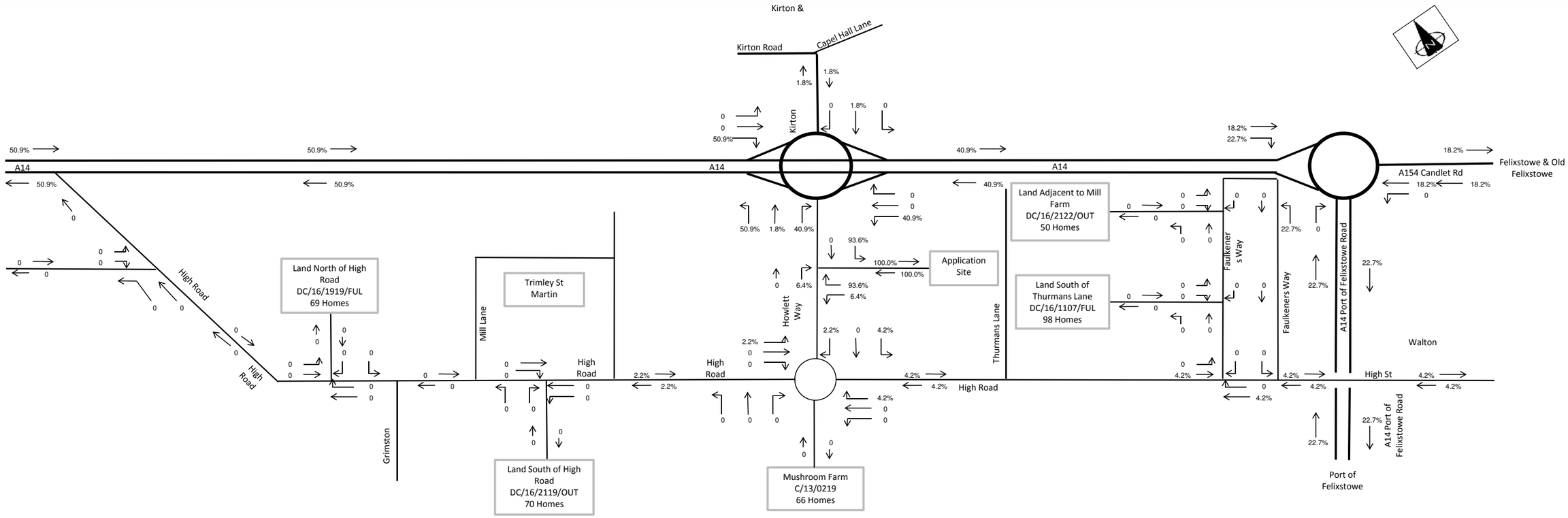
population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
usual residence	E02006298 : Suffolk Coastal 012 (2011 super output area - middle layer)

Place of Work	MSOA Number	Driving a car or van	% Car	Workplace Zone Grouped Area	Workplace Zone Workforce Population %	Local Car Trip Distribution
Suffolk Coastal 012	E02006298	443	14.8%	Port of Felixstowe (west)	55.8%	8.3%
				Trimley St Mary (north & south)	17.1%	2.5%
				Kirton & Falkenham	12.2%	1.8%
				Trimley St Martin	14.9%	2.2%
Suffolk Coastal 013	E02006299	121	4.1%	Felixstowe & Old Felixstowe	100.0%	4.1%
Suffolk Coastal 014	E02006300	230	7.7%	Walton High Street	21.5%	1.7%
				Port of Felixstowe (southeast)	78.5%	6.0%
Suffolk Coastal 015	E02006301	672	22.5%	Felixstowe & Old Felixstowe	62.9%	14.2%
				Port of Felixstowe (southeast)	37.1%	8.3%
Suffolk Coastal 001	E02006287	5	0.2%			50.9%
Suffolk Coastal 002	E02006288	15	0.5%			
Suffolk Coastal 003	E02006289	6	0.2%			
Suffolk Coastal 004	E02006290	11	0.4%			
Suffolk Coastal 005	E02006291	26	0.9%			
Suffolk Coastal 006	E02006292	19	0.6%			
Suffolk Coastal 007	E02006293	26	0.9%			
Suffolk Coastal 008	E02006294	64	2.1%			
Suffolk Coastal 009	E02006295	12	0.4%			
Suffolk Coastal 010	E02006296	163	5.5%			
Suffolk Coastal 011	E02006297	62	2.1%			
North West	E12000002	1	0.0%			
East Midlands	E12000004	3	0.1%			
West Midlands	E12000005	2	0.1%			
London	E12000007	8	0.3%			
South East	E12000008	14	0.5%			
South West	E12000009	3	0.1%			
Thurrock	E41000034	3	0.1%			
Cambridge	E41000060	1	0.0%			
South Cambridgeshire	E41000064	3	0.1%			
Basildon	E41000098	2	0.1%			
Braintree	E41000099	12	0.4%			
Chelmsford	E41000102	3	0.1%	N/A	N/A	
Colchester	E41000103	41	1.4%			
Epping Forest	E41000104	1	0.0%			
Tendring	E41000108	26	0.9%			
Uttlesford	E41000109	5	0.2%			
Broxbourne	E41000127	1	0.0%			
East Hertfordshire	E41000129	1	0.0%			
St Albans	E41000132	1	0.0%			
Watford	E41000135	1	0.0%			
Breckland	E41000175	5	0.2%			
Broadland	E41000176	2	0.1%			
Great Yarmouth	E41000177	3	0.1%			
King's Lynn and West Norfolk	E41000178	3	0.1%			
Norwich	E41000180	10	0.3%			
South Norfolk	E41000181	4	0.1%			
Babergh	E41000221	95	3.2%			
Forest Heath	E41000222	4	0.1%			
Ipswich	E41000223	740	24.8%			
Mid Suffolk	E41000224	71	2.4%			
St Edmundsbury	E41000225	20	0.7%			
Waveney	E41000227	21	0.7%			
Northern Ireland	N92000002	1	0.0%			
Scotland	S92000003	1	0.0%			
Totals		2,987	100%			100%

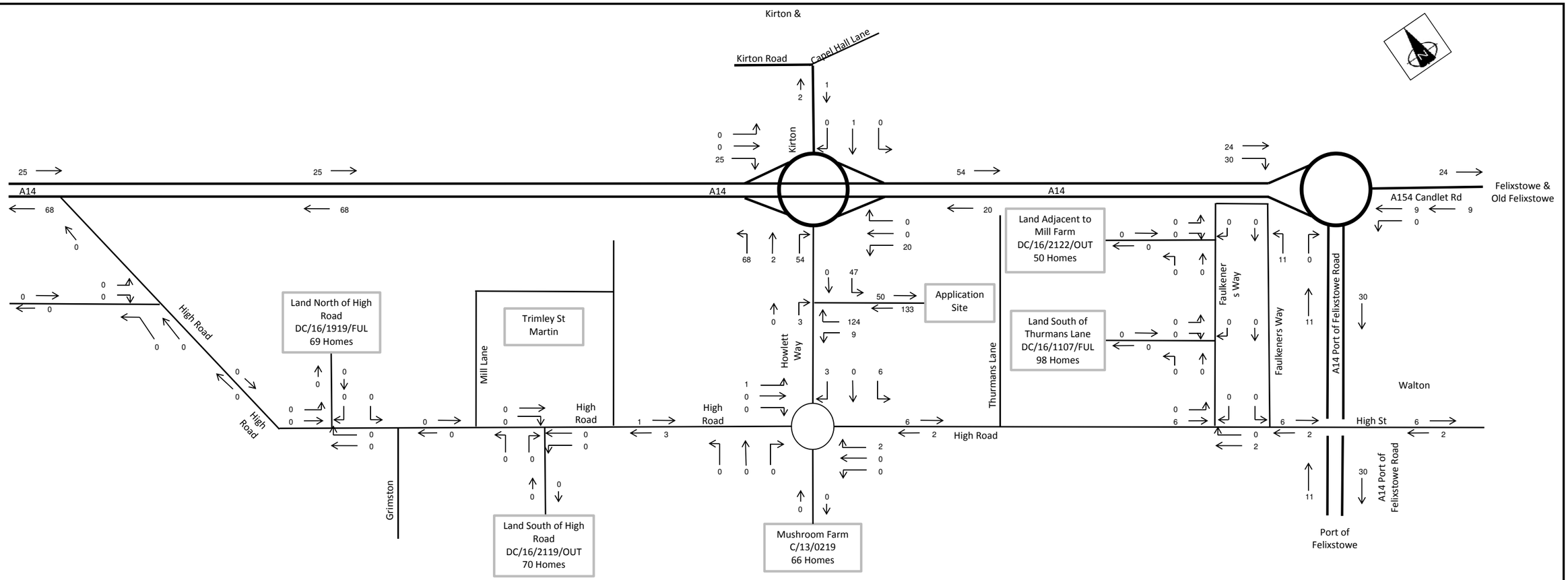
NOTE: Destinations with zero car trips removed

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts wil

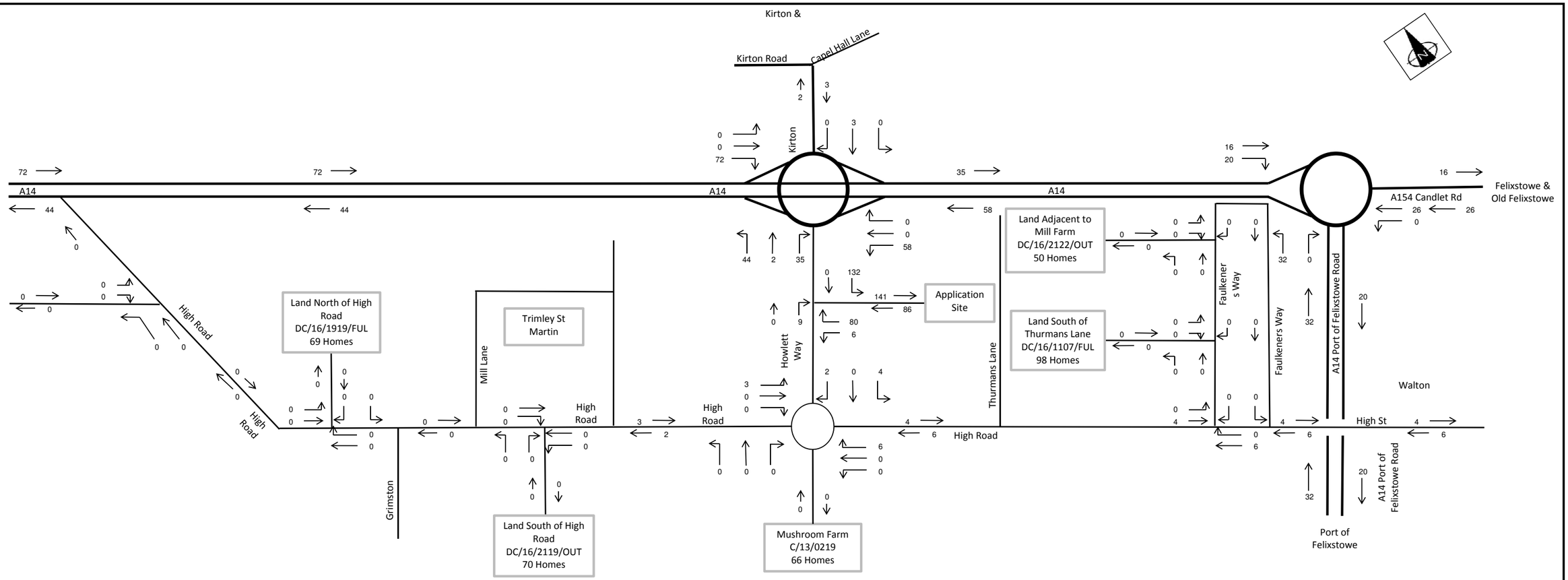
FIGURES



Scale: NTS	Client: **Trinity College Cambridge**	Job Title: **Howlett Way, Felixstowe**	**Development Transport Planning** Kingswick House, Kingswick Drive, Sunninghill, SL5 7BH
Date: 18/12/2017	Title: **Residential Distribution (08:00-09:00)**		
Drawn by: RAA		Job No: 67006	Figure: SR 1



Scale: NTS	Client: **Trinity College Cambridge**	Job Title: **Howlett Way, Felixstowe**	**Development Transport Planning** Kingswick House, Kingswick Drive, Sunninghill, SL5 7BH
Date: 18/12/2017	Title: **Development Flows Morning Peak Hour (08:00-09:00)**		
Drawn by: RAA		Job No: 67006	Figure: SR 2



Scale: NTS	Client: **Trinity College Cambridge**	Job Title: **Howlett Way, Felixstowe**	**Development Transport Planning** Kingswick House, Kingswick Drive, Sunninghill, SL5 7BH
Date: 18/12/2017	Title: **Development Flows Evening Peak Hour (17:00-18:00)**		
Drawn by: RAA		Job No: 67006	Figure: SR 3

APPENDIX H

Calculation Reference: AUDIT-743701-180730-0735

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : D - NURSERY
MULTI-MODAL VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
05	**EAST MIDLANDS**		
	LN	LINCOLNSHIRE	1 days

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

Secondary Filtering selection:

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

Parameter: Number of pupils
Actual Range: 45 to 50 (units:)
Range Selected by User: 37 to 60 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 31/10/17

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

Selected survey days:

Tuesday	2 days
Friday	1 days

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

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Neighbourhood Centre (PPS6 Local Centre)	1

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

Selected Location Sub Categories:

Residential Zone	3

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

Secondary Filtering selection:

Use Class:

D1	3 days

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

Secondary Filtering selection (Cont.):

Population within 1 mile:

15,001 to 20,000	1 days
25,001 to 50,000	1 days
50,001 to 100,000	1 days

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

Population within 5 miles:

125,001 to 250,000	2 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.5 or Less	1 days
1.1 to 1.5	2 days

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

Travel Plan:

No	3 days

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

PTAL Rating:

No PTAL Present	3 days

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

LIST OF SITES relevant to selection parameters

1	**CA-04-D-02**	**NURSERY**		**CAMBRIDGESHIRE**
	EASTFIELD ROAD			
	PETERBOROUGH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of pupils:		50	
	Survey date: TUESDAY		18/10/16	Survey Type: MANUAL
2	**ES-04-D-01**	**NURSERY**		**EAST SUSSEX**
	CONNAUGHT ROAD			
	BRIGHTON			
	HOVE			
	Neighbourhood Centre (PPS6 Local Centre)			
	Residential Zone			
	Total Number of pupils:		45	
	Survey date: FRIDAY		22/09/17	Survey Type: MANUAL
3	**LN-04-D-01**	**NURSERY**		**LINCOLNSHIRE**
	NEWARK ROAD			
	LINCOLN			
	SWALLOW BECK			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of pupils:		49	
	Survey date: TUESDAY		31/10/17	Survey Type: MANUAL

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL VEHICLES
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	3	48	0.069	3	48	0.028	3	48	0.097
08:00 - 09:00	**3**	**48**	**0.264**	3	48	0.174	**3**	**48**	**0.438**
09:00 - 10:00	3	48	0.063	3	48	0.056	3	48	0.118
10:00 - 11:00	3	48	0.000	3	48	0.000	3	48	0.000
11:00 - 12:00	3	48	0.007	3	48	0.007	3	48	0.014
12:00 - 13:00	3	48	0.049	3	48	0.090	3	48	0.139
13:00 - 14:00	3	48	0.076	3	48	0.076	3	48	0.152
14:00 - 15:00	3	48	0.007	3	48	0.021	3	48	0.028
15:00 - 16:00	3	48	0.063	3	48	0.056	3	48	0.118
16:00 - 17:00	3	48	0.104	3	48	0.090	3	48	0.194
17:00 - 18:00	3	48	0.174	**3**	**48**	**0.201**	3	48	0.375
18:00 - 19:00	3	48	0.028	3	48	0.104	3	48	0.132
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.902			0.903			1.805

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

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

Parameter summary

Trip rate parameter range selected:	45 - 50 (units:)
Survey date date range:	01/01/10 - 31/10/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL TAXIS
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	**3**	**48**	**0.007**	**3**	**48**	**0.007**	**3**	**48**	**0.014**
08:00 - 09:00	3	48	0.007	3	48	0.007	3	48	0.014
09:00 - 10:00	3	48	0.000	3	48	0.000	3	48	0.000
10:00 - 11:00	3	48	0.000	3	48	0.000	3	48	0.000
11:00 - 12:00	3	48	0.000	3	48	0.000	3	48	0.000
12:00 - 13:00	3	48	0.007	3	48	0.007	3	48	0.014
13:00 - 14:00	3	48	0.000	3	48	0.000	3	48	0.000
14:00 - 15:00	3	48	0.000	3	48	0.000	3	48	0.000
15:00 - 16:00	3	48	0.000	3	48	0.000	3	48	0.000
16:00 - 17:00	3	48	0.000	3	48	0.000	3	48	0.000
17:00 - 18:00	3	48	0.000	3	48	0.000	3	48	0.000
18:00 - 19:00	3	48	0.000	3	48	0.000	3	48	0.000
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.021			0.021			0.042

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL CYCLISTS
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	3	48	0.000	3	48	0.000	3	48	0.000
08:00 - 09:00	**3**	**48**	**0.007**	**3**	**48**	**0.007**	**3**	**48**	**0.014**
09:00 - 10:00	3	48	0.000	3	48	0.000	3	48	0.000
10:00 - 11:00	3	48	0.000	3	48	0.000	3	48	0.000
11:00 - 12:00	3	48	0.000	3	48	0.000	3	48	0.000
12:00 - 13:00	3	48	0.007	3	48	0.000	3	48	0.007
13:00 - 14:00	3	48	0.000	3	48	0.000	3	48	0.000
14:00 - 15:00	3	48	0.000	3	48	0.000	3	48	0.000
15:00 - 16:00	3	48	0.000	3	48	0.000	3	48	0.000
16:00 - 17:00	3	48	0.000	3	48	0.000	3	48	0.000
17:00 - 18:00	3	48	0.000	3	48	0.007	3	48	0.007
18:00 - 19:00	3	48	0.000	3	48	0.000	3	48	0.000
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00	1	50	0.000	1	50	0.000	1	50	0.000
21:00 - 22:00	1	50	0.000	1	50	0.000	1	50	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.014			0.014			0.028

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	3	48	0.097	3	48	0.028	3	48	0.125
08:00 - 09:00	**3**	**48**	**0.542**	3	48	0.125	**3**	**48**	**0.667**
09:00 - 10:00	3	48	0.118	3	48	0.056	3	48	0.174
10:00 - 11:00	3	48	0.000	3	48	0.000	3	48	0.000
11:00 - 12:00	3	48	0.007	3	48	0.007	3	48	0.014
12:00 - 13:00	3	48	0.076	3	48	0.090	3	48	0.166
13:00 - 14:00	3	48	0.104	3	48	0.090	3	48	0.194
14:00 - 15:00	3	48	0.014	3	48	0.021	3	48	0.035
15:00 - 16:00	3	48	0.069	3	48	0.111	3	48	0.180
16:00 - 17:00	3	48	0.090	3	48	0.160	3	48	0.250
17:00 - 18:00	3	48	0.160	**3**	**48**	**0.410**	3	48	0.570
18:00 - 19:00	3	48	0.021	3	48	0.201	3	48	0.222
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.298			1.299			2.597

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL PEDESTRIANS
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	3	48	0.028	3	48	0.007	3	48	0.035
08:00 - 09:00	**3**	**48**	**0.097**	**3**	**48**	**0.090**	**3**	**48**	**0.187**
09:00 - 10:00	3	48	0.028	3	48	0.007	3	48	0.035
10:00 - 11:00	3	48	0.007	3	48	0.007	3	48	0.014
11:00 - 12:00	3	48	0.035	3	48	0.014	3	48	0.049
12:00 - 13:00	3	48	0.097	3	48	0.063	3	48	0.159
13:00 - 14:00	3	48	0.007	3	48	0.083	3	48	0.090
14:00 - 15:00	3	48	0.007	3	48	0.007	3	48	0.014
15:00 - 16:00	3	48	0.097	3	48	0.069	3	48	0.166
16:00 - 17:00	3	48	0.014	3	48	0.021	3	48	0.035
17:00 - 18:00	3	48	0.063	3	48	0.063	3	48	0.124
18:00 - 19:00	3	48	0.007	3	48	0.028	3	48	0.035
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.486			0.457			0.943

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL BUS/ TRAM PASSENGERS
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	3	48	0.014	3	48	0.000	3	48	0.014
08:00 - 09:00	**3**	**48**	**0.035**	3	48	0.014	**3**	**48**	**0.049**
09:00 - 10:00	3	48	0.000	3	48	0.007	3	48	0.007
10:00 - 11:00	3	48	0.000	3	48	0.000	3	48	0.000
11:00 - 12:00	3	48	0.000	3	48	0.007	3	48	0.007
12:00 - 13:00	3	48	0.021	3	48	0.014	3	48	0.035
13:00 - 14:00	3	48	0.007	3	48	0.007	3	48	0.014
14:00 - 15:00	3	48	0.000	3	48	0.000	3	48	0.000
15:00 - 16:00	3	48	0.007	3	48	0.000	3	48	0.007
16:00 - 17:00	3	48	0.000	**3**	**48**	**0.021**	3	48	0.021
17:00 - 18:00	3	48	0.007	3	48	0.021	3	48	0.028
18:00 - 19:00	3	48	0.000	3	48	0.007	3	48	0.007
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.091			0.098			0.189

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	3	48	0.014	3	48	0.000	3	48	0.014
08:00 - 09:00	**3**	**48**	**0.035**	3	48	0.014	**3**	**48**	**0.049**
09:00 - 10:00	3	48	0.000	3	48	0.007	3	48	0.007
10:00 - 11:00	3	48	0.000	3	48	0.000	3	48	0.000
11:00 - 12:00	3	48	0.000	3	48	0.007	3	48	0.007
12:00 - 13:00	3	48	0.021	3	48	0.014	3	48	0.035
13:00 - 14:00	3	48	0.007	3	48	0.007	3	48	0.014
14:00 - 15:00	3	48	0.000	3	48	0.000	3	48	0.000
15:00 - 16:00	3	48	0.007	3	48	0.000	3	48	0.007
16:00 - 17:00	3	48	0.000	**3**	**48**	**0.021**	3	48	0.021
17:00 - 18:00	3	48	0.007	3	48	0.021	3	48	0.028
18:00 - 19:00	3	48	0.000	3	48	0.007	3	48	0.007
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.091			0.098			0.189

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	3	48	0.139	3	48	0.035	3	48	0.174
08:00 - 09:00	**3**	**48**	**0.681**	3	48	0.236	**3**	**48**	**0.917**
09:00 - 10:00	3	48	0.146	3	48	0.069	3	48	0.215
10:00 - 11:00	3	48	0.007	3	48	0.007	3	48	0.014
11:00 - 12:00	3	48	0.042	3	48	0.028	3	48	0.070
12:00 - 13:00	3	48	0.201	3	48	0.167	3	48	0.368
13:00 - 14:00	3	48	0.118	3	48	0.181	3	48	0.299
14:00 - 15:00	3	48	0.021	3	48	0.028	3	48	0.049
15:00 - 16:00	3	48	0.174	3	48	0.181	3	48	0.355
16:00 - 17:00	3	48	0.104	3	48	0.201	3	48	0.305
17:00 - 18:00	3	48	0.229	**3**	**48**	**0.500**	3	48	0.729
18:00 - 19:00	3	48	0.028	3	48	0.236	3	48	0.264
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00	1	50	0.000	1	50	0.000	1	50	0.000
21:00 - 22:00	1	50	0.000	1	50	0.000	1	50	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.890			1.869			3.759

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL CARS
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	3	48	0.063	3	48	0.021	3	48	0.083
08:00 - 09:00	**3**	**48**	**0.257**	3	48	0.167	**3**	**48**	**0.424**
09:00 - 10:00	3	48	0.063	3	48	0.056	3	48	0.118
10:00 - 11:00	3	48	0.000	3	48	0.000	3	48	0.000
11:00 - 12:00	3	48	0.000	3	48	0.007	3	48	0.007
12:00 - 13:00	3	48	0.042	3	48	0.083	3	48	0.125
13:00 - 14:00	3	48	0.076	3	48	0.076	3	48	0.152
14:00 - 15:00	3	48	0.007	3	48	0.021	3	48	0.028
15:00 - 16:00	3	48	0.063	3	48	0.056	3	48	0.118
16:00 - 17:00	3	48	0.097	3	48	0.083	3	48	0.180
17:00 - 18:00	3	48	0.174	**3**	**48**	**0.194**	3	48	0.368
18:00 - 19:00	3	48	0.028	3	48	0.104	3	48	0.132
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.867			0.868			1.735

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

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

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
MULTI-MODAL LGVS
Calculation factor: 1
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	50	0.000	1	50	0.000	1	50	0.000
07:00 - 08:00	3	48	0.000	3	48	0.000	3	48	0.000
08:00 - 09:00	3	48	0.000	3	48	0.000	3	48	0.000
09:00 - 10:00	3	48	0.000	3	48	0.000	3	48	0.000
10:00 - 11:00	3	48	0.000	3	48	0.000	3	48	0.000
11:00 - 12:00	**3**	**48**	**0.007**	3	48	0.000	3	48	0.007
12:00 - 13:00	3	48	0.000	3	48	0.000	3	48	0.000
13:00 - 14:00	3	48	0.000	3	48	0.000	3	48	0.000
14:00 - 15:00	3	48	0.000	3	48	0.000	3	48	0.000
15:00 - 16:00	3	48	0.000	3	48	0.000	3	48	0.000
16:00 - 17:00	3	48	0.007	**3**	**48**	**0.007**	**3**	**48**	**0.014**
17:00 - 18:00	3	48	0.000	3	48	0.007	3	48	0.007
18:00 - 19:00	3	48	0.000	3	48	0.000	3	48	0.000
19:00 - 20:00	1	50	0.000	1	50	0.000	1	50	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.014			0.014			0.028

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

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APPENDIX I

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
usual residence	E02006298 : Suffolk Coastal 012 (2011 super output area - middle layer)

Calculation of Trips by All Modes - Proposed Residential Development

Based on 360 units

place of work		All categories: Method of travel to work (2001 specification)	Underground, metro, light rail or tram	Train	Bus, minibus or coach	Combined Public Transport Modes	Taxi	Motorcycle, scooter or moped	Driving a car or van	Passenger in a car or van	Bicycle	On foot	Other method of travel to work
MSOA Suffolk Coastal 012		3,915	1	64	93	158	12	76	2,987	205	224	224	9
Percentages			0.0%	1.6%	2.4%	4.0%	0.3%	1.9%	76.3%	5.2%	5.7%	5.7%	0.2%
Public Transport Percentages			0.6%	40.5%	58.9%								
Calculated Trips by Mode	AM	Inbound	0	1	2	3	0	1	54	4	4	4	0
		Outbound	0	3	4	8	1	4	144	10	11	11	0
		Total	0	4	6	10	1	5	198	14	15	15	1
	PM	Inbound	0	3	4	7	1	3	125	9	9	9	0
		Outbound	0	2	2	4	0	2	71	5	5	5	0
		Total	0	4	6	10	1	5	196	13	15	15	1

Calculated Vehicle Trips	AM	PM
In	54	125
Out	144	71
Total	199	196

Table 4.4	AM Peak			PM Peak		
Mode	In	Out	Total	In	Out	Total
On Foot	4	11	15	9	5	15
Bicycle	4	11	15	9	5	15
Bus	2	4	6	4	2	6
Train	1	3	4	3	2	4
Motorcycle	1	4	5	3	2	5
Total	12	33	45	28	16	45

APPENDIX J

Trinity College Cambridge
Land at Howlett Way, Trimley
Travel Plan Framework

Introduction

A Travel Plan is a package of measures designed to improve opportunities for travel to and from a site by means of travel other than single occupancy car use. It is becoming increasingly common for Councils to ask for a Travel Plan to be implemented in association with new developments as a means by which to reduce the vehicular traffic impacts of a development on the local community.

A residential Travel Plan aims to promote the use of non-car mode travel by residents of new housing developments by encouraging walking, cycling, car-sharing and the use of public transport. This can be achieved by locating development close to existing facilities and services; ensuring that the infrastructure exists for these modes; co-ordinating a number of encouragement measures; providing relevant facilities and services; and promoting the Travel Plan. These five strands of the Travel Plan are considered below.

Existing Local Facilities & Infrastructure

The proposed development is located between the villages of Trimley St Martin and Trimley St Mary, each within walking distance and offering services which would provide for some of the daily needs of future residents. A convenience store and post office is located at Church Lane, which is proposed as a pedestrian and cyclist access route. Amongst the existing facilities within walking distance are pubs, food outlets, schools and a social club.

Additionally, there exist adequate footways, cycle lanes and bus services along High Street ensuring that walking, cycling and public transport are convenient and attractive. Existing bus stops are located within a short walk of proposed access points.

Proposed Facilities & Infrastructure

The proposed development will be designed in accordance with the guidance in Manual for Streets and this will ensure that within the development priority is given to pedestrians and cyclists. The proposals include off-site improvements to local pedestrian infrastructure including additional footway/cycleway provision and improved crossing points. The proposals also include provision of a pre-school nursery for up to 32 children and an area of public open space.

There may be opportunities for further improvements to encourage more sustainable travel which would only become apparent following occupation, for example increased cycle parking provision, and this would emerge from ongoing collection, analysis and review of travel data by the Travel Plan Coordinator following occupation of the development.

Coordination of Travel Plan & Measures

At the commencement of development a Travel Plan co-ordinator will be appointed by the developer to ensure that Travel Plan measures are actioned and that incoming residents are fully informed of the existence and aims of the Travel Plan and the measures included within it.

Subsequent to the occupation of the development, the role of co-ordinating the Travel Plan will be transferred to the residents management company for the continuing management of the Travel Plan and in particular when occupation of dwellings changes.

The developer is committed to the provision of a Travel Plan Coordinator for a minimum period of 5 years following the completion of the development.

The developer is also committed to allocating appropriate funding for the provision of Travel Plan measures during both the construction phase and also for a period of at least 5 years following the completion of the development.

Promotion

A key part of the role of Travel Plan Coordinator is to actively promote the Travel Plan and maximise the potential for model shift from single occupancy car trips. This promotion should continue throughout the life of the Travel Plan with regular events and updating of informational/promotional materials.

In summary, a Travel Plan is not simply a document but an ongoing process that should develop and evolve iteratively over time as the development matures, and best practice guidance advises that the commencement of this iterative travel plan process should ideally begin as early as the design phase. This Travel Plan Framework document therefore serves two purposes:

- The identification of initial design measures, developer commitments, and indicative targets (based on predicted travel characteristics) intended as the initial foundation for a successful Travel Plan;

- The provision of an exemplar Travel Plan template to inform future Travel Plan Coordinators and provide them with a live Travel Plan process to adopt and subsequently develop, reviewing and revising measures appropriately as the development matures.

Residential Travel Plan Measures

Design Measures

During the design phase of the proposals a number of improvements were identified which would facilitate and encourage walking, cycling and the use of public transport and hence reduce single occupant vehicle trips:

- The internal estate road layout has been designed to give priority to pedestrians and cyclists in accordance with Manual for Streets guidance;
- Existing public right of way routes have been retained and incorporated into the design;

- Additional pedestrian and cyclist access points have been provided onto Howlett Way and High Road including an access via Church Lane, allowing for permeability and convenient through-routes;
- A Zebra crossing is proposed on High Road adjacent to Church Lane to improve pedestrian access;
- Improvements to the crossing point at the junction of Howlett Way with High Road are proposed to enhance pedestrian/cyclist safety and convenience;
- A new 3m wide shared footway/cycleway is proposed on the southern side of Howlett Way between the proposed main access and the junction of Howlett Way with High Road;
- This shared footway/cycleway links into the existing cycle route on High Road and continues into the development access road;
- New pedestrian crossing points are provided at the proposed roundabout access junction across both Howlett Way and the proposed access road;
- The above improvements to the local pedestrian infrastructure would have the additional effect of improving access to local bus stops;
- A pedestrian refuge island and new footway are proposed at the crossing point of Crows Well Way with Howlett Way to enhance pedestrian safety and convenience;
- A new pedestrian footway access from the development to this refuge island crossing is proposed to allow step-free convenient access for disabled persons and parents with perambulators for example;
- A pre-school nursery for up to 32 children is proposed on site. This would reduce the need for residents to travel off-site and hence reduce trips;
- An area of public open space is proposed on-site which would potentially reduce the need for off-site trips by dog walkers for example.

Travel Plan Co-ordinator (TPC)

During the initial period of residential occupations, and for up to a year after final occupation, the housing developer would provide a TPC on site to fulfil the TPC role and assume the TPC responsibilities as outlined below.

In particular, this interim TPC would be responsible for the initial introduction of the Travel Plan measures to residents and the provision of initial advice and support. This would include a welcome briefing event (or events) covering the aims of the development to be more sustainable, the presentation of a Residents' Welcome Pack and personal travel planning advice for each new household.

Within 3 months of final occupation a vehicular traffic count must be undertaken for a minimum of two weeks in order to establish baseline data for the purpose of setting targets and ongoing monitoring, and hence it is expected that this would need to be organised/instructed by the interim TPC.

The role of the Travel Plan coordinator will then be transferred to the resident's management company with a commitment for this to be continued for a minimum of a further 4 years, as such the development will be provided with a Travel Plan Coordinator for a minimum period of 5 years after final completion.

The TPC would have the following responsibilities:

- To make contact and partner with the District and County Councils;
- Making contacts and partnering with local cycling groups and public transport providers;
- Making contacts and partnering with local employers where possible;
- Making contacts and partnering with local schools/colleges;
- To contact local service providers such as GPs and Dentists to identify where local capacity is available for new residents;
- Preparing the Travel Plan documentation prior to first occupation;
- Preparing Travel Plan promotional materials prior to first occupation;
- Setting up a Community Website to promote and provide online access to Travel Plan information such as up to date bus and rail timetables as well as links to relevant external information;
- Promote the Travel Plan through the use of Social Media;
- Promote the Travel Plan through dedicated events which may include participation in pre-existing events through partnership with the local community;

- Providing TP promotional material to the development sales staff;
- Introducing new households to the Travel Plan and explaining the content of the Residents' Welcome Pack;
- Providing personal travel planning advice to each new household;
- Maintaining regular contact with residents to ensure that they continue to understand the transport choices available;
- To conduct an annual travel survey of residents and to agree the content of the survey questionnaire with the Council prior to the survey. An example template is attached at Appendix A;
- To review and analyse the annual survey results and to summarise any issues raised over the past year by residents and present these to the council as part of a monitoring report;
- To consider the annual survey results against the targets and to identify and put together an annual action plan for the following 12 months aimed at achieving progressive improvements in line with the targets and to present this to the council as part of the annual monitoring report;
- To hold discussions with and agree with the council any remedial measures which may be necessary to achieve the following years targets as well as long term targets. This should be done with consideration of the available annual monitoring reports and annual action plan.

Initial Action Plan

In addition to the annual action plan which should be reviewed and updated each year and throughout the life of the Travel Plan, an initial action plan is required to define the immediate actions required from the outset and to outline the expected actions required going forward. The action plan should include details of actions to be taken, expected timescales and action owners and/or stakeholders. An initial action plan is provided at Appendix B.

***Residents' Welcome Pack* & Events**

Key to encouraging increased use of non-car modes of travel is information about the options available. This will include information on the local public transport services and about the cycle route and pedestrian networks in Trimley and the surrounding areas. It will also identify local facilities in the area which are accessible by non-car modes so that new residents build patterns of sustainable travel behaviour from the first days after moving into their new home.

This information will be initially provided in the form of a series of welcome events for new residents who will also be provided with a welcome pack which will include maps of local facilities, cycle and pedestrian routes and bus and rail timetables.

The ongoing promotion of the Travel Plan and continued provision of data will be facilitated through regular email transmittals (where possible), a community website, and via social media. Periodic events should also be held and the potential for involvement in existing local events/schemes should be explored.

Subsidised Public Transport

This will encourage use of the local bus services by new residents who may not be familiar with travelling by bus and may be discouraged by this. The developer would provide each household with credit for the purchase of two adult monthly season tickets for the Ipswich Zone 2 Area for services operated by First Eastern Counties.

Car Share

Liftshare operate a carshare service in the Suffolk area via the www.suffolkcarshare.liftshare.com website. This is free to all residents of Suffolk and the TPC will encourage all new residents to join and to actively seek a car share arrangement.

Personal Travel Planning

Each new household will have the opportunity to take advice on the options available for travel by all members of the household to their most frequently visited destinations. Where options for local services exist the TPC will advise on the most convenient service for travel on foot, by cycle or by public transport.

This advice will be available to households prior to and after completion of the purchase of their new home so that the options have been identified before occupation. The combination of this service with the subsidised public transport tickets will maximise the potential for new residents to make use of the public transport and to use services within walking distance.

Community Website

The developer will create a website for the new community which will provide a source of information on a variety of subjects relevant to life in Trimley, Felixstowe and Suffolk Coastal District. It would include information on travel and other matters such as local shopping, sports and leisure, local services related to health and community groups and provide details of useful contacts with links to external websites where available.

Education Trips

There are several local schools within convenient walking and cycling distance of the site and hence reductions in peak hour school run trips should be targeted. Schools typically have Travel Plans of their own and organise or participate in schemes specifically targeted at walking, cycling or scooting/skating to and from school. National schemes include the Department for Transport's 'Bikeability' scheme which provides cycling training for children and adults and can be found at: https://bikeability.org.uk/

The TPC should work in partnership with local schools to maximise the resources available to encourage walking, cycling, and scooting/skating.

Targets

Travel Plan targets should be set to focus attention on what needs to be achieved, and to allow assessment of the effectiveness of the initiatives implemented. Targets should be specific, measurable, achievable, realistic and time-related (SMART).

Prior to occupation of the development it is not possible to know the exact composition or travel habits of the future residents and hence initially, provisional targets should be set. Once the development is occupied, a full vehicular traffic count will be undertaken and the actual targets should then be revised based on this baseline data.

Travel questionnaire surveys will subsequently be undertaken each year to provide regular updates to the baseline data and an opportunity to monitor progress and refine targets accordingly over time.

The Transport Assessment of the development has estimated the expected residential trip generating character of the development based on the average of vehicle trip rates provided at other local residential developments. The initial expected peak hour car trip rates and trips are shown in the table below.

	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Average Trip Rates	0.151	0.400	0.552	0.347	0.198	0.544
Calculated Vehicle Trips	54	144	199	125	71	196

Therefore the proposed residential development is predicted to generate around 200 two-way vehicle movements in the peak hours once fully occupied.

The Transport Assessment included a number of development impact assessments including trip assignments to the local highway network and junction capacity assessments. The conclusion of the assessment was that the predicted development trips would result in no severe highway impacts. This conclusion was based on the predicted trip generation of the whole development prior to the effects of any Travel Plan or other mitigation measures.

The potential of the Travel Plan measures to encourage use of more sustainable modes of travel is expected to result in a reduction in the vehicle trip generation of the site. The most realistic figure to use for setting targets in a Travel Plan is the percentage of journeys to work made as a single occupancy car driver.

Census 2011 journey to work data shows the average modes used for journeys to work from the middle layer super output area (MSOA) Suffolk Coastal 012 which contains Trimley and the application site. These mode percentages are presented in the table below.

Census 2011 Journey to Work Data - Suffolk Coastal 012	
Mode	Percentage
Walk	6.2
Cycle	5.7
Public Transport	4.3
Motor Cycle	1.9
Car Driver	76.3
Car Passenger	5.2

The existing average percentage of single occupancy car driver mode in the local area is around 76.3%. It is considered that a provisional target reduction in this percentage by 8% would be reasonable over a period of 5 years from completion of the development, and this would be achieved through milestone targets of 2% reduction after 1 year of occupation and 5% reduction after three years of occupation.

A reduction in single occupant vehicle mode share from 76.3% to 68.3% of all trips would lead to reduced peak hour two-way vehicle trip volumes of around 178 and 175 in the morning and evening peaks hours respectively, a reduction of roughly 22 trips in either peak hour, which equates to around an 11% reduction in peak hour vehicle trips.

This reduction in vehicle trips would result from relative increases in the use of alternate modes of transport. A preliminary target would be to increase walking, cycling, public transport and car sharing modes by 2% each to achieve an overall 8% modal shift.

These preliminary targets should be reviewed and amended following the results of the initial baseline survey and subsequent questionnaire surveys to ensure that they are appropriate, and that the greatest opportunities for modal shift are exploited. These targets should be agreed upon between the developer, the TPC and SCC.

Monitoring and Review

A programme of monitoring and review should be developed to generate information by which the Travel Plan Coordinator will evaluate the ongoing success of the Travel Plan and make adjustments accordingly to maintain progress towards targets.

Monitoring will consist of collected survey data from the outset and annually, in addition to general comments and feedback, and should include consideration of:

- Participation in work based salary sacrifice cycle purchase schemes by residents;
- Enrolment in cycle proficiency training schemes (adult and child);
- Take up of public transport season ticket loans;
- Take up and participation in the Suffolk liftshare scheme;
- Participation in school travel plans and schemes;
- Participation in walking/cycling buddy schemes; and
- General engagement in the Travel Plan by residents.

Information gathered through the monitoring process will be recorded for input to the annual review. Monitoring will take place annually on or about the anniversary of the first travel survey. The re-issue of the questionnaire to residents offers the opportunity to gather new information about wider attitudes to travel. Analysis of the questionnaire results will also yield updated mode-split information for comparison with data derived at the introduction of the Plan.

Annual Review

The Travel Plan Coordinator will use the data collected for monitoring to undertake a comprehensive review of the Plan. The review will assess the success of the Plan and identify the potential for future refinement of the details of the Plan to ensure targets are achieved.

APPENDIX A

Howlett Way Travel Survey

Dear Resident, we are committed to encouraging a sustainable living environment, and the use of sustainable modes of transport where possible. There are many potential benefits such as reduced stress, cost savings and health benefits, as well as benefits to the environment and local area. Therefore, we would really appreciate if you could take the time to complete the following questionnaire. Please complete only one questionaire per household. If you have any queries regarding the survey please contact (insert name) your Travel Plan Coordinator.

1 Name

2 House name/no.

3 Road name

4 How many people are in your household (including yourself)?

Working adults	
Non-working adults	
Students 16 yrs +	
School pupils	
Pre-school/nursery	

Infant	
Total	

5 For each member of your household making a regular commute (including yourself) please indicate the following

	Destination (work, school, college etc.)	Postcode	Main mode of travel								
			Car share driver	Solo car driver	Car share passenger	Motorcyle /moped	Walk	Cycle	Bus	Train	Taxi
a											
b											
c											
d											
e											
f											
g											
h											
i											
j											

6 Is anyone in your household enrolled in a liftshare scheme?

Yes ☐ No ☐

If yes, please provide details below

7 Does anyone in your household accompany other members, for example school drop offs/pick ups

Yes ☐ No ☐

If yes, please provide details below

8 For household journeys by car, what would you cite as the main reasons? Tick all that apply.

Car essential for job role	
Dropping off/collecting children	
Dropping off/collecting partner or friends	
Car sharing with colleagues	
Car sharing with liftshare scheme	
Health reasons	
Lack of alternative	
Cheaper than alternatives	
Reliability	
Comfort	
Personal safety/security	
Quicker than alternatives	
Other (please specify below)	

9 Which of the following would encourage car sharing in your household? Tick all that apply.

We already car share	
Help in finding suitable carshare partner/s	
Free taxi in and/or home if let down by driver	
Free taxi in event of an emergency	
Reserved car parking for car sharers	
Details of potential cost savings	
Nothing would encourage car sharing	
Other (please specify below)	

10 Which of the following would encourage walking in your household? Tick all that apply.

We already walk	
Better quality footpaths	
Safer routes	
Increased/improved street lighting	
Improved crossing facilities	
School walking bus	
Walking partner	
Nothing would encourage walking	
Other (please specify below)	

11 Which of the following would encourage cycling in your household? Tick all that apply.

We already cycle	
Improved cycles paths/lanes	
Improved cycle parking facilities	
Improved changing/shower/locker facilities	
Interest free loan to purchase bike	
Availability of pool bikes	
Discounts at cycle shops	

12 Which of the following would encourage bus use in your

Provision of cycle training	
Provision of route advice	
Cycling partner/s	
Nothing would encourage me to cycle	
Other (please specify below)	

13 Which of the following would encourage train use in your household? Tick all that apply.

We already take the train	
More direct service	
More frequent service	
Cleaner trains	
Cheaper fares	
Season ticket loan	
Better quality stations/waiting areas	
Better security at stations/on train	
Better information	
Travelling partner/s	
Nothing would encourage train use	
Other (please specify below)	

household? Tick all that apply.

We already take the bus	
More direct service	
More frequent service	
Cleaner buses	
Cheaper fares	
Season ticket loan	
Better quality waiting area/stops	
Better security	
Better information	
Travelling partner/s	
Nothing would encourage bus use	
Other (please specify below)	

14 Please indicate below the mode or modes of travel your household would most likely consider switching to.

15 What incentives/improvements are most important to facilitate or encourage switching to this mode?

16 How many days a week might you consider switching mode?

1 to 2 ☐ 3 to 4 ☐ All week ☐

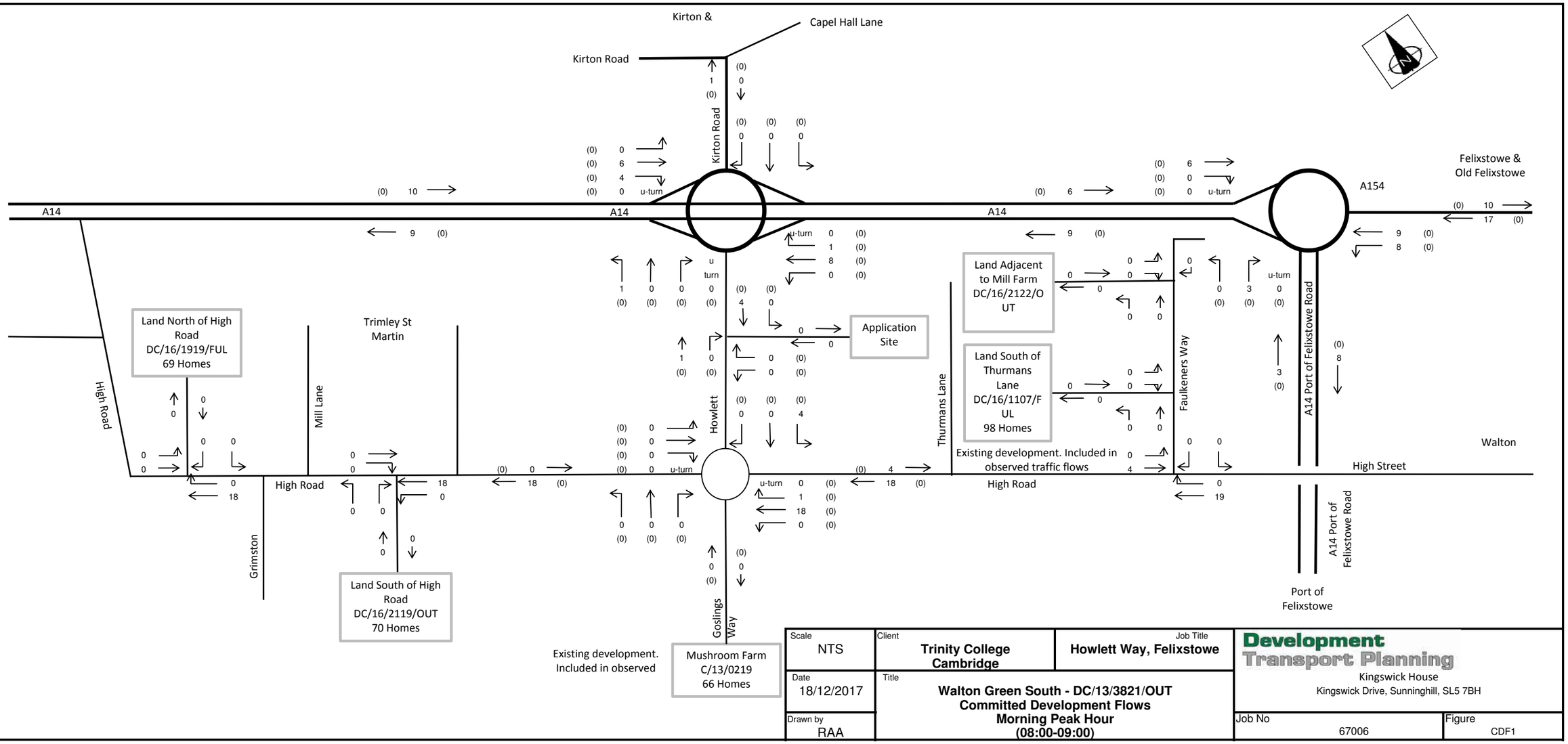
17 If you have any further comments you would like to share, or you would like to highlight any impediments to switching to sustainable transport modes not mentioned above, please provide your further comments below.

Thank you for taking the time to complete this survey. Please provide the survey to (Insert Name)

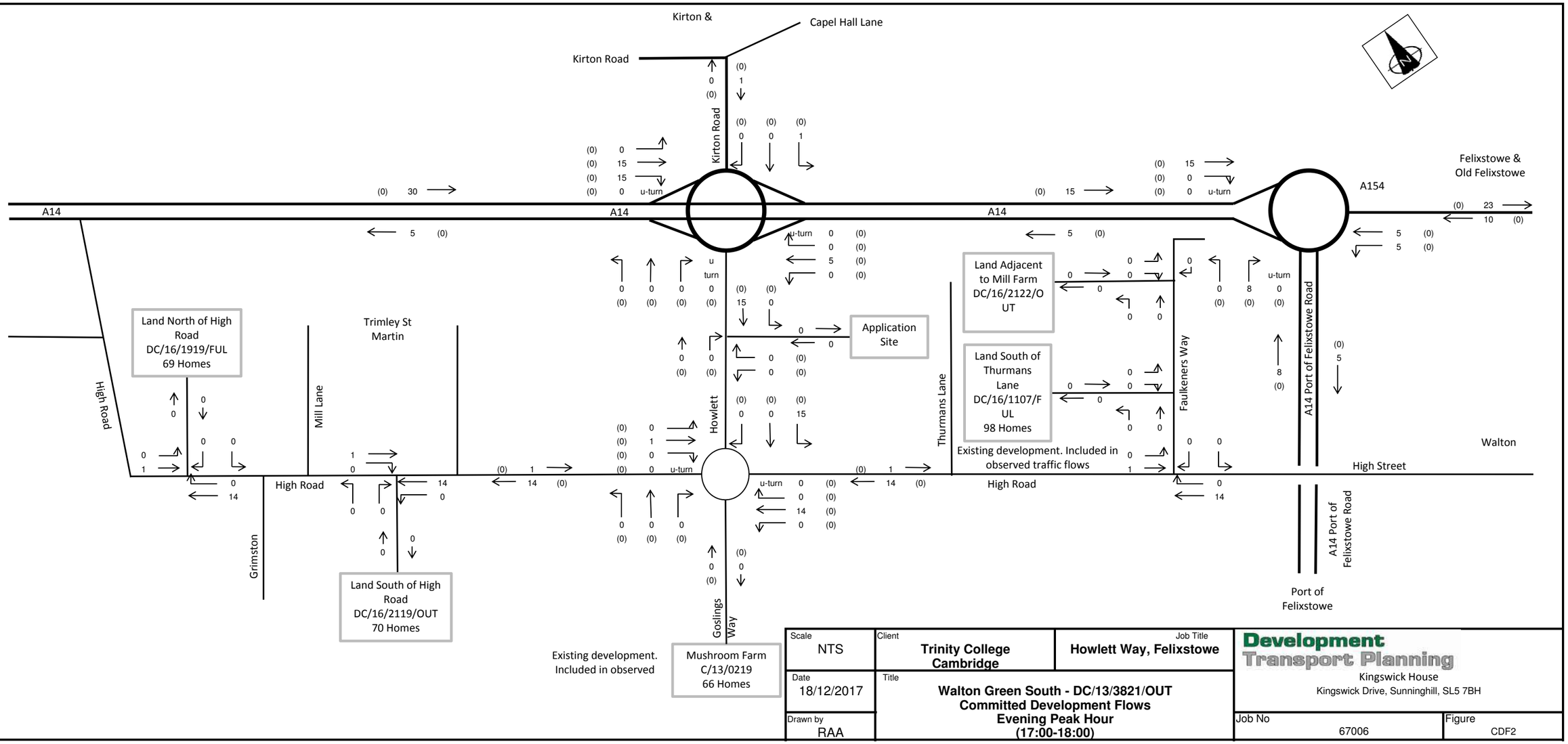
APPENDIX B

Objective	Target	Action/Measure	Timescale	Responsibility	Monitoring
To reduce SOV trips	To achieve a 2% reduction in SOV trips within 1 year	Provide off-site infrastructure improvements.	Prior to occupation	Developer/Site Management	Planning condition
		Provide on-site infrastructure.	Prior to occupation	Developer/Site Management	
		Host welcome events.	From occupation	Travel Plan Coordinator/Site Management	Vehicle count survey at 3 months occupation and follow up questionaire survey after 1 year (report to SCC TP team).
		Introduce and promote Suffolk Liftshare.	From occupation	Travel Plan Coordinator	
		Introduce and promote Green Travel Plan.	From occupation	Travel Plan Coordinator	
		Set up community website.	From occupation	Travel Plan Coordinator	
		Establish contact and partnerships with local schools.	From occupation	Travel Plan Coordinator	
		Establish contact and partnerships with local employers.	From occupation	Travel Plan Coordinator	
		Set up social media channels.	From occupation	Travel Plan Coordinator	
		Provide incentive season tickets to residents.	From occupation	Travel Plan Coordinator/Developer	
	To achieve a 5% reduction in SOV trips within 3 years	Ongoing promotion of scheme, review and revision.	Annually	Travel Plan Coordinator	Survey at 3 years (report to SCC TP team). Annual review. Mode split and participation levels to be reviewed quarterly.
		Review participation and measures.	As required	Travel Plan Coordinator	
	To achieve an 8% reduction in SOV trips within 5 years	Ongoing promotion of scheme, review and revision.	Annually	Travel Plan Coordinator	Survey at 5 years (report to SCC TP team). Annual review. Mode split and participation levels to be reviewed quarterly.
		Review participation and measures.	As required	Travel Plan Coordinator	
Measures to increase trips by bicycle	To achieve a 2% increase in cycling to work within 5 years	Provision of shared footway/cycleway on Howlett Way.	Prior to occupation	Developer/Site Management	Confirm prior to occupation.
		Provision of pedestrian/cycle access on Church Lane.	Prior to occupation	Developer/Site Management	Confirm prior to occupation.
		Provision of pedestrian/cycle priority within estate roads.	Prior to occupation	Developer/Site Management	Confirm prior to occupation.
		Provision of secure, covered and attractive cycle parking where applicable.	Prior to occupation	Developer/Site Management	Confirm prior to occupation.
		Increase cycle parking provision if necessary.	As required	Travel Plan Coordinator/Site Management	Cycle parking occupancy/availability to be reviewed quarterly.
		Introduce and promote school cycling, scooting & skating schemes.	From occupation	Travel Plan Coordinator	Participation levels to be reported at 3 months, 1, 3 and 5 years (report to SCC TP team).
		Introduce and promote cycle to work schemes.	From occupation	Travel Plan Coordinator	
		Introduce Bikeability and other schemes/groups	From occupation		
		Identify opportunities for residents to cycle together.	3 months from occupation	Travel Plan Coordinator	
		Provision of cycle information including safety, routes and local shops. Promotion of National Cycle Week.	From occupation	Travel Plan Coordinator	
		Ongoing promotion of cycle to work scheme	Quarterly	Travel Plan Coordinator	
Measures to increase trips on foot	To achieve a 2% increase in walking to work within 5 years	Provision of high quality, safe and attractive pedestrian routes into and throughout the site.	Prior to occupation	Developer/Site Management	Monitoring and reporting at 3 months, 1, 3 and 5 years (report to SCC TP team).
		Provision of off-site pedestrian infrastructure improvements.	Prior to occupation	Developer/Site Management	
		Provision of details of safe walking routes, suitable routes for mobility impaired persons, maps, advice and local information web links.	From occupation	Travel Plan Coordinator	
		Identify opportunities for residents to walk together.	3 months from occupation	Travel Plan Coordinator	
Measures to increase trips by public transport	To achieve a 2% increase in public transport patronage within 5 years	Provision of public transportation information in hard copy and digitally.	From occupation	Travel Plan Coordinator	Monitoring and reporting at 3 months, 1, 3 and 5 years (report to SCC TP team).
		Provision of household credit for two adult monthly season ticket passes for the Ipswich Zone 2 Area for services operated by First Eastern Counties.	From occupation	Travel Plan Coordinator/Developer	
		Identify opportunities for residents to travel by bus or rail together.	3 months from occupation	Travel Plan Coordinator	

APPENDIX K



Scale: NTS	Client: **Trinity College Cambridge**	Job Title: **Howlett Way, Felixstowe**	**Development Transport Planning** Kingswick House, Kingswick Drive, Sunninghill, SL5 7BH
Date: 18/12/2017	Title: **Walton Green South - DC/13/3821/OUT Committed Development Flows Morning Peak Hour (08:00-09:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF1



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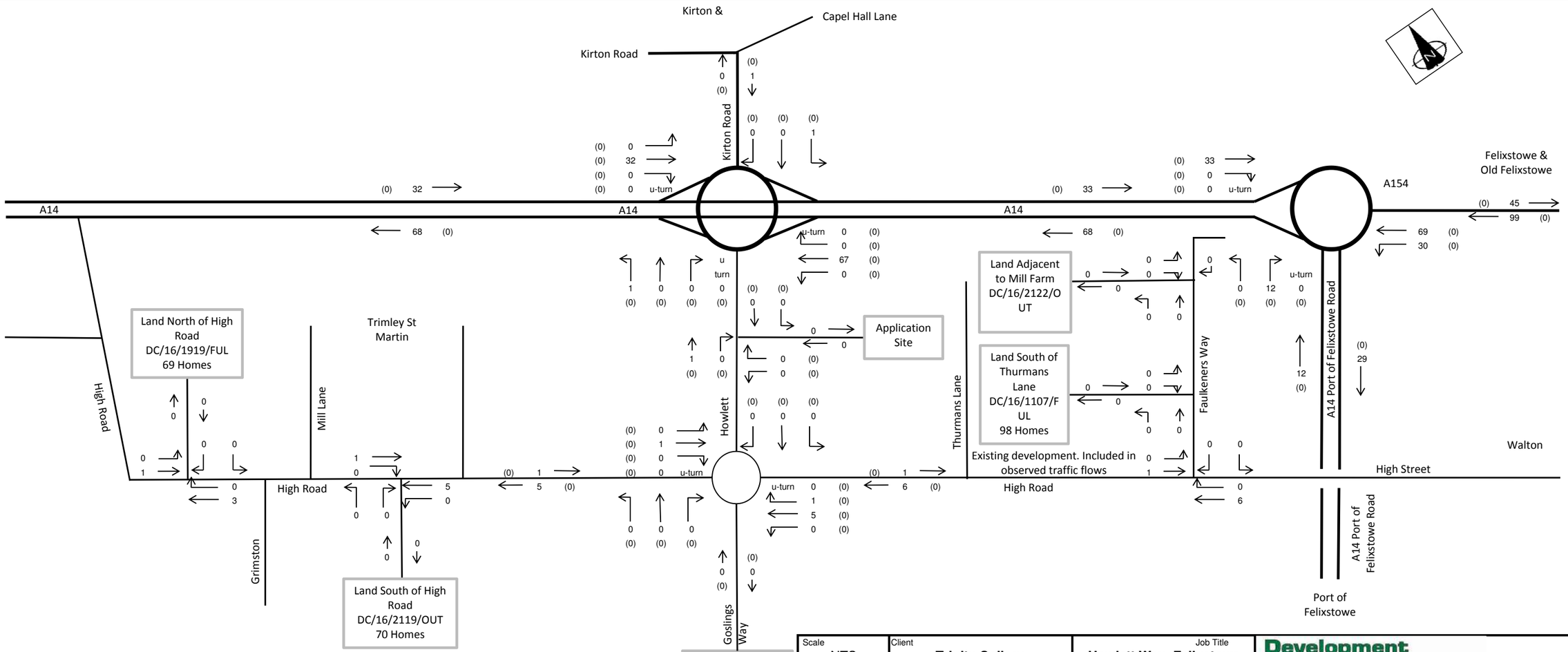
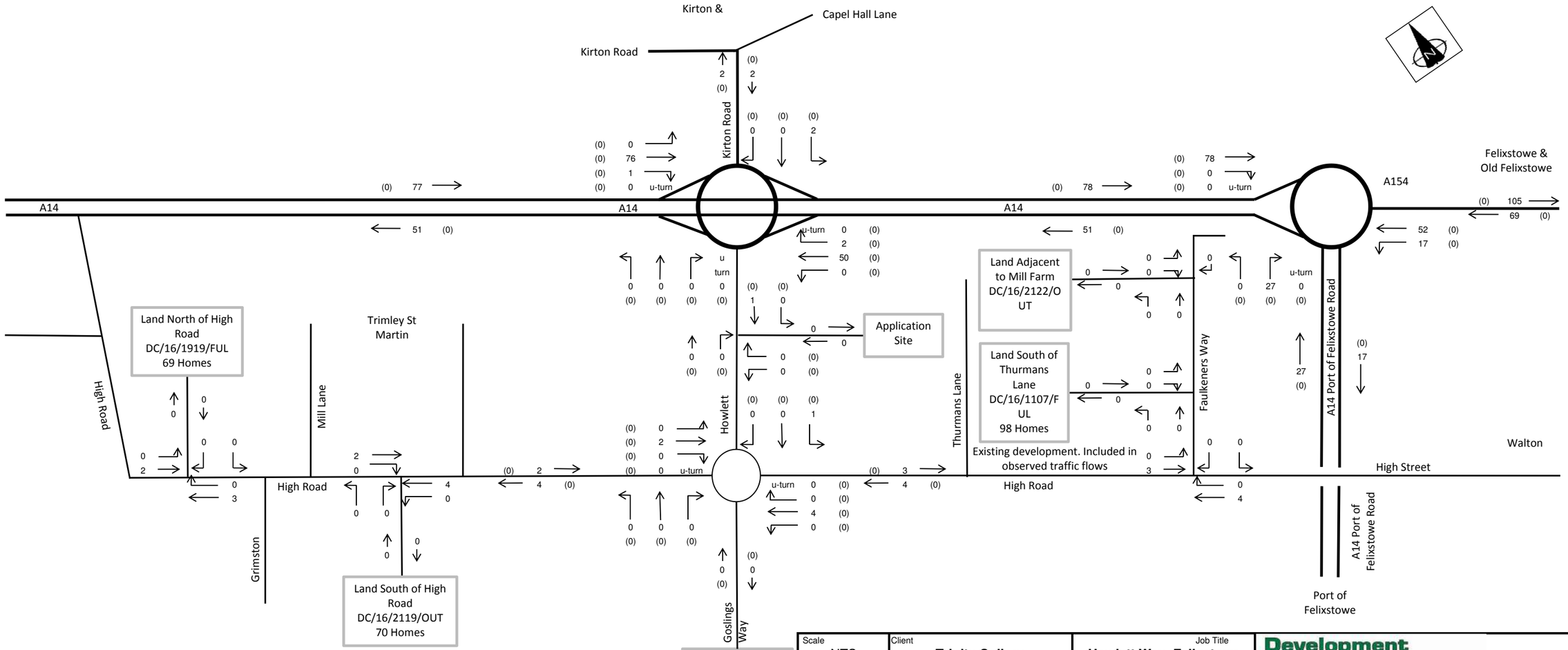
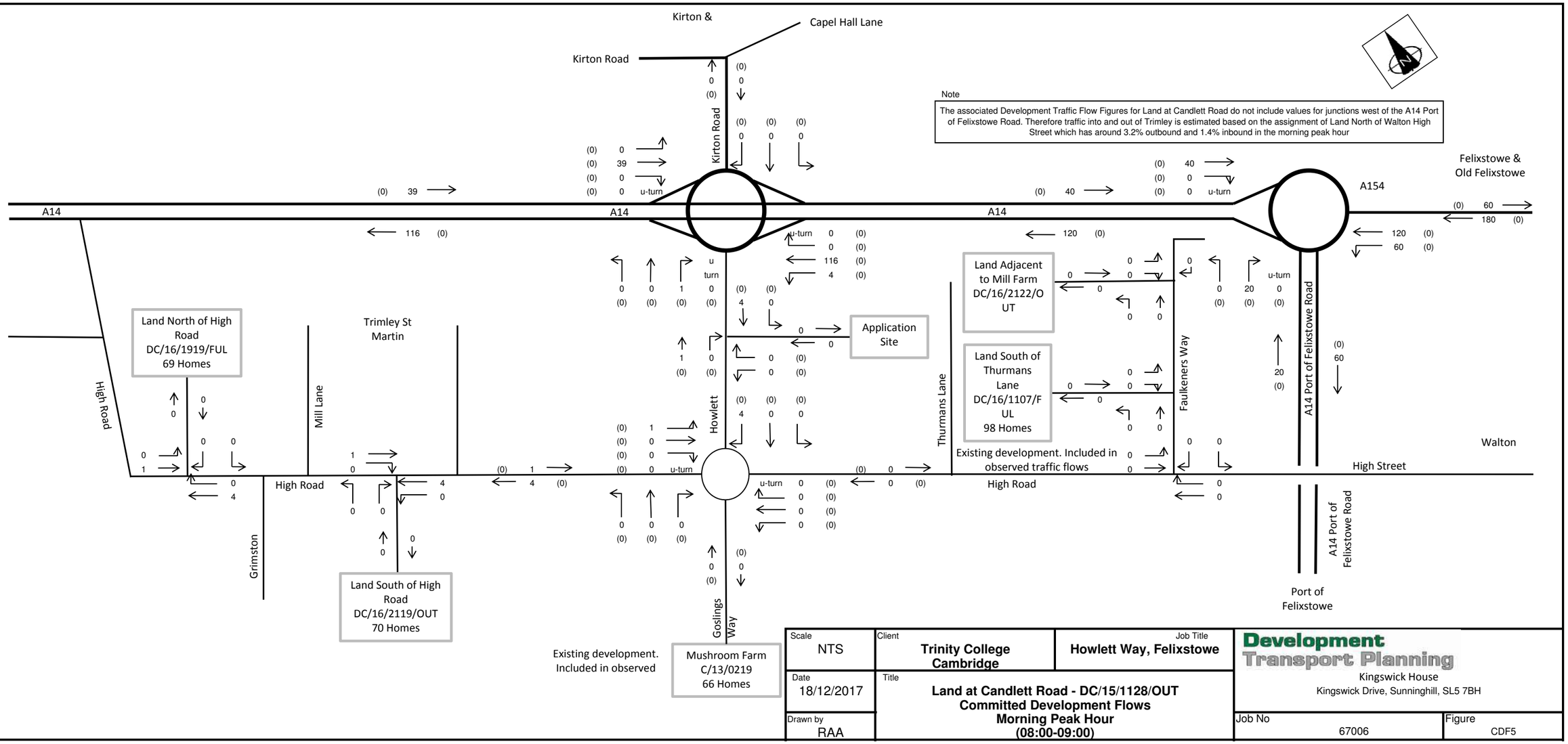
Date: 18/12/2017	Title: **Walton Green South - DC/13/3821/OUT Committed Development Flows Evening Peak Hour (17:00-18:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF2



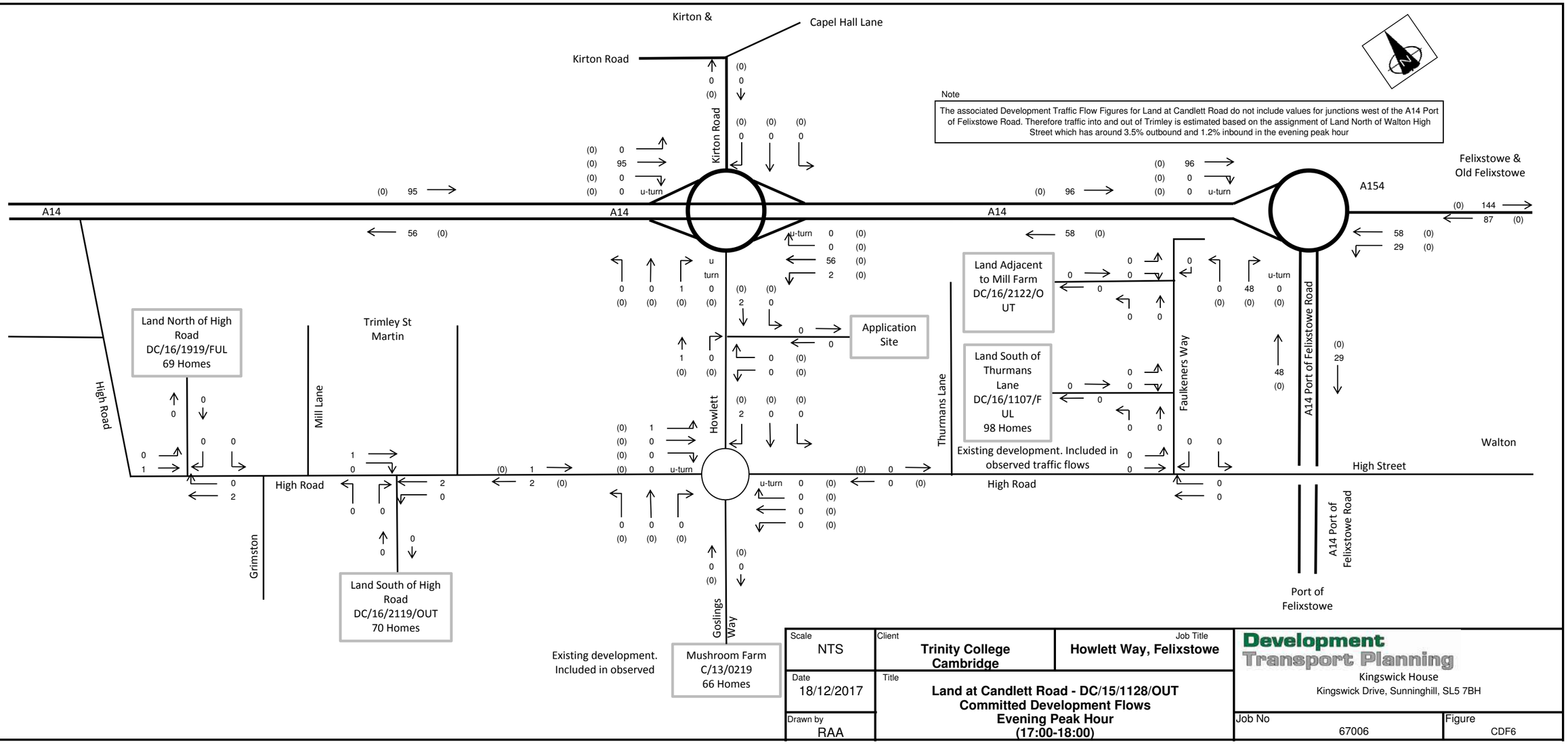
Scale: NTS	Client: **Trinity College Cambridge**	Job Title: **Howlett Way, Felixstowe**	**Development Transport Planning** Kingswick House, Kingswick Drive, Sunninghill, SL5 7BH
Date: 18/12/2017	Title: **Land North of Walton High St - DC/16/2778/OUT Committed Development Flows Morning Peak Hour (08:00-09:00)**		
Drawn by: RAA			Job No: 67006 / Figure: CDF3



Scale: NTS	Client: **Trinity College Cambridge**	Job Title: **Howlett Way, Felixstowe**	**Development Transport Planning** Kingswick House, Kingswick Drive, Sunninghill, SL5 7BH
Date: 18/12/2017	Title: **Land North of Walton High St - DC/16/2778/OUT Committed Development Flows Evening Peak Hour (17:00-18:00)**		
Drawn by: RAA			Job No: 67006 / Figure: CDF4



Scale: NTS	Client: **Trinity College Cambridge**	Job Title: **Howlett Way, Felixstowe**	**Development Transport Planning** Kingswick House, Kingswick Drive, Sunninghill, SL5 7BH
Date: 18/12/2017	Title: **Land at Candlett Road - DC/15/1128/OUT Committed Development Flows Morning Peak Hour (08:00-09:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF5



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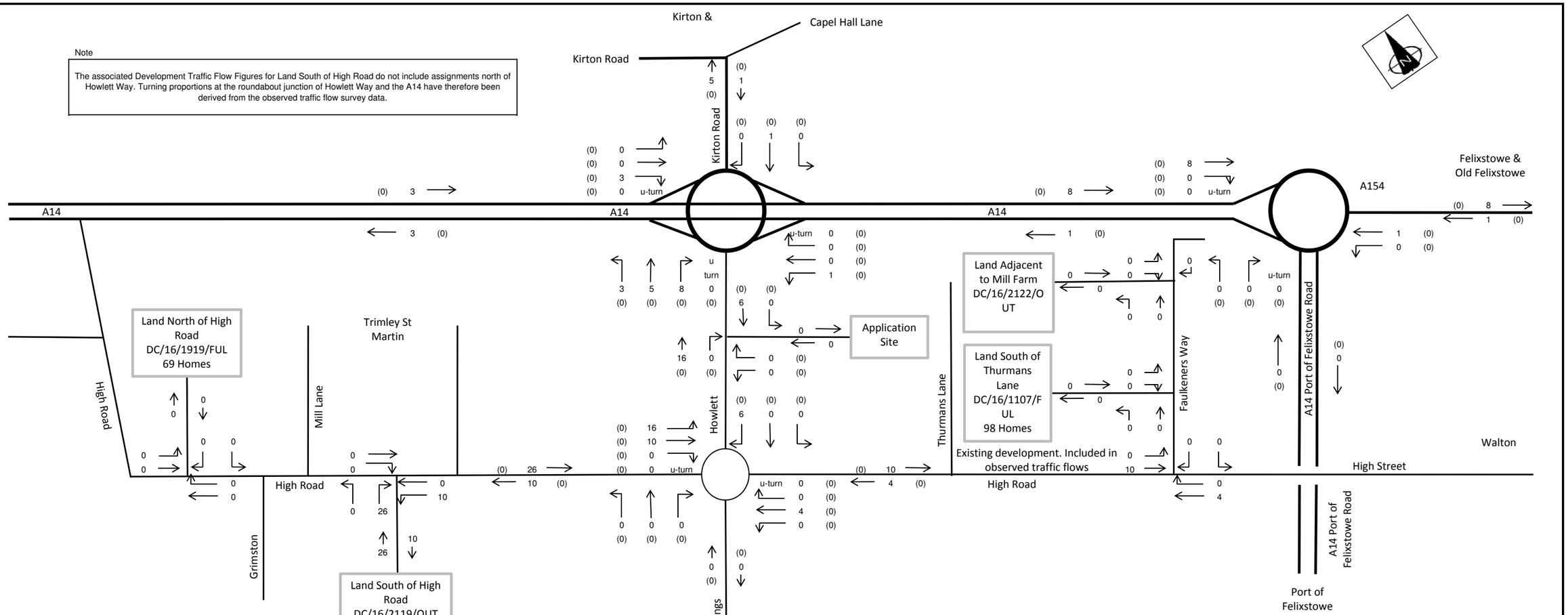
Date: 18/12/2017	Title: **Land at Candlett Road - DC/15/1128/OUT Committed Development Flows Evening Peak Hour (17:00-18:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF6

Note

The associated Development Traffic Flow Figures for Land South of High Road do not include assignments north of Howlett Way. Turning proportions at the roundabout junction of Howlett Way and the A14 have therefore been derived from the observed traffic flow survey data.



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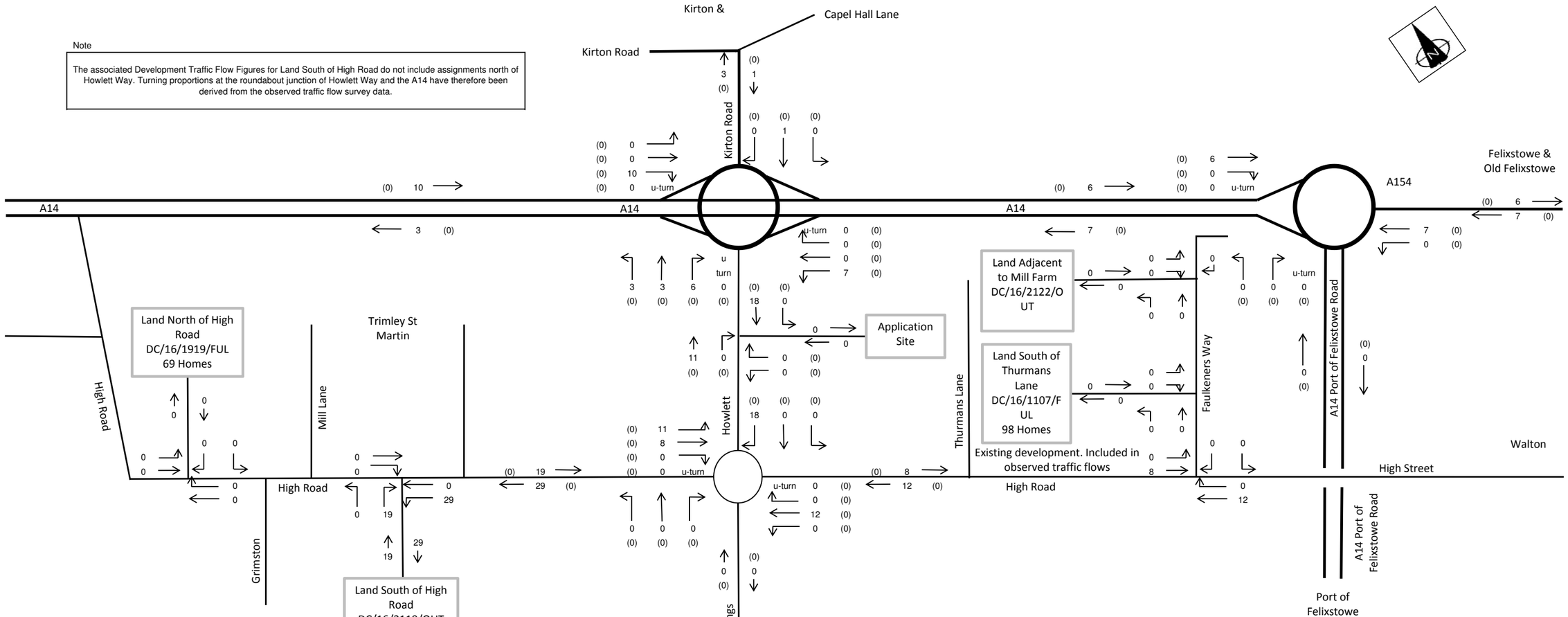
Date: 18/12/2017	Title: **Land South of High Road - DC/16/2119/OUT Committed Development Flows Morning Peak Hour (08:00-09:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF7

Note

The associated Development Traffic Flow Figures for Land South of High Road do not include assignments north of Howlett Way. Turning proportions at the roundabout junction of Howlett Way and the A14 have therefore been derived from the observed traffic flow survey data.



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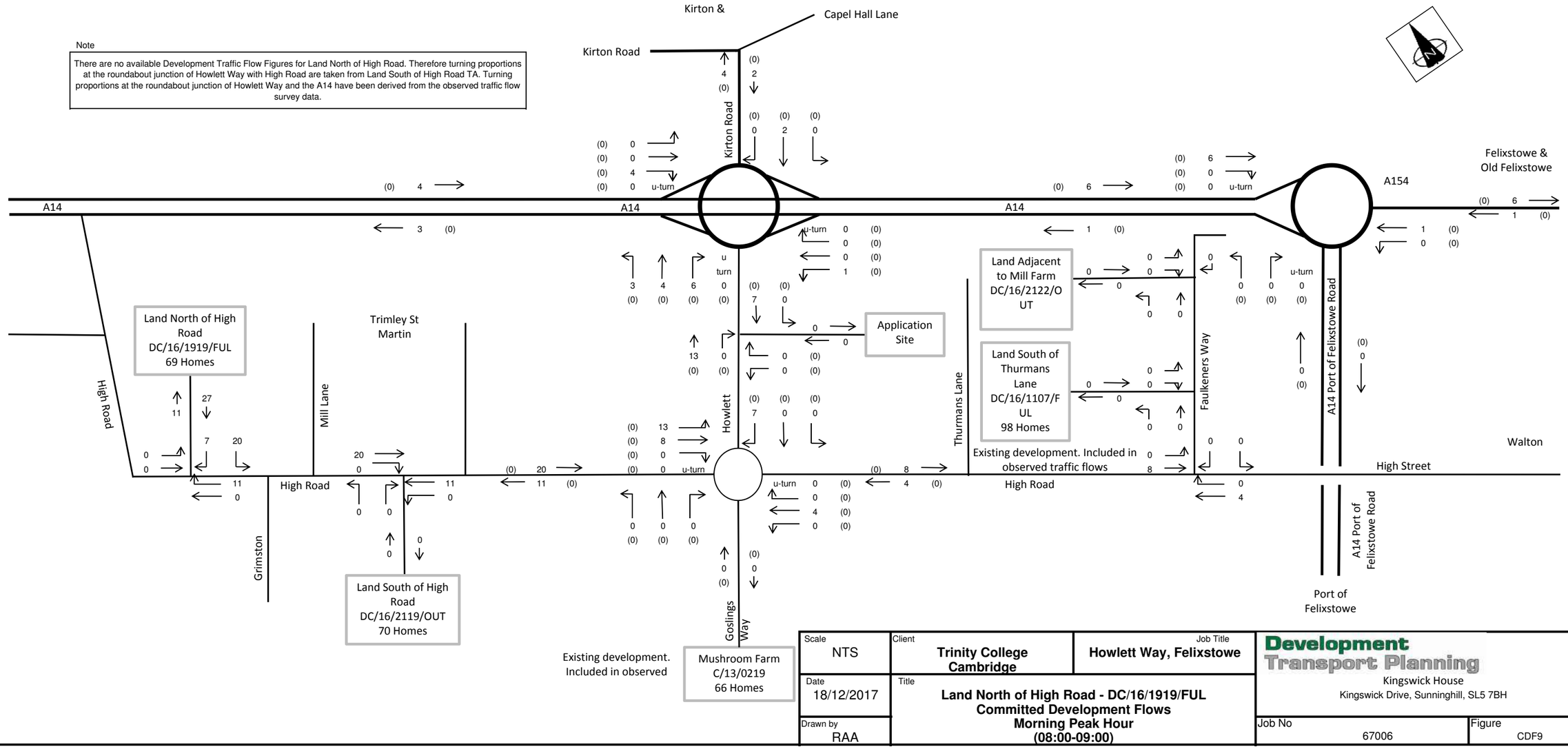
Date: 18/12/2017	Title: **Land South of High Road - DC/16/2119/OUT Committed Development Flows Evening Peak Hour (17:00-18:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF8

Note

There are no available Development Traffic Flow Figures for Land North of High Road. Therefore turning proportions at the roundabout junction of Howlett Way with High Road are taken from Land South of High Road TA. Turning proportions at the roundabout junction of Howlett Way and the A14 have been derived from the observed traffic flow survey data.



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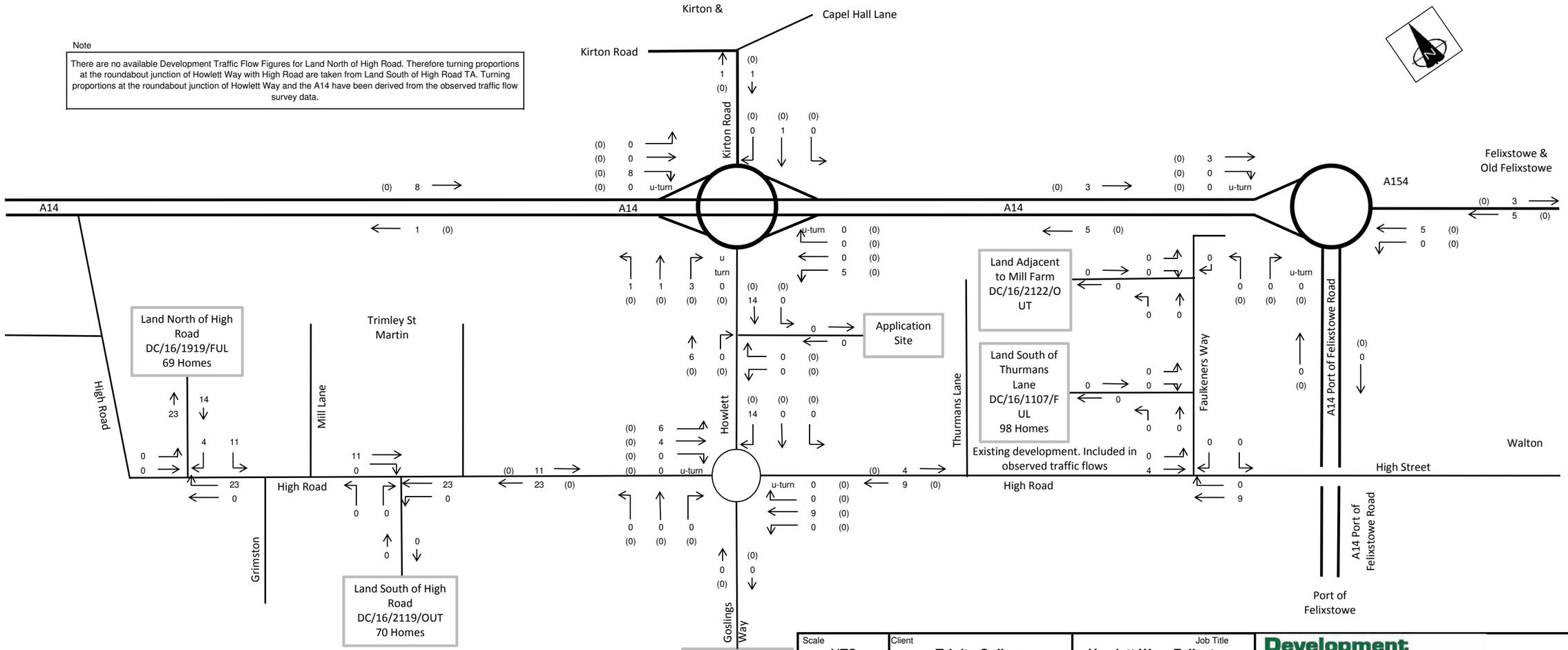
Date: 18/12/2017	Title: **Land North of High Road - DC/16/1919/FUL Committed Development Flows Morning Peak Hour (08:00-09:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF9

Note

There are no available Development Traffic Flow Figures for Land North of High Road. Therefore turning proportions at the roundabout junction of Howlett Way with High Road are taken from Land South of High Road TA. Turning proportions at the roundabout junction of Howlett Way and the A14 have been derived from the observed traffic flow survey data.



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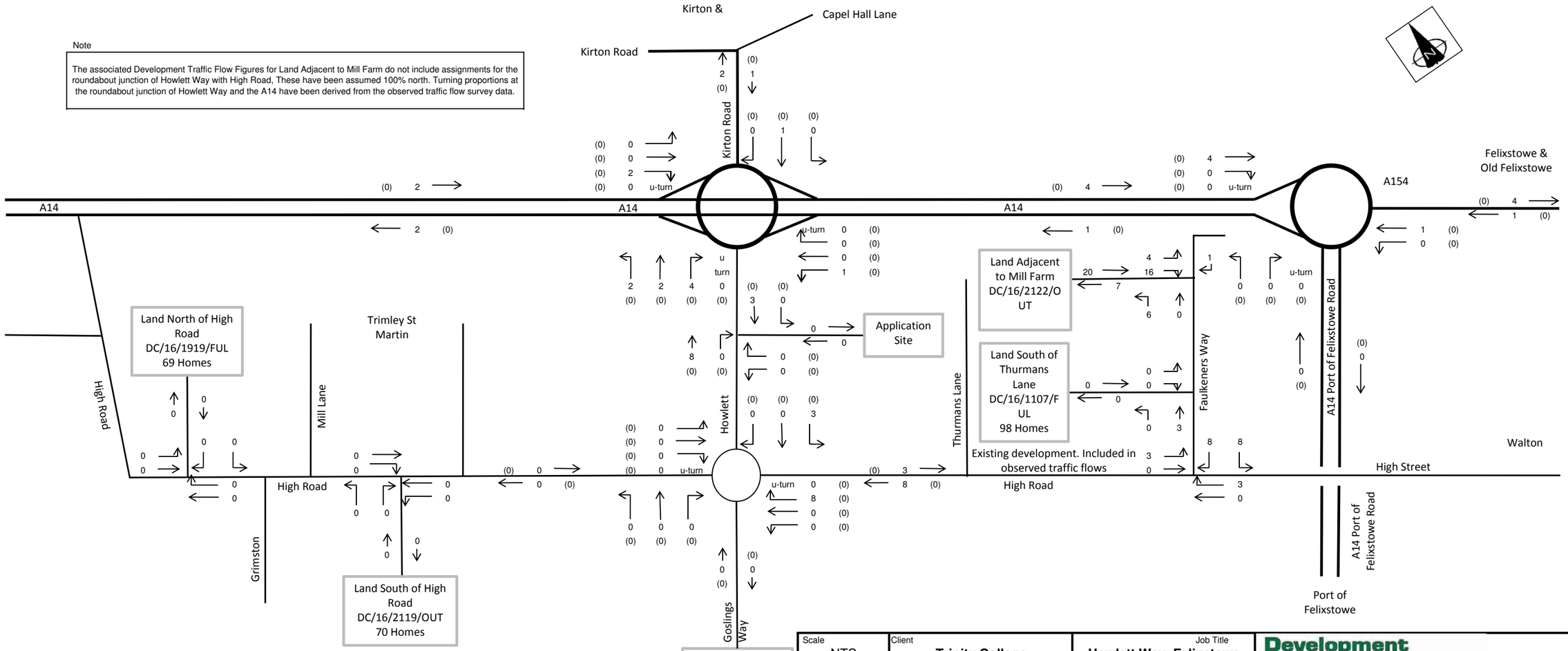
Date: 18/12/2017	Title: **Land North of High Road - DC/16/1919/FUL Committed Development Flows Evening Peak Hour (17:00-18:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF10

Note

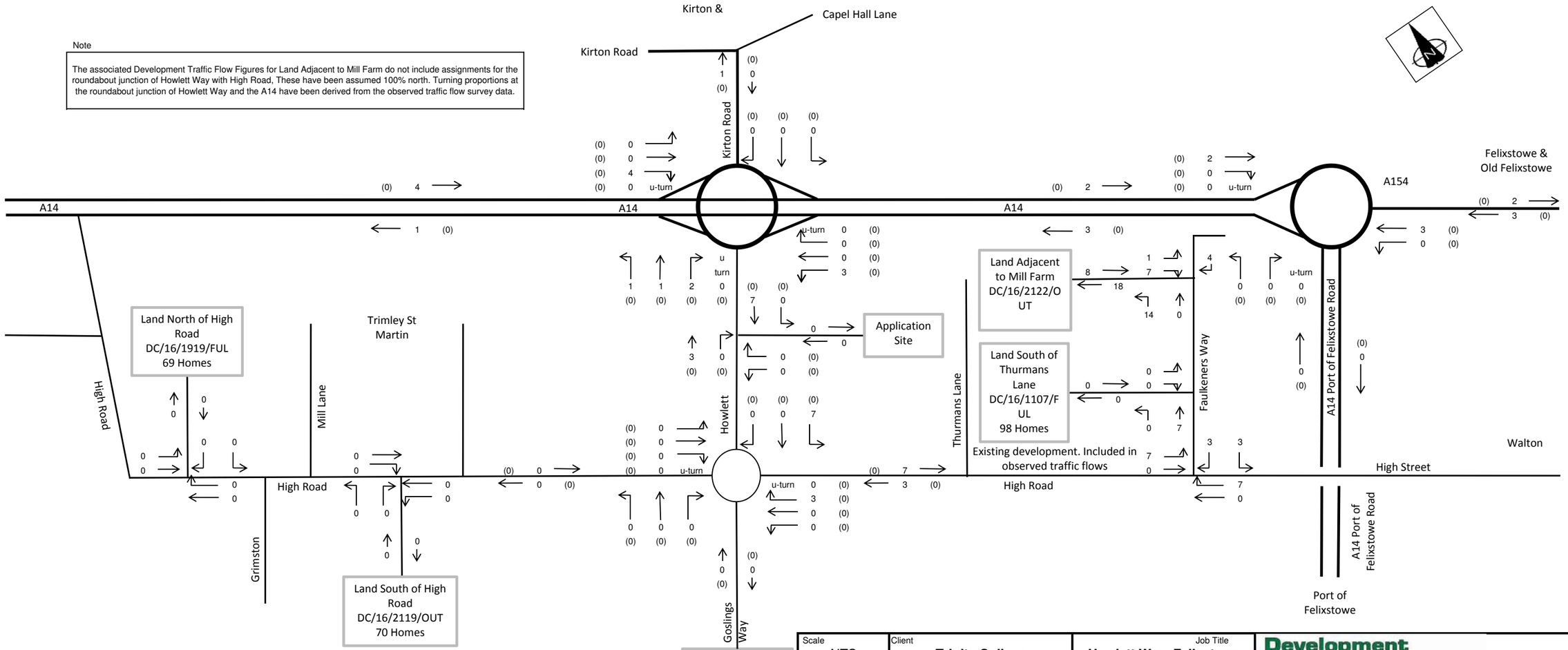
The associated Development Traffic Flow Figures for Land Adjacent to Mill Farm do not include assignments for the roundabout junction of Howlett Way with High Road, These have been assumed 100% north. Turning proportions at the roundabout junction of Howlett Way and the A14 have been derived from the observed traffic flow survey data.



Scale: NTS	Client: Trinity College Cambridge	Job Title: Howlett Way, Felixstowe	Development Transport Planning Kingswick House Kingswick Drive, Sunninghill, SL5 7BH
Date: 18/12/2017	Title: **Land Adjacent to Mill Farm - DC/16/2122/OUT Committed Development Flows Morning Peak Hour (08:00-09:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF11

Note

The associated Development Traffic Flow Figures for Land Adjacent to Mill Farm do not include assignments for the roundabout junction of Howlett Way with High Road, These have been assumed 100% north. Turning proportions at the roundabout junction of Howlett Way and the A14 have been derived from the observed traffic flow survey data.



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Date: 18/12/2017	Title: **Land Adjacent to Mill Farm - DC/16/2122/OUT Committed Development Flows Evening Peak Hour (17:00-18:00)**		
Drawn by: RAA		Job No: 67006	Figure: CDF12

APPENDIX L

Junctions 9

ARCADY 9 - Roundabout Module

Filename: Howlett Way-High Road RBT - Existing Layout.j9
Path: R:\Projects\67006 Howlett Way, Trimley\Trans\Junction Capacity Assessments
Report generation date: 05/12/2018 15:41:49

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	Howlett Way/High Road - Existing Layout - 2018 Observed									
1 - High Road Southeast	0.5	2.67	0.32	A	136 % [2 - Goslings Way]	0.3	2.57	0.20	A	108 % [4 - Howlett Way]
2 - Goslings Way	0.0	3.91	0.04	A		0.0	3.70	0.02	A	
3 - High Road Northwest	0.3	2.80	0.20	A		0.2	2.43	0.17	A	
4 - Howlett Way	0.2	2.40	0.18	A		0.7	3.22	0.41	A	
	Howlett Way/High Road - Existing Layout - 2023 Do-Nothing									
1 - High Road Southeast	0.6	2.91	0.37	A	106 % [2 - Goslings Way]	0.3	2.84	0.25	A	81 % [4 - Howlett Way]
2 - Goslings Way	0.0	4.32	0.05	A		0.0	4.08	0.02	A	
3 - High Road Northwest	0.3	3.04	0.25	A		0.3	2.55	0.20	A	
4 - Howlett Way	0.3	2.53	0.21	A		0.9	3.69	0.47	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

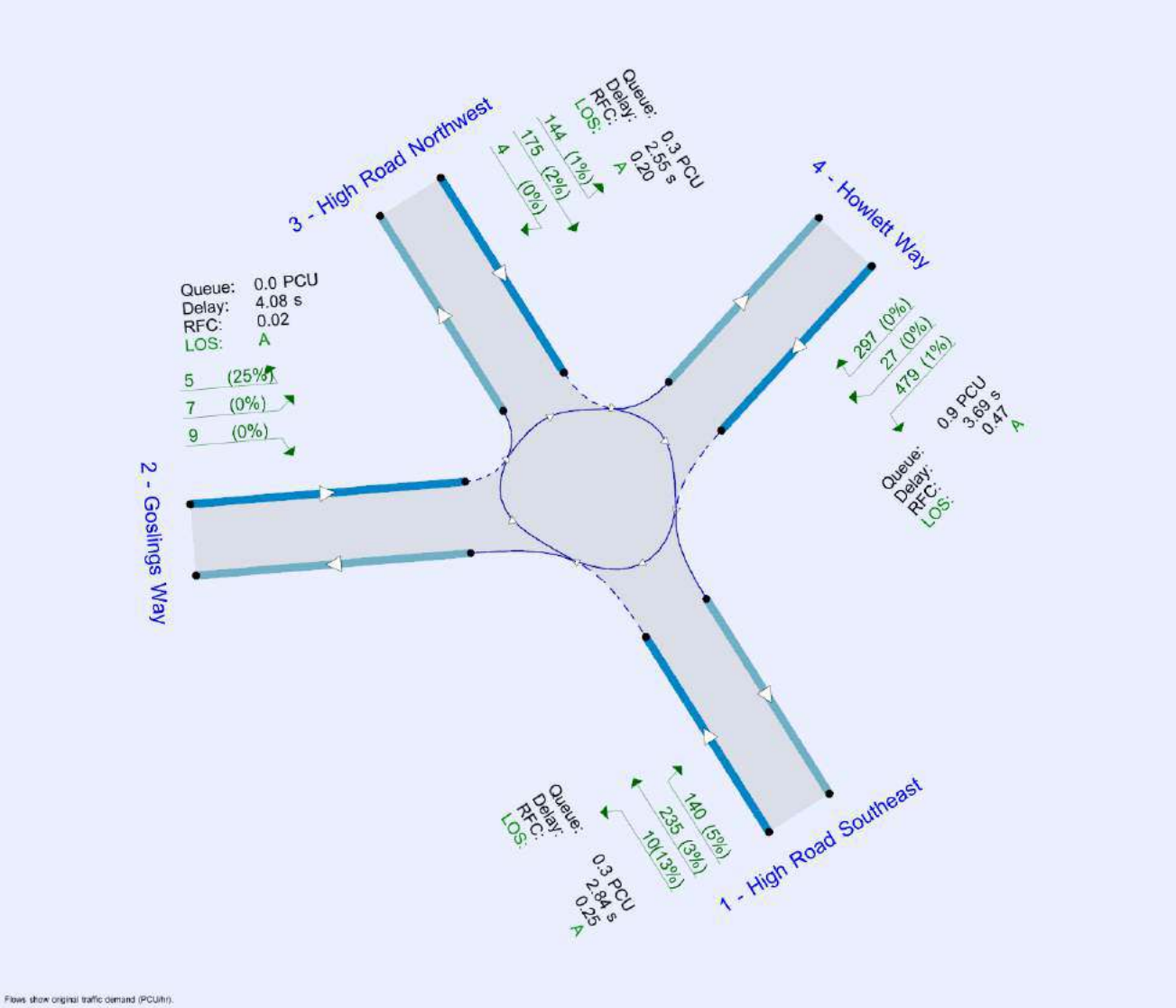
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	22/05/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AUTOCAD-T1700\Tom
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2018 Observed	AM	ONE HOUR	07:45	09:15	15
D2	2018 Observed	PM	ONE HOUR	16:45	18:15	15
D3	2023 Do-Nothing	AM	ONE HOUR	07:45	09:15	15
D4	2023 Do-Nothing	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Howlett Way/High Road - Existing Layout	100.000

Howlett Way/High Road - Existing Layout - 2018 Observed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Howlett Way-High Road	Large Roundabout		1, 2, 3, 4	2.67	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	136	2 - Goslings Way

Arms

Arms

Arm	Name	Description
1	High Road Southeast	
2	Goslings Way	
3	High Road Northwest	
4	Howlett Way	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - High Road Southeast	3.88	4.52	2.1	26.8	52.4	10.0	
2 - Goslings Way	2.75	3.88	1.7	9.5	52.4	47.0	
3 - High Road Northwest	3.59	4.23	1.7	22.2	52.4	13.0	
4 - Howlett Way	3.70	4.70	11.0	11.0	52.4	29.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - High Road Southeast	70	23.60
2 - Goslings Way	696	8.27
3 - High Road Northwest	344	23.71
4 - Howlett Way	168	14.24

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - High Road Southeast	1.184	2176
2 - Goslings Way	0.759	1521
3 - High Road Northwest	1.068	1984
4 - Howlett Way	1.067	2102

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2018 Observed	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - High Road Southeast		✓	594	100.000
2 - Goslings Way		✓	33	100.000
3 - High Road Northwest		✓	293	100.000
4 - Howlett Way		✓	308	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	6	5	316	267
	2 - Goslings Way	10	0	10	13
	3 - High Road Northwest	137	2	0	154
	4 - Howlett Way	214	8	86	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	0	0	3	5
	2 - Goslings Way	0	0	0	0
	3 - High Road Northwest	5	0	0	0
	4 - Howlett Way	6	0	5	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - High Road Southeast	0.32	2.67	0.5	A
2 - Goslings Way	0.04	3.91	0.0	A
3 - High Road Northwest	0.20	2.80	0.3	A
4 - Howlett Way	0.18	2.40	0.2	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	447	72	2091	0.214	446	0.3	2.268	A
2 - Goslings Way	25	507	1136	0.022	25	0.0	3.238	A
3 - High Road Northwest	221	222	1747	0.126	220	0.1	2.408	A
4 - Howlett Way	232	116	1978	0.117	231	0.1	2.173	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	534	86	2074	0.257	534	0.4	2.422	A
2 - Goslings Way	30	606	1061	0.028	30	0.0	3.491	A
3 - High Road Northwest	263	266	1700	0.155	263	0.2	2.557	A
4 - Howlett Way	277	139	1954	0.142	277	0.2	2.263	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	654	106	2051	0.319	654	0.5	2.670	A
2 - Goslings Way	36	743	957	0.038	36	0.0	3.908	A
3 - High Road Northwest	323	326	1636	0.197	322	0.2	2.797	A
4 - Howlett Way	339	171	1921	0.177	339	0.2	2.400	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	654	106	2051	0.319	654	0.5	2.670	A
2 - Goslings Way	36	743	957	0.038	36	0.0	3.910	A
3 - High Road Northwest	323	326	1636	0.197	323	0.3	2.797	A
4 - Howlett Way	339	171	1920	0.177	339	0.2	2.400	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	534	86	2074	0.257	534	0.4	2.426	A
2 - Goslings Way	30	607	1060	0.028	30	0.0	3.493	A
3 - High Road Northwest	263	266	1700	0.155	264	0.2	2.561	A
4 - Howlett Way	277	139	1954	0.142	277	0.2	2.264	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	447	72	2091	0.214	448	0.3	2.270	A
2 - Goslings Way	25	509	1135	0.022	25	0.0	3.245	A
3 - High Road Northwest	221	223	1746	0.126	221	0.1	2.411	A
4 - Howlett Way	232	117	1978	0.117	232	0.1	2.176	A

Howlett Way/High Road - Existing Layout - 2018 Observed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Howlett Way-High Road	Large Roundabout		1, 2, 3, 4	2.90	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	108	4 - Howlett Way

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - High Road Southeast	70	23.60
2 - Goslings Way	696	8.27
3 - High Road Northwest	344	23.71
4 - Howlett Way	168	14.24

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2018 Observed	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - High Road Southeast		✓	331	100.000
2 - Goslings Way		✓	20	100.000
3 - High Road Northwest		✓	273	100.000
4 - Howlett Way		✓	701	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	9	9	184	129
	2 - Goslings Way	8	0	5	7
	3 - High Road Northwest	150	4	1	118
	4 - Howlett Way	429	25	247	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	0	13	3	5
	2 - Goslings Way	0	0	25	0
	3 - High Road Northwest	2	0	0	1
	4 - Howlett Way	1	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - High Road Southeast	0.20	2.57	0.3	A
2 - Goslings Way	0.02	3.70	0.0	A
3 - High Road Northwest	0.17	2.43	0.2	A
4 - Howlett Way	0.41	3.22	0.7	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	249	208	1930	0.129	249	0.2	2.222	A
2 - Goslings Way	15	428	1196	0.013	15	0.0	3.208	A
3 - High Road Northwest	206	115	1861	0.110	205	0.1	2.206	A
4 - Howlett Way	528	129	1965	0.269	526	0.4	2.522	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	298	249	1882	0.158	297	0.2	2.358	A
2 - Goslings Way	18	512	1132	0.016	18	0.0	3.400	A
3 - High Road Northwest	245	137	1837	0.134	245	0.2	2.294	A
4 - Howlett Way	630	155	1938	0.325	630	0.5	2.776	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	364	305	1815	0.201	364	0.3	2.574	A
2 - Goslings Way	22	627	1045	0.021	22	0.0	3.703	A
3 - High Road Northwest	301	168	1804	0.167	300	0.2	2.429	A
4 - Howlett Way	772	189	1901	0.406	771	0.7	3.213	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	364	305	1815	0.201	364	0.3	2.574	A
2 - Goslings Way	22	628	1045	0.021	22	0.0	3.705	A
3 - High Road Northwest	301	168	1804	0.167	301	0.2	2.429	A
4 - Howlett Way	772	189	1900	0.406	772	0.7	3.216	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	298	249	1881	0.158	298	0.2	2.359	A
2 - Goslings Way	18	513	1132	0.016	18	0.0	3.405	A
3 - High Road Northwest	245	138	1837	0.134	246	0.2	2.295	A
4 - Howlett Way	630	155	1937	0.325	631	0.5	2.780	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	249	209	1929	0.129	249	0.2	2.225	A
2 - Goslings Way	15	429	1195	0.013	15	0.0	3.211	A
3 - High Road Northwest	206	115	1861	0.110	206	0.1	2.208	A
4 - Howlett Way	528	130	1964	0.269	528	0.4	2.530	A

Howlett Way/High Road - Existing Layout - 2023 Do-Nothing, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Howlett Way-High Road	Large Roundabout		1, 2, 3, 4	2.89	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	106	2 - Goslings Way

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - High Road Southeast	70	23.60
2 - Goslings Way	696	8.27
3 - High Road Northwest	344	23.71
4 - Howlett Way	168	14.24

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2023 Do-Nothing	AM	ONE HOUR	07:45	09:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - High Road Southeast		✓	673	100.000
2 - Goslings Way		✓	36	100.000
3 - High Road Northwest		✓	359	100.000
4 - Howlett Way		✓	352	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	6	5	368	294
	2 - Goslings Way	11	0	11	14
	3 - High Road Northwest	164	2	0	193
	4 - Howlett Way	235	9	108	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	0	0	3	5
	2 - Goslings Way	0	0	0	0
	3 - High Road Northwest	5	0	0	0
	4 - Howlett Way	6	0	5	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - High Road Southeast	0.37	2.91	0.6	A
2 - Goslings Way	0.05	4.32	0.0	A
3 - High Road Northwest	0.25	3.04	0.3	A
4 - Howlett Way	0.21	2.53	0.3	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	507	89	2070	0.245	505	0.3	2.381	A
2 - Goslings Way	27	583	1079	0.025	27	0.0	3.422	A
3 - High Road Northwest	270	244	1723	0.157	270	0.2	2.525	A
4 - Howlett Way	265	137	1956	0.135	264	0.2	2.244	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	605	107	2050	0.295	605	0.4	2.582	A
2 - Goslings Way	32	697	992	0.033	32	0.0	3.751	A
3 - High Road Northwest	323	292	1672	0.193	323	0.2	2.721	A
4 - Howlett Way	316	164	1927	0.164	316	0.2	2.356	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	741	131	2021	0.367	740	0.6	2.911	A
2 - Goslings Way	40	854	873	0.045	40	0.0	4.319	A
3 - High Road Northwest	395	358	1602	0.247	395	0.3	3.043	A
4 - Howlett Way	388	201	1888	0.205	387	0.3	2.529	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	741	131	2021	0.367	741	0.6	2.913	A
2 - Goslings Way	40	854	872	0.045	40	0.0	4.322	A
3 - High Road Northwest	395	358	1602	0.247	395	0.3	3.043	A
4 - Howlett Way	388	201	1888	0.205	388	0.3	2.529	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	605	107	2049	0.295	606	0.4	2.586	A
2 - Goslings Way	32	698	991	0.033	32	0.0	3.755	A
3 - High Road Northwest	323	292	1672	0.193	323	0.2	2.724	A
4 - Howlett Way	316	165	1927	0.164	317	0.2	2.359	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	507	90	2070	0.245	507	0.3	2.388	A
2 - Goslings Way	27	585	1077	0.025	27	0.0	3.430	A
3 - High Road Northwest	270	245	1723	0.157	270	0.2	2.530	A
4 - Howlett Way	265	138	1955	0.136	265	0.2	2.247	A

Howlett Way/High Road - Existing Layout - 2023 Do-Nothing, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Howlett Way-High Road	Large Roundabout		1, 2, 3, 4	3.24	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	81	4 - Howlett Way

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - High Road Southeast	70	23.60
2 - Goslings Way	696	8.27
3 - High Road Northwest	344	23.71
4 - Howlett Way	168	14.24

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2023 Do-Nothing	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - High Road Southeast		✓	395	100.000
2 - Goslings Way		✓	21	100.000
3 - High Road Northwest		✓	324	100.000
4 - Howlett Way		✓	803	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	10	10	235	140
	2 - Goslings Way	9	0	5	7
	3 - High Road Northwest	175	4	1	144
	4 - Howlett Way	479	27	297	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	0	13	3	5
	2 - Goslings Way	0	0	25	0
	3 - High Road Northwest	2	0	0	1
	4 - Howlett Way	1	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - High Road Southeast	0.25	2.84	0.3	A
2 - Goslings Way	0.02	4.08	0.0	A
3 - High Road Northwest	0.20	2.55	0.3	A
4 - Howlett Way	0.47	3.69	0.9	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	297	247	1884	0.158	297	0.2	2.350	A
2 - Goslings Way	16	513	1132	0.014	16	0.0	3.386	A
3 - High Road Northwest	244	125	1851	0.132	243	0.2	2.272	A
4 - Howlett Way	605	149	1943	0.311	603	0.5	2.704	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	355	296	1826	0.194	355	0.2	2.536	A
2 - Goslings Way	19	614	1055	0.018	19	0.0	3.646	A
3 - High Road Northwest	291	149	1825	0.160	291	0.2	2.381	A
4 - Howlett Way	722	179	1912	0.378	721	0.6	3.047	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	435	362	1748	0.249	435	0.3	2.842	A
2 - Goslings Way	23	751	951	0.024	23	0.0	4.074	A
3 - High Road Northwest	357	183	1789	0.199	356	0.3	2.550	A
4 - Howlett Way	884	219	1869	0.473	883	0.9	3.676	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	435	362	1747	0.249	435	0.3	2.843	A
2 - Goslings Way	23	752	950	0.024	23	0.0	4.077	A
3 - High Road Northwest	357	183	1789	0.199	357	0.3	2.550	A
4 - Howlett Way	884	219	1869	0.473	884	0.9	3.685	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	355	296	1825	0.195	355	0.3	2.539	A
2 - Goslings Way	19	615	1054	0.018	19	0.0	3.652	A
3 - High Road Northwest	291	149	1824	0.160	292	0.2	2.384	A
4 - Howlett Way	722	179	1911	0.378	723	0.6	3.058	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	297	248	1883	0.158	298	0.2	2.355	A
2 - Goslings Way	16	515	1130	0.014	16	0.0	3.393	A
3 - High Road Northwest	244	125	1850	0.132	244	0.2	2.274	A
4 - Howlett Way	605	150	1943	0.311	605	0.5	2.717	A

	AM					PM				
	Queue (PCU)	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**	**Queue (PCU)**	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**
	Howlett Way/High Road - Existing Layout - 2018 Observed									
1 - High Road Southeast	0.5	2.67	0.32	A	136 % [2 - Goslings Way]	0.3	2.57	0.20	A	108 % [4 - Howlett Way]
2 - Goslings Way	0.0	3.91	0.04	A		0.0	3.70	0.02	A	
3 - High Road Northwest	0.3	2.80	0.20	A		0.2	2.43	0.17	A	
4 - Howlett Way	0.2	2.40	0.18	A		0.7	3.22	0.41	A	
	Howlett Way/High Road - Existing Layout - 2023 Do-Nothing									
1 - High Road Southeast	0.6	2.91	0.37	A	106 % [2 - Goslings Way]	**0.3**	**2.84**	**0.25**	**A**	**81 % [4 - Howlett Way]**
2 - Goslings Way	0.0	4.32	0.05	A		**0.0**	**4.08**	**0.02**	**A**	
3 - High Road Northwest	0.3	3.04	0.25	A		**0.3**	**2.55**	**0.20**	**A**	
4 - Howlett Way	0.3	2.53	0.21	A		**0.9**	**3.69**	**0.47**	**A**	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

Junctions 9

ARCADY 9 - Roundabout Module

Filename: Howlett Way-High Road RBT - Proposed Layout.j9
Path: R:\Projects\67006 Howlett Way, Trimley\Trans\Junction Capacity Assessments
Report generation date: 05/12/2018 16:15:30

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	Howlett Way/High Road - Revised Layout - 2023 Do-Something									
1 - High Road Southeast	0.6	2.93	0.37	A	105 % [2 - Goslings Way]	0.4	2.86	0.25	A	80 % [4 - Howlett Way]
2 - Goslings Way	0.0	4.35	0.05	A		0.0	4.10	0.02	A	
3 - High Road Northwest	0.3	3.08	0.25	A		0.3	2.59	0.20	A	
4 - Howlett Way	0.3	2.55	0.21	A		0.9	3.71	0.48	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	22/05/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AUTOCAD-T1700\Tom
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

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Do-Something	AM	ONE HOUR	07:45	09:15	15
D2	2023 Do-Something	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Howlett Way/High Road - Revised Layout	100.000

Howlett Way/High Road - Revised Layout - 2023 Do-Something, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Howlett Way-High Road	Large Roundabout		1, 2, 3, 4	2.91	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	105	2 - Goslings Way

Arms

Arms

Arm	Name	Description
1	High Road Southeast	
2	Goslings Way	
3	High Road Northwest	
4	Howlett Way	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - High Road Southeast	3.88	4.52	2.1	26.8	52.4	10.0	
2 - Goslings Way	2.75	3.88	1.7	9.5	52.4	47.0	
3 - High Road Northwest	3.59	4.00	18.0	15.0	52.4	19.0	
4 - Howlett Way	3.70	4.70	11.0	11.0	52.4	29.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - High Road Southeast	70	23.60
2 - Goslings Way	696	8.27
3 - High Road Northwest	344	23.71
4 - Howlett Way	168	14.24

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - High Road Southeast	1.184	2176
2 - Goslings Way	0.759	1521
3 - High Road Northwest	1.037	1965
4 - Howlett Way	1.067	2102

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

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - High Road Southeast		✓	676	100.000
2 - Goslings Way		✓	36	100.000
3 - High Road Northwest		✓	361	100.000
4 - Howlett Way		✓	361	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	6	5	368	297
	2 - Goslings Way	11	0	11	14
	3 - High Road Northwest	164	2	0	195
	4 - Howlett Way	241	9	111	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	0	0	3	5
	2 - Goslings Way	0	0	0	0
	3 - High Road Northwest	5	0	0	0
	4 - Howlett Way	6	0	5	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - High Road Southeast	0.37	2.93	0.6	A
2 - Goslings Way	0.05	4.35	0.0	A
3 - High Road Northwest	0.25	3.08	0.3	A
4 - Howlett Way	0.21	2.55	0.3	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	509	92	2068	0.246	508	0.3	2.389	A
2 - Goslings Way	27	587	1075	0.025	27	0.0	3.433	A
3 - High Road Northwest	272	246	1709	0.159	271	0.2	2.552	A
4 - Howlett Way	272	137	1956	0.139	271	0.2	2.251	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	608	110	2046	0.297	607	0.4	2.592	A
2 - Goslings Way	32	703	988	0.033	32	0.0	3.767	A
3 - High Road Northwest	325	295	1659	0.196	324	0.2	2.751	A
4 - Howlett Way	325	164	1927	0.168	324	0.2	2.368	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	744	134	2017	0.369	744	0.6	2.927	A
2 - Goslings Way	40	860	868	0.046	40	0.0	4.345	A
3 - High Road Northwest	397	361	1591	0.250	397	0.3	3.077	A
4 - Howlett Way	397	201	1888	0.211	397	0.3	2.546	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	744	134	2017	0.369	744	0.6	2.930	A
2 - Goslings Way	40	861	867	0.046	40	0.0	4.348	A
3 - High Road Northwest	397	361	1590	0.250	397	0.3	3.078	A
4 - Howlett Way	397	201	1888	0.211	397	0.3	2.546	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	608	110	2046	0.297	608	0.4	2.595	A
2 - Goslings Way	32	704	987	0.033	32	0.0	3.771	A
3 - High Road Northwest	325	295	1659	0.196	325	0.2	2.756	A
4 - Howlett Way	325	165	1927	0.168	325	0.2	2.369	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	509	92	2067	0.246	509	0.3	2.394	A
2 - Goslings Way	27	589	1074	0.025	27	0.0	3.439	A
3 - High Road Northwest	272	247	1709	0.159	272	0.2	2.556	A
4 - Howlett Way	272	138	1955	0.139	272	0.2	2.254	A

Howlett Way/High Road - Revised Layout - 2023 Do-Something, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Howlett Way-High Road	Large Roundabout		1, 2, 3, 4	3.26	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	80	4 - Howlett Way

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - High Road Southeast	70	23.60
2 - Goslings Way	696	8.27
3 - High Road Northwest	344	23.71
4 - Howlett Way	168	14.24

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - High Road Southeast		✓	401	100.000
2 - Goslings Way		✓	21	100.000
3 - High Road Northwest		✓	327	100.000
4 - Howlett Way		✓	808	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	10	10	235	146
	2 - Goslings Way	9	0	5	7
	3 - High Road Northwest	175	4	1	147
	4 - Howlett Way	483	27	298	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	0	13	3	5
	2 - Goslings Way	0	0	25	0
	3 - High Road Northwest	2	0	0	1
	4 - Howlett Way	1	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - High Road Southeast	0.25	2.86	0.4	A
2 - Goslings Way	0.02	4.10	0.0	A
3 - High Road Northwest	0.20	2.59	0.3	A
4 - Howlett Way	0.48	3.71	0.9	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	302	248	1883	0.160	301	0.2	2.359	A
2 - Goslings Way	16	518	1128	0.014	16	0.0	3.398	A
3 - High Road Northwest	246	129	1831	0.134	246	0.2	2.302	A
4 - Howlett Way	608	149	1943	0.313	606	0.5	2.712	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	360	296	1825	0.198	360	0.3	2.548	A
2 - Goslings Way	19	620	1050	0.018	19	0.0	3.663	A
3 - High Road Northwest	294	155	1805	0.163	294	0.2	2.417	A
4 - Howlett Way	726	179	1912	0.380	726	0.6	3.059	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	442	363	1747	0.253	441	0.3	2.860	A
2 - Goslings Way	23	759	945	0.024	23	0.0	4.100	A
3 - High Road Northwest	360	189	1769	0.204	360	0.3	2.592	A
4 - Howlett Way	890	219	1869	0.476	888	0.9	3.697	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	442	363	1746	0.253	442	0.4	2.861	A
2 - Goslings Way	23	760	944	0.024	23	0.0	4.103	A
3 - High Road Northwest	360	189	1768	0.204	360	0.3	2.593	A
4 - Howlett Way	890	219	1869	0.476	890	0.9	3.706	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	360	297	1824	0.198	361	0.3	2.551	A
2 - Goslings Way	19	621	1049	0.018	19	0.0	3.669	A
3 - High Road Northwest	294	155	1804	0.163	294	0.2	2.418	A
4 - Howlett Way	726	179	1911	0.380	728	0.6	3.070	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	302	249	1882	0.160	302	0.2	2.363	A
2 - Goslings Way	16	520	1126	0.014	16	0.0	3.406	A
3 - High Road Northwest	246	130	1830	0.134	246	0.2	2.305	A
4 - Howlett Way	608	150	1943	0.313	609	0.5	2.724	A

	AM					PM				
	Queue (PCU)	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**	**Queue (PCU)**	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**
	Howlett Way/High Road - Revised Layout - 2023 Do-Something									
1 - High Road Southeast	0.6	2.93	0.37	A	105 % [2 - Goslings Way]	**0.4**	**2.86**	**0.25**	**A**	**80 % [4 - Howlett Way]**
2 - Goslings Way	0.0	4.35	0.05	A		**0.0**	**4.10**	**0.02**	**A**	
3 - High Road Northwest	0.3	3.08	0.25	A		**0.3**	**2.59**	**0.20**	**A**	
4 - Howlett Way	0.3	2.55	0.21	A		**0.9**	**3.71**	**0.48**	**A**	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

APPENDIX M

	AM					PM				
	Queue (PCU)	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**	**Queue (PCU)**	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**
	Howlett Way/A14 - Existing Layout - 2018 Observed									
1 - A14 Southeast	0.1	1.36	0.07	A	261 % [4 - Kirton Road]	0.2	1.64	0.19	A	187 % [1 - A14 Southeast]
2 - Howlett Way	0.2	1.73	0.18	A		0.1	1.60	0.11	A	
3 - A14 Northwest	0.1	1.80	0.09	A		0.2	1.84	0.19	A	
4 - Kirton Road	0.2	2.04	0.13	A		0.1	2.08	0.09	A	
	Howlett Way/A14 - Existing Layout - 2023 Do-Nothing									
1 - A14 Southeast	0.2	1.50	0.15	A	167 % [2 - Howlett Way]	0.4	1.86	0.26	A	124 % [3 - A14 Northwest]
2 - Howlett Way	0.3	1.97	0.23	A		0.2	1.74	0.13	A	
3 - A14 Northwest	0.2	1.85	0.15	A		0.4	2.20	0.31	A	
4 - Kirton Road	0.2	2.18	0.15	A		0.1	2.47	0.11	A	
	Howlett Way/A14 - Existing Layout - 2023 Do-Something									
1 - A14 Southeast	**0.2**	**1.55**	**0.16**	**A**	**133 %** **[2 - Howlett Way]**	0.4	2.02	0.29	A	106 % [3 - A14 Northwest]
2 - Howlett Way	**0.4**	**2.23**	**0.30**	**A**		0.2	1.81	0.16	A	
3 - A14 Northwest	**0.2**	**2.07**	**0.17**	**A**		0.5	2.36	0.34	A	
4 - Kirton Road	**0.2**	**2.34**	**0.16**	**A**		0.1	2.64	0.12	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896

Filename: A14 J59 Trimley Rbt.j9
Path: R:\Projects\67006 Howlett Way, Trimley\Trans\Junction Capacity Assessments
Report generation date: 31/07/2018 17:06:10

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
Howlett Way/A14 - Existing Layout - 2018 Observed										
1 - A14 Southeast	0.1	1.36	0.07	A	261 % [4 - Kirton Road]	0.2	1.64	0.19	A	187 % [1 - A14 Southeast]
2 - Howlett Way	0.2	1.73	0.18	A		0.1	1.60	0.11	A	
3 - A14 Northwest	0.1	1.80	0.09	A		0.2	1.84	0.19	A	
4 - Kirton Road	0.2	2.04	0.13	A		0.1	2.08	0.09	A	
Howlett Way/A14 - Existing Layout - 2023 Do-Nothing										
1 - A14 Southeast	0.2	1.50	0.15	A	167 % [2 - Howlett Way]	0.4	1.86	0.26	A	124 % [3 - A14 Northwest]
2 - Howlett Way	0.3	1.97	0.23	A		0.2	1.74	0.13	A	
3 - A14 Northwest	0.2	1.85	0.15	A		0.4	2.20	0.31	A	
4 - Kirton Road	0.2	2.18	0.15	A		0.1	2.47	0.11	A	
Howlett Way/A14 - Existing Layout - 2023 Do-Something										
1 - A14 Southeast	0.2	1.55	0.16	A	133 % [2 - Howlett Way]	0.4	2.02	0.29	A	106 % [3 - A14 Northwest]
2 - Howlett Way	0.4	2.23	0.30	A		0.2	1.81	0.16	A	
3 - A14 Northwest	0.2	2.07	0.17	A		0.5	2.36	0.34	A	
4 - Kirton Road	0.2	2.34	0.16	A		0.1	2.64	0.12	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	21/05/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AUTOCAD-T1700\Tom
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2018 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023 Do-Nothing	AM	ONE HOUR	07:45	09:15	15	✓
D4	2023 Do-Nothing	PM	ONE HOUR	16:45	18:15	15	✓
D5	2023 Do-Something	AM	ONE HOUR	07:45	09:15	15	✓
D6	2023 Do-Something	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Howlett Way/A14 - Existing Layout	✓	100.000	100.000

Howlett Way/A14 - Existing Layout - 2018 Observed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
59	Jctn 59 of A14	Large Roundabout		1, 2, 3, 4	1.75	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	261	4 - Kirton Road

Arms

Arms

Arm	Name	Description
1	A14 Southeast	
2	Howlett Way	
3	A14 Northwest	
4	Kirton Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - A14 Southeast	7.44	8.80	10.5	83.0	125.0	10.0	
2 - Howlett Way	3.66	7.95	30.0	30.4	125.0	13.0	
3 - A14 Northwest	7.21	7.55	1.3	33.1	118.0	19.0	
4 - Kirton Road	3.16	7.82	19.7	20.7	118.0	28.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - A14 Southeast	468	115.00
2 - Howlett Way	226	46.00
3 - A14 Northwest	399	109.00
4 - Kirton Road	531	27.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - A14 Southeast	1.222	3333
2 - Howlett Way	1.077	2869
3 - A14 Northwest	1.096	2913
4 - Kirton Road	0.889	2464

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A14 Southeast		ONE HOUR	✓	179	100.000
2 - Howlett Way		ONE HOUR	✓	441	100.000
3 - A14 Northwest		ONE HOUR	✓	199	100.000
4 - Kirton Road		ONE HOUR	✓	243	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	4	61	0	114
	2 - Howlett Way	207	0	97	137
	3 - A14 Northwest	1	180	9	9
	4 - Kirton Road	98	70	75	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	0	2	0	1
	2 - Howlett Way	0	0	10	3
	3 - A14 Northwest	0	8	0	0
	4 - Kirton Road	1	3	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A14 Southeast	0.07	1.36	0.1	A	164	246
2 - Howlett Way	0.18	1.73	0.2	A	405	607
3 - A14 Northwest	0.09	1.80	0.1	A	183	274
4 - Kirton Road	0.13	2.04	0.2	A	223	334

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	135	34	251	3027	0.045	135	233	0.0	0.0	1.260	A
2 - Howlett Way	332	83	152	2706	0.123	331	234	0.0	0.1	1.561	A
3 - A14 Northwest	150	37	347	2533	0.059	150	136	0.0	0.1	1.618	A
4 - Kirton Road	183	46	301	2196	0.083	183	195	0.0	0.1	1.831	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	161	40	300	2966	0.054	161	279	0.0	0.1	1.299	A
2 - Howlett Way	396	99	182	2674	0.148	396	279	0.1	0.2	1.627	A
3 - A14 Northwest	179	45	415	2458	0.073	179	163	0.1	0.1	1.692	A
4 - Kirton Road	218	55	360	2144	0.102	218	234	0.1	0.1	1.915	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	197	49	368	2884	0.068	197	341	0.1	0.1	1.356	A
2 - Howlett Way	486	121	222	2630	0.185	485	342	0.2	0.2	1.728	A
3 - A14 Northwest	219	55	508	2356	0.093	219	199	0.1	0.1	1.804	A
4 - Kirton Road	268	67	441	2072	0.129	267	286	0.1	0.2	2.044	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	197	49	368	2884	0.068	197	341	0.1	0.1	1.357	A
2 - Howlett Way	486	121	222	2630	0.185	486	342	0.2	0.2	1.728	A
3 - A14 Northwest	219	55	509	2356	0.093	219	199	0.1	0.1	1.805	A
4 - Kirton Road	268	67	442	2072	0.129	268	286	0.2	0.2	2.044	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	161	40	300	2966	0.054	161	279	0.1	0.1	1.301	A
2 - Howlett Way	396	99	182	2674	0.148	397	280	0.2	0.2	1.627	A
3 - A14 Northwest	179	45	416	2458	0.073	179	163	0.1	0.1	1.692	A
4 - Kirton Road	218	55	361	2144	0.102	219	234	0.2	0.1	1.915	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	135	34	252	3026	0.045	135	233	0.1	0.0	1.261	A
2 - Howlett Way	332	83	152	2706	0.123	332	234	0.2	0.1	1.564	A
3 - A14 Northwest	150	37	348	2532	0.059	150	136	0.1	0.1	1.621	A
4 - Kirton Road	183	46	302	2196	0.083	183	196	0.1	0.1	1.835	A

Howlett Way/A14 - Existing Layout - 2018 Observed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
59	Jctn 59 of A14	Large Roundabout		1, 2, 3, 4	1.75	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	187	1 - A14 Southeast

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - A14 Southeast	468	115.00
2 - Howlett Way	226	46.00
3 - A14 Northwest	399	109.00
4 - Kirton Road	531	27.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018 Observed	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A14 Southeast		ONE HOUR	✓	458	100.000
2 - Howlett Way		ONE HOUR	✓	257	100.000
3 - A14 Northwest		ONE HOUR	✓	414	100.000
4 - Kirton Road		ONE HOUR	✓	152	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	2	253	0	203
	2 - Howlett Way	129	2	63	63
	3 - A14 Northwest	2	392	4	16
	4 - Kirton Road	82	53	17	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	0	0	0	0
	2 - Howlett Way	0	0	7	5
	3 - A14 Northwest	0	1	0	0
	4 - Kirton Road	0	8	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A14 Southeast	0.19	1.64	0.2	A	420	630
2 - Howlett Way	0.11	1.60	0.1	A	236	354
3 - A14 Northwest	0.19	1.84	0.2	A	380	570
4 - Kirton Road	0.09	2.08	0.1	A	139	209

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	345	86	352	2903	0.119	344	162	0.0	0.1	1.406	A
2 - Howlett Way	193	48	170	2686	0.072	193	526	0.0	0.1	1.484	A
3 - A14 Northwest	312	78	300	2584	0.121	311	63	0.0	0.1	1.598	A
4 - Kirton Road	114	29	399	2109	0.054	114	212	0.0	0.1	1.851	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	412	103	421	2819	0.146	412	193	0.1	0.2	1.494	A
2 - Howlett Way	231	58	203	2651	0.087	231	629	0.1	0.1	1.529	A
3 - A14 Northwest	372	93	359	2520	0.148	372	75	0.1	0.2	1.691	A
4 - Kirton Road	137	34	477	2040	0.067	137	253	0.1	0.1	1.941	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	504	126	515	2704	0.187	504	237	0.2	0.2	1.635	A
2 - Howlett Way	283	71	249	2602	0.109	283	770	0.1	0.1	1.596	A
3 - A14 Northwest	456	114	439	2432	0.187	456	92	0.2	0.2	1.838	A
4 - Kirton Road	167	42	584	1945	0.086	167	310	0.1	0.1	2.078	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	504	126	515	2703	0.187	504	237	0.2	0.2	1.636	A
2 - Howlett Way	283	71	249	2601	0.109	283	771	0.1	0.1	1.596	A
3 - A14 Northwest	456	114	439	2432	0.187	456	92	0.2	0.2	1.838	A
4 - Kirton Road	167	42	585	1945	0.086	167	310	0.1	0.1	2.079	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	412	103	421	2819	0.146	412	193	0.2	0.2	1.497	A
2 - Howlett Way	231	58	203	2650	0.087	231	630	0.1	0.1	1.529	A
3 - A14 Northwest	372	93	359	2520	0.148	372	76	0.2	0.2	1.691	A
4 - Kirton Road	137	34	478	2040	0.067	137	254	0.1	0.1	1.943	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	345	86	353	2902	0.119	345	162	0.2	0.1	1.409	A
2 - Howlett Way	193	48	170	2686	0.072	194	527	0.1	0.1	1.484	A
3 - A14 Northwest	312	78	301	2584	0.121	312	63	0.2	0.1	1.598	A
4 - Kirton Road	114	29	400	2109	0.054	114	212	0.1	0.1	1.855	A

Howlett Way/A14 - Existing Layout - 2023 Do-Nothing, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
59	Jctn 59 of A14	Large Roundabout		1, 2, 3, 4	1.86	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	167	2 - Howlett Way

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - A14 Southeast	468	115.00
2 - Howlett Way	226	46.00
3 - A14 Northwest	399	109.00
4 - Kirton Road	531	27.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023 Do-Nothing	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A14 Southeast		ONE HOUR	✓	389	100.000
2 - Howlett Way		ONE HOUR	✓	509	100.000
3 - A14 Northwest		ONE HOUR	✓	303	100.000
4 - Kirton Road		ONE HOUR	✓	263	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	4	72	191	122
	2 - Howlett Way	239	0	113	157
	3 - A14 Northwest	79	204	10	10
	4 - Kirton Road	105	78	80	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	0	0	0	0
	2 - Howlett Way	0	0	0	0
	3 - A14 Northwest	0	0	2	0
	4 - Kirton Road	0	0	0	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A14 Southeast	0.15	1.50	0.2	A	357	535
2 - Howlett Way	0.23	1.97	0.3	A	467	701
3 - A14 Northwest	0.15	1.85	0.2	A	278	417
4 - Kirton Road	0.15	2.18	0.2	A	241	362

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	293	73	280	2992	0.098	292	321	0.0	0.1	1.333	A
2 - Howlett Way	383	96	306	2540	0.151	382	266	0.0	0.2	1.668	A
3 - A14 Northwest	228	57	392	2483	0.092	228	296	0.0	0.1	1.596	A
4 - Kirton Road	198	50	403	2106	0.094	198	217	0.0	0.1	1.885	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	350	87	334	2925	0.120	350	384	0.1	0.1	1.397	A
2 - Howlett Way	458	114	366	2475	0.185	457	318	0.2	0.2	1.783	A
3 - A14 Northwest	272	68	469	2399	0.114	272	354	0.1	0.1	1.693	A
4 - Kirton Road	236	59	482	2036	0.116	236	260	0.1	0.1	2.000	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	428	107	409	2833	0.151	428	470	0.1	0.2	1.496	A
2 - Howlett Way	560	140	448	2387	0.235	560	390	0.2	0.3	1.970	A
3 - A14 Northwest	334	83	574	2284	0.146	333	434	0.1	0.2	1.846	A
4 - Kirton Road	290	72	590	1940	0.149	289	318	0.1	0.2	2.180	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	428	107	410	2833	0.151	428	470	0.2	0.2	1.496	A
2 - Howlett Way	560	140	448	2387	0.235	560	390	0.3	0.3	1.970	A
3 - A14 Northwest	334	83	575	2283	0.146	334	434	0.2	0.2	1.846	A
4 - Kirton Road	290	72	590	1940	0.149	290	318	0.2	0.2	2.181	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	350	87	335	2924	0.120	350	384	0.2	0.1	1.400	A
2 - Howlett Way	458	114	366	2475	0.185	458	318	0.3	0.2	1.784	A
3 - A14 Northwest	272	68	470	2399	0.114	273	354	0.2	0.1	1.693	A
4 - Kirton Road	236	59	482	2036	0.116	237	260	0.2	0.1	2.002	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	293	73	280	2991	0.098	293	322	0.1	0.1	1.333	A
2 - Howlett Way	383	96	307	2539	0.151	383	267	0.2	0.2	1.669	A
3 - A14 Northwest	228	57	393	2482	0.092	228	297	0.1	0.1	1.597	A
4 - Kirton Road	198	50	404	2105	0.094	198	218	0.1	0.1	1.889	A

Howlett Way/A14 - Existing Layout - 2023 Do-Nothing, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
59	Jctn 59 of A14	Large Roundabout		1, 2, 3, 4	2.03	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	124	3 - A14 Northwest

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - A14 Southeast	468	115.00
2 - Howlett Way	226	46.00
3 - A14 Northwest	399	109.00
4 - Kirton Road	531	27.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023 Do-Nothing	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A14 Southeast		ONE HOUR	✓	616	100.000
2 - Howlett Way		ONE HOUR	✓	295	100.000
3 - A14 Northwest		ONE HOUR	✓	664	100.000
4 - Kirton Road		ONE HOUR	✓	167	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	2	285	111	218
	2 - Howlett Way	149	2	72	72
	3 - A14 Northwest	188	455	4	17
	4 - Kirton Road	90	59	18	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	0	0	0	0
	2 - Howlett Way	0	0	7	5
	3 - A14 Northwest	0	1	0	0
	4 - Kirton Road	0	8	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A14 Southeast	0.26	1.86	0.4	A	565	848
2 - Howlett Way	0.13	1.74	0.2	A	271	406
3 - A14 Northwest	0.31	2.20	0.4	A	609	914
4 - Kirton Road	0.11	2.47	0.1	A	153	230

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	464	116	404	2839	0.163	463	322	0.0	0.2	1.514	A
2 - Howlett Way	222	56	265	2584	0.086	222	602	0.0	0.1	1.566	A
3 - A14 Northwest	500	125	333	2548	0.196	499	154	0.0	0.2	1.768	A
4 - Kirton Road	126	31	601	1930	0.065	125	231	0.0	0.1	2.048	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	554	138	483	2742	0.202	554	385	0.2	0.3	1.644	A
2 - Howlett Way	265	66	317	2528	0.105	265	720	0.1	0.1	1.635	A
3 - A14 Northwest	597	149	398	2477	0.241	597	184	0.2	0.3	1.927	A
4 - Kirton Road	150	38	719	1825	0.082	150	276	0.1	0.1	2.206	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	678	170	592	2610	0.260	678	472	0.3	0.4	1.862	A
2 - Howlett Way	325	81	388	2451	0.133	325	881	0.1	0.2	1.740	A
3 - A14 Northwest	731	183	488	2379	0.307	731	226	0.3	0.4	2.199	A
4 - Kirton Road	184	46	880	1682	0.109	184	338	0.1	0.1	2.467	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	678	170	592	2609	0.260	678	472	0.4	0.4	1.863	A
2 - Howlett Way	325	81	389	2451	0.133	325	882	0.2	0.2	1.740	A
3 - A14 Northwest	731	183	488	2379	0.307	731	226	0.4	0.4	2.199	A
4 - Kirton Road	184	46	881	1681	0.109	184	338	0.1	0.1	2.468	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	554	138	484	2742	0.202	554	386	0.4	0.3	1.647	A
2 - Howlett Way	265	66	318	2527	0.105	265	721	0.2	0.1	1.638	A
3 - A14 Northwest	597	149	398	2476	0.241	597	184	0.4	0.3	1.929	A
4 - Kirton Road	150	38	720	1825	0.082	150	276	0.1	0.1	2.209	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	464	116	405	2838	0.163	464	323	0.3	0.2	1.518	A
2 - Howlett Way	222	56	266	2583	0.086	222	603	0.1	0.1	1.569	A
3 - A14 Northwest	500	125	334	2547	0.196	500	154	0.3	0.2	1.769	A
4 - Kirton Road	126	31	603	1929	0.065	126	231	0.1	0.1	2.050	A

Howlett Way/A14 - Existing Layout - 2023 Do-Something, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
59	Jctn 59 of A14	Large Roundabout		1, 2, 3, 4	2.04	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	133	2 - Howlett Way

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - A14 Southeast	468	115.00
2 - Howlett Way	226	46.00
3 - A14 Northwest	399	109.00
4 - Kirton Road	531	27.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2023 Do-Something	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A14 Southeast		ONE HOUR	✓	415	100.000
2 - Howlett Way		ONE HOUR	✓	649	100.000
3 - A14 Northwest		ONE HOUR	✓	335	100.000
4 - Kirton Road		ONE HOUR	✓	264	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	4	98	191	122
	2 - Howlett Way	300	0	189	160
	3 - A14 Northwest	79	236	10	10
	4 - Kirton Road	105	79	80	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	0	2	0	1
	2 - Howlett Way	0	0	10	3
	3 - A14 Northwest	0	8	0	0
	4 - Kirton Road	1	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A14 Southeast	0.16	1.55	0.2	A	381	571
2 - Howlett Way	0.30	2.23	0.4	A	596	893
3 - A14 Northwest	0.17	2.07	0.2	A	307	461
4 - Kirton Road	0.16	2.34	0.2	A	242	363

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	312	78	304	2961	0.106	312	367	0.0	0.1	1.368	A
2 - Howlett Way	489	122	306	2540	0.192	488	310	0.0	0.2	1.815	A
3 - A14 Northwest	252	63	440	2431	0.104	252	353	0.0	0.1	1.742	A
4 - Kirton Road	199	50	473	2044	0.097	198	219	0.0	0.1	1.975	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	373	93	364	2888	0.129	373	438	0.1	0.1	1.441	A
2 - Howlett Way	583	146	366	2475	0.236	583	371	0.2	0.3	1.968	A
3 - A14 Northwest	301	75	527	2336	0.129	301	422	0.1	0.2	1.865	A
4 - Kirton Road	237	59	565	1962	0.121	237	262	0.1	0.1	2.113	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	457	114	446	2789	0.164	457	537	0.1	0.2	1.554	A
2 - Howlett Way	715	179	448	2387	0.299	714	454	0.3	0.4	2.227	A
3 - A14 Northwest	369	92	645	2206	0.167	369	517	0.2	0.2	2.066	A
4 - Kirton Road	291	73	692	1849	0.157	290	321	0.1	0.2	2.339	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	457	114	446	2788	0.164	457	537	0.2	0.2	1.555	A
2 - Howlett Way	715	179	448	2387	0.299	715	455	0.4	0.4	2.227	A
3 - A14 Northwest	369	92	645	2206	0.167	369	517	0.2	0.2	2.067	A
4 - Kirton Road	291	73	693	1849	0.157	291	321	0.2	0.2	2.339	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	373	93	364	2888	0.129	373	439	0.2	0.1	1.444	A
2 - Howlett Way	583	146	366	2475	0.236	584	372	0.4	0.3	1.970	A
3 - A14 Northwest	301	75	527	2335	0.129	301	423	0.2	0.2	1.869	A
4 - Kirton Road	237	59	566	1961	0.121	238	263	0.2	0.1	2.115	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	312	78	305	2960	0.106	313	368	0.1	0.1	1.371	A
2 - Howlett Way	489	122	307	2539	0.192	489	311	0.3	0.2	1.819	A
3 - A14 Northwest	252	63	441	2429	0.104	252	354	0.2	0.1	1.743	A
4 - Kirton Road	199	50	474	2043	0.097	199	220	0.1	0.1	1.976	A

Howlett Way/A14 - Existing Layout - 2023 Do-Something, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
59	Jctn 59 of A14	Large Roundabout		1, 2, 3, 4	2.16	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	106	3 - A14 Northwest

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - A14 Southeast	468	115.00
2 - Howlett Way	226	46.00
3 - A14 Northwest	399	109.00
4 - Kirton Road	531	27.00

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2023 Do-Something	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - A14 Southeast		ONE HOUR	✓	670	100.000
2 - Howlett Way		ONE HOUR	✓	367	100.000
3 - A14 Northwest		ONE HOUR	✓	730	100.000
4 - Kirton Road		ONE HOUR	✓	169	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	2	339	111	218
	2 - Howlett Way	181	2	111	73
	3 - A14 Northwest	188	521	4	17
	4 - Kirton Road	90	61	18	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - A14 Southeast	2 - Howlett Way	3 - A14 Northwest	4 - Kirton Road
From	1 - A14 Southeast	0	0	0	0
	2 - Howlett Way	0	0	7	5
	3 - A14 Northwest	0	1	0	0
	4 - Kirton Road	0	8	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - A14 Southeast	0.29	2.02	0.4	A	615	922
2 - Howlett Way	0.16	1.81	0.2	A	337	505
3 - A14 Northwest	0.34	2.36	0.5	A	670	1005
4 - Kirton Road	0.12	2.64	0.1	A	155	233

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	504	126	455	2777	0.182	504	346	0.0	0.2	1.583	A
2 - Howlett Way	276	69	265	2584	0.107	276	694	0.0	0.1	1.606	A
3 - A14 Northwest	550	137	358	2521	0.218	548	183	0.0	0.3	1.838	A
4 - Kirton Road	127	32	675	1865	0.068	127	231	0.0	0.1	2.128	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	602	151	544	2668	0.226	602	414	0.2	0.3	1.742	A
2 - Howlett Way	330	82	317	2528	0.131	330	829	0.1	0.2	1.686	A
3 - A14 Northwest	656	164	428	2444	0.268	656	219	0.3	0.4	2.027	A
4 - Kirton Road	152	38	807	1747	0.087	152	277	0.1	0.1	2.318	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	738	184	667	2518	0.293	737	507	0.3	0.4	2.021	A
2 - Howlett Way	404	101	388	2451	0.165	404	1015	0.2	0.2	1.810	A
3 - A14 Northwest	804	201	524	2339	0.344	803	268	0.4	0.5	2.359	A
4 - Kirton Road	186	47	988	1586	0.117	186	339	0.1	0.1	2.641	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	738	184	667	2518	0.293	738	508	0.4	0.4	2.022	A
2 - Howlett Way	404	101	389	2451	0.165	404	1016	0.2	0.2	1.811	A
3 - A14 Northwest	804	201	524	2339	0.344	804	269	0.5	0.5	2.361	A
4 - Kirton Road	186	47	989	1586	0.117	186	339	0.1	0.1	2.642	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	602	151	545	2667	0.226	603	415	0.4	0.3	1.746	A
2 - Howlett Way	330	82	318	2527	0.131	330	831	0.2	0.2	1.689	A
3 - A14 Northwest	656	164	428	2444	0.269	657	220	0.5	0.4	2.030	A
4 - Kirton Road	152	38	808	1746	0.087	152	277	0.1	0.1	2.320	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - A14 Southeast	504	126	457	2775	0.182	505	347	0.3	0.2	1.584	A
2 - Howlett Way	276	69	266	2583	0.107	276	695	0.2	0.1	1.607	A
3 - A14 Northwest	550	137	359	2520	0.218	550	184	0.4	0.3	1.842	A
4 - Kirton Road	127	32	676	1863	0.068	127	232	0.1	0.1	2.130	A

APPENDIX N

	AM					PM				
	Queue (PCU)	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**	**Queue (PCU)**	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**
	Howlett Way - Proposed Access Junction - 2023 Do Something									
1 - Howlett Way (E)	**0.6**	**4.55**	**0.36**	**A**	**81 %**	3.7	13.59	0.79	B	17 %
2 - Site Access	**0.2**	**4.18**	**0.16**	**A**	**[3 - Howlett Way (W)]**	0.1	5.45	0.12	A	[1 - Howlett Way (E)]
3 - Howlett Way (W)	**0.9**	**5.95**	**0.48**	**A**		0.4	4.13	0.27	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

Junctions 9

ARCADY 9 - Roundabout Module

Filename: Howlett Way Access RBT.j9
Path: R:\Projects\67006 Howlett Way, Trimley\Trans\Junction Capacity Assessments
Report generation date: 05/12/2018 17:31:21

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	Howlett Way - Proposed Access Junction - 2023 Do Something									
1 - Howlett Way (E)	0.6	4.55	0.36	A	81 %	3.7	13.59	0.79	B	17 %
2 - Site Access	0.2	4.18	0.16	A		0.1	5.45	0.12	A	
3 - Howlett Way (W)	0.9	5.95	0.48	A	[3 - Howlett Way (W)]	0.4	4.13	0.27	A	[1 - Howlett Way (E)]

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

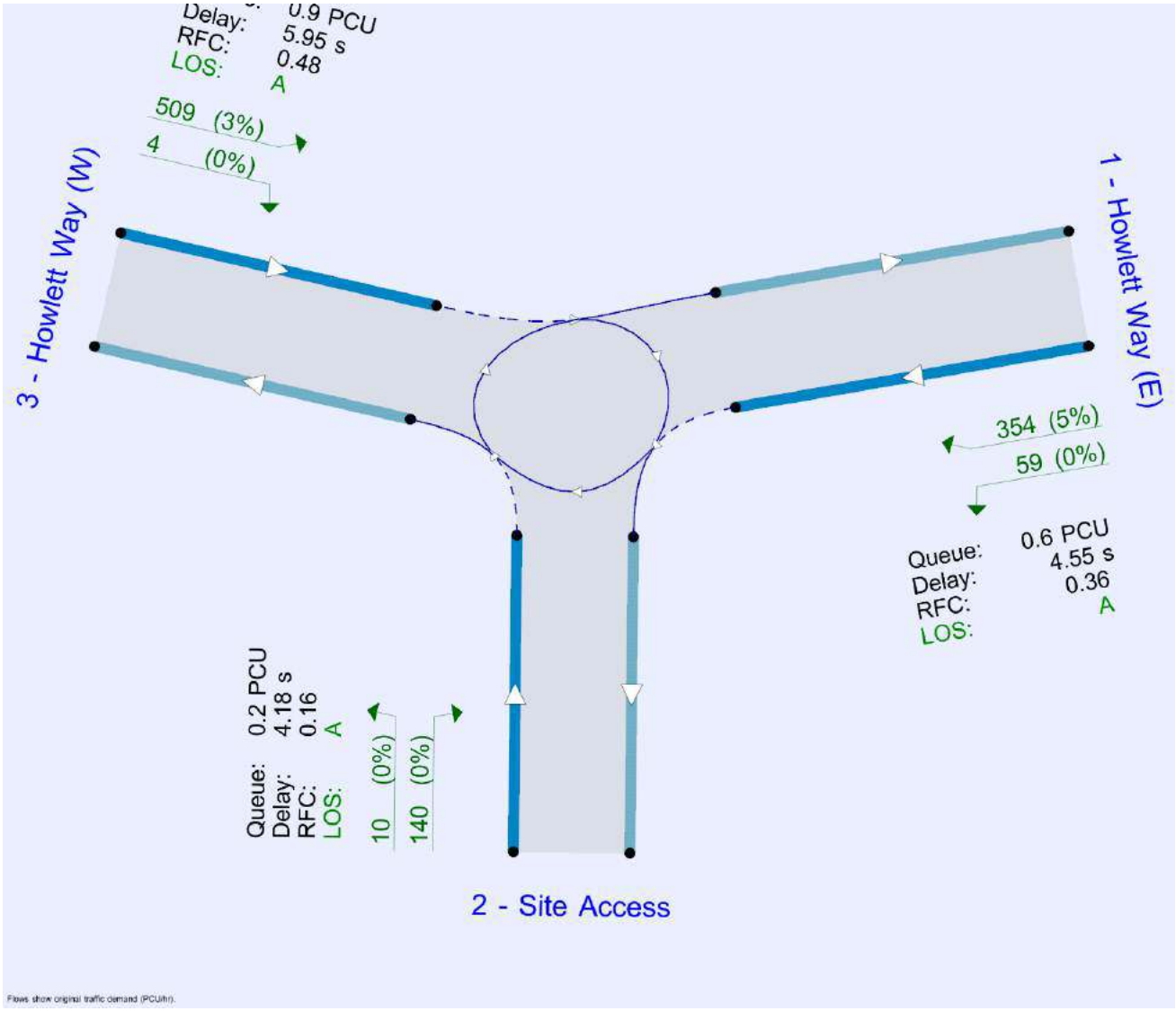
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	05/03/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AUTOCAD-T1700\Tom
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Do Something	AM	ONE HOUR	07:45	09:15	15
D2	2023 Do Something	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Howlett Way - Proposed Access Junction	100.000

Howlett Way - Proposed Access Junction - 2023 Do Something, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Proposed Access RBT	Standard Roundabout		1, 2, 3	5.17	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	81	3 - Howlett Way (W)

Arms

Arms

Arm	Name	Description
1	Howlett Way (E)	
2	Site Access	
3	Howlett Way (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Howlett Way (E)	3.66	4.33	6.4	25.0	35.0	28.0	
2 - Site Access	3.38	4.13	8.8	36.0	35.0	25.0	
3 - Howlett Way (W)	3.81	4.40	7.2	20.0	35.0	35.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Howlett Way (E)	0.572	1282
2 - Site Access	0.572	1250
3 - Howlett Way (W)	0.560	1274

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

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Howlett Way (E)		✓	413	100.000
2 - Site Access		✓	150	100.000
3 - Howlett Way (W)		✓	513	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Howlett Way (E)	2 - Site Access	3 - Howlett Way (W)
From	1 - Howlett Way (E)	0	59	354
	2 - Site Access	140	0	10
	3 - Howlett Way (W)	509	4	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Howlett Way (E)	2 - Site Access	3 - Howlett Way (W)
From	1 - Howlett Way (E)	0	0	5
	2 - Site Access	0	0	0
	3 - Howlett Way (W)	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Howlett Way (E)	0.36	4.55	0.6	A
2 - Site Access	0.16	4.18	0.2	A
3 - Howlett Way (W)	0.48	5.95	0.9	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	311	3	1281	0.243	310	0.3	3.861	A
2 - Site Access	113	265	1098	0.103	112	0.1	3.651	A
3 - Howlett Way (W)	386	105	1215	0.318	384	0.5	4.453	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	371	4	1280	0.290	371	0.4	4.125	A
2 - Site Access	135	318	1068	0.126	135	0.1	3.858	A
3 - Howlett Way (W)	461	126	1203	0.383	461	0.6	4.986	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	455	4	1280	0.355	454	0.6	4.543	A
2 - Site Access	165	389	1027	0.161	165	0.2	4.175	A
3 - Howlett Way (W)	565	154	1188	0.476	564	0.9	5.931	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	455	4	1280	0.355	455	0.6	4.548	A
2 - Site Access	165	390	1027	0.161	165	0.2	4.178	A
3 - Howlett Way (W)	565	154	1187	0.476	565	0.9	5.953	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	371	4	1280	0.290	372	0.4	4.135	A
2 - Site Access	135	319	1067	0.126	135	0.1	3.862	A
3 - Howlett Way (W)	461	126	1203	0.383	462	0.6	5.013	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	311	3	1281	0.243	311	0.3	3.874	A
2 - Site Access	113	267	1097	0.103	113	0.1	3.661	A
3 - Howlett Way (W)	386	106	1215	0.318	387	0.5	4.481	A

Howlett Way - Proposed Access Junction - 2023 Do Something, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Proposed Access RBT	Standard Roundabout		1, 2, 3	10.91	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	17	1 - Howlett Way (E)

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Howlett Way (E)		✓	921	100.000
2 - Site Access		✓	78	100.000
3 - Howlett Way (W)		✓	301	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Howlett Way (E)	2 - Site Access	3 - Howlett Way (W)
From	1 - Howlett Way (E)	0	122	799
	2 - Site Access	73	0	5
	3 - Howlett Way (W)	293	8	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Howlett Way (E)	2 - Site Access	3 - Howlett Way (W)
From	1 - Howlett Way (E)	0	0	0
	2 - Site Access	0	0	0
	3 - Howlett Way (W)	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Howlett Way (E)	0.79	13.59	3.7	B
2 - Site Access	0.12	5.45	0.1	A
3 - Howlett Way (W)	0.27	4.13	0.4	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	693	6	1279	0.542	689	1.2	6.054	A
2 - Site Access	59	597	908	0.065	58	0.1	4.238	A
3 - Howlett Way (W)	227	55	1243	0.182	226	0.2	3.638	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	828	7	1278	0.648	825	1.8	7.906	A
2 - Site Access	70	716	840	0.083	70	0.1	4.676	A
3 - Howlett Way (W)	271	66	1237	0.219	270	0.3	3.832	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	1014	9	1277	0.794	1007	3.6	12.964	B
2 - Site Access	86	873	750	0.115	86	0.1	5.419	A
3 - Howlett Way (W)	331	80	1229	0.270	331	0.4	4.125	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	1014	9	1277	0.794	1014	3.7	13.590	B
2 - Site Access	86	879	746	0.115	86	0.1	5.449	A
3 - Howlett Way (W)	331	80	1229	0.270	331	0.4	4.128	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	828	7	1278	0.648	835	1.9	8.259	A
2 - Site Access	70	725	835	0.084	70	0.1	4.708	A
3 - Howlett Way (W)	271	66	1237	0.219	271	0.3	3.836	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	693	6	1279	0.542	696	1.2	6.205	A
2 - Site Access	59	604	904	0.065	59	0.1	4.259	A
3 - Howlett Way (W)	227	55	1243	0.182	227	0.2	3.646	A

APPENDIX O

	AM					PM				
	Queue (PCU)	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**	**Queue (PCU)**	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**
	Howlett Way/High Road - Revised Layout - 2023 Sensitivity Test									
1 - High Road Southeast	**0.7**	**3.11**	**0.39**	**A**	**91 %**	0.4	2.96	0.27	A	73 %
2 - Goslings Way	**0.1**	**4.63**	**0.05**	**A**	**[2 - Goslings Way]**	0.0	4.25	0.03	A	[4 - Howlett Way]
3 - High Road Northwest	**0.4**	**3.15**	**0.26**	**A**		0.3	2.66	0.21	A	
4 - Howlett Way	**0.4**	**2.71**	**0.26**	**A**		1.0	3.90	0.50	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

Junctions 9

ARCADY 9 - Roundabout Module

Filename: Howlett Way-High Road RBT - Proposed - Sensitivity Test.j9
Path: R:\Projects\67006 Howlett Way, Trimley\Trans\Junction Capacity Assessments
Report generation date: 05/12/2018 17:52:09

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	Howlett Way/High Road - Revised Layout - 2023 Sensitivity Test									
1 - High Road Southeast	0.7	3.11	0.39	A	91 % [2 - Goslings Way]	0.4	2.96	0.27	A	73 % [4 - Howlett Way]
2 - Goslings Way	0.1	4.63	0.05	A		0.0	4.25	0.03	A	
3 - High Road Northwest	0.4	3.15	0.26	A		0.3	2.66	0.21	A	
4 - Howlett Way	0.4	2.71	0.26	A		1.0	3.90	0.50	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

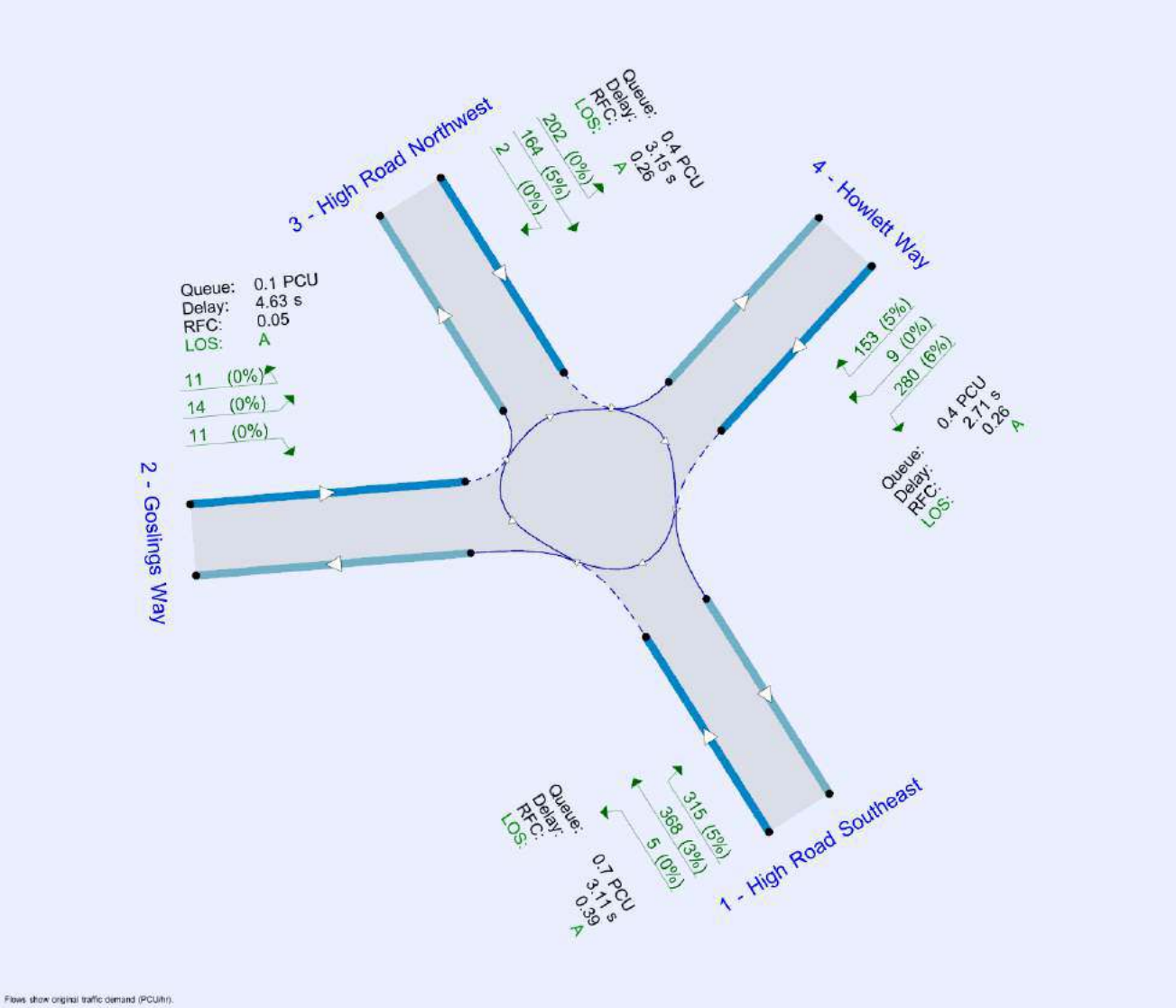
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	22/05/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AUTOCAD-T1700\Tom
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Sensitivity Test	AM	ONE HOUR	07:45	09:15	15
D2	2023 Sensitivity Test	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Howlett Way/High Road - Revised Layout	100.000

Howlett Way/High Road - Revised Layout - 2023 Sensitivity Test, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Howlett Way-High Road	Large Roundabout		1, 2, 3, 4	3.04	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	91	2 - Goslings Way

Arms

Arms

Arm	Name	Description
1	High Road Southeast	
2	Goslings Way	
3	High Road Northwest	
4	Howlett Way	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - High Road Southeast	3.88	4.52	2.1	26.8	52.4	10.0	
2 - Goslings Way	2.75	3.88	1.7	9.5	52.4	47.0	
3 - High Road Northwest	3.59	4.00	18.0	15.0	52.4	19.0	
4 - Howlett Way	3.70	4.70	11.0	11.0	52.4	29.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - High Road Southeast	70	23.60
2 - Goslings Way	696	8.27
3 - High Road Northwest	344	23.71
4 - Howlett Way	168	14.24

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - High Road Southeast	1.184	2176
2 - Goslings Way	0.759	1521
3 - High Road Northwest	1.037	1965
4 - Howlett Way	1.067	2102

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

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - High Road Southeast		✓	694	100.000
2 - Goslings Way		✓	36	100.000
3 - High Road Northwest		✓	368	100.000
4 - Howlett Way		✓	442	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	6	5	368	315
	2 - Goslings Way	11	0	11	14
	3 - High Road Northwest	164	2	0	202
	4 - Howlett Way	280	9	153	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	0	0	3	5
	2 - Goslings Way	0	0	0	0
	3 - High Road Northwest	5	0	0	0
	4 - Howlett Way	6	0	5	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - High Road Southeast	0.39	3.11	0.7	A
2 - Goslings Way	0.05	4.63	0.1	A
3 - High Road Northwest	0.26	3.15	0.4	A
4 - Howlett Way	0.26	2.71	0.4	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	522	123	2030	0.257	521	0.4	2.470	A
2 - Goslings Way	27	632	1041	0.026	27	0.0	3.549	A
3 - High Road Northwest	277	260	1695	0.163	276	0.2	2.586	A
4 - Howlett Way	333	137	1956	0.170	332	0.2	2.335	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	624	147	2002	0.312	623	0.5	2.707	A
2 - Goslings Way	32	756	947	0.034	32	0.0	3.936	A
3 - High Road Northwest	331	311	1643	0.201	331	0.3	2.798	A
4 - Howlett Way	397	164	1927	0.206	397	0.3	2.480	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	764	180	1963	0.389	763	0.7	3.110	A
2 - Goslings Way	40	926	818	0.048	40	0.1	4.624	A
3 - High Road Northwest	405	381	1570	0.258	405	0.4	3.150	A
4 - Howlett Way	487	201	1888	0.258	486	0.4	2.708	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	764	181	1962	0.389	764	0.7	3.113	A
2 - Goslings Way	40	927	817	0.049	40	0.1	4.628	A
3 - High Road Northwest	405	381	1570	0.258	405	0.4	3.152	A
4 - Howlett Way	487	201	1888	0.258	487	0.4	2.708	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	624	148	2001	0.312	625	0.5	2.711	A
2 - Goslings Way	32	758	946	0.034	32	0.0	3.943	A
3 - High Road Northwest	331	311	1642	0.201	331	0.3	2.801	A
4 - Howlett Way	397	165	1927	0.206	398	0.3	2.484	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	522	124	2030	0.257	523	0.4	2.476	A
2 - Goslings Way	27	634	1039	0.026	27	0.0	3.555	A
3 - High Road Northwest	277	261	1694	0.164	277	0.2	2.592	A
4 - Howlett Way	333	138	1955	0.170	333	0.2	2.339	A

Howlett Way/High Road - Revised Layout - 2023 Sensitivity Test, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Howlett Way-High Road	Large Roundabout		1, 2, 3, 4	3.41	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	73	4 - Howlett Way

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1 - High Road Southeast	70	23.60
2 - Goslings Way	696	8.27
3 - High Road Northwest	344	23.71
4 - Howlett Way	168	14.24

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - High Road Southeast		✓	423	100.000
2 - Goslings Way		✓	21	100.000
3 - High Road Northwest		✓	338	100.000
4 - Howlett Way		✓	852	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	10	10	235	168
	2 - Goslings Way	9	0	5	7
	3 - High Road Northwest	175	4	1	158
	4 - Howlett Way	512	27	313	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - High Road Southeast	2 - Goslings Way	3 - High Road Northwest	4 - Howlett Way
From	1 - High Road Southeast	0	13	3	5
	2 - Goslings Way	0	0	25	0
	3 - High Road Northwest	2	0	0	1
	4 - Howlett Way	1	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - High Road Southeast	0.27	2.96	0.4	A
2 - Goslings Way	0.03	4.25	0.0	A
3 - High Road Northwest	0.21	2.66	0.3	A
4 - Howlett Way	0.50	3.90	1.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	318	259	1870	0.170	318	0.2	2.406	A
2 - Goslings Way	16	546	1107	0.014	16	0.0	3.464	A
3 - High Road Northwest	254	146	1814	0.140	254	0.2	2.340	A
4 - Howlett Way	641	149	1943	0.330	639	0.5	2.781	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	380	310	1809	0.210	380	0.3	2.613	A
2 - Goslings Way	19	653	1025	0.018	19	0.0	3.755	A
3 - High Road Northwest	304	174	1784	0.170	304	0.2	2.466	A
4 - Howlett Way	766	179	1912	0.401	765	0.7	3.164	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	466	379	1727	0.270	465	0.4	2.961	A
2 - Goslings Way	23	800	914	0.025	23	0.0	4.242	A
3 - High Road Northwest	372	213	1744	0.213	372	0.3	2.662	A
4 - Howlett Way	938	219	1869	0.502	937	1.0	3.888	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	466	380	1726	0.270	466	0.4	2.962	A
2 - Goslings Way	23	800	913	0.025	23	0.0	4.245	A
3 - High Road Northwest	372	214	1743	0.213	372	0.3	2.663	A
4 - Howlett Way	938	219	1869	0.502	938	1.0	3.900	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	380	311	1808	0.210	381	0.3	2.619	A
2 - Goslings Way	19	654	1024	0.018	19	0.0	3.762	A
3 - High Road Northwest	304	175	1784	0.170	304	0.2	2.470	A
4 - Howlett Way	766	179	1911	0.401	767	0.7	3.178	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - High Road Southeast	318	260	1868	0.170	319	0.2	2.412	A
2 - Goslings Way	16	548	1105	0.014	16	0.0	3.469	A
3 - High Road Northwest	254	146	1813	0.140	255	0.2	2.343	A
4 - Howlett Way	641	150	1943	0.330	642	0.5	2.794	A

APPENDIX P

	AM					PM				
	Queue (PCU)	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**	**Queue (PCU)**	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**
	Howlett Way - Proposed Access Junction - 2023 Do Something - Sensitivity Test									
1 - Howlett Way (E)	0.5	4.51	0.34	A	83 %	**3.5**	**13.13**	**0.78**	**B**	**18 %**
2 - Site Access	0.2	4.17	0.16	A	[3 - Howlett Way (W)]	**0.1**	**5.45**	**0.12**	**A**	**[1 - Howlett Way (E)]**
3 - Howlett Way (W)	1.0	5.91	0.48	A		**0.4**	**4.14**	**0.28**	**A**	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Howlett Way Access RBT - Sensitivity Test.j9
Path: R:\Projects\67006 Howlett Way, Trimley\Trans\Junction Capacity Assessments
Report generation date: 06/12/2018 09:23:53

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	Howlett Way - Proposed Access Junction - 2023 Do Something - Sensitivity Test									
1 - Howlett Way (E)	0.5	4.51	0.34	A	83 %	3.5	13.13	0.78	B	18 %
2 - Site Access	0.2	4.17	0.16	A		0.1	5.45	0.12	A	
3 - Howlett Way (W)	1.0	5.91	0.48	A	[3 - Howlett Way (W)]	0.4	4.14	0.28	A	[1 - Howlett Way (E)]

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

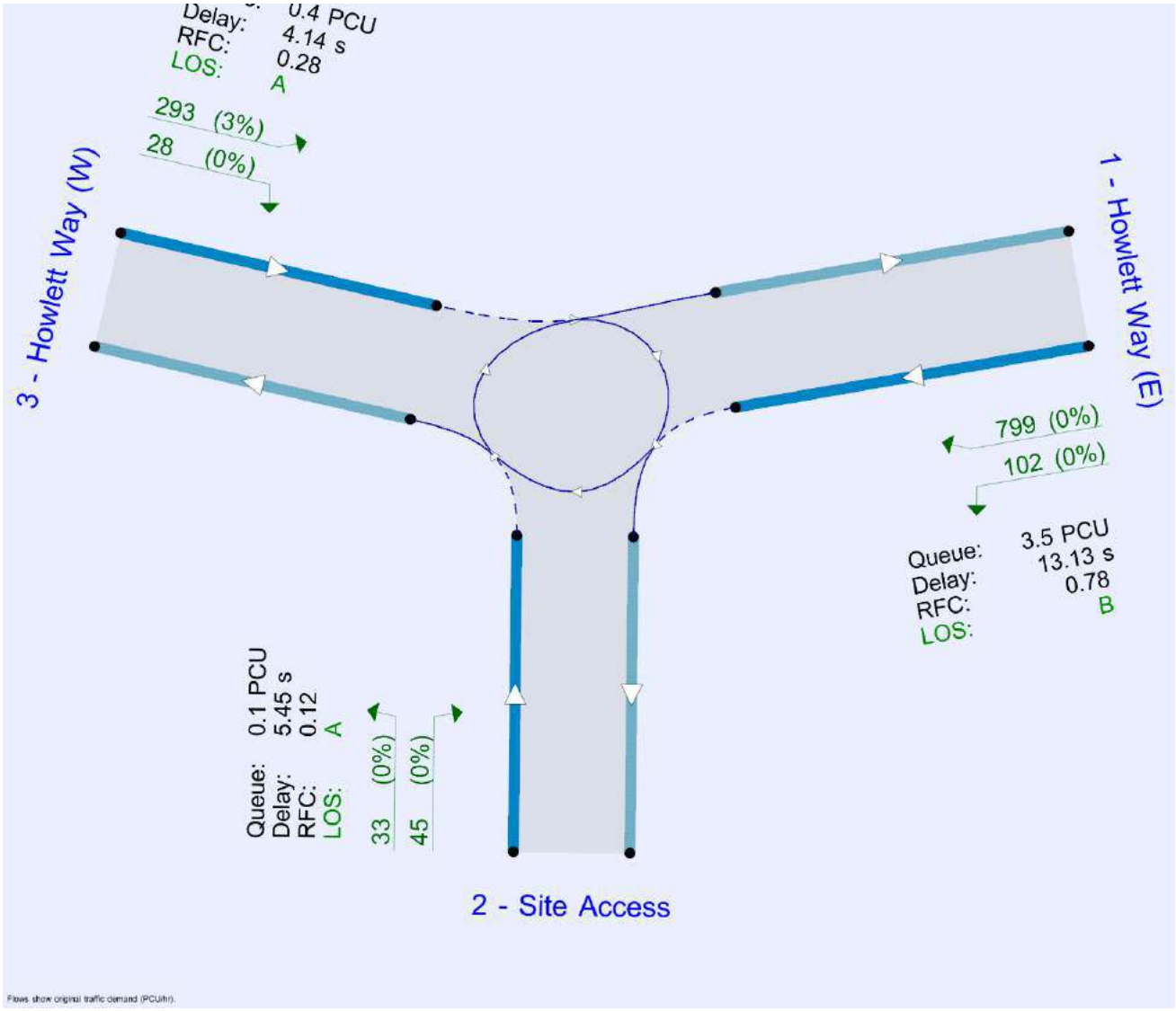
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	05/03/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	AUTOCAD-T1700\Tom
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Do Something - Sensitivity Test	AM	ONE HOUR	07:45	09:15	15
D2	2023 Do Something - Sensitivity Test	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Howlett Way - Proposed Access Junction	100.000

Howlett Way - Proposed Access Junction - 2023 Do Something - Sensitivity Test, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Proposed Access RBT	Standard Roundabout		1, 2, 3	5.16	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	83	3 - Howlett Way (W)

Arms

Arms

Arm	Name	Description
1	Howlett Way (E)	
2	Site Access	
3	Howlett Way (W)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Howlett Way (E)	3.66	4.33	6.4	25.0	35.0	28.0	
2 - Site Access	3.38	4.13	8.8	36.0	35.0	25.0	
3 - Howlett Way (W)	3.81	4.40	7.2	20.0	35.0	35.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Howlett Way (E)	0.572	1282
2 - Site Access	0.572	1250
3 - Howlett Way (W)	0.560	1274

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

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Howlett Way (E)		✓	396	100.000
2 - Site Access		✓	149	100.000
3 - Howlett Way (W)		✓	530	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Howlett Way (E)	2 - Site Access	3 - Howlett Way (W)
From	1 - Howlett Way (E)	0	42	354
	2 - Site Access	104	0	45
	3 - Howlett Way (W)	509	21	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Howlett Way (E)	2 - Site Access	3 - Howlett Way (W)
From	1 - Howlett Way (E)	0	0	5
	2 - Site Access	0	0	0
	3 - Howlett Way (W)	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Howlett Way (E)	0.34	4.51	0.5	A
2 - Site Access	0.16	4.17	0.2	A
3 - Howlett Way (W)	0.48	5.91	1.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	298	16	1273	0.234	297	0.3	3.846	A
2 - Site Access	112	265	1098	0.102	112	0.1	3.648	A
3 - Howlett Way (W)	399	78	1230	0.324	397	0.5	4.437	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	356	19	1272	0.280	356	0.4	4.105	A
2 - Site Access	134	318	1068	0.125	134	0.1	3.855	A
3 - Howlett Way (W)	476	93	1221	0.390	476	0.7	4.963	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	436	23	1269	0.344	435	0.5	4.507	A
2 - Site Access	164	389	1027	0.160	164	0.2	4.170	A
3 - Howlett Way (W)	584	114	1210	0.482	582	0.9	5.893	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	436	23	1269	0.344	436	0.5	4.513	A
2 - Site Access	164	390	1027	0.160	164	0.2	4.173	A
3 - Howlett Way (W)	584	115	1210	0.482	584	1.0	5.915	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	356	19	1271	0.280	357	0.4	4.111	A
2 - Site Access	134	319	1067	0.126	134	0.1	3.860	A
3 - Howlett Way (W)	476	94	1221	0.390	478	0.7	4.987	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	298	16	1273	0.234	298	0.3	3.860	A
2 - Site Access	112	267	1097	0.102	112	0.1	3.655	A
3 - Howlett Way (W)	399	78	1230	0.324	400	0.5	4.464	A

Howlett Way - Proposed Access Junction - 2023 Do Something - Sensitivity Test, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Proposed Access RBT	Standard Roundabout		1, 2, 3	10.45	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	18	1 - Howlett Way (E)

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Howlett Way (E)		✓	901	100.000
2 - Site Access		✓	78	100.000
3 - Howlett Way (W)		✓	321	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1 - Howlett Way (E)	2 - Site Access	3 - Howlett Way (W)
From	1 - Howlett Way (E)	0	102	799
	2 - Site Access	45	0	33
	3 - Howlett Way (W)	293	28	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1 - Howlett Way (E)	2 - Site Access	3 - Howlett Way (W)
From	1 - Howlett Way (E)	0	0	0
	2 - Site Access	0	0	0
	3 - Howlett Way (W)	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Howlett Way (E)	0.78	13.13	3.5	B
2 - Site Access	0.12	5.45	0.1	A
3 - Howlett Way (W)	0.28	4.14	0.4	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	678	21	1270	0.534	674	1.1	5.992	A
2 - Site Access	59	598	908	0.065	58	0.1	4.238	A
3 - Howlett Way (W)	242	34	1255	0.193	241	0.2	3.643	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	810	25	1268	0.639	808	1.7	7.780	A
2 - Site Access	70	716	840	0.084	70	0.1	4.676	A
3 - Howlett Way (W)	289	40	1251	0.231	288	0.3	3.840	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	992	31	1265	0.784	985	3.4	12.580	B
2 - Site Access	86	874	750	0.115	86	0.1	5.421	A
3 - Howlett Way (W)	353	49	1246	0.284	353	0.4	4.139	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	992	31	1265	0.784	992	3.5	13.130	B
2 - Site Access	86	879	746	0.115	86	0.1	5.449	A
3 - Howlett Way (W)	353	50	1246	0.284	353	0.4	4.143	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	810	25	1268	0.639	817	1.8	8.098	A
2 - Site Access	70	724	835	0.084	70	0.1	4.709	A
3 - Howlett Way (W)	289	41	1251	0.231	289	0.3	3.845	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Howlett Way (E)	678	21	1270	0.534	681	1.2	6.134	A
2 - Site Access	59	604	904	0.065	59	0.1	4.259	A
3 - Howlett Way (W)	242	34	1255	0.193	242	0.2	3.651	A

APPENDIX Q

Tracsis plc
Traffic and Data Services

Junction Turning Count

Project Number	4231-LON
Project Name	Garrison Lane & Maidstone road, Near Ipswich
Client	Development Transport Planning Limited
Sites	1 & 2
Survey Date	07/11/2018
Survey Time	07:30-09:30,16:30-18:30
Weather	Overcast
Observations	No incidents or observations during the survey period.

Tracsis plc
Traffic and Data Services

Site 01 - Gulpher Road / High Street(SE) / Maidstone Road / High Street(WNW)
07:30 - 18:30

4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
07/11/2018

Start/End Time

Origin Arm

Dest Arm

Class Selection

Car LGV OGV1
OGV2 PSV MC
PC

Vehicles
PCU
Values

Network Peak

AM IP PM ALL

Display

Sites Show Flows
Overview

Arm

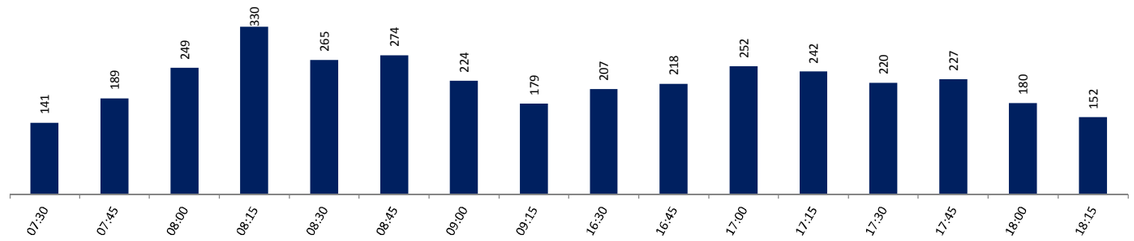
A	Gulpher Road
B	High Street(SE)
C	Maidstone Road
D	High Street(WNW)

Location

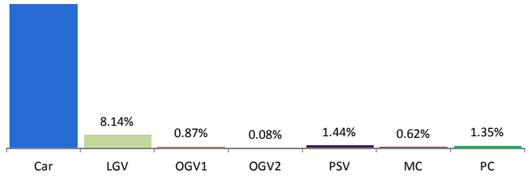
Latitude: 51.97289
Longitude: 1.33749

Observations

Total Number of Vehicles per Interval



Percentage of Classed Vehicles



	A	B	C	D
A	0	125	33	102
B	84	3	69	1081
C	25	95	1	314
D	98	1157	362	0

Tracsis plc
Traffic and Data Services

4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
07/11/2018

Site 01 - Gulpher Road / High Street(SE) / Maidstone Road / High Street(WNW)

Origin : Arm A Gulpher Road

	Destination : Arm A Gulpher Road							Total	**Destination :** Arm B High Street(SE)							Total	**Destination :** Arm C Maidstone Road							Total	**Destination :** Arm D High Street(WNW)							Total	Arm Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		
07:30	0	0	0	0	0	0	0	0	5	0	1	0	0	0	0	6	1	0	0	0	0	0	0	1	9	1	1	0	0	0	0	11	18
07:45	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	7	2	0	0	0	0	0	0	2	5	0	0	0	0	0	0	5	14
½ Hr	0	0	0	0	0	0	0	0	11	1	1	0	0	0	0	13	3	0	0	0	0	0	0	3	14	1	1	0	0	0	0	16	32
08:00	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	2	0	0	0	0	0	0	2	11	1	0	0	0	0	0	12	21
08:15	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	12	20
08:30	0	0	0	0	0	0	0	0	13	1	1	0	0	0	0	15	3	0	0	0	0	0	0	3	4	0	0	0	0	0	0	4	22
08:45	0	0	0	0	0	0	0	0	11	2	0	0	0	0	0	13	2	0	0	0	0	0	0	2	7	0	0	0	0	0	1	8	23
1 Hr	0	0	0	0	0	0	0	0	39	3	1	0	0	0	0	43	7	0	0	0	0	0	0	7	34	1	0	0	0	0	1	36	86
09:00	0	0	0	0	0	0	0	0	9	2	0	0	0	0	0	11	2	0	0	0	0	0	0	2	7	0	0	0	0	0	0	7	20
09:15	0	0	0	0	0	0	0	0	4	3	1	0	0	0	0	8	3	0	0	0	0	0	0	3	3	1	0	0	0	0	0	4	15
½ Hr	0	0	0	0	0	0	0	0	13	5	1	0	0	0	0	19	5	0	0	0	0	0	0	5	10	1	0	0	0	0	0	11	35
2 Hrs	0	0	0	0	0	0	0	0	63	9	3	0	0	0	0	75	15	0	0	0	0	0	0	15	58	3	1	0	0	0	1	63	153

Origin : Arm A Gulpher Road

	Destination : Arm A Gulpher Road							Total	**Destination :** Arm B High Street(SE)							Total	**Destination :** Arm C Maidstone Road							Total	**Destination :** Arm D High Street(WNW)							Total	Arm Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		
16:30	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	1	0	0	0	0	0	0	1	2	2	0	0	0	0	0	4	13
16:45	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	7	1	0	0	0	0	0	0	1	3	1	0	0	0	0	0	4	12
½ Hr	0	0	0	0	0	0	0	0	14	1	0	0	0	0	0	15	2	0	0	0	0	0	0	2	5	3	0	0	0	0	0	8	25
17:00	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	3	0	0	0	0	0	0	3	7	0	0	0	0	0	0	7	17
17:15	0	0	0	0	0	0	0	0	12	1	0	0	0	0	0	13	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	17
17:30	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3	0	0	0	0	0	0	3	10	0	0	0	0	0	0	10	16
17:45	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	3	0	0	0	0	0	0	3	4	1	0	0	0	0	0	5	13
1 Hr	0	0	0	0	0	0	0	0	27	1	0	0	0	0	0	28	9	0	0	0	0	0	0	9	25	1	0	0	0	0	0	26	63
18:00	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	0	0	0	0	0	0	1	1	4	0	0	0	0	1	0	5	10
18:15	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	9
½ Hr	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	6	0	0	0	0	0	1	7	4	0	0	0	0	1	0	5	19
2 Hrs	0	0	0	0	0	0	0	0	48	2	0	0	0	0	0	50	17	0	0	0	0	0	1	18	34	4	0	0	0	1	0	39	107
Total	0	0	0	0	0	0	0	0	111	11	3	0	0	0	0	125	32	0	0	0	0	0	1	33	92	7	1	0	0	1	1	102	260

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Traffic and Data Services

4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
07/11/2018

Site 01 - Gulpher Road / High Street(SE) / Maidstone Road / High Street(WNW)

Origin : Arm B High Street(SE)

	Destination : Arm A Gulpher Road								**Destination :** Arm B High Street(SE)								**Destination :** Arm C Maidstone Road								**Destination :** Arm D High Street(WNW)								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Totals
07:30	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	33	4	2	1	4	0	3	47	51
07:45	4	1	1	0	0	0	0	6	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	45	5	1	0	2	2	3	58	68
½ Hr	4	1	3	0	0	0	0	8	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	6	78	9	3	1	6	2	6	105	119
08:00	5	1	0	0	0	0	0	6	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	2	73	10	1	0	5	0	1	90	99
08:15	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	100	5	2	1	1	0	1	110	117
08:30	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	6	1	0	0	0	0	1	8	52	5	0	0	4	0	0	61	75
08:45	5	1	1	0	0	0	0	7	0	0	1	0	0	0	0	1	6	0	0	0	0	0	0	6	48	2	1	0	2	1	0	54	68
1 Hr	19	2	1	0	0	0	0	22	0	1	1	0	0	0	0	2	18	1	0	0	0	0	1	20	273	22	4	1	12	1	2	315	359
09:00	4	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	6	48	8	0	0	1	0	0	57	68
09:15	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	36	11	1	0	1	0	0	49	53
½ Hr	7	1	0	0	0	0	0	8	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	7	84	19	1	0	2	0	0	106	121
2 Hrs	30	4	4	0	0	0	0	38	0	1	1	0	0	0	0	2	29	3	0	0	0	0	1	33	435	50	8	2	20	3	8	526	599

Origin : Arm B High Street(SE)

	Destination : Arm A Gulpher Road								**Destination :** Arm B High Street(SE)								**Destination :** Arm C Maidstone Road								**Destination :** Arm D High Street(WNW)								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Totals
16:30	4	1	1	0	0	0	0	6	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5	58	8	1	0	3	0	1	71	82
16:45	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	7	50	6	1	0	0	0	1	58	67
½ Hr	6	1	1	0	0	0	0	8	0	0	0	0	0	0	0	0	10	2	0	0	0	0	0	12	108	14	2	0	3	0	2	129	149
17:00	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	78	6	1	0	1	0	2	88	96
17:15	10	2	0	0	0	0	0	12	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	8	59	6	0	0	2	0	2	69	89
17:30	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	77	8	1	0	1	0	0	87	95
17:45	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	70	5	0	0	1	0	1	77	88
1 Hr	29	2	0	0	0	0	0	31	0	0	0	0	0	0	0	0	15	1	0	0	0	0	0	16	284	25	2	0	5	0	5	321	368
18:00	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	6	55	4	0	0	2	0	1	62	70
18:15	5	0	0	0	0	0	0	5	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	2	36	3	0	0	0	1	3	43	51
½ Hr	7	0	0	0	0	0	0	7	1	0	0	0	0	0	0	1	7	1	0	0	0	0	0	8	91	7	0	0	2	1	4	105	121
2 Hrs	42	3	1	0	0	0	0	46	1	0	0	0	0	0	0	1	32	4	0	0	0	0	0	36	483	46	4	0	10	1	11	555	638
Total	72	7	5	0	0	0	0	84	1	1	1	0	0	0	0	3	61	7	0	0	0	0	1	69	918	96	12	2	30	4	19	1081	1237

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4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
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Site 01 - Gulpher Road / High Street(SE) / Maidstone Road / High Street(WNW)

Origin : Arm C Maidstone Road

	Destination : Arm A Gulpher Road								**Destination :** Arm B High Street(SE)								**Destination :** Arm C Maidstone Road								**Destination :** Arm D High Street(WNW)								Arm
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Totals
07:30	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	9	2	0	0	0	0	0	11	14
07:45	2	0	0	0	0	0	0	2	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	12	1	0	0	0	0	0	13	18
½ Hr	3	0	0	0	0	0	0	3	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	21	3	0	0	0	0	0	24	32
08:00	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	22	2	0	0	0	0	0	24	29
08:15	2	0	0	0	0	0	0	2	7	1	0	0	0	0	0	8	0	0	0	0	0	0	0	0	32	2	0	0	0	0	2	36	46
08:30	3	0	0	0	0	0	0	3	14	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	17	1	0	0	0	0	0	18	35
08:45	4	0	0	0	0	0	0	4	12	1	0	0	0	0	0	13	0	0	0	0	0	0	0	0	15	2	0	0	0	0	0	17	34
1 Hr	9	0	0	0	0	0	0	9	38	2	0	0	0	0	0	40	0	0	0	0	0	0	0	0	86	7	0	0	0	0	2	95	144
09:00	1	1	0	0	0	0	0	2	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	12	2	0	0	0	0	0	14	23
09:15	1	0	0	0	0	0	0	1	5	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	11	2	0	0	0	1	0	14	21
½ Hr	2	1	0	0	0	0	0	3	12	0	0	0	0	0	1	13	0	0	0	0	0	0	0	0	23	4	0	0	0	1	0	28	44
2 Hrs	14	1	0	0	0	0	0	15	55	2	0	0	0	0	1	58	0	0	0	0	0	0	0	0	130	14	0	0	0	1	2	147	220

Origin : Arm C Maidstone Road

	Destination : Arm A Gulpher Road								**Destination :** Arm B High Street(SE)								**Destination :** Arm C Maidstone Road								**Destination :** Arm D High Street(WNW)								Arm
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Totals
16:30	2	0	0	0	0	0	0	2	6	1	0	0	0	0	0	7	0	1	0	0	0	0	0	1	10	0	0	0	0	0	0	10	20
16:45	2	0	0	0	0	0	0	2	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	21	3	0	0	0	0	0	24	30
½ Hr	4	0	0	0	0	0	0	4	10	1	0	0	0	0	0	11	0	1	0	0	0	0	0	1	31	3	0	0	0	0	0	34	50
17:00	1	0	0	0	0	0	0	1	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	19	1	0	0	0	0	1	21	27
17:15	1	0	0	0	0	0	0	1	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	26	0	0	0	0	0	0	26	30
17:30	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	7	0	0	0	0	0	0	0	0	17	2	0	0	0	0	0	19	26
17:45	1	0	0	0	0	0	0	1	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	21	1	0	0	0	0	0	22	27
1 Hr	3	0	0	0	0	0	0	3	18	1	0	0	0	0	0	19	0	0	0	0	0	0	0	0	83	4	0	0	0	0	1	88	110
18:00	1	0	0	0	0	0	0	1	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	23	2	0	0	0	2	1	28	36
18:15	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	17	19
½ Hr	3	0	0	0	0	0	0	3	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	40	2	0	0	0	2	1	45	55
2 Hrs	10	0	0	0	0	0	0	10	35	2	0	0	0	0	0	37	0	1	0	0	0	0	0	1	154	9	0	0	0	2	2	167	215
Total	24	1	0	0	0	0	0	25	90	4	0	0	0	0	1	95	0	1	0	0	0	0	0	1	284	23	0	0	0	3	4	314	435

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Site 01 - Gulpher Road / High Street(SE) / Maidstone Road / High Street(WNW)

Origin : Arm D High Street(WNW)

	Destination : Arm A Gulpher Road								**Destination :** Arm B High Street(SE)								**Destination :** Arm C Maidstone Road								**Destination :** Arm D High Street(WNW)								Arm Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	
07:30	2	0	0	0	0	0	0	2	39	3	2	0	1	0	0	45	8	2	0	0	0	0	1	11	0	0	0	0	0	0	0	0	58
07:45	5	2	0	0	0	0	0	7	45	5	1	0	0	1	0	52	24	6	0	0	0	0	0	30	0	0	0	0	0	0	0	0	89
½ Hr	7	2	0	0	0	0	0	9	84	8	3	0	1	1	0	97	32	8	0	0	0	0	1	41	0	0	0	0	0	0	0	0	147
08:00	6	0	0	0	0	0	0	6	57	5	1	0	2	0	3	68	24	1	0	0	0	0	1	26	0	0	0	0	0	0	0	0	100
08:15	4	2	0	0	0	0	0	6	99	10	0	0	0	0	0	109	28	4	0	0	0	0	0	32	0	0	0	0	0	0	0	0	147
08:30	14	0	0	0	0	0	0	14	89	2	1	0	1	1	1	95	23	0	0	0	0	0	1	24	0	0	0	0	0	0	0	0	133
08:45	13	2	0	0	0	0	1	16	97	8	1	0	1	0	0	107	24	2	0	0	0	0	0	26	0	0	0	0	0	0	0	0	149
1 Hr	37	4	0	0	0	0	1	42	342	25	3	0	4	1	4	379	99	7	0	0	0	0	2	108	0	0	0	0	0	0	0	0	529
09:00	2	1	0	0	0	0	0	3	77	8	1	0	1	1	1	89	18	2	0	0	0	0	1	21	0	0	0	0	0	0	0	0	113
09:15	1	0	0	0	0	0	0	1	59	9	0	1	1	0	1	71	15	2	1	0	0	0	0	18	0	0	0	0	0	0	0	0	90
½ Hr	3	1	0	0	0	0	0	4	136	17	1	1	2	1	2	160	33	4	1	0	0	0	1	39	0	0	0	0	0	0	0	0	203
2 Hrs	47	7	0	0	0	0	1	55	562	50	7	1	7	3	6	636	164	19	1	0	0	0	4	188	0	0	0	0	0	0	0	0	879

Origin : Arm D High Street(WNW)

	Destination : Arm A Gulpher Road								**Destination :** Arm B High Street(SE)								**Destination :** Arm C Maidstone Road								**Destination :** Arm D High Street(WNW)								Arm Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	
16:30	6	0	0	0	0	0	0	6	53	8	0	0	3	2	0	66	16	4	0	0	0	0	0	20	0	0	0	0	0	0	0	0	92
16:45	7	0	0	0	0	0	0	7	65	6	0	0	1	1	2	75	24	1	0	0	0	2	0	27	0	0	0	0	0	0	0	0	109
½ Hr	13	0	0	0	0	0	0	13	118	14	0	0	4	3	2	141	40	5	0	0	0	2	0	47	0	0	0	0	0	0	0	0	201
17:00	6	0	0	0	0	0	0	6	76	8	0	0	3	0	0	87	16	2	0	0	0	0	1	19	0	0	0	0	0	0	0	0	112
17:15	7	1	0	0	0	0	0	8	64	12	1	0	0	1	1	79	18	1	0	0	0	0	0	19	0	0	0	0	0	0	0	0	106
17:30	7	1	0	0	0	0	0	8	49	3	0	0	4	0	0	56	16	1	0	0	0	1	1	19	0	0	0	0	0	0	0	0	83
17:45	2	0	0	0	0	0	1	3	63	3	0	0	2	1	1	70	25	0	0	0	0	1	0	26	0	0	0	0	0	0	0	0	99
1 Hr	22	2	0	0	0	0	1	25	252	26	1	0	9	2	2	292	75	4	0	0	0	2	2	83	0	0	0	0	0	0	0	0	400
18:00	2	0	0	0	0	0	0	2	38	2	0	0	0	0	1	41	21	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	64
18:15	3	0	0	0	0	0	0	3	43	1	0	0	1	2	0	47	20	1	0	0	0	0	2	23	0	0	0	0	0	0	0	0	73
½ Hr	5	0	0	0	0	0	0	5	81	3	0	0	1	2	1	88	41	1	0	0	0	0	2	44	0	0	0	0	0	0	0	0	137
2 Hrs	40	2	0	0	0	0	1	43	451	43	1	0	14	7	5	521	156	10	0	0	0	4	4	174	0	0	0	0	0	0	0	0	738
Total	87	9	0	0	0	0	2	98	1013	93	8	1	21	10	11	1157	320	29	1	0	0	4	8	362	0	0	0	0	0	0	0	0	1617

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4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
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Site 01 - Gulpher Road / High Street(SE) / Maidstone Road / High Street(WNW)

ORIGIN SUMMARY

	Origin : Arm A Gulpher Road								Origin : Arm B High Street(SE)								Origin : Arm C Maidstone Road								Origin : Arm D High Street(WNW)								Origin Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	
07:30	15	1	2	0	0	0	0	18	34	5	4	1	4	0	3	51	12	2	0	0	0	0	0	14	49	5	2	0	1	0	1	58	141
07:45	13	1	0	0	0	0	0	14	53	6	2	0	2	2	3	68	17	1	0	0	0	0	0	18	74	13	1	0	0	1	0	89	189
½ Hr	28	2	2	0	0	0	0	32	87	11	6	1	6	2	6	119	29	3	0	0	0	0	0	32	123	18	3	0	1	1	1	147	330
08:00	20	1	0	0	0	0	0	21	80	12	1	0	5	0	1	99	27	2	0	0	0	0	0	29	87	6	1	0	2	0	4	100	249
08:15	20	0	0	0	0	0	0	20	107	5	2	1	1	0	1	117	41	3	0	0	0	0	2	46	131	16	0	0	0	0	0	147	330
08:30	20	1	1	0	0	0	0	22	64	6	0	0	4	0	1	75	34	1	0	0	0	0	0	35	126	2	1	0	1	1	2	133	265
08:45	20	2	0	0	0	0	1	23	59	3	3	0	2	1	0	68	31	3	0	0	0	0	0	34	134	12	1	0	1	0	1	149	274
1 Hr	80	4	1	0	0	0	1	86	310	26	6	1	12	1	3	359	133	9	0	0	0	0	2	144	478	36	3	0	4	1	7	529	1118
09:00	18	2	0	0	0	0	0	20	57	10	0	0	1	0	0	68	20	3	0	0	0	0	0	23	97	11	1	0	1	1	2	113	224
09:15	10	4	1	0	0	0	0	15	40	11	1	0	1	0	0	53	17	2	0	0	0	1	1	21	75	11	1	1	1	0	1	90	179
½ Hr	28	6	1	0	0	0	0	35	97	21	1	0	2	0	0	121	37	5	0	0	0	1	1	44	172	22	2	1	2	1	3	203	403
2 Hrs	136	12	4	0	0	0	1	153	494	58	13	2	20	3	9	599	199	17	0	0	0	1	3	220	773	76	8	1	7	3	11	879	1851

ORIGIN SUMMARY

	Origin : Arm A Gulpher Road								Origin : Arm B High Street(SE)								Origin : Arm C Maidstone Road								Origin : Arm D High Street(WNW)								Origin Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	
16:30	11	2	0	0	0	0	0	13	66	10	2	0	3	0	1	82	18	2	0	0	0	0	0	20	75	12	0	0	3	2	0	92	207
16:45	10	2	0	0	0	0	0	12	58	7	1	0	0	0	1	67	27	3	0	0	0	0	0	30	96	7	0	0	1	3	2	109	218
½ Hr	21	4	0	0	0	0	0	25	124	17	3	0	3	0	2	149	45	5	0	0	0	0	0	50	171	19	0	0	4	5	2	201	425
17:00	17	0	0	0	0	0	0	17	86	6	1	0	1	0	2	96	25	1	0	0	0	0	1	27	98	10	0	0	3	0	1	112	252
17:15	16	1	0	0	0	0	0	17	76	9	0	0	2	0	2	89	30	0	0	0	0	0	0	30	89	14	1	0	0	1	1	106	242
17:30	16	0	0	0	0	0	0	16	85	8	1	0	1	0	0	95	23	3	0	0	0	0	0	26	72	5	0	0	4	1	1	83	220
17:45	12	1	0	0	0	0	0	13	81	5	0	0	1	0	1	88	26	1	0	0	0	0	0	27	90	3	0	0	2	2	2	99	227
1 Hr	61	2	0	0	0	0	0	63	328	28	2	0	5	0	5	368	104	5	0	0	0	0	1	110	349	32	1	0	9	4	5	400	941
18:00	8	0	0	0	0	1	1	10	62	5	0	0	2	0	1	70	31	2	0	0	0	2	1	36	61	2	0	0	0	0	1	64	180
18:15	9	0	0	0	0	0	0	9	44	3	0	0	0	1	3	51	19	0	0	0	0	0	0	19	66	2	0	0	1	2	2	73	152
½ Hr	17	0	0	0	0	1	1	19	106	8	0	0	2	1	4	121	50	2	0	0	0	2	1	55	127	4	0	0	1	2	3	137	332
2 Hrs	99	6	0	0	0	1	1	107	558	53	5	0	10	1	11	638	199	12	0	0	0	2	2	215	647	55	1	0	14	11	10	738	1698
Total	235	18	4	0	0	1	2	260	1052	111	18	2	30	4	20	1237	398	29	0	0	0	3	5	435	1420	131	9	1	21	14	21	1617	3549

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Traffic and Data Services

4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
07/11/2018

Site 01 - Gulpher Road / High Street(SE) / Maidstone Road / High Street(WNW)

DESTINATION SUMMARY

	Destination : Arm A Gulpher Road								**Destination :** Arm B High Street(SE)								**Destination :** Arm C Maidstone Road								**Destination :** Arm D High Street(WNW)								Dest
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Totals
07:30	3	0	2	0	0	0	0	5	46	3	3	0	1	0	0	53	10	3	0	0	0	0	1	14	51	7	3	1	4	0	3	69	141
07:45	11	3	1	0	0	0	0	15	54	6	1	0	0	1	0	62	30	6	0	0	0	0	0	36	62	6	1	0	2	2	3	76	189
½ Hr	14	3	3	0	0	0	0	20	100	9	4	0	1	1	0	115	40	9	0	0	0	0	1	50	113	13	4	1	6	2	6	145	330
08:00	11	1	0	0	0	0	0	12	69	6	1	0	2	0	3	81	28	1	0	0	0	0	1	30	106	13	1	0	5	0	1	126	249
08:15	9	2	0	0	0	0	0	11	114	11	0	0	0	0	0	125	32	4	0	0	0	0	0	36	144	7	2	1	1	0	3	158	330
08:30	23	0	0	0	0	0	0	23	116	3	2	0	1	1	1	124	32	1	0	0	0	0	2	35	73	6	0	0	4	0	0	83	265
08:45	22	3	1	0	0	0	1	27	120	11	2	0	1	0	0	134	32	2	0	0	0	0	0	34	70	4	1	0	2	1	1	79	274
1 Hr	65	6	1	0	0	0	1	73	419	31	5	0	4	1	4	464	124	8	0	0	0	0	3	135	393	30	4	1	12	1	5	446	1118
09:00	7	3	0	0	0	0	0	10	93	10	1	0	1	1	1	107	25	3	0	0	0	0	1	29	67	10	0	0	1	0	0	78	224
09:15	5	0	0	0	0	0	0	5	68	12	1	1	1	0	2	85	19	2	1	0	0	0	0	22	50	14	1	0	1	1	0	67	179
½ Hr	12	3	0	0	0	0	0	15	161	22	2	1	2	1	3	192	44	5	1	0	0	0	1	51	117	24	1	0	2	1	0	145	403
2 Hrs	91	12	4	0	0	0	1	108	680	62	11	1	7	3	7	771	208	22	1	0	0	0	5	236	623	67	9	2	20	4	11	736	1851

DESTINATION SUMMARY

	Destination : Arm A Gulpher Road								**Destination :** Arm B High Street(SE)								**Destination :** Arm C Maidstone Road								**Destination :** Arm D High Street(WNW)								Dest
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Totals
16:30	12	1	1	0	0	0	0	14	67	9	0	0	3	2	0	81	21	6	0	0	0	0	0	27	70	10	1	0	3	0	1	85	207
16:45	11	0	0	0	0	0	0	11	75	7	0	0	1	1	2	86	31	2	0	0	0	2	0	35	74	10	1	0	0	0	1	86	218
½ Hr	23	1	1	0	0	0	0	25	142	16	0	0	4	3	2	167	52	8	0	0	0	2	0	62	144	20	2	0	3	0	2	171	425
17:00	14	0	0	0	0	0	0	14	88	8	0	0	3	0	0	99	20	2	0	0	0	0	1	23	104	7	1	0	1	0	3	116	252
17:15	18	3	0	0	0	0	0	21	79	13	1	0	0	1	1	95	25	2	0	0	0	0	0	27	89	6	0	0	2	0	2	99	242
17:30	11	1	0	0	0	0	0	12	58	4	0	0	4	0	0	66	23	1	0	0	0	1	1	26	104	10	1	0	1	0	0	116	220
17:45	11	0	0	0	0	0	1	12	72	3	0	0	2	1	1	79	31	0	0	0	0	1	0	32	95	7	0	0	1	0	1	104	227
1 Hr	54	4	0	0	0	0	1	59	297	28	1	0	9	2	2	339	99	5	0	0	0	2	2	108	392	30	2	0	5	0	6	435	941
18:00	5	0	0	0	0	0	0	5	49	2	0	0	0	0	1	52	26	1	0	0	0	0	1	28	82	6	0	0	2	3	2	95	180
18:15	10	0	0	0	0	0	0	10	47	1	0	0	1	2	0	51	28	1	0	0	0	0	2	31	53	3	0	0	0	1	3	60	152
½ Hr	15	0	0	0	0	0	0	15	96	3	0	0	1	2	1	103	54	2	0	0	0	0	3	59	135	9	0	0	2	4	5	155	332
2 Hrs	92	5	1	0	0	0	1	99	535	47	1	0	14	7	5	609	205	15	0	0	0	4	5	229	671	59	4	0	10	4	13	761	1698
Total	183	17	5	0	0	0	2	207	1215	109	12	1	21	10	12	1380	413	37	1	0	0	4	10	465	1294	126	13	2	30	8	24	1497	3549

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Traffic and Data Services

Site 02 - Garrison Lane(N) / High Street(E) / Garrison Lane(S) / High Street(W)
07:30 - 18:30

4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
07/11/2018

Start/End Time

Origin Arm

Dest Arm

Class Selection

Car LGV OGV1
OGV2 PSV MC
PC

Vehicles PCU Values

Network Peak

AM IP PM ALL

Display

Sites Show Flows
Overview

Arm

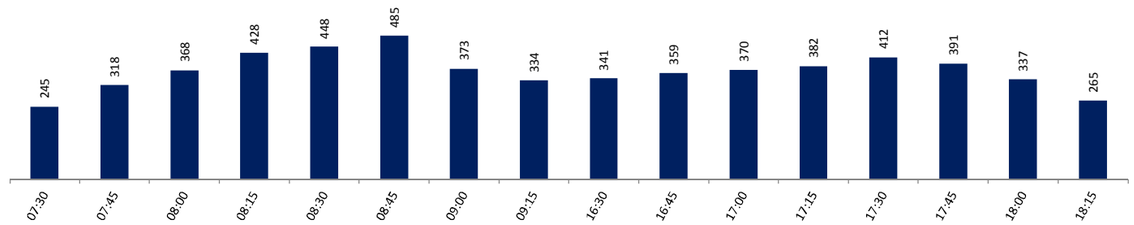
A	Garrison Lane(N)
B	High Street(E)
C	Garrison Lane(S)
D	High Street(W)

Location

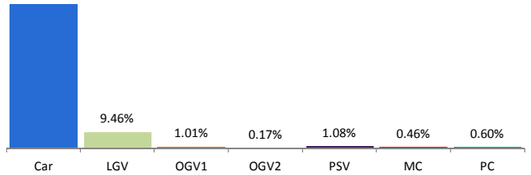
Latitude: 51.96790
Longitude: 1.34679

Observations

Total Number of Vehicles per Interval



Percentage of Classed Vehicles



	A	B	C	D
A	0	104	705	409
B	157	0	186	772
C	623	178	0	758
D	418	871	675	0

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4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
07/11/2018

Site 02 - Garrison Lane(N) / High Street(E) / Garrison Lane(S) / High Street(W)

Origin : Arm A Garrison Lane(N)

	Destination : Arm A Garrison Lane(N)								**Destination :** Arm B High Street(E)								**Destination :** Arm C Garrison Lane(S)								**Destination :** Arm D High Street(W)								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Totals
07:30	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	3	13	6	0	1	2	0	0	22	3	4	1	0	0	0	0	8	33
07:45	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	5	29	11	1	0	0	0	0	41	11	3	0	0	1	0	0	15	61
½ Hr	0	0	0	0	0	0	0	0	5	1	1	1	0	0	0	8	42	17	1	1	2	0	0	63	14	7	1	0	1	0	0	23	94
08:00	0	0	0	0	0	0	0	0	2	2	0	1	0	0	0	5	22	6	1	0	0	0	0	29	7	5	0	0	0	0	0	12	46
08:15	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5	25	5	0	0	1	0	0	31	19	4	2	1	0	0	0	26	62
08:30	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	6	39	6	3	0	0	0	0	48	10	3	1	0	0	0	0	14	68
08:45	0	0	0	0	0	0	0	0	10	1	0	0	0	0	0	11	60	9	3	0	0	0	0	72	25	4	0	0	0	0	0	29	112
1 Hr	0	0	0	0	0	0	0	0	21	5	0	1	0	0	0	27	146	26	7	0	1	0	0	180	61	16	3	1	0	0	0	81	288
09:00	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	41	2	1	0	0	0	0	44	18	3	2	0	0	0	0	23	72
09:15	0	0	0	0	0	0	0	0	4	1	1	0	0	0	0	6	29	7	1	0	0	0	0	37	14	2	3	0	0	0	0	19	62
½ Hr	0	0	0	0	0	0	0	0	9	1	1	0	0	0	0	11	70	9	2	0	0	0	0	81	32	5	5	0	0	0	0	42	134
2 Hrs	0	0	0	0	0	0	0	0	35	7	2	2	0	0	0	46	258	52	10	1	3	0	0	324	107	28	9	1	1	0	0	146	516

Origin : Arm A Garrison Lane(N)

	Destination : Arm A Garrison Lane(N)								**Destination :** Arm B High Street(E)								**Destination :** Arm C Garrison Lane(S)								**Destination :** Arm D High Street(W)								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Totals
16:30	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	38	5	0	0	1	0	0	44	22	5	0	0	0	1	0	28	75
16:45	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	7	54	5	0	0	0	0	0	59	20	4	0	0	0	0	0	24	90
½ Hr	0	0	0	0	0	0	0	0	9	1	0	0	0	0	0	10	92	10	0	0	1	0	0	103	42	9	0	0	0	1	0	52	165
17:00	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	38	3	0	0	0	0	0	41	26	3	0	0	0	0	0	29	78
17:15	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	10	42	5	0	0	0	1	0	48	39	1	0	0	0	0	0	40	98
17:30	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	8	45	1	1	0	0	0	0	47	36	2	0	0	0	0	0	38	93
17:45	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	8	61	4	0	0	0	1	0	66	39	5	0	0	0	0	0	44	118
1 Hr	0	0	0	0	0	0	0	0	32	2	0	0	0	0	0	34	186	13	1	0	0	2	0	202	140	11	0	0	0	0	0	151	387
18:00	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	11	41	2	0	0	0	0	0	43	39	2	0	0	0	0	0	41	95
18:15	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	31	2	0	0	0	0	0	33	19	0	0	0	0	0	0	19	55
½ Hr	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	14	72	4	0	0	0	0	0	76	58	2	0	0	0	0	0	60	150
2 Hrs	0	0	0	0	0	0	0	0	55	3	0	0	0	0	0	58	350	27	1	0	1	2	0	381	240	22	0	0	0	1	0	263	702
Total	0	0	0	0	0	0	0	0	90	10	2	2	0	0	0	104	608	79	11	1	4	2	0	705	347	50	9	1	1	1	0	409	1218

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4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
07/11/2018

Site 02 - Garrison Lane(N) / High Street(E) / Garrison Lane(S) / High Street(W)

Origin : Arm B High Street(E)

	Destination : Arm A Garrison Lane(N)								**Destination :** Arm B High Street(E)								**Destination :** Arm C Garrison Lane(S)								**Destination :** Arm D High Street(W)								Arm
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Totals
07:30	5	0	1	0	0	0	0	6	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	8	21	2	1	0	4	0	3	31	45
07:45	6	1	0	0	0	0	0	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	26	5	0	0	2	0	1	34	42
½ Hr	11	1	1	0	0	0	0	13	0	0	0	0	0	0	0	0	5	4	0	0	0	0	0	9	47	7	1	0	6	0	4	65	87
08:00	9	2	0	0	0	0	0	11	0	0	0	0	0	0	0	0	8	2	0	0	0	0	0	10	56	4	0	0	4	0	0	64	85
08:15	10	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	52	3	0	1	2	0	1	59	72
08:30	8	0	2	0	0	0	0	10	0	0	0	0	0	0	0	0	14	1	0	0	0	0	0	15	20	1	0	0	3	0	0	24	49
08:45	15	2	0	1	0	0	0	18	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	24	54	7	1	0	2	0	0	64	106
1 Hr	42	4	2	1	0	0	0	49	0	0	0	0	0	0	0	0	49	3	0	0	0	0	0	52	182	15	1	1	11	0	1	211	312
09:00	17	1	1	0	0	0	0	19	0	0	0	0	0	0	0	0	16	3	0	0	0	0	0	19	42	5	0	0	1	0	1	49	87
09:15	15	3	0	0	0	0	0	18	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	13	29	8	1	0	1	0	0	39	70
½ Hr	32	4	1	0	0	0	0	37	0	0	0	0	0	0	0	0	29	3	0	0	0	0	0	32	71	13	1	0	2	0	1	88	157
2 Hrs	85	9	4	1	0	0	0	99	0	0	0	0	0	0	0	0	83	10	0	0	0	0	0	93	300	35	3	1	19	0	6	364	556

Origin : Arm B High Street(E)

	Destination : Arm A Garrison Lane(N)								**Destination :** Arm B High Street(E)								**Destination :** Arm C Garrison Lane(S)								**Destination :** Arm D High Street(W)								Arm
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Totals
16:30	10	2	0	1	0	0	0	13	0	0	0	0	0	0	0	0	15	0	1	0	0	0	0	16	46	6	0	0	3	0	1	56	85
16:45	6	1	0	0	0	0	0	7	0	0	0	0	0	0	0	0	12	2	0	0	0	0	0	14	26	5	0	0	0	0	0	31	52
½ Hr	16	3	0	1	0	0	0	20	0	0	0	0	0	0	0	0	27	2	1	0	0	0	0	30	72	11	0	0	3	0	1	87	137
17:00	6	0	0	0	1	0	0	7	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	12	52	4	0	0	2	0	0	58	77
17:15	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	9	1	0	0	0	0	0	10	54	5	0	0	0	2	0	61	77
17:30	3	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	10	0	0	0	1	0	0	11	65	5	1	0	1	0	0	72	87
17:45	6	1	0	0	0	0	0	7	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	8	54	3	0	0	1	0	0	58	73
1 Hr	21	2	0	0	1	0	0	24	0	0	0	0	0	0	0	0	38	2	0	0	1	0	0	41	225	17	1	0	4	2	0	249	314
18:00	6	1	0	0	0	0	0	7	0	0	0	0	0	0	0	0	13	1	0	0	0	0	0	14	35	4	0	0	2	0	0	41	62
18:15	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	29	2	0	0	0	0	0	31	46
½ Hr	13	1	0	0	0	0	0	14	0	0	0	0	0	0	0	0	21	1	0	0	0	0	0	22	64	6	0	0	2	0	0	72	108
2 Hrs	50	6	0	1	1	0	0	58	0	0	0	0	0	0	0	0	86	5	1	0	1	0	0	93	361	34	1	0	9	2	1	408	559
Total	135	15	4	2	1	0	0	157	0	0	0	0	0	0	0	0	169	15	1	0	1	0	0	186	661	69	4	1	28	2	7	772	1115

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4231-LON Garrison Lane & Maidstone road, Near Ipswich
Junction Turning Count
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Site 02 - Garrison Lane(N) / High Street(E) / Garrison Lane(S) / High Street(W)

Origin : Arm C Garrison Lane(S)

	Destination : Arm A Garrison Lane(N)								**Destination :** Arm B High Street(E)								**Destination :** Arm C Garrison Lane(S)								**Destination :** Arm D High Street(W)								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Totals
07:30	48	6	2	0	0	0	0	56	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	17	3	1	0	0	0	1	22	80
07:45	39	4	1	0	0	0	0	44	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	23	0	1	0	0	1	1	26	74
½ Hr	87	10	3	0	0	0	0	100	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	40	3	2	0	0	1	2	48	154
08:00	40	4	0	0	0	1	0	45	2	2	0	0	0	0	0	4	0	0	0	0	0	0	0	0	54	5	0	0	1	0	1	61	110
08:15	35	1	0	0	0	0	0	36	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	59	4	0	0	0	1	0	64	107
08:30	49	4	2	0	0	1	0	56	31	1	0	0	0	1	0	33	0	0	0	0	0	0	0	0	32	4	0	0	0	1	1	38	127
08:45	34	4	0	0	0	0	0	38	16	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	20	5	1	0	0	1	0	27	81
1 Hr	158	13	2	0	0	2	0	175	56	3	0	0	0	1	0	60	0	0	0	0	0	0	0	0	165	18	1	0	1	3	2	190	425
09:00	37	7	0	0	0	0	0	44	12	2	0	0	0	0	0	14	0	0	0	0	0	0	0	0	28	7	0	0	0	0	0	35	93
09:15	27	3	0	0	0	0	0	30	11	2	0	0	0	0	0	13	0	0	0	0	0	0	0	0	19	8	1	0	0	0	0	28	71
½ Hr	64	10	0	0	0	0	0	74	23	4	0	0	0	0	0	27	0	0	0	0	0	0	0	0	47	15	1	0	0	0	0	63	164
2 Hrs	309	33	5	0	0	2	0	349	85	7	0	0	0	1	0	93	0	0	0	0	0	0	0	0	252	36	4	0	1	4	4	301	743

Origin : Arm C Garrison Lane(S)

	Destination : Arm A Garrison Lane(N)								**Destination :** Arm B High Street(E)								**Destination :** Arm C Garrison Lane(S)								**Destination :** Arm D High Street(W)								
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Arm Totals
16:30	28	7	1	0	0	0	0	36	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	38	5	0	0	0	0	1	44	85
16:45	21	8	1	0	0	0	0	30	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	55	4	1	0	0	3	2	65	103
½ Hr	49	15	2	0	0	0	0	66	13	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	93	9	1	0	0	3	3	109	188
17:00	27	1	0	0	0	0	0	28	10	1	0	0	0	0	0	11	0	0	0	0	0	0	0	0	63	4	1	0	0	1	1	70	109
17:15	34	2	0	0	1	0	0	37	13	0	0	0	1	0	0	14	0	0	0	0	0	0	0	0	52	6	0	0	1	0	0	59	110
17:30	58	1	0	0	0	0	0	59	8	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	57	9	0	0	0	0	1	67	135
17:45	32	1	0	0	1	0	0	34	9	1	0	0	0	0	0	10	0	0	0	0	0	0	0	0	53	3	1	0	0	0	0	57	101
1 Hr	151	5	0	0	2	0	0	158	40	2	0	0	1	0	1	44	0	0	0	0	0	0	0	0	225	22	2	0	1	1	2	253	455
18:00	21	2	0	0	0	0	0	23	12	1	0	0	0	0	0	13	0	0	0	0	0	0	0	0	48	1	0	0	0	0	1	50	86
18:15	26	0	0	0	1	0	0	27	15	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	42	3	0	0	0	0	0	45	87
½ Hr	47	2	0	0	1	0	0	50	27	1	0	0	0	0	0	28	0	0	0	0	0	0	0	0	90	4	0	0	0	0	1	95	173
2 Hrs	247	22	2	0	3	0	0	274	80	3	0	0	1	0	1	85	0	0	0	0	0	0	0	0	408	35	3	0	1	4	6	457	816
Total	556	55	7	0	3	2	0	623	165	10	0	0	1	1	1	178	0	0	0	0	0	0	0	0	660	71	7	0	2	8	10	758	1559

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Site 02 - Garrison Lane(N) / High Street(E) / Garrison Lane(S) / High Street(W)

Origin : Arm D High Street(W)

	Destination : Arm A Garrison Lane(N)							Total	**Destination :** Arm B High Street(E)							Total	**Destination :** Arm C Garrison Lane(S)							Total	**Destination :** Arm D High Street(W)							Total	Arm Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		
07:30	30	4	0	0	0	0	0	34	21	3	1	0	1	0	0	26	23	2	1	0	0	0	1	27	0	0	0	0	0	0	0	0	87
07:45	41	9	0	0	0	0	0	50	43	5	0	0	0	0	0	48	36	4	1	0	0	2	0	43	0	0	0	0	0	0	0	0	141
½ Hr	71	13	0	0	0	0	0	84	64	8	1	0	1	0	0	74	59	6	2	0	0	2	1	70	0	0	0	0	0	0	0	0	228
08:00	33	7	0	0	0	0	0	40	37	9	0	0	1	2	1	50	32	2	1	0	1	0	1	37	0	0	0	0	0	0	0	0	127
08:15	37	2	0	0	0	0	0	39	78	5	0	0	0	0	1	84	60	3	0	0	0	1	0	64	0	0	0	0	0	0	0	0	187
08:30	57	2	1	1	0	0	0	61	72	5	0	0	1	0	2	80	58	3	0	0	0	2	0	63	0	0	0	0	0	0	0	0	204
08:45	39	4	0	1	0	0	0	44	78	8	1	0	1	0	0	88	49	5	0	0	0	0	0	54	0	0	0	0	0	0	0	0	186
1 Hr	166	15	1	2	0	0	0	184	265	27	1	0	3	2	4	302	199	13	1	0	1	3	1	218	0	0	0	0	0	0	0	0	704
09:00	18	1	0	0	0	0	0	19	52	9	0	0	1	0	0	62	37	3	0	0	0	0	0	40	0	0	0	0	0	0	0	0	121
09:15	15	4	3	1	0	0	0	23	51	10	2	0	1	0	0	64	32	12	0	0	0	0	0	44	0	0	0	0	0	0	0	0	131
½ Hr	33	5	3	1	0	0	0	42	103	19	2	0	2	0	0	126	69	15	0	0	0	0	0	84	0	0	0	0	0	0	0	0	252
2 Hrs	270	33	4	3	0	0	0	310	432	54	4	0	6	2	4	502	327	34	3	0	1	5	2	372	0	0	0	0	0	0	0	0	1184

Origin : Arm D High Street(W)

	Destination : Arm A Garrison Lane(N)							Total	**Destination :** Arm B High Street(E)							Total	**Destination :** Arm C Garrison Lane(S)							Total	**Destination :** Arm D High Street(W)							Total	Arm Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		Car	LGV	OGV1	OGV2	PSV	MC	PC		
16:30	10	2	0	0	0	0	0	12	44	3	0	0	2	1	3	53	26	3	0	0	1	1	0	31	0	0	0	0	0	0	0	0	96
16:45	17	0	0	0	0	0	0	17	47	4	0	0	2	0	1	54	37	5	1	0	0	0	0	43	0	0	0	0	0	0	0	0	114
½ Hr	27	2	0	0	0	0	0	29	91	7	0	0	4	1	4	107	63	8	1	0	1	1	0	74	0	0	0	0	0	0	0	0	210
17:00	16	3	0	0	0	0	0	19	40	5	0	0	2	0	0	47	36	3	0	0	1	0	0	40	0	0	0	0	0	0	0	0	106
17:15	8	1	0	0	0	0	0	9	42	5	0	0	0	0	0	47	36	4	1	0	0	0	0	41	0	0	0	0	0	0	0	0	97
17:30	15	2	0	0	0	0	0	17	32	4	0	0	2	0	3	41	33	4	0	0	2	0	0	39	0	0	0	0	0	0	0	0	97
17:45	11	1	0	0	0	0	0	12	39	0	0	0	1	0	1	41	42	3	0	0	1	0	0	46	0	0	0	0	0	0	0	0	99
1 Hr	50	7	0	0	0	0	0	57	153	14	0	0	5	0	4	176	147	14	1	0	4	0	0	166	0	0	0	0	0	0	0	0	399
18:00	8	0	1	0	0	0	0	9	46	1	0	0	0	0	1	48	31	4	0	0	0	1	1	37	0	0	0	0	0	0	0	0	94
18:15	13	0	0	0	0	0	0	13	34	1	0	0	1	1	1	38	25	1	0	0	0	0	0	26	0	0	0	0	0	0	0	0	77
½ Hr	21	0	1	0	0	0	0	22	80	2	0	0	1	1	2	86	56	5	0	0	0	1	1	63	0	0	0	0	0	0	0	0	171
2 Hrs	98	9	1	0	0	0	0	108	324	23	0	0	10	2	10	369	266	27	2	0	5	2	1	303	0	0	0	0	0	0	0	0	780
Total	368	42	5	3	0	0	0	418	756	77	4	0	16	4	14	871	593	61	5	0	6	7	3	675	0	0	0	0	0	0	0	0	1964

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Site 02 - Garrison Lane(N) / High Street(E) / Garrison Lane(S) / High Street(W)

ORIGIN SUMMARY

	Origin : Arm A Garrison Lane(N)								Origin : Arm B High Street(E)								Origin : Arm C Garrison Lane(S)								Origin : Arm D High Street(W)								Origin Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	
07:30	18	10	1	2	2	0	0	33	30	6	2	0	4	0	3	45	67	9	3	0	0	0	1	80	74	9	2	0	1	0	1	87	245
07:45	43	15	2	0	1	0	0	61	33	6	0	0	2	0	1	42	66	4	2	0	0	1	1	74	120	18	1	0	0	2	0	141	318
½ Hr	61	25	3	2	3	0	0	94	63	12	2	0	6	0	4	87	133	13	5	0	0	1	2	154	194	27	3	0	1	2	1	228	563
08:00	31	13	1	1	0	0	0	46	73	8	0	0	4	0	0	85	96	11	0	0	1	1	1	110	102	18	1	0	2	2	2	127	368
08:15	48	10	2	1	1	0	0	62	65	3	0	1	2	0	1	72	101	5	0	0	0	1	0	107	175	10	0	0	0	1	1	187	428
08:30	54	10	4	0	0	0	0	68	42	2	2	0	3	0	0	49	112	9	2	0	0	3	1	127	187	10	1	1	1	2	2	204	448
08:45	95	14	3	0	0	0	0	112	93	9	1	1	2	0	0	106	70	9	1	0	0	1	0	81	166	17	1	1	1	0	0	186	485
1 Hr	228	47	10	2	1	0	0	288	273	22	3	2	11	0	1	312	379	34	3	0	1	6	2	425	630	55	3	2	4	5	5	704	1729
09:00	64	5	3	0	0	0	0	72	75	9	1	0	1	0	1	87	77	16	0	0	0	0	0	93	107	13	0	0	1	0	0	121	373
09:15	47	10	5	0	0	0	0	62	57	11	1	0	1	0	0	70	57	13	1	0	0	0	0	71	98	26	5	1	1	0	0	131	334
½ Hr	111	15	8	0	0	0	0	134	132	20	2	0	2	0	1	157	134	29	1	0	0	0	0	164	205	39	5	1	2	0	0	252	707
2 Hrs	400	87	21	4	4	0	0	516	468	54	7	2	19	0	6	556	646	76	9	0	1	7	4	743	1029	121	11	3	7	7	6	1184	2999

ORIGIN SUMMARY

	Origin : Arm A Garrison Lane(N)								Origin : Arm B High Street(E)								Origin : Arm C Garrison Lane(S)								Origin : Arm D High Street(W)								Origin Totals
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	
16:30	63	10	0	0	1	1	0	75	71	8	1	1	3	0	1	85	71	12	1	0	0	0	1	85	80	8	0	0	3	2	3	96	341
16:45	80	10	0	0	0	0	0	90	44	8	0	0	0	0	0	52	84	12	2	0	0	3	2	103	101	9	1	0	2	0	1	114	359
½ Hr	143	20	0	0	1	1	0	165	115	16	1	1	3	0	1	137	155	24	3	0	0	3	3	188	181	17	1	0	5	2	4	210	700
17:00	72	6	0	0	0	0	0	78	70	4	0	0	3	0	0	77	100	6	1	0	0	1	1	109	92	11	0	0	3	0	0	106	370
17:15	91	6	0	0	0	1	0	98	69	6	0	0	0	2	0	77	99	8	0	0	3	0	0	110	86	10	1	0	0	0	0	97	382
17:30	88	4	1	0	0	0	0	93	78	6	1	0	2	0	0	87	123	10	0	0	0	0	2	135	80	10	0	0	4	0	3	97	412
17:45	107	10	0	0	0	1	0	118	67	5	0	0	1	0	0	73	94	5	1	0	1	0	0	101	92	4	0	0	2	0	1	99	391
1 Hr	358	26	1	0	0	2	0	387	284	21	1	0	6	2	0	314	416	29	2	0	4	1	3	455	350	35	1	0	9	0	4	399	1555
18:00	91	4	0	0	0	0	0	95	54	6	0	0	2	0	0	62	81	4	0	0	0	0	1	86	85	5	1	0	0	1	2	94	337
18:15	53	2	0	0	0	0	0	55	44	2	0	0	0	0	0	46	83	3	0	0	1	0	0	87	72	2	0	0	1	1	1	77	265
½ Hr	144	6	0	0	0	0	0	150	98	8	0	0	2	0	0	108	164	7	0	0	1	0	1	173	157	7	1	0	1	2	3	171	602
2 Hrs	645	52	1	0	1	3	0	702	497	45	2	1	11	2	1	559	735	60	5	0	5	4	7	816	688	59	3	0	15	4	11	780	2857
Total	1045	139	22	4	5	3	0	1218	965	99	9	3	30	2	7	1115	1381	136	14	0	6	11	11	1559	1717	180	14	3	22	11	17	1964	5856

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Site 02 - Garrison Lane(N) / High Street(E) / Garrison Lane(S) / High Street(W)

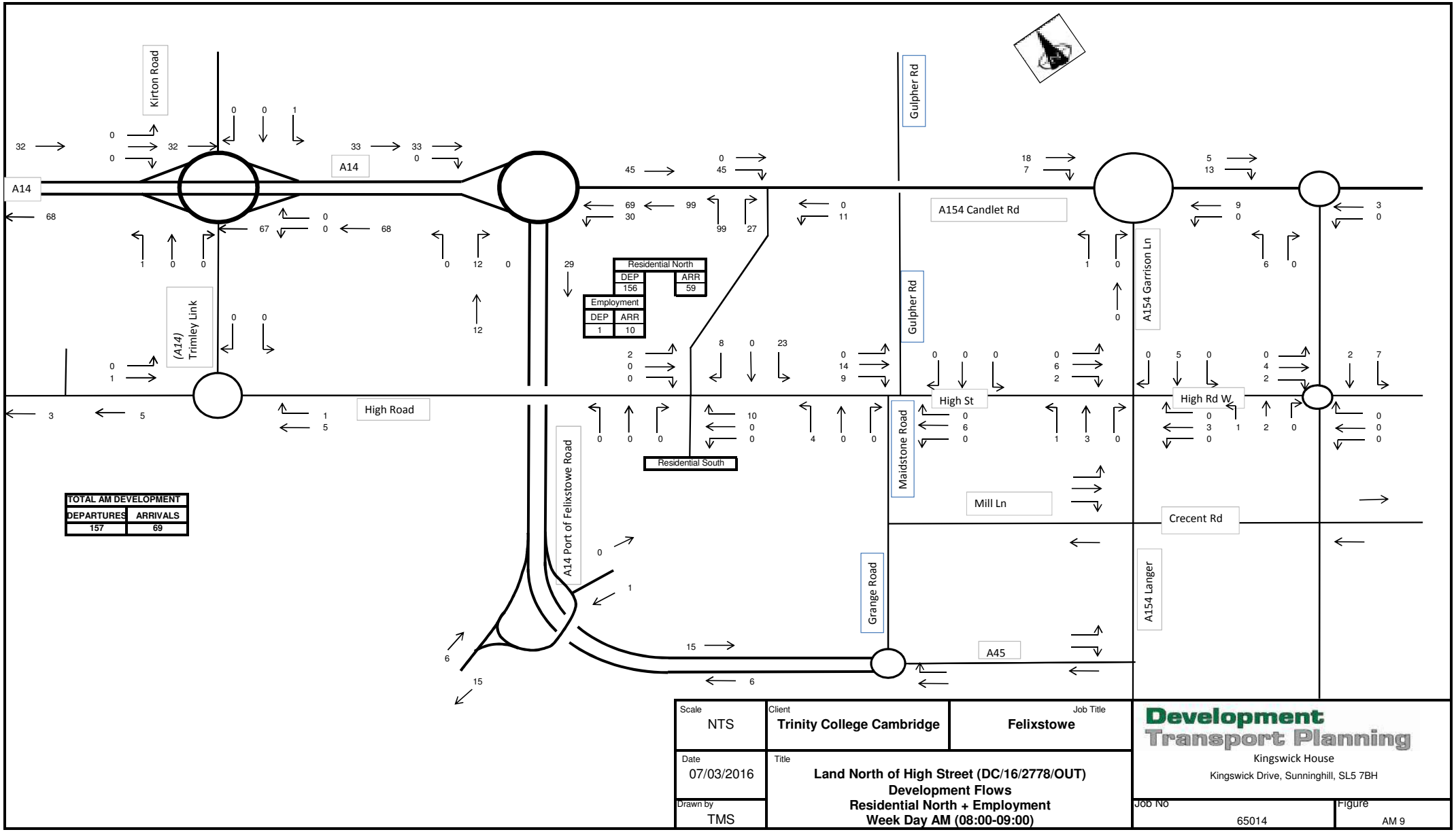
DESTINATION SUMMARY

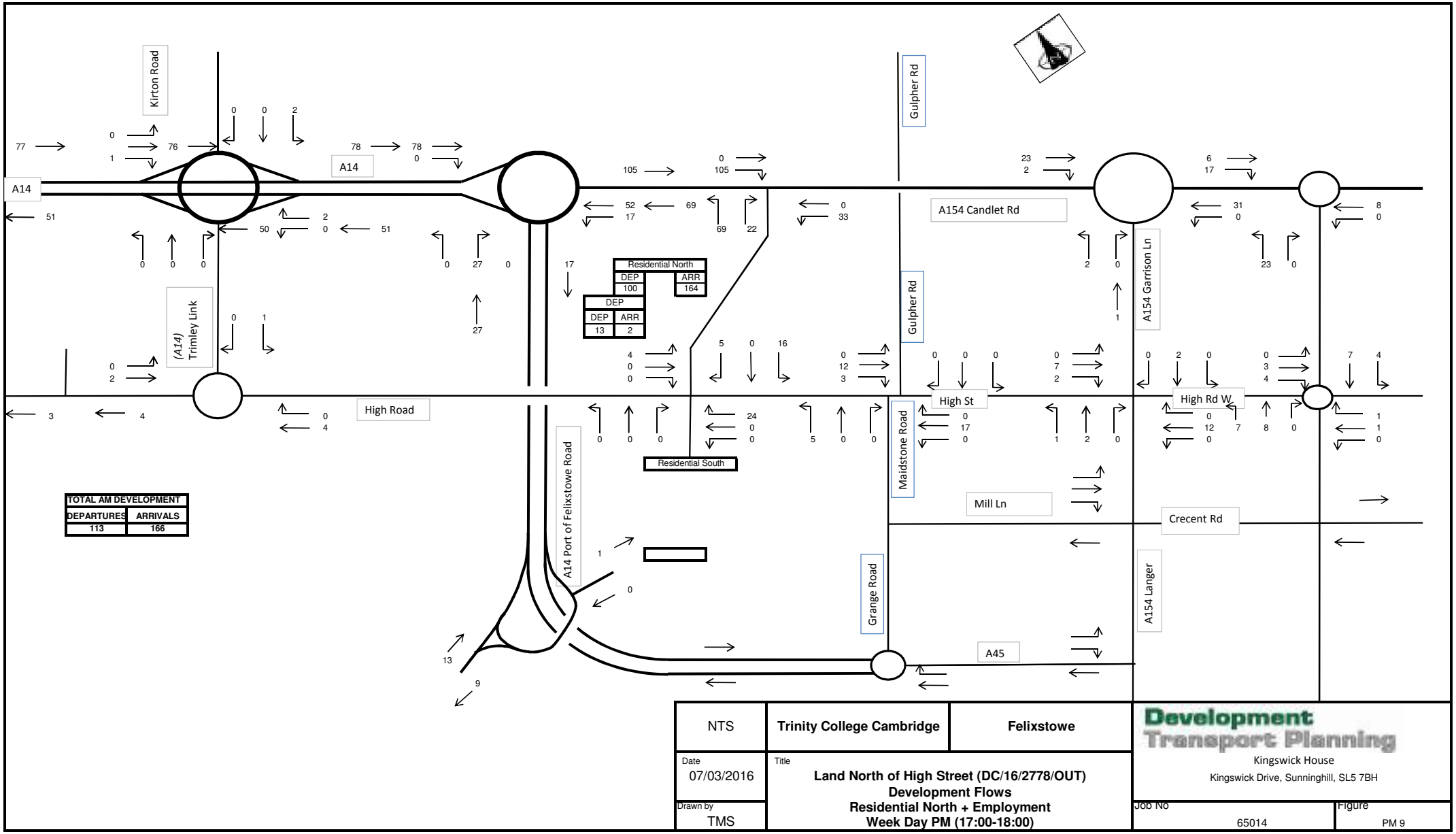
	Destination : Arm A Garrison Lane(N)								**Destination :** Arm B High Street(E)								**Destination :** Arm C Garrison Lane(S)								**Destination :** Arm D High Street(W)								Dest
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Totals
07:30	83	10	3	0	0	0	0	96	25	3	1	1	1	0	0	31	40	12	1	1	2	0	1	57	41	9	3	0	4	0	4	61	245
07:45	86	14	1	0	0	0	0	101	50	6	1	0	0	0	0	57	66	15	2	0	0	2	0	85	60	8	1	0	3	1	2	75	318
½ Hr	169	24	4	0	0	0	0	197	75	9	2	1	1	0	0	88	106	27	3	1	2	2	1	142	101	17	4	0	7	1	6	136	563
08:00	82	13	0	0	0	1	0	96	41	13	0	1	1	2	1	59	62	10	2	0	1	0	1	76	117	14	0	0	5	0	1	137	368
08:15	82	3	0	0	0	0	0	85	89	6	0	0	0	0	1	96	88	8	0	0	1	1	0	98	130	11	2	2	2	1	1	149	428
08:30	114	6	5	1	0	1	0	127	108	7	0	0	1	1	2	119	111	10	3	0	0	2	0	126	62	8	1	0	3	1	1	76	448
08:45	88	10	0	2	0	0	0	100	104	9	1	0	1	0	0	115	133	14	3	0	0	0	0	150	99	16	2	0	2	1	0	120	485
1 Hr	366	32	5	3	0	2	0	408	342	35	1	1	3	3	4	389	394	42	8	0	2	3	1	450	408	49	5	2	12	3	3	482	1729
09:00	72	9	1	0	0	0	0	82	69	11	0	0	1	0	0	81	94	8	1	0	0	0	0	103	88	15	2	0	1	0	1	107	373
09:15	57	10	3	1	0	0	0	71	66	13	3	0	1	0	0	83	74	19	1	0	0	0	0	94	62	18	5	0	1	0	0	86	334
½ Hr	129	19	4	1	0	0	0	153	135	24	3	0	2	0	0	164	168	27	2	0	0	0	0	197	150	33	7	0	2	0	1	193	707
2 Hrs	664	75	13	4	0	2	0	758	552	68	6	2	6	3	4	641	668	96	13	1	4	5	2	789	659	99	16	2	21	4	10	811	2999

DESTINATION SUMMARY

	Destination : Arm A Garrison Lane(N)								**Destination :** Arm B High Street(E)								**Destination :** Arm C Garrison Lane(S)								**Destination :** Arm D High Street(W)								Dest
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total	Totals
16:30	48	11	1	1	0	0	0	61	52	3	0	0	2	1	3	61	79	8	1	0	2	1	0	91	106	16	0	0	3	1	2	128	341
16:45	44	9	1	0	0	0	0	54	61	5	0	0	2	0	1	69	103	12	1	0	0	0	0	116	101	13	1	0	0	3	2	120	359
½ Hr	92	20	2	1	0	0	0	115	113	8	0	0	4	1	4	130	182	20	2	0	2	1	0	207	207	29	1	0	3	4	4	248	700
17:00	49	4	0	0	1	0	0	54	58	6	0	0	2	0	0	66	86	6	0	0	1	0	0	93	141	11	1	0	2	1	1	157	370
17:15	48	3	0	0	1	0	0	52	65	5	0	0	1	0	0	71	87	10	1	0	0	1	0	99	145	12	0	0	1	2	0	160	382
17:30	76	4	0	0	0	0	0	80	47	5	0	0	2	0	4	58	88	5	1	0	3	0	0	97	158	16	1	0	1	0	1	177	412
17:45	49	3	0	0	1	0	0	53	55	2	0	0	1	0	1	59	110	8	0	0	1	1	0	120	146	11	1	0	1	0	0	159	391
1 Hr	222	14	0	0	3	0	0	239	225	18	0	0	6	0	5	254	371	29	2	0	5	2	0	409	590	50	3	0	5	3	2	653	1555
18:00	35	3	1	0	0	0	0	39	69	2	0	0	0	0	1	72	85	7	0	0	0	1	1	94	122	7	0	0	2	0	1	132	337
18:15	46	0	0	0	1	0	0	47	52	1	0	0	1	1	1	56	64	3	0	0	0	0	0	67	90	5	0	0	0	0	0	95	265
½ Hr	81	3	1	0	1	0	0	86	121	3	0	0	1	1	2	128	149	10	0	0	0	1	1	161	212	12	0	0	2	0	1	227	602
2 Hrs	395	37	3	1	4	0	0	440	459	29	0	0	11	2	11	512	702	59	4	0	7	4	1	777	1009	91	4	0	10	7	7	1128	2857
Total	1059	112	16	5	4	2	0	1198	1011	97	6	2	17	5	15	1153	1370	155	17	1	11	9	3	1566	1668	190	20	2	31	11	17	1939	5856

APPENDIX R

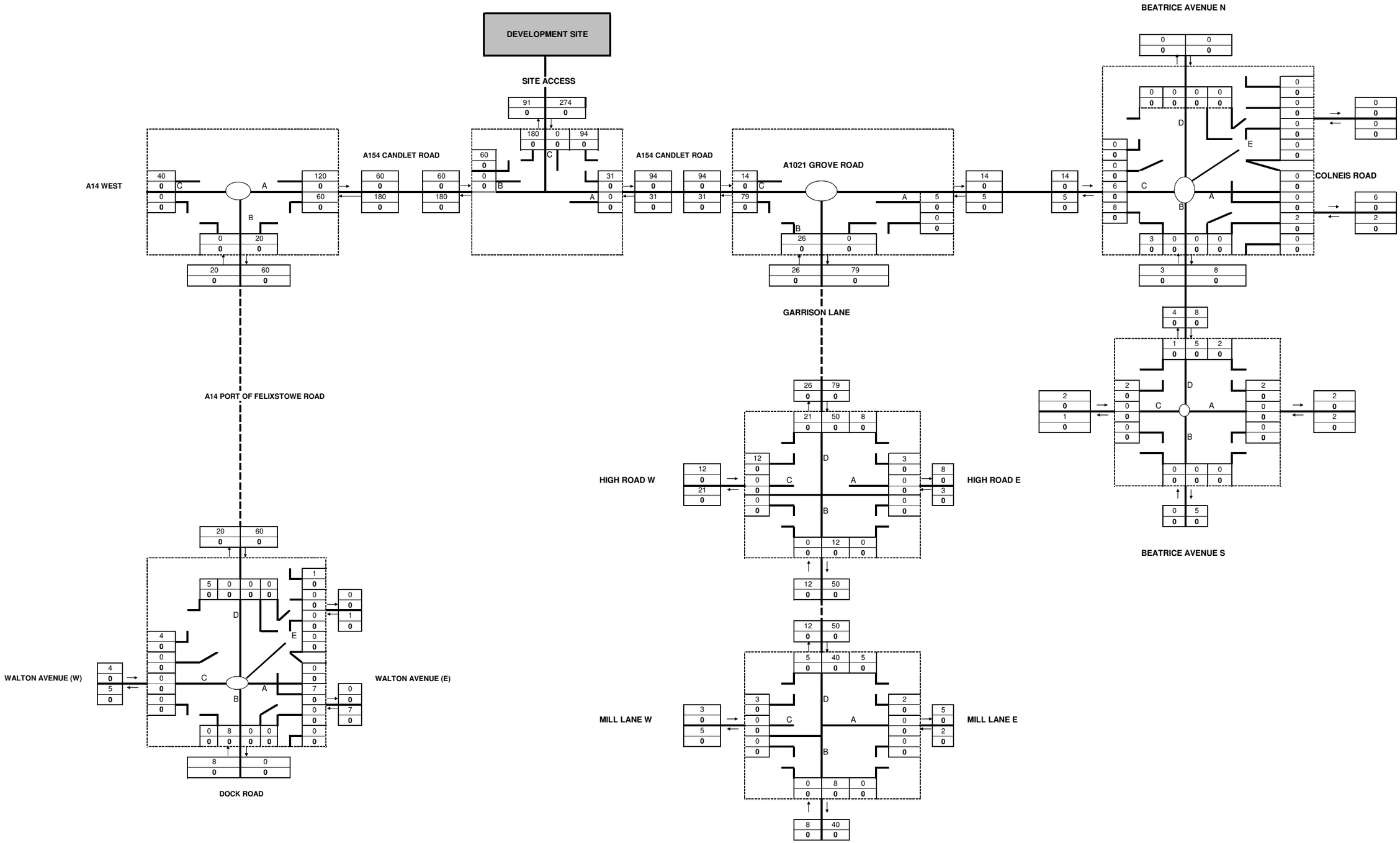

Kirton Road
A14
A14
(A14) Trimley Link
High Road
A14 Port of Felixstowe Road
Residential North
DEP 156
ARR 59
Employment
DEP 1
ARR 10
Residential South
Gulpher Rd
Gulpher Rd
A154 Candlet Rd
A154 Garrison Ln
High St
High Rd W
Maidstone Road
Mill Ln
Crecent Rd
Grange Road
A154 Langer
A45
TOTAL AM DEVELOPMENT
DEPARTURES 157
ARRIVALS 69
Scale NTS
Client Trinity College Cambridge
Job Title Felixstowe
Date 07/03/2016
Title Land North of High Street (DC/16/2778/OUT)
Development Flows
Residential North + Employment
Week Day AM (08:00-09:00)
Drawn by TMS
Development Transport Planning
Kingswick House
Kingswick Drive, Sunninghill, SL5 7BH
Job No 65014
Figure AM 9



NTS	**Trinity College Cambridge**	**Felixstowe**
Date 07/03/2016	Title **Land North of High Street (DC/16/2778/OUT) Development Flows Residential North + Employment Week Day PM (17:00-18:00)**	
Drawn by TMS		

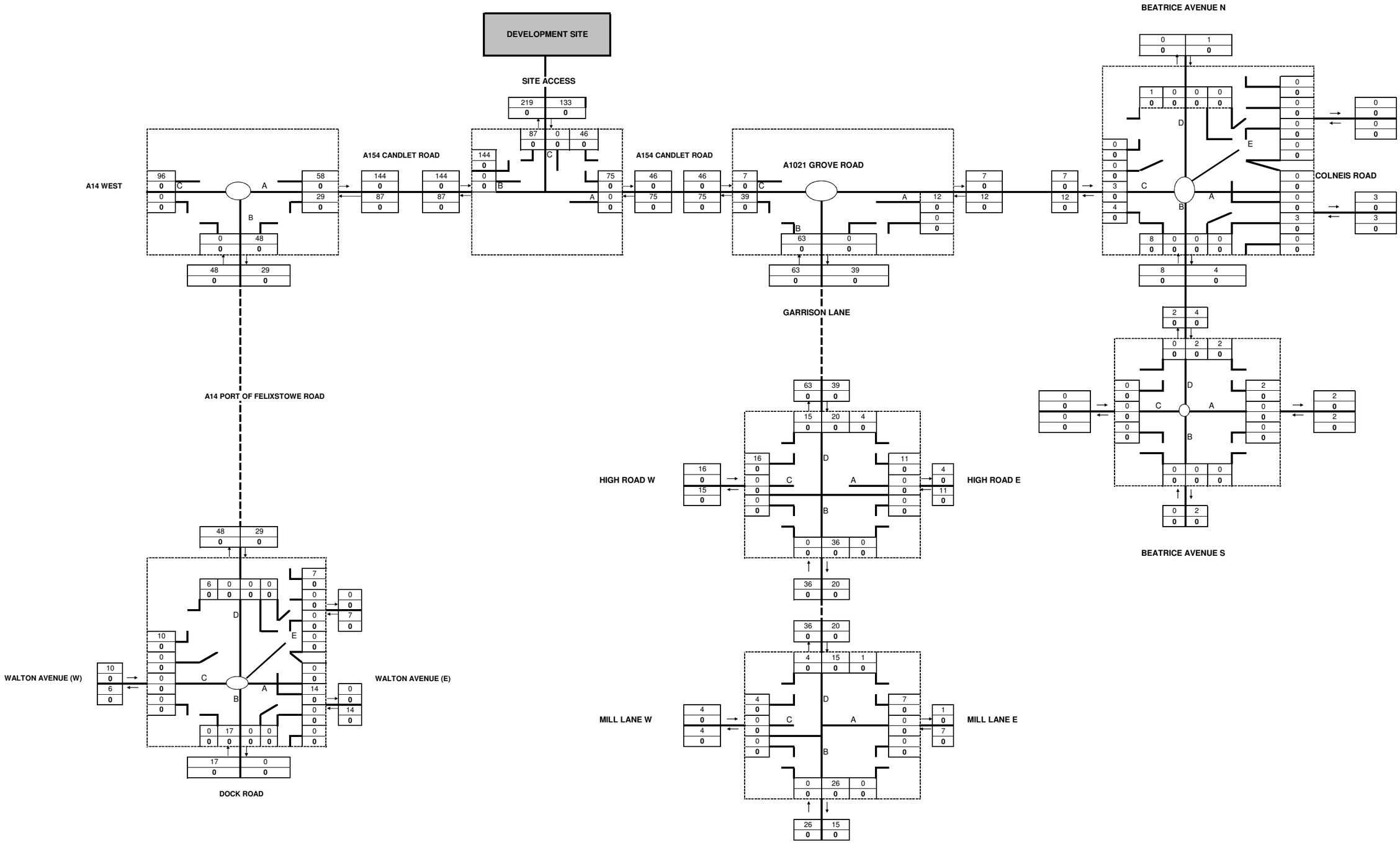
Development Transport Planning
Kingswick House
Kingswick Drive, Sunninghill, SL5 7BH

Job No	Figure
65014	PM 9



A085774 - Christchurch Land & Estates Ltd - Candlet Road, Felixstowe

Total Development Traffic Flows Diagram - AM Peak - Figure M-3



A085774 - Christchurch Land & Estates Ltd - Candlet Road, Felixstowe

Total Development Traffic Flows Diagram - PM Peak - Figure M-4

APPENDIX S

	AM					PM				
	Queue (PCU)	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**	**Queue (PCU)**	**Delay (s)**	**RFC**	**LOS**	**Network Residual Capacity**
	2018 Observed									
Stream B-AC	0.5	11.26	0.33	B	60 %	0.3	8.60	0.22	A	111 %
Stream C-B	0.2	6.76	0.18	A	[Stream B-AC]	0.2	6.34	0.13	A	[Stream B-AC]
	2023 Do Nothing									
Stream B-AC	0.7	13.20	0.40	B	40 %	0.4	9.61	0.28	A	80 %
Stream C-B	0.3	7.36	0.22	A	[Stream B-AC]	0.2	6.80	0.16	A	[Stream B-AC]
	2023 With Development									
Stream B-AC	0.7	13.92	0.42	B	35 %	**0.4**	**9.97**	**0.29**	**A**	**72 %**
Stream C-B	0.3	7.60	0.24	A	[Stream B-AC]	**0.2**	**6.99**	**0.17**	**A**	**[Stream B-AC]**

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.0.6896

Filename: High St-Maidstone Road.j9
Path: R:\Projects\67006 Howlett Way, Trimley\Trans\Junction Capacity Assessments\Maidstone Road Junction
Report generation date: 06/12/2018 17:24:14

Summary of junction performance

	AM					PM				
	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Network Residual Capacity
	2018 Observed									
Stream B-AC	0.5	11.26	0.33	B	60 %	0.3	8.60	0.22	A	111 %
Stream C-B	0.2	6.76	0.18	A	[Stream B-AC]	0.2	6.34	0.13	A	[Stream B-AC]
	2023 Do Nothing									
Stream B-AC	0.7	13.20	0.40	B	40 %	0.4	9.61	0.28	A	80 %
Stream C-B	0.3	7.36	0.22	A	[Stream B-AC]	0.2	6.80	0.16	A	[Stream B-AC]
	2023 With Development									
Stream B-AC	0.7	13.92	0.42	B	35 %	0.4	9.97	0.29	A	72 %
Stream C-B	0.3	7.60	0.24	A	[Stream B-AC]	0.2	6.99	0.17	A	[Stream B-AC]

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

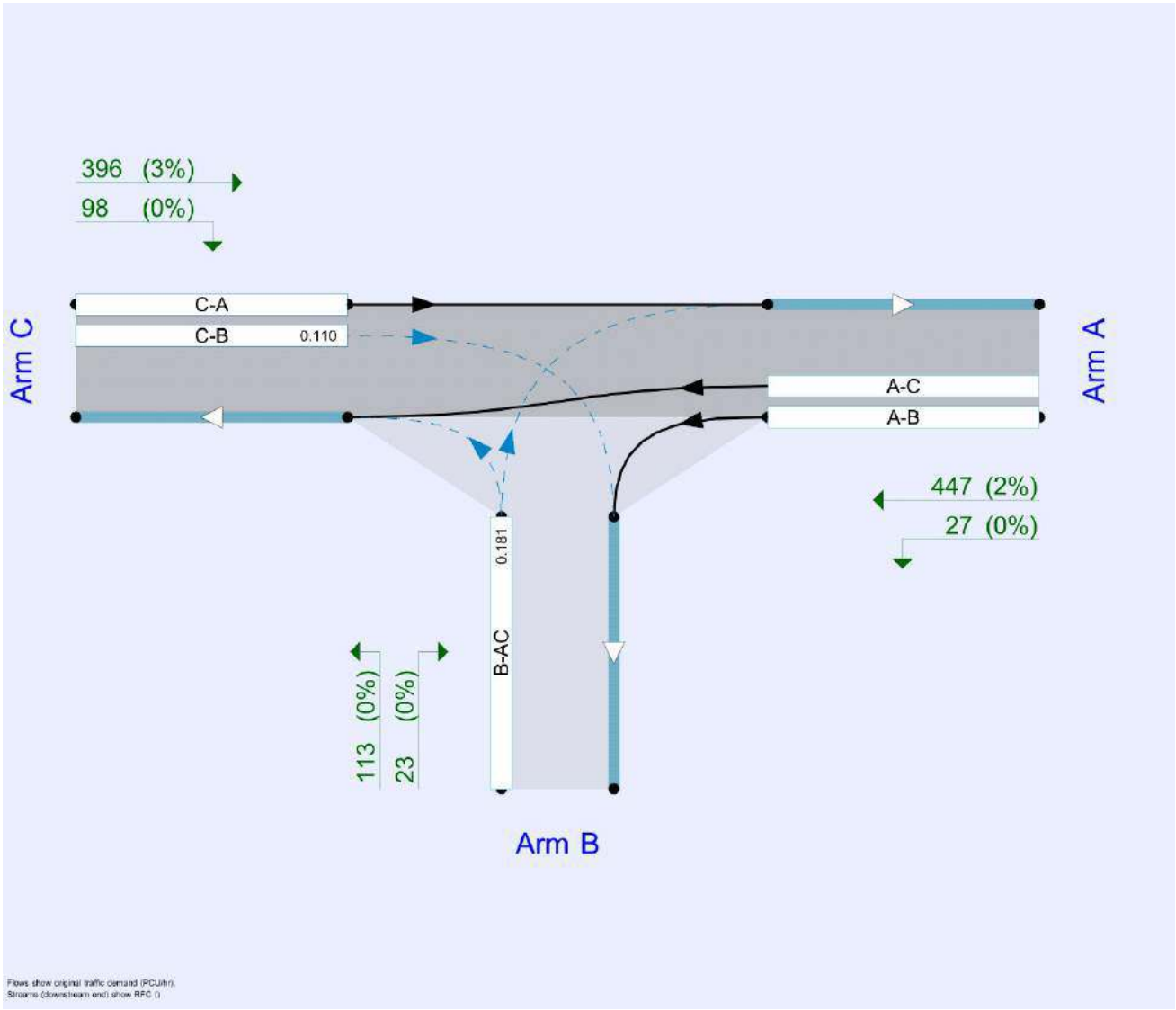
File summary

File Description

Title	High Street-Maidstone Road
Location	Felixstowe
Site number	
Date	08/03/2016
Version	
Status	Final Version
Identifier	
Client	
Jobnumber	65014
Enumerator	TJMS
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Observed	AM	ONE HOUR	07:45	09:15	15	✓
D2	2018 Observed	PM	ONE HOUR	16:45	18:15	15	✓
D3	2023 Do Nothing	AM	ONE HOUR	07:45	09:15	15	✓
D4	2023 Do Nothing	PM	ONE HOUR	16:45	18:15	15	✓
D5	2023 With Development	AM	ONE HOUR	07:45	09:15	15	✓
D6	2023 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2018 Observed, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	High St/Maidstone Road	T-Junction	Two-way		2.18	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	60	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	High Street East		Major
B	Maidstone Road		Minor
C	High Street West		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.80		✓	2.90	250.0		-

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	4.14	30	24

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	556	0.098	0.247	0.155	0.353
1	B-C	712	0.105	0.266	-	-
1	C-B	773	0.289	0.289	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Observed	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	391	100.000
B		ONE HOUR	✓	142	100.000
C		ONE HOUR	✓	528	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	27	364
	B	49	0	93
	C	422	106	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	5
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.33	11.26	0.5	B	130	195
C-A					387	581
C-B	0.18	6.76	0.2	A	97	146
A-B					25	37
A-C					334	501

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	27	534	0.200	106	0.0	0.2	8.389	A
C-A	318	79			318				
C-B	80	20	688	0.116	79	0.0	0.1	5.905	A
A-B	20	5			20				
A-C	274	69			274				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	128	32	510	0.250	127	0.2	0.3	9.397	A
C-A	379	95			379				
C-B	95	24	672	0.142	95	0.1	0.2	6.241	A
A-B	24	6			24				
A-C	327	82			327				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	156	39	476	0.329	156	0.3	0.5	11.222	B
C-A	465	116			465				
C-B	117	29	649	0.180	116	0.2	0.2	6.757	A
A-B	30	7			30				
A-C	401	100			401				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	156	39	476	0.329	156	0.5	0.5	11.263	B
C-A	465	116			465				
C-B	117	29	649	0.180	117	0.2	0.2	6.762	A
A-B	30	7			30				
A-C	401	100			401				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	128	32	510	0.250	128	0.5	0.3	9.443	A
C-A	379	95			379				
C-B	95	24	672	0.142	95	0.2	0.2	6.250	A
A-B	24	6			24				
A-C	327	82			327				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	107	27	534	0.200	107	0.3	0.3	8.445	A
C-A	318	79			318				
C-B	80	20	688	0.116	80	0.2	0.1	5.917	A
A-B	20	5			20				
A-C	274	69			274				

2018 Observed, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	High St/Maidstone Road	T-Junction	Two-way		1.63	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	111	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018 Observed	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	374	100.000
B		ONE HOUR	✓	109	100.000
C		ONE HOUR	✓	401	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	25	349
	B	22	0	87
	C	322	79	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	3	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	0.22	8.60	0.3	A	100	150
C-A					295	443
C-B	0.13	6.34	0.2	A	72	109
A-B					23	34
A-C					320	480

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	82	21	583	0.141	81	0.0	0.2	7.171	A
C-A	242	61			242				
C-B	59	15	692	0.086	59	0.0	0.1	5.685	A
A-B	19	5			19				
A-C	263	66			263				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	98	24	564	0.174	98	0.2	0.2	7.712	A
C-A	289	72			289				
C-B	71	18	676	0.105	71	0.1	0.1	5.947	A
A-B	22	6			22				
A-C	314	78			314				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	30	538	0.223	120	0.2	0.3	8.592	A
C-A	355	89			355				
C-B	87	22	654	0.133	87	0.1	0.2	6.341	A
A-B	28	7			28				
A-C	384	96			384				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	30	538	0.223	120	0.3	0.3	8.604	A
C-A	355	89			355				
C-B	87	22	654	0.133	87	0.2	0.2	6.343	A
A-B	28	7			28				
A-C	384	96			384				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	98	24	564	0.174	98	0.3	0.2	7.730	A
C-A	289	72			289				
C-B	71	18	676	0.105	71	0.2	0.1	5.952	A
A-B	22	6			22				
A-C	314	78			314				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	82	21	583	0.141	82	0.2	0.2	7.194	A
C-A	242	61			242				
C-B	59	15	692	0.086	60	0.1	0.1	5.692	A
A-B	19	5			19				
A-C	263	66			263				

2023 Do Nothing, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	High St/Maidstone Road	T-Junction	Two-way		2.52	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	40	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2023 Do Nothing	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	451	100.000
B		ONE HOUR	✓	163	100.000
C		ONE HOUR	✓	616	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	29	422
	B	52	0	111
	C	488	128	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	5
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.40	13.20	0.7	B	150	224
C-A					448	672
C-B	0.22	7.36	0.3	A	117	176
A-B					27	40
A-C					387	581

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	123	31	521	0.236	121	0.0	0.3	8.986	A
C-A	367	92			367				
C-B	96	24	675	0.143	96	0.0	0.2	6.205	A
A-B	22	5			22				
A-C	318	79			318				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	147	37	493	0.297	146	0.3	0.4	10.369	B
C-A	439	110			439				
C-B	115	29	656	0.175	115	0.2	0.2	6.649	A
A-B	26	7			26				
A-C	379	95			379				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	179	45	452	0.397	179	0.4	0.6	13.113	B
C-A	537	134			537				
C-B	141	35	630	0.224	141	0.2	0.3	7.353	A
A-B	32	8			32				
A-C	465	116			465				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	179	45	452	0.397	179	0.6	0.7	13.199	B
C-A	537	134			537				
C-B	141	35	630	0.224	141	0.3	0.3	7.362	A
A-B	32	8			32				
A-C	465	116			465				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	147	37	493	0.297	147	0.7	0.4	10.454	B
C-A	439	110			439				
C-B	115	29	656	0.175	115	0.3	0.2	6.658	A
A-B	26	7			26				
A-C	379	95			379				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	123	31	521	0.236	123	0.4	0.3	9.066	A
C-A	367	92			367				
C-B	96	24	675	0.143	97	0.2	0.2	6.224	A
A-B	22	5			22				
A-C	318	79			318				

2023 Do Nothing, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	High St/Maidstone Road	T-Junction	Two-way		1.79	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	80	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2023 Do Nothing	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	452	100.000
B		ONE HOUR	✓	130	100.000
C		ONE HOUR	✓	461	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	27	425
	B	23	0	107
	C	370	91	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	3	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	0.28	9.61	0.4	A	119	179
C-A					340	509
C-B	0.16	6.80	0.2	A	84	125
A-B					25	37
A-C					390	585

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	98	24	571	0.171	97	0.0	0.2	7.586	A
C-A	279	70			279				
C-B	69	17	675	0.101	68	0.0	0.1	5.927	A
A-B	20	5			20				
A-C	320	80			320				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	117	29	549	0.213	117	0.2	0.3	8.321	A
C-A	333	83			333				
C-B	82	20	656	0.125	82	0.1	0.1	6.266	A
A-B	24	6			24				
A-C	382	96			382				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	143	36	518	0.276	143	0.3	0.4	9.585	A
C-A	407	102			407				
C-B	100	25	630	0.159	100	0.1	0.2	6.797	A
A-B	30	7			30				
A-C	468	117			468				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	143	36	518	0.276	143	0.4	0.4	9.608	A
C-A	407	102			407				
C-B	100	25	630	0.159	100	0.2	0.2	6.799	A
A-B	30	7			30				
A-C	468	117			468				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	117	29	549	0.213	117	0.4	0.3	8.349	A
C-A	333	83			333				
C-B	82	20	656	0.125	82	0.2	0.1	6.273	A
A-B	24	6			24				
A-C	382	96			382				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	98	24	571	0.171	98	0.3	0.2	7.619	A
C-A	279	70			279				
C-B	69	17	675	0.101	69	0.1	0.1	5.939	A
A-B	20	5			20				
A-C	320	80			320				

2023 With Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	High St/Maidstone Road	T-Junction	Two-way		2.60	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	35	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2023 With Development	AM	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	468	100.000
B		ONE HOUR	✓	167	100.000
C		ONE HOUR	✓	661	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	29	439
	B	52	0	115
	C	524	137	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	4	5
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.42	13.92	0.7	B	153	230
C-A					481	721
C-B	0.24	7.60	0.3	A	126	189
A-B					27	40
A-C					403	604

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	126	31	516	0.244	124	0.0	0.3	9.172	A
C-A	394	99			394				
C-B	103	26	672	0.154	102	0.0	0.2	6.317	A
A-B	22	5			22				
A-C	331	83			331				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	150	38	486	0.309	150	0.3	0.4	10.690	B
C-A	471	118			471				
C-B	123	31	652	0.189	123	0.2	0.2	6.802	A
A-B	26	7			26				
A-C	395	99			395				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	184	46	442	0.416	183	0.4	0.7	13.812	B
C-A	577	144			577				
C-B	151	38	624	0.242	151	0.2	0.3	7.591	A
A-B	32	8			32				
A-C	483	121			483				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	184	46	442	0.416	184	0.7	0.7	13.920	B
C-A	577	144			577				
C-B	151	38	624	0.242	151	0.3	0.3	7.600	A
A-B	32	8			32				
A-C	483	121			483				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	150	38	486	0.309	151	0.7	0.5	10.789	B
C-A	471	118			471				
C-B	123	31	652	0.189	123	0.3	0.2	6.820	A
A-B	26	7			26				
A-C	395	99			395				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	126	31	516	0.244	126	0.5	0.3	9.259	A
C-A	394	99			394				
C-B	103	26	672	0.154	103	0.2	0.2	6.339	A
A-B	22	5			22				
A-C	331	83			331				

2023 With Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	High St/Maidstone Road	T-Junction	Two-way		1.85	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	72	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2023 With Development	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	474	100.000
B		ONE HOUR	✓	136	100.000
C		ONE HOUR	✓	494	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	27	447
	B	23	0	113
	C	396	98	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	3	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	0.29	9.97	0.4	A	125	187
C-A					363	545
C-B	0.17	6.99	0.2	A	90	135
A-B					25	37
A-C					410	615

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	102	26	567	0.181	102	0.0	0.2	7.722	A
C-A	298	75			298				
C-B	74	18	670	0.110	73	0.0	0.1	6.025	A
A-B	20	5			20				
A-C	337	84			337				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	122	31	544	0.225	122	0.2	0.3	8.530	A
C-A	356	89			356				
C-B	88	22	650	0.135	88	0.1	0.2	6.400	A
A-B	24	6			24				
A-C	402	100			402				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	150	37	511	0.293	149	0.3	0.4	9.941	A
C-A	436	109			436				
C-B	108	27	623	0.173	108	0.2	0.2	6.988	A
A-B	30	7			30				
A-C	492	123			492				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	150	37	511	0.293	150	0.4	0.4	9.970	A
C-A	436	109			436				
C-B	108	27	623	0.173	108	0.2	0.2	6.994	A
A-B	30	7			30				
A-C	492	123			492				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	122	31	544	0.225	123	0.4	0.3	8.562	A
C-A	356	89			356				
C-B	88	22	650	0.135	88	0.2	0.2	6.410	A
A-B	24	6			24				
A-C	402	100			402				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	102	26	567	0.181	103	0.3	0.2	7.760	A
C-A	298	75			298				
C-B	74	18	670	0.110	74	0.2	0.1	6.037	A
A-B	20	5			20				
A-C	337	84			337				

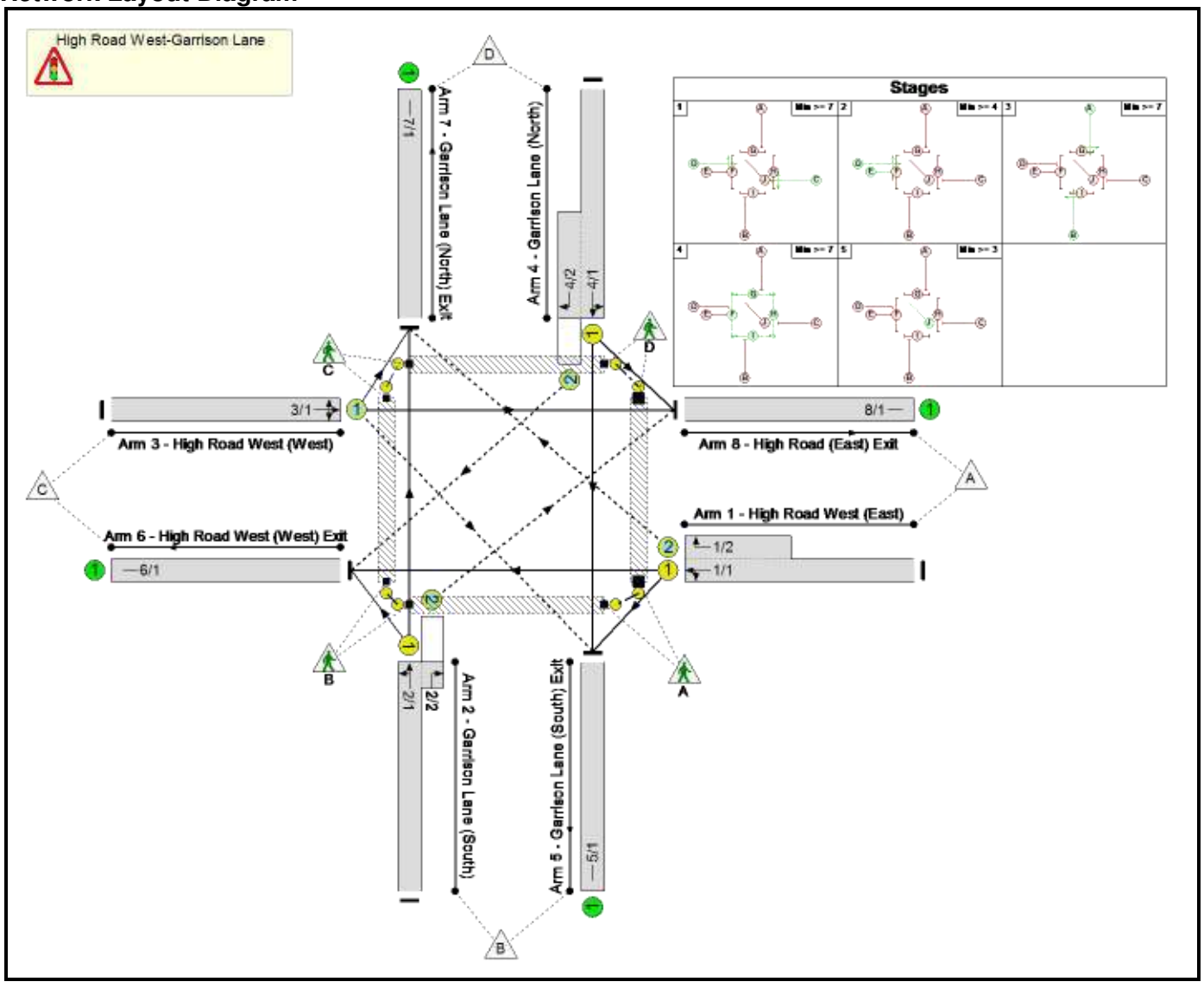
APPENDIX T

Full Input Data And Results

User and Project Details

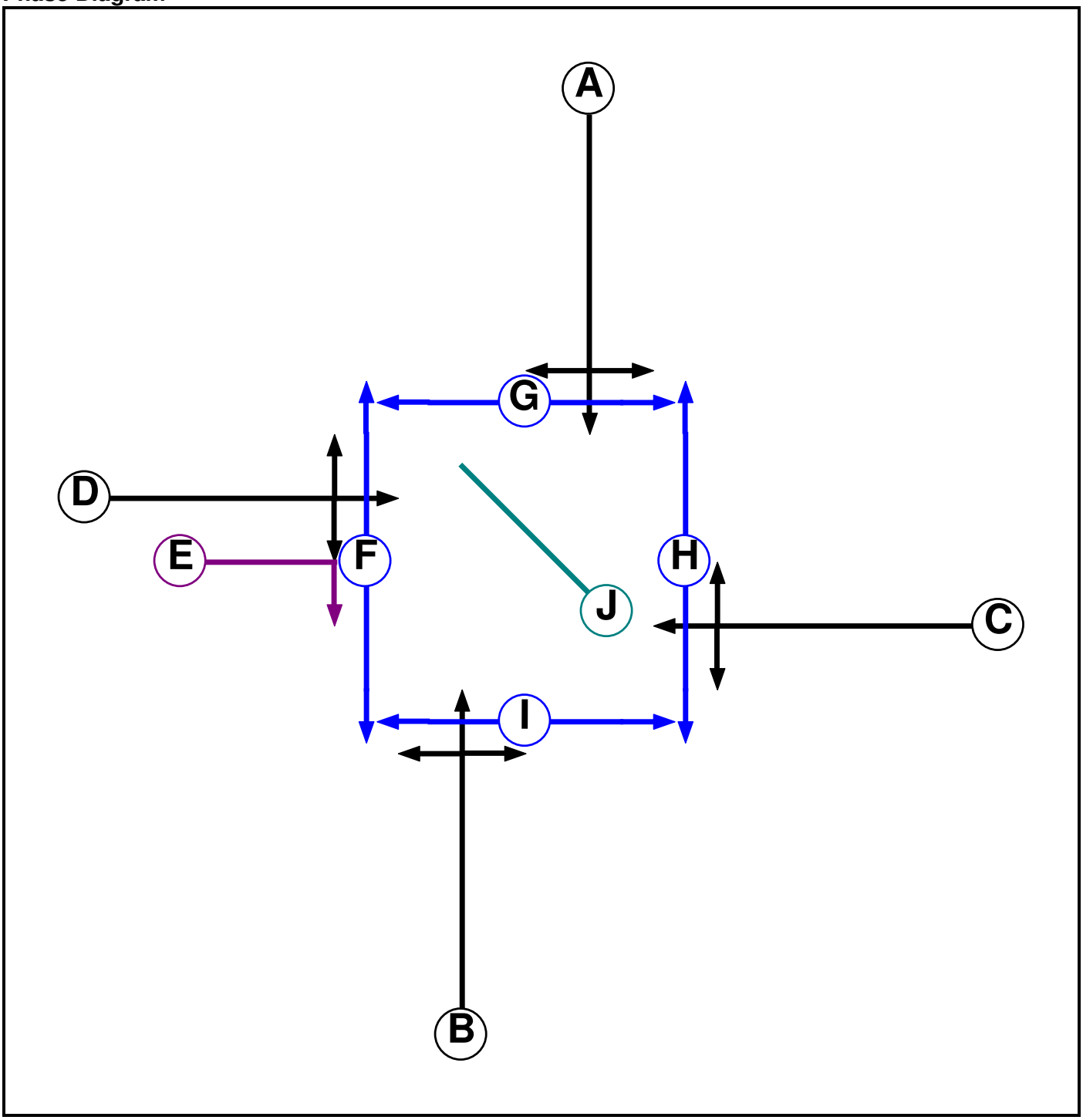
Project:	**Howlett Way, Trimley**
Title:	**High Road/Garrison Lane**
Location:	Felixstowe
Additional detail:	
File name:	High Rd-Garrison Lane - With Ped Phase.lsg3x
Author:	TJMS
Company:	DTPL
Address:	Kingswock House, Kingswick Drive, Sunninghill, SL57BH

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Ind. Arrow	D	4	4
F	Pedestrian		6	6
G	Pedestrian		7	7
H	Pedestrian		6	6
I	Pedestrian		6	6
J	Dummy		3	3

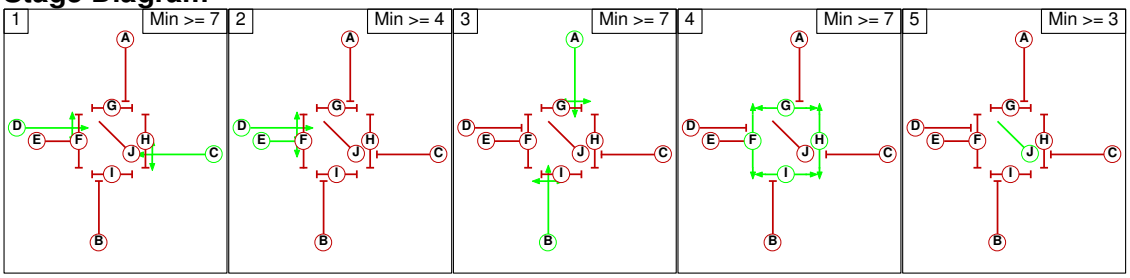
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J
A		-	6	5	5	12	12	12	12	3
B	-		5	6	6	12	12	12	12	3
C	5	5		-	5	12	12	12	12	3
D	5	5	-		-	12	12	12	12	3
E	5	5	5	-		12	12	12	12	3
F	5	5	5	5	5		-	-	-	3
G	5	5	5	5	5	-		-	-	3
H	5	5	5	5	5	-	-		-	3
I	5	5	5	5	5	-	-	-		3
J	2	2	2	2	2	2	2	2	2	

Phases in Stage

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

Stage Diagram



Full Input Data And Results

Phase Delays

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

Prohibited Stage Change

		To Stage				
		1	2	3	4	5
From Stage	1		5	5	12	3
	2	5		5	12	3
	3	6	6		12	3
	4	5	5	5		3
	5	2	2	2	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: High Road West-Garrison Lane											
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)**
1/2 (High Road West (East))	7/1 (Right)	1439	0	3/1	1.09	To 7/1 (Left) To 8/1 (Ahead)	-	-	-	-	-
2/2 (Garrison Lane (South))	8/1 (Right)	1439	0	4/1	1.09	All	3.00	-	0.50	3	2.00
3/1 (High Road West (West))	5/1 (Right)	1439	0	1/1	1.09	All	-	-	-	-	-
4/2 (Garrison Lane (North))	6/1 (Right)	1439	0	2/1	1.09	All	3.00	-	0.50	3	2.00

Full Input Data And Results

Lane Input Data

Junction: High Road West-Garrison Lane

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 (High Road West (East))	U	C	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Left	18.00
											Arm 6 Ahead	Inf
1/2 (High Road West (East))	O	C	2	3	7.0	Geom	-	3.00	0.00	N	Arm 7 Right	23.00
2/1 (Garrison Lane (South))	U	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 6 Left	13.00
											Arm 7 Ahead	Inf
2/2 (Garrison Lane (South))	O	B	2	3	1.7	Geom	-	3.00	0.00	N	Arm 8 Right	20.00
3/1 (High Road West (West))	O	D E	2	3	60.0	Geom	-	3.60	0.00	N	Arm 5 Right	22.00
											Arm 7 Left	16.00
											Arm 8 Ahead	Inf
4/1 (Garrison Lane (North))	U	A	2	3	60.0	Geom	-	3.10	0.00	N	Arm 5 Ahead	Inf
											Arm 8 Left	18.00
4/2 (Garrison Lane (North))	O	A	2	3	7.0	Geom	-	3.20	0.00	N	Arm 6 Right	14.00
5/1 (Garrison Lane (South) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (High Road West (West) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Garrison Lane (North) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (High Road (East) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 Observed AM'	08:00	09:00	01:00	
2: '2018 Observed PM'	17:00	18:00	01:00	
3: '2023 Do Nothing AM'	08:00	09:00	01:00	
4: '2023 Do Nothing PM'	17:00	18:00	01:00	
5: '2023 With Development AM'	08:00	09:00	01:00	
6: '2023 With Development PM'	17:00	18:00	01:00	

Scenario 1: '2018 Observed AM + Ped' (FG1: '2018 Observed AM', Plan 1: 'With Ped Stage')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	52	223	52	327
	B	59	0	187	175	421
	C	300	216	0	187	703
	D	28	188	85	0	301
	Tot.	387	456	495	414	1752

Traffic Lane Flows

Lane	Scenario 1: 2018 Observed AM + Ped
Junction: High Road West-Garrison Lane	
1/1 (with short)	327(In) 275(Out)
1/2 (short)	52
2/1 (with short)	421(In) 362(Out)
2/2 (short)	59
3/1	703
4/1 (with short)	301(In) 216(Out)
4/2 (short)	85
5/1	456
6/1	495
7/1	414
8/1	387

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	18.9 %	1885	1885
				Arm 6 Ahead	Inf	81.1 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	51.7 %	1939	1939
				Arm 7 Ahead	Inf	48.3 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	30.7 %	2022	2022
				Arm 7 Left	16.00	26.6 %		
				Arm 8 Ahead	Inf	42.7 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	87.0 %	2043	2043
				Arm 8 Left	18.00	13.0 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2018 Observed PM + Ped' (FG2: '2018 Observed PM', Plan 1: 'With Ped Stage')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	252	25	319
	B	44	0	253	160	457
	C	177	171	0	57	405
	D	34	201	151	0	386
	Tot.	255	414	656	242	1567

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2018 Observed PM + Ped
Junction: High Road West-Garrison Lane	
1/1 (with short)	319(In) 294(Out)
1/2 (short)	25
2/1 (with short)	457(In) 413(Out)
2/2 (short)	44
3/1	405
4/1 (with short)	386(In) 235(Out)
4/2 (short)	151
5/1	414
6/1	656
7/1	242
8/1	255

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	14.3 %	1892	1892
				Arm 6 Ahead	Inf	85.7 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	61.3 %	1919	1919
				Arm 7 Ahead	Inf	38.7 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	42.2 %	2030	2030
				Arm 7 Left	16.00	14.1 %		
				Arm 8 Ahead	Inf	43.7 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	85.5 %	2040	2040
				Arm 8 Left	18.00	14.5 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2023 Do Nothing AM + Ped' (FG3: '2023 Do Nothing AM', Plan 1: 'With Ped Stage')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	55	253	98	406
	B	63	0	213	340	616
	C	336	243	0	211	790
	D	48	324	111	0	483
	Tot.	447	622	577	649	2295

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: 2023 Do Nothing AM + Ped
Junction: High Road West-Garrison Lane	
1/1 (with short)	406(In) 308(Out)
1/2 (short)	98
2/1 (with short)	616(In) 553(Out)
2/2 (short)	63
3/1	790
4/1 (with short)	483(In) 372(Out)
4/2 (short)	111
5/1	622
6/1	577
7/1	649
8/1	447

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	17.9 %	1887	1887
				Arm 6 Ahead	Inf	82.1 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	38.5 %	1968	1968
				Arm 7 Ahead	Inf	61.5 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	30.8 %	2022	2022
				Arm 7 Left	16.00	26.7 %		
				Arm 8 Ahead	Inf	42.5 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	87.1 %	2043	2043
				Arm 8 Left	18.00	12.9 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2023 Do Nothing PM + Ped' (FG4: '2023 Do Nothing PM', Plan 1: 'With Ped Stage')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	45	297	52	394
	B	47	0	287	301	635
	C	202	191	0	77	470
	D	65	380	176	0	621
	Tot.	314	616	760	430	2120

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2023 Do Nothing PM + Ped
Junction: High Road West-Garrison Lane	
1/1 (with short)	394(In) 342(Out)
1/2 (short)	52
2/1 (with short)	635(In) 588(Out)
2/2 (short)	47
3/1	470
4/1 (with short)	621(In) 445(Out)
4/2 (short)	176
5/1	616
6/1	760
7/1	430
8/1	314

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	13.2 %	1894	1894
				Arm 6 Ahead	Inf	86.8 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	48.8 %	1945	1945
				Arm 7 Ahead	Inf	51.2 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	40.6 %	2028	2028
				Arm 7 Left	16.00	16.4 %		
				Arm 8 Ahead	Inf	43.0 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	85.4 %	2040	2040
				Arm 8 Left	18.00	14.6 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2023 With Development AM + Ped' (FG5: '2023 With Development AM', Plan 1: 'With Ped Stage')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	55	261	98	414
	B	63	0	220	342	625
	C	353	259	0	211	823
	D	49	330	111	0	490
	Tot.	465	644	592	651	2352

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2023 With Development AM + Ped
Junction: High Road West-Garrison Lane	
1/1 (with short)	414(In) 316(Out)
1/2 (short)	98
2/1 (with short)	625(In) 562(Out)
2/2 (short)	63
3/1	823
4/1 (with short)	490(In) 379(Out)
4/2 (short)	111
5/1	644
6/1	592
7/1	651
8/1	465

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	17.4 %	1888	1888
				Arm 6 Ahead	Inf	82.6 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	39.1 %	1966	1966
				Arm 7 Ahead	Inf	60.9 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	31.5 %	2023	2023
				Arm 7 Left	16.00	25.6 %		
				Arm 8 Ahead	Inf	42.9 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	87.1 %	2043	2043
				Arm 8 Left	18.00	12.9 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2023 With Development PM + Ped' (FG6: '2023 With Development PM', Plan 1: 'With Ped Stage')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	45	307	52	404
	B	47	0	297	306	650
	C	214	203	0	77	494
	D	65	384	176	0	625
	Tot.	326	632	780	435	2173

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2023 With Development PM + Ped
Junction: High Road West-Garrison Lane	
1/1 (with short)	404(In) 352(Out)
1/2 (short)	52
2/1 (with short)	650(In) 603(Out)
2/2 (short)	47
3/1	494
4/1 (with short)	625(In) 449(Out)
4/2 (short)	176
5/1	632
6/1	780
7/1	435
8/1	326

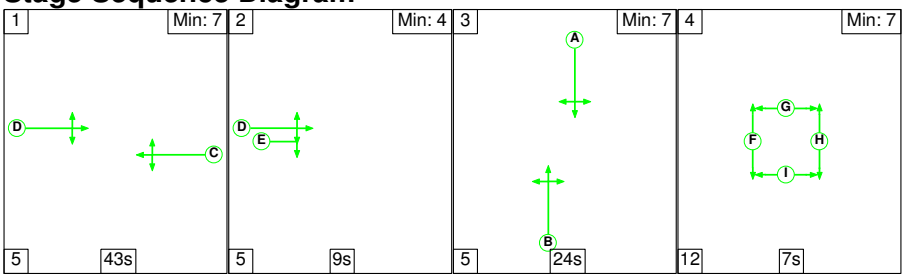
Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	12.8 %	1895	1895
				Arm 6 Ahead	Inf	87.2 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	49.3 %	1944	1944
				Arm 7 Ahead	Inf	50.7 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	41.1 %	2029	2029
				Arm 7 Left	16.00	15.6 %		
				Arm 8 Ahead	Inf	43.3 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	85.5 %	2040	2040
				Arm 8 Left	18.00	14.5 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2018 Observed AM + Ped' (FG1: '2018 Observed AM', Plan 1: 'With Ped Stage')

Stage Sequence Diagram

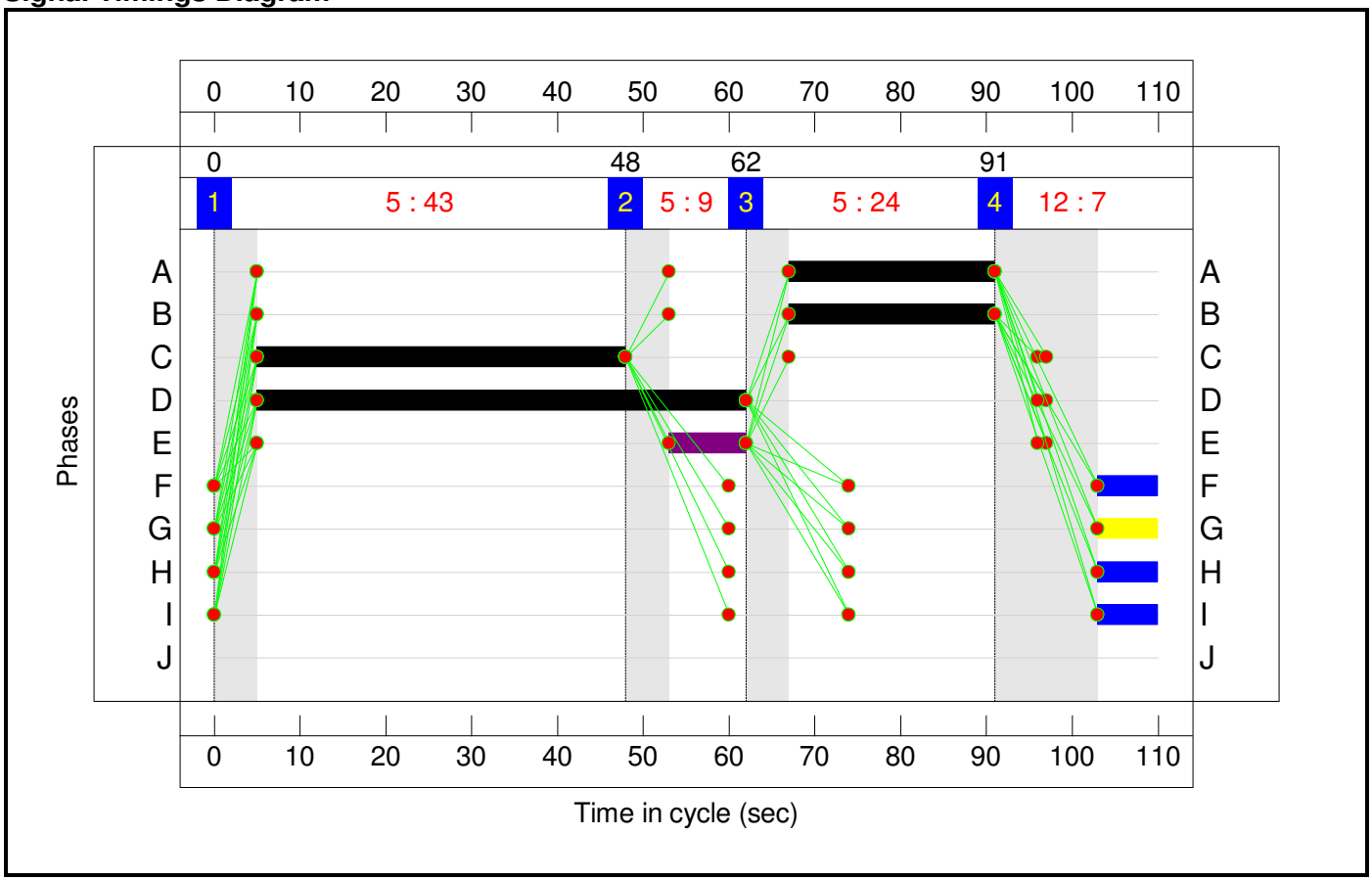


Stage Timings

Stage	1	2	3	4
Duration	43	9	24	7
Change Point	0	48	62	91

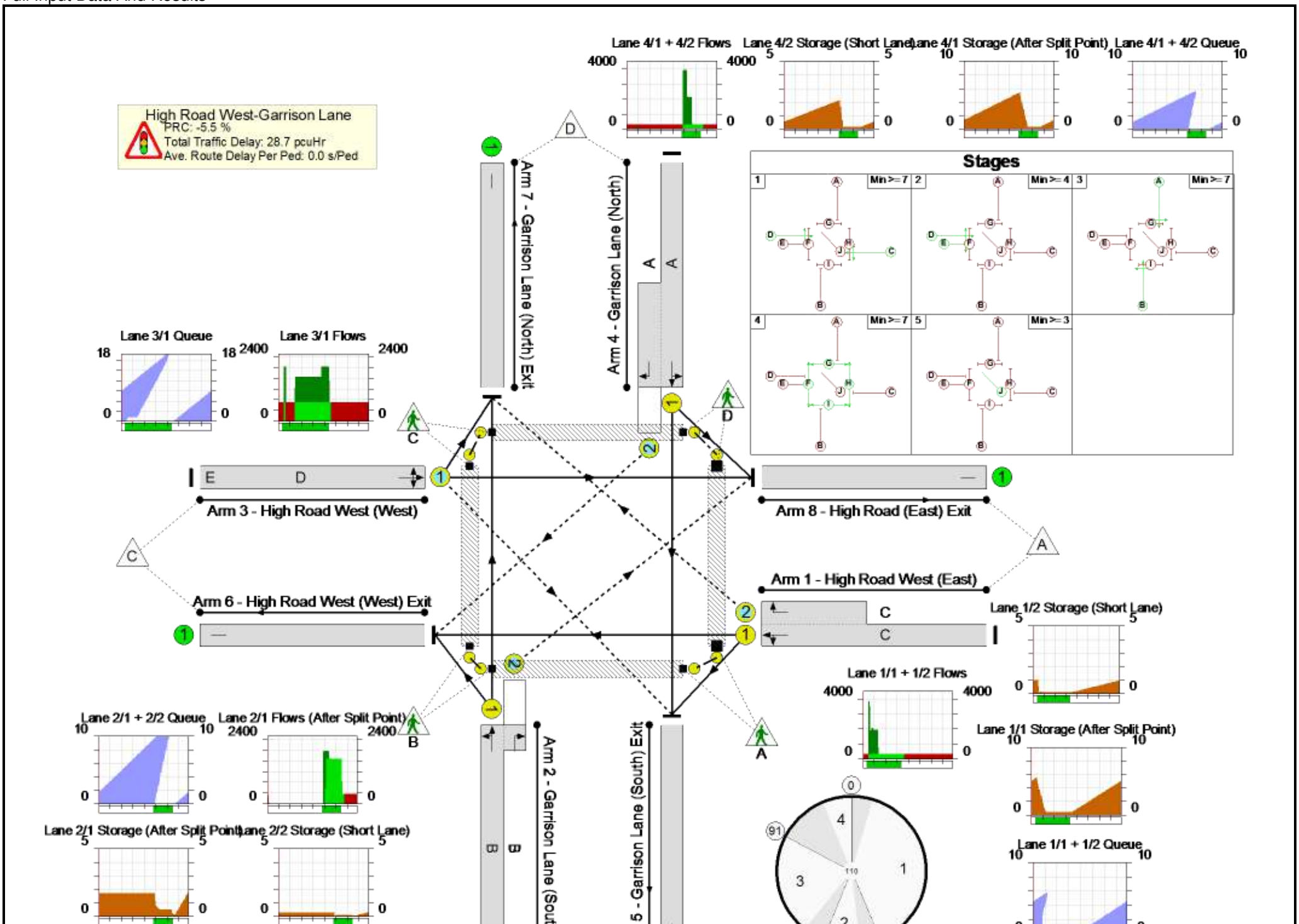
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


High Road West-Garrison Lane
PRC: -5.5 %
Total Traffic Delay: 28.7 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Lane 4/1 + 4/2 Flows
Lane 4/2 Storage (Short Lane)
Lane 4/1 Storage (After Split Point)
Lane 4/1 + 4/2 Queue
Stages
Arm 7 - Garrison Lane (North) Exit
Arm 4 - Garrison Lane (North)
Lane 3/1 Queue
Lane 3/1 Flows
Arm 3 - High Road West (West)
Arm 8 - High Road (East) Exit
Arm 1 - High Road West (East)
Arm 6 - High Road West (West) Exit
Lane 1/2 Storage (Short Lane)
Lane 1/1 + 1/2 Flows
Lane 1/1 Storage (After Split Point)
Lane 2/1 + 2/2 Queue
Lane 2/1 Flows (After Split Point)
Lane 2/1 Storage (After Split Point)
Lane 2/2 Storage (Short Lane)
Arm 2 - Garrison Lane (South)
Arm 5 - Garrison Lane (South) Exit
Lane 1/1 + 1/2 Queue

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: High Road/Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**94.9%**
High Road West-Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**94.9%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	43	-	327	1885:1929	677+128	40.6 : 40.6%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	24	-	421	1939:1912	393+64	92.0 : 92.0%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	57	9	703	2022	744	94.5%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	24	-	301	2043:1874	398+90	54.3 : 94.9%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	456	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	495	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	414	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	4582	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	4582	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	4582	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		1	7	-	0	-	4582	0.0%

Full Input Data And Results

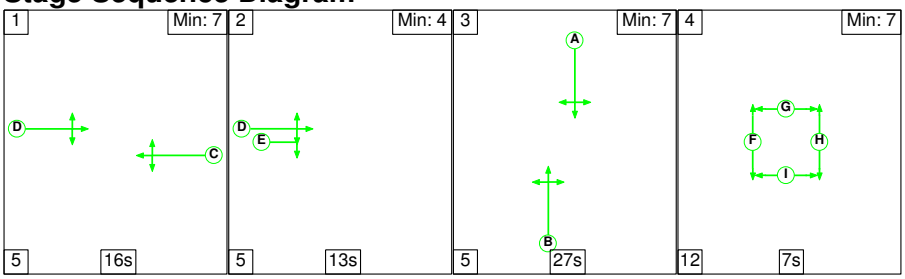
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**252**	**99**	**61**	**15.9**	**12.3**	**0.5**	**28.7**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**252**	**99**	**61**	**15.9**	**12.3**	**0.5**	**28.7**	**-**	**-**	**-**	**-**
1/1+1/2	327	327	20	32	0	2.1	0.3	-	2.4	26.5	5.9	0.3	6.2
2/1+2/2	421	421	58	0	1	4.8	4.6	0.0	9.4	80.8	12.2	4.6	16.8
3/1	703	703	149	67	0	6.0	6.5	-	12.5	64.1	20.7	6.5	27.2
4/1+4/2	301	301	24	0	61	3.0	0.8	0.5	4.3	51.4	5.7	0.8	6.5
5/1	456	456	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	495	495	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	414	414	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P4	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): -5.5 Total Delay for Signalled Lanes (pcuHr): 28.67 Cycle Time (s): 110
PRC Over All Lanes (%): -5.5 Total Delay Over All Lanes(pcuHr): 28.67

Full Input Data And Results

Scenario 2: '2018 Observed PM + Ped' (FG2: '2018 Observed PM', Plan 1: 'With Ped Stage')

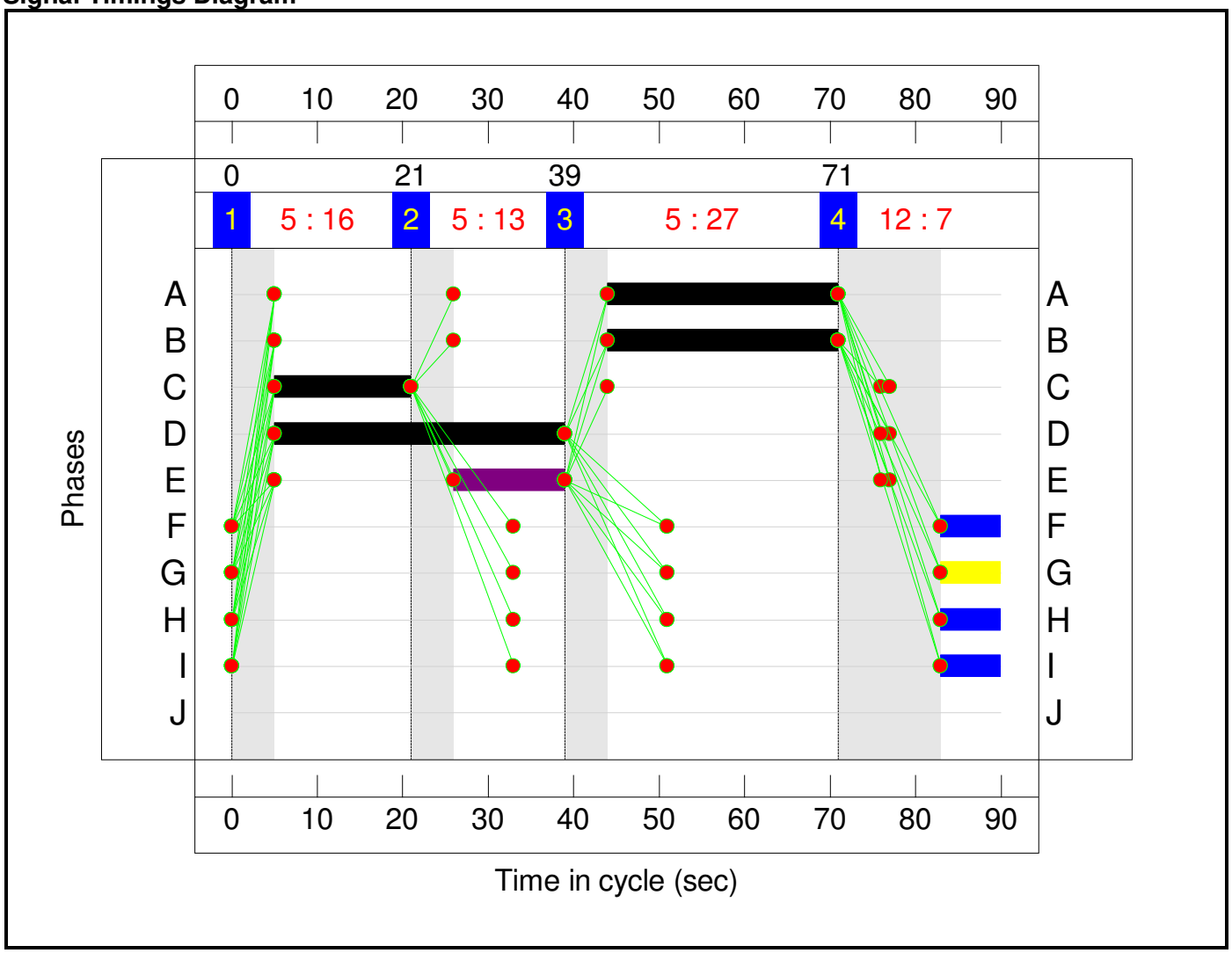
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	16	13	27	7
Change Point	0	21	39	71

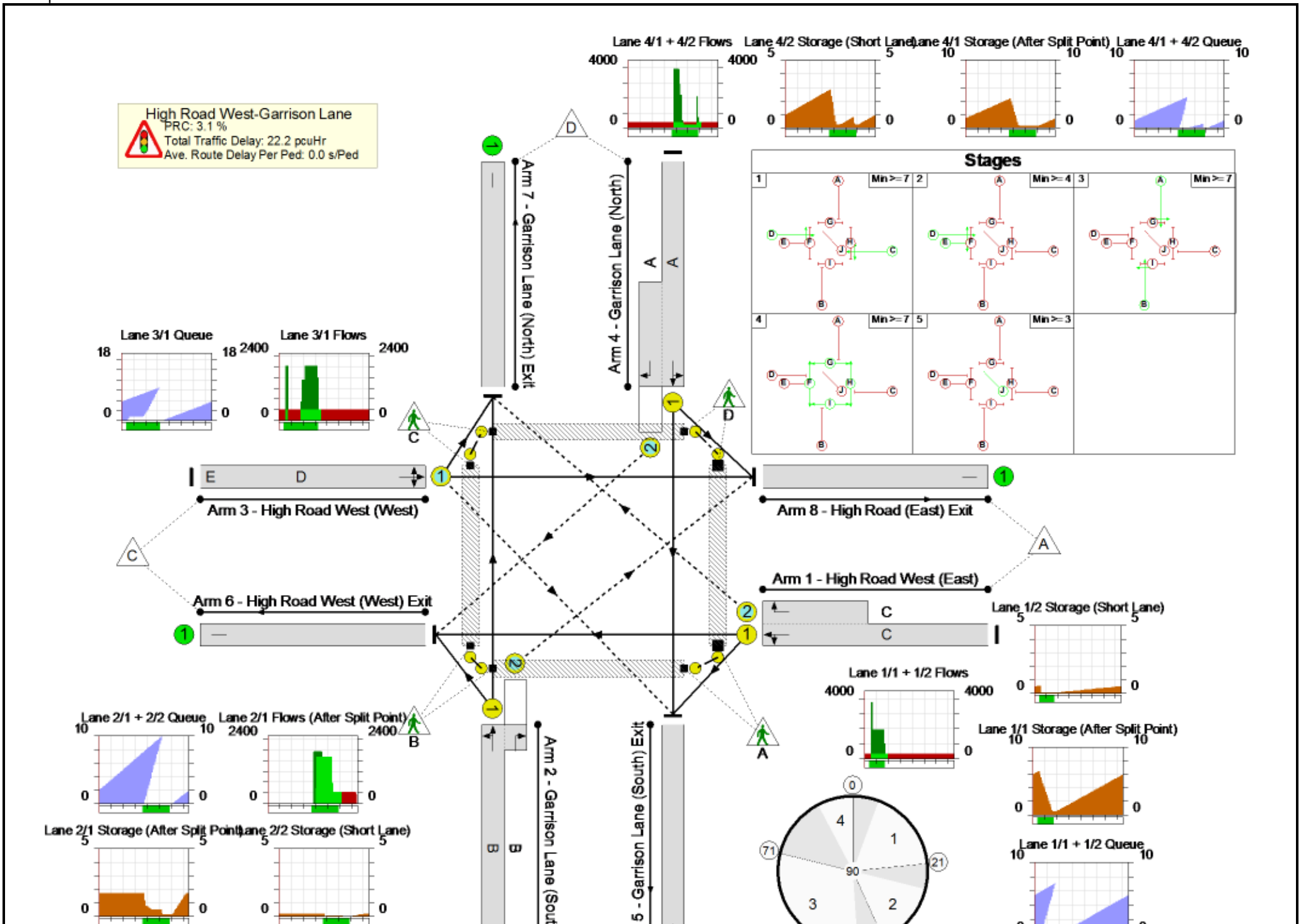
Signal Timings Diagram



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: High Road/Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.3%**
High Road West-Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.3%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	16	-	319	1892:1929	357+30	82.3 : 82.3%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	27	-	457	1919:1912	556+59	74.3 : 74.3%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	34	13	405	2030	464	87.3%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	27	-	386	2040:1874	289+186	81.4 : 81.4%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	414	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	656	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	242	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	255	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	5600	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	5600	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	5600	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		1	7	-	0	-	5600	0.0%

Full Input Data And Results

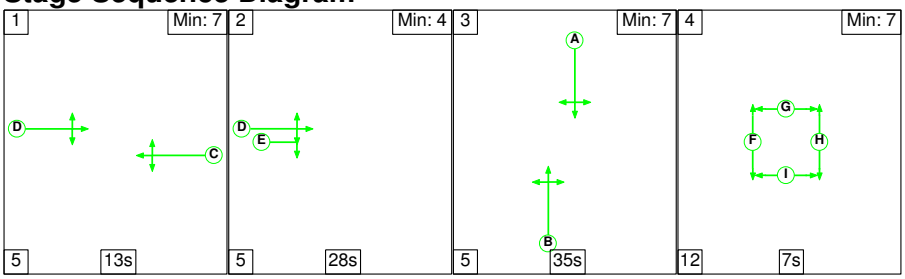
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**178**	**167**	**46**	**12.7**	**8.8**	**0.7**	**22.2**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**178**	**167**	**46**	**12.7**	**8.8**	**0.7**	**22.2**	**-**	**-**	**-**	**-**
1/1+1/2	319	319	4	21	0	3.1	2.2	-	5.3	59.3	7.0	2.2	9.2
2/1+2/2	457	457	44	0	0	3.5	1.4	0.0	4.9	38.8	10.0	1.4	11.4
3/1	405	405	25	146	0	3.6	3.1	-	6.7	59.3	9.7	3.1	12.8
4/1+4/2	386	386	106	0	45	2.6	2.1	0.7	5.4	50.2	4.6	2.1	6.7
5/1	414	414	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	656	656	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	242	242	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	255	255	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P4	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): 3.1 Total Delay for Signalled Lanes (pcuHr): 22.24 Cycle Time (s): 90
PRC Over All Lanes (%): 3.1 Total Delay Over All Lanes(pcuHr): 22.24

Full Input Data And Results

Scenario 3: '2023 Do Nothing AM + Ped' (FG3: '2023 Do Nothing AM', Plan 1: 'With Ped Stage')

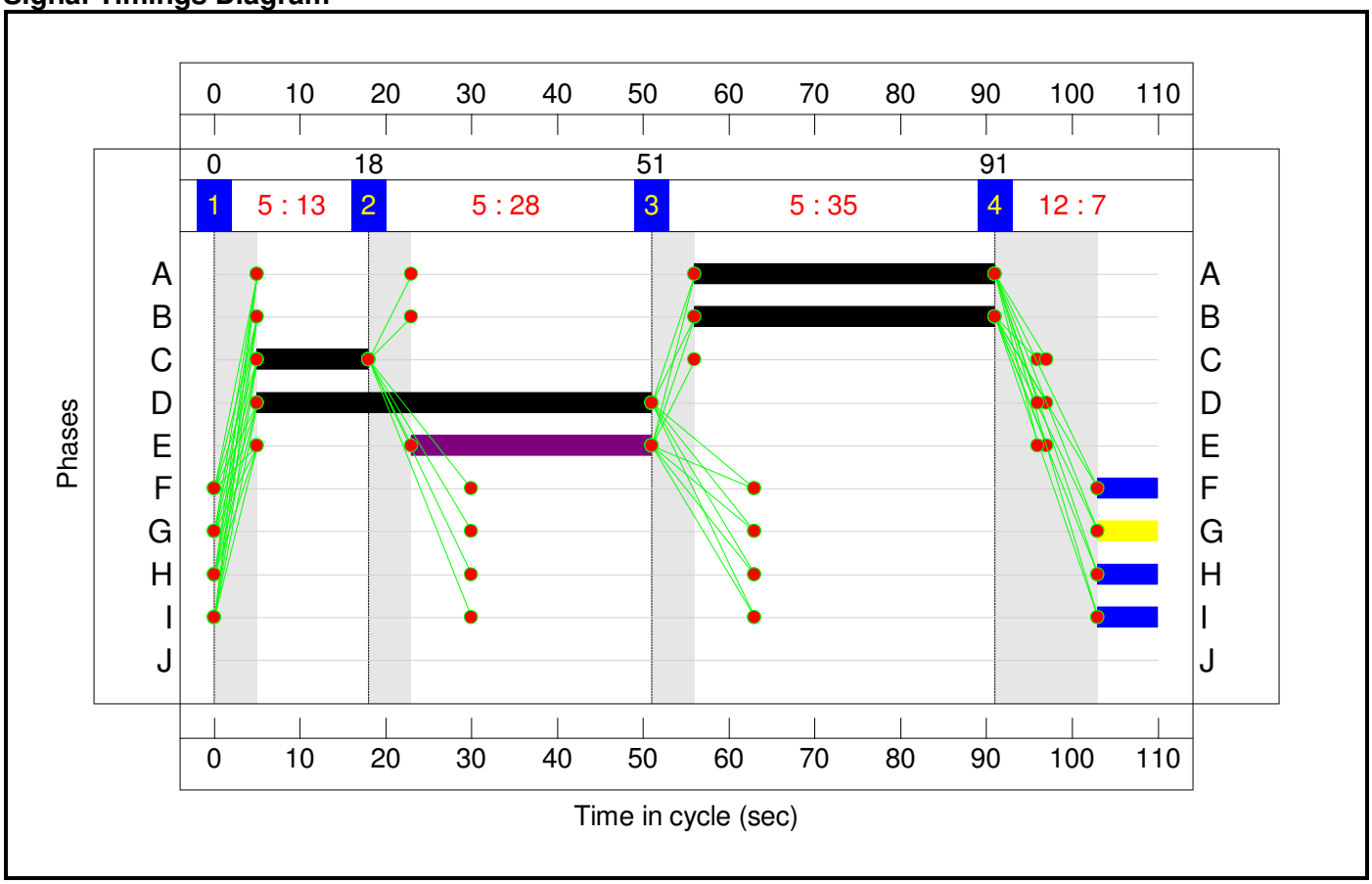
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	13	28	35	7
Change Point	0	18	51	91

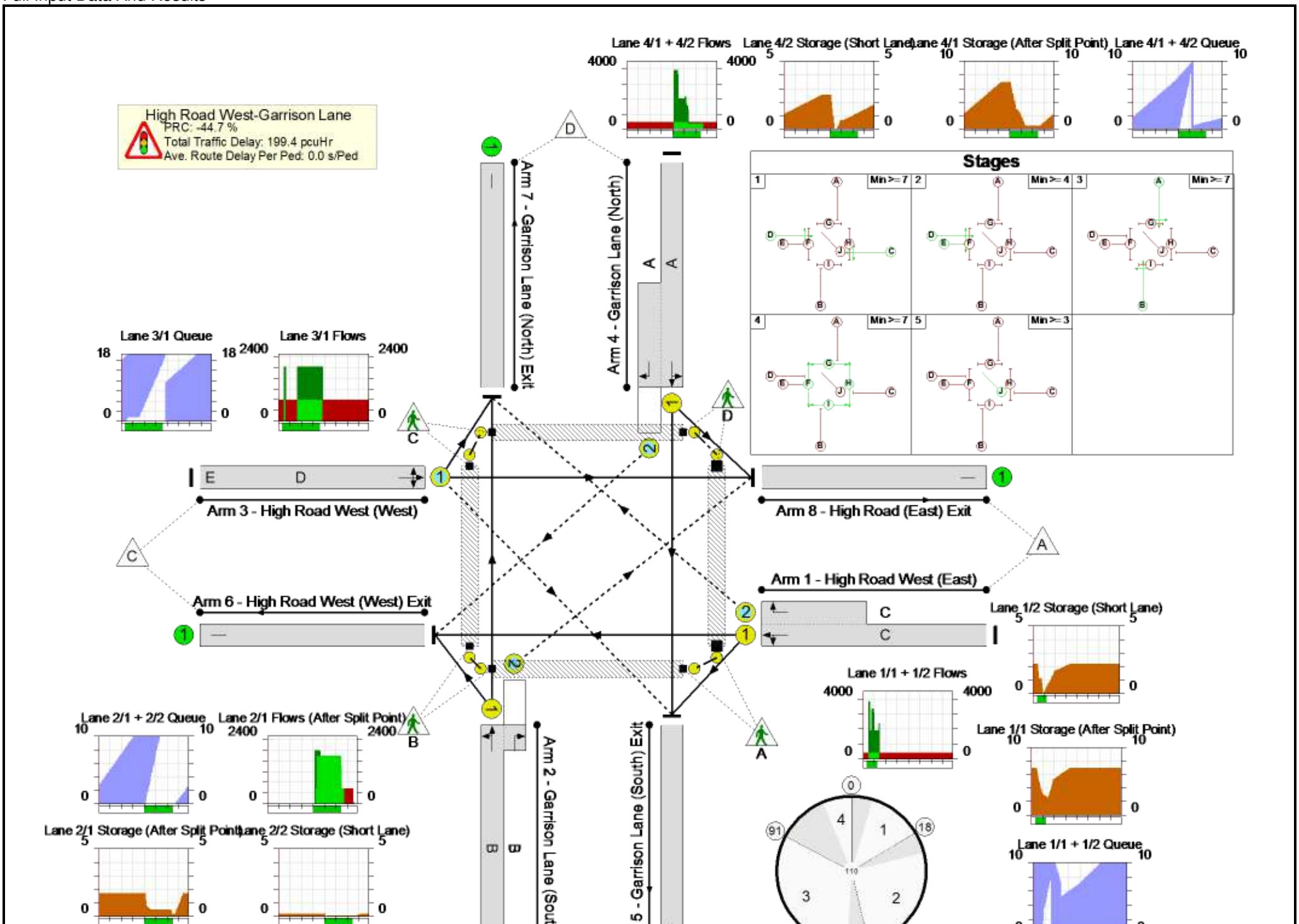
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



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: High Road/Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**130.2%**
High Road West-Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**130.2%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	13	-	406	1887:1929	240+76	128.2 : 128.2%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	35	-	616	1968:1912	589+67	93.8 : 93.8%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	46	28	790	2022	607	130.2%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	35	-	483	2043:1874	553+88	67.3 : 125.8%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	622	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	649	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	447	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	4582	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	4582	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	4582	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		1	7	-	0	-	4582	0.0%

Full Input Data And Results

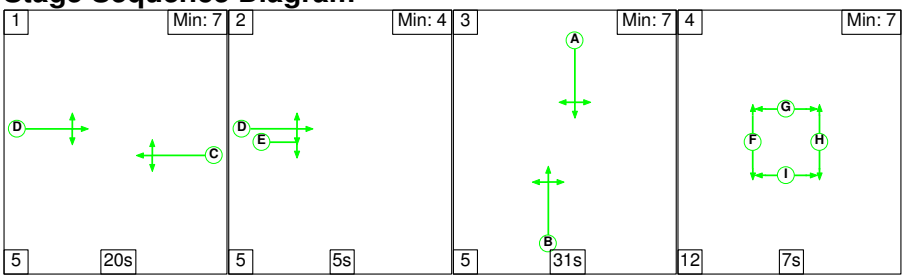
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**127**	**222**	**66**	**38.7**	**159.5**	**1.2**	**199.4**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**127**	**222**	**66**	**38.7**	**159.5**	**1.2**	**199.4**	**-**	**-**	**-**	**-**
1/1+1/2	406	317	41	35	0	10.5	46.9	-	57.3	508.4	13.6	46.9	60.5
2/1+2/2	616	616	62	0	1	6.1	5.9	0.1	12.1	70.7	17.9	5.9	23.8
3/1	790	607	0	187	0	17.6	93.8	-	111.4	507.8	29.7	93.8	123.5
4/1+4/2	483	460	23	0	65	4.6	12.9	1.1	18.5	138.2	10.1	12.9	23.0
5/1	553	553	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	499	499	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	578	578	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	369	369	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P4	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): -44.7 Total Delay for Signalled Lanes (pcuHr): 199.39 Cycle Time (s): 110
PRC Over All Lanes (%): -44.7 Total Delay Over All Lanes(pcuHr): 199.39

Full Input Data And Results

Scenario 4: '2023 Do Nothing PM + Ped' (FG4: '2023 Do Nothing PM', Plan 1: 'With Ped Stage')

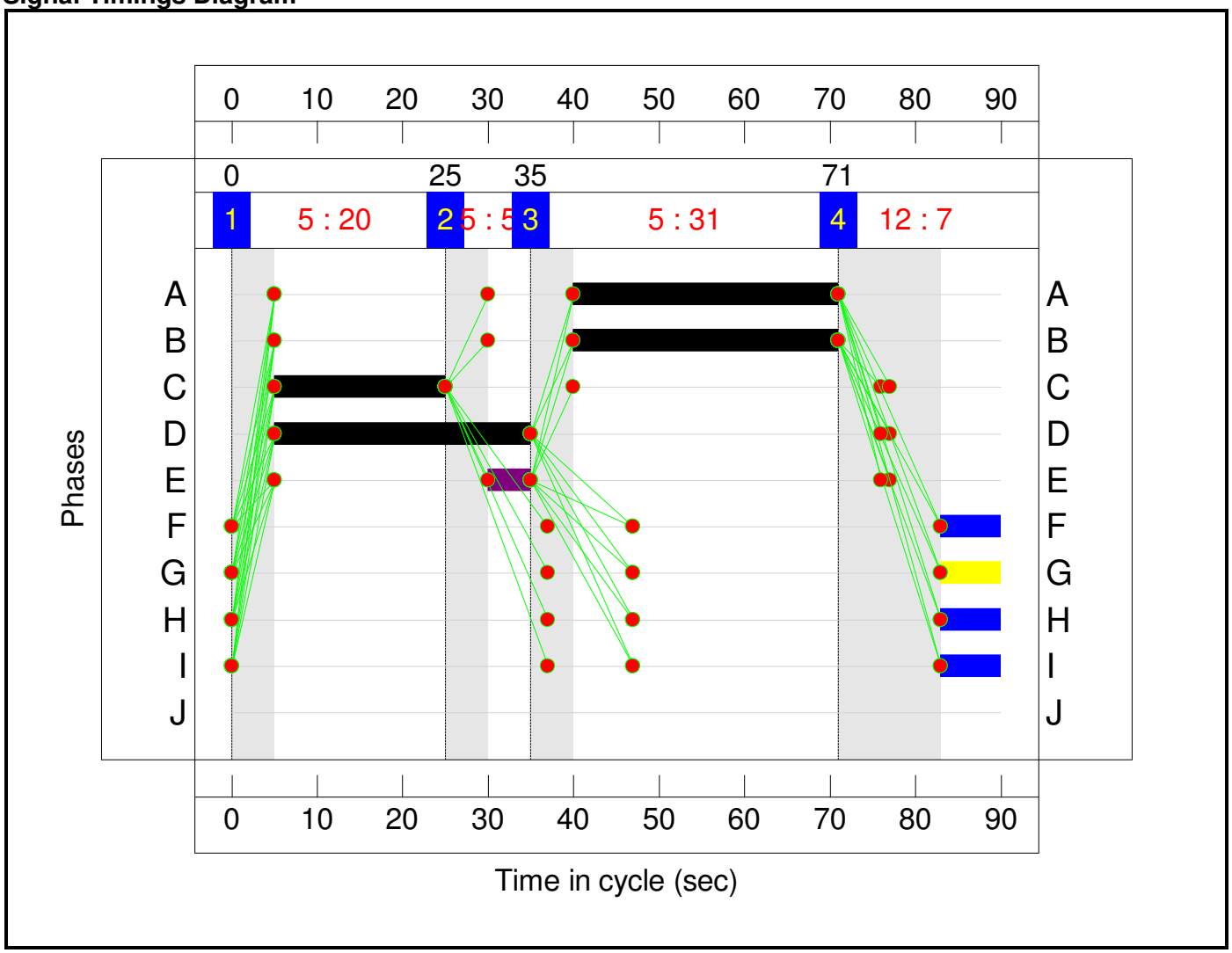
Stage Sequence Diagram



Stage Timings

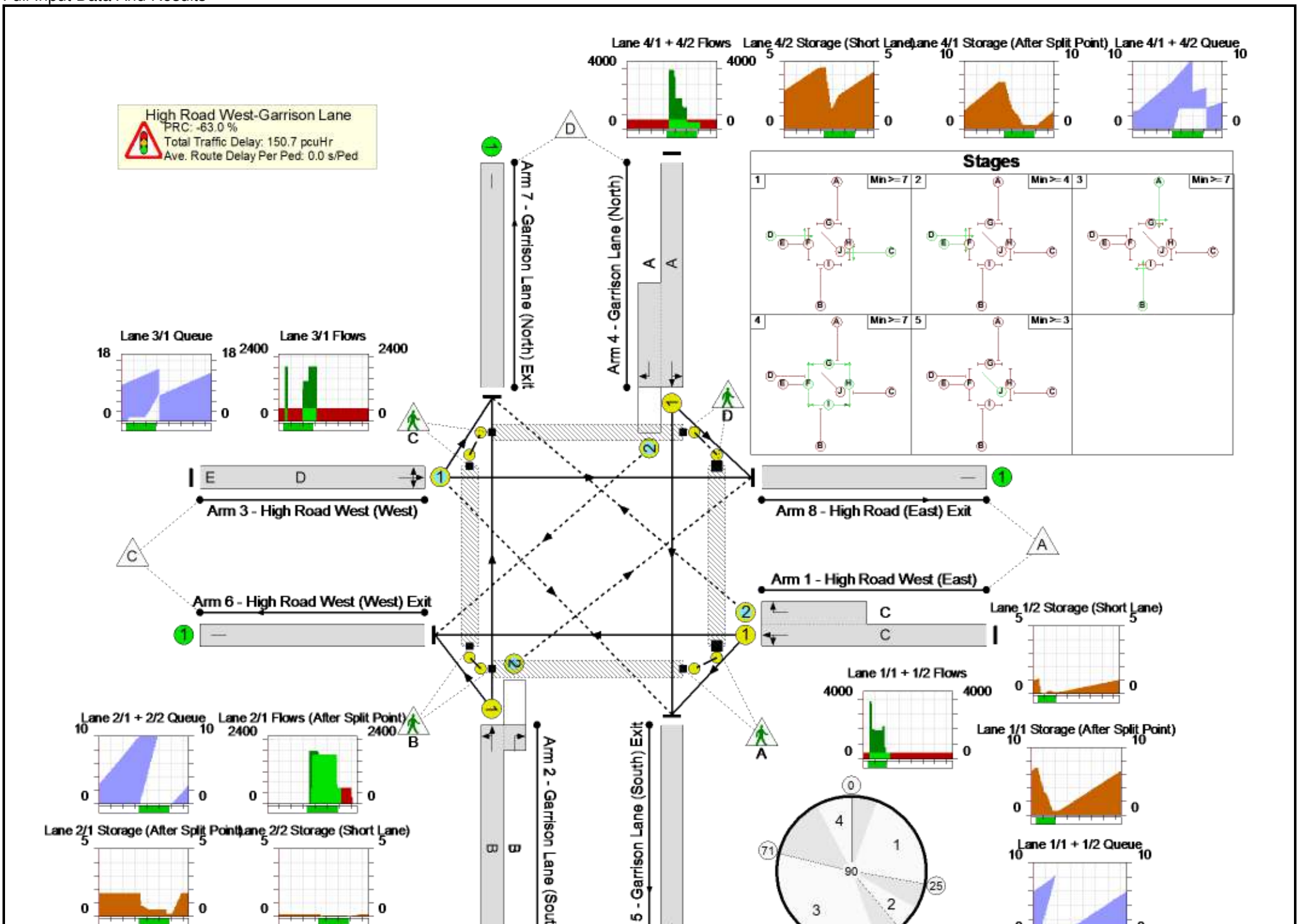
Stage	1	2	3	4
Duration	20	5	31	7
Change Point	0	25	35	71

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


High Road West-Garrison Lane
PRC: -63.0 %
Total Traffic Delay: 150.7 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Lane 4/1 + 4/2 Flows
Lane 4/2 Storage (Short Lane)
Lane 4/1 Storage (After Split Point)
Lane 4/1 + 4/2 Queue
Stages
Lane 3/1 Queue
Lane 3/1 Flows
Arm 7 - Garrison Lane (North) Exit
Arm 4 - Garrison Lane (North)
Arm 3 - High Road West (West)
Arm 8 - High Road (East) Exit
Arm 6 - High Road West (West) Exit
Arm 1 - High Road West (East)
Lane 1/2 Storage (Short Lane)
Lane 1/1 + 1/2 Flows
Lane 1/1 Storage (After Split Point)
Lane 2/1 + 2/2 Queue
Lane 2/1 Flows (After Split Point)
Lane 2/1 Storage (After Split Point)
Lane 2/2 Storage (Short Lane)
Arm 2 - Garrison Lane (South)
Arm 5 - Garrison Lane (South) Exit
Lane 1/1 + 1/2 Queue

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: High Road/Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**146.7%**
High Road West-Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**146.7%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	20	-	394	1894:1929	426+65	80.2 : 80.2%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	31	-	635	1945:1912	654+52	89.9 : 89.9%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	30	5	470	2028	321	146.5%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	31	-	621	2040:1874	424+120	104.9 : 146.7%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	616	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	760	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	430	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	314	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	5600	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	5600	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	5600	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		1	7	-	0	-	5600	0.0%

Full Input Data And Results

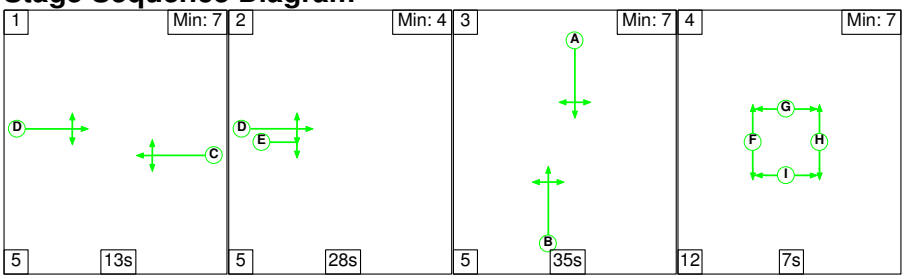
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**139**	**133**	**78**	**25.4**	**124.3**	**1.0**	**150.7**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**139**	**133**	**78**	**25.4**	**124.3**	**1.0**	**150.7**	**-**	**-**	**-**	**-**
1/1+1/2	394	394	11	41	0	3.5	1.9	-	5.4	49.5	8.1	1.9	10.1
2/1+2/2	635	635	46	0	1	4.8	4.0	0.1	8.9	50.4	14.9	4.0	18.9
3/1	470	321	39	92	0	10.9	76.2	-	87.1	667.1	15.5	76.2	91.7
4/1+4/2	621	565	43	0	77	6.2	42.2	0.9	49.3	285.7	10.3	42.2	52.5
5/1	555	555	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	704	704	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	406	406	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	250	250	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P4	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): -63.0 Total Delay for Signalled Lanes (pcuHr): 150.68 Cycle Time (s): 90
PRC Over All Lanes (%): -63.0 Total Delay Over All Lanes(pcuHr): 150.68

Full Input Data And Results

Scenario 5: '2023 With Development AM + Ped' (FG5: '2023 With Development AM', Plan 1: 'With Ped Stage')

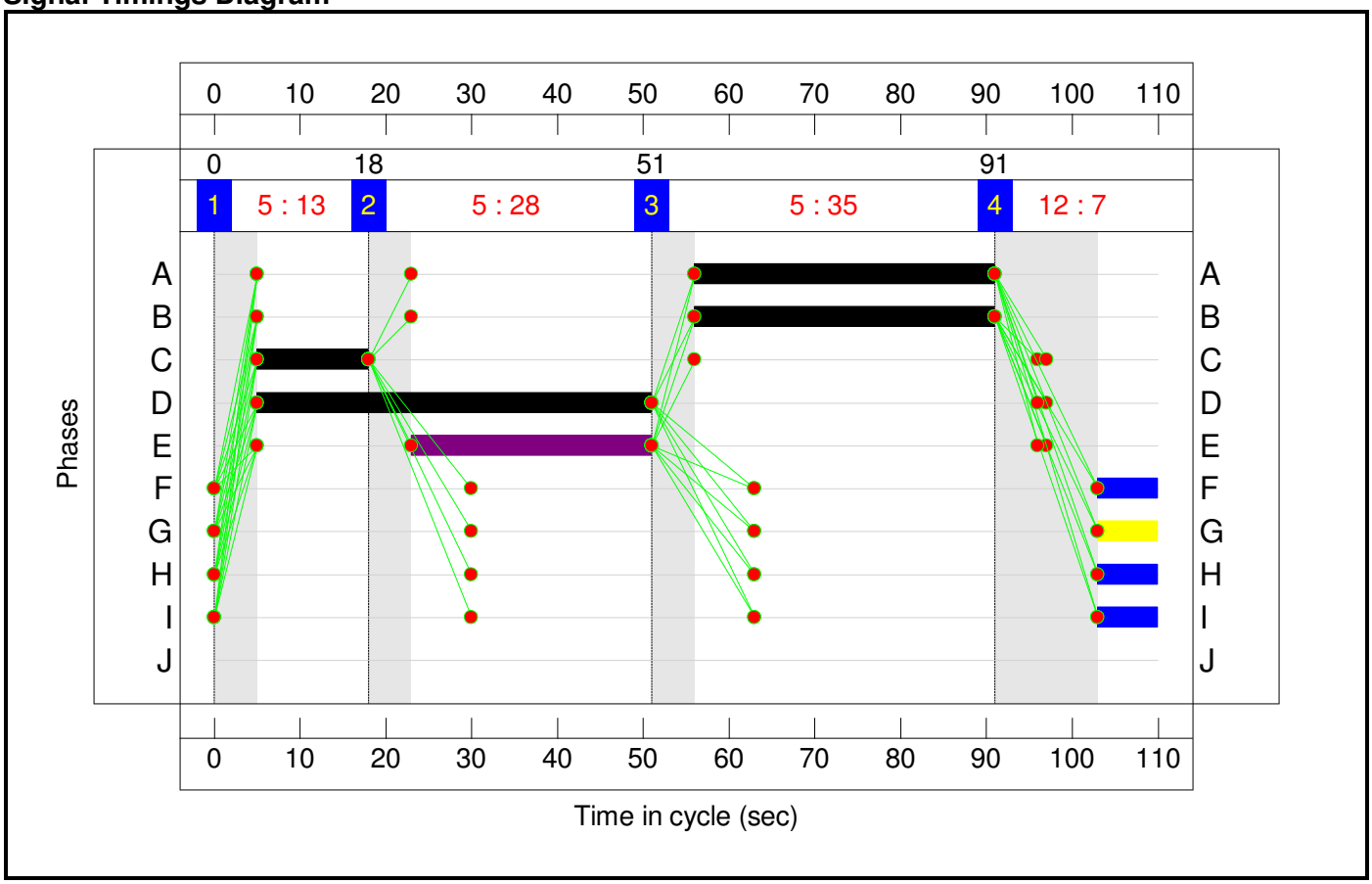
Stage Sequence Diagram



Stage Timings

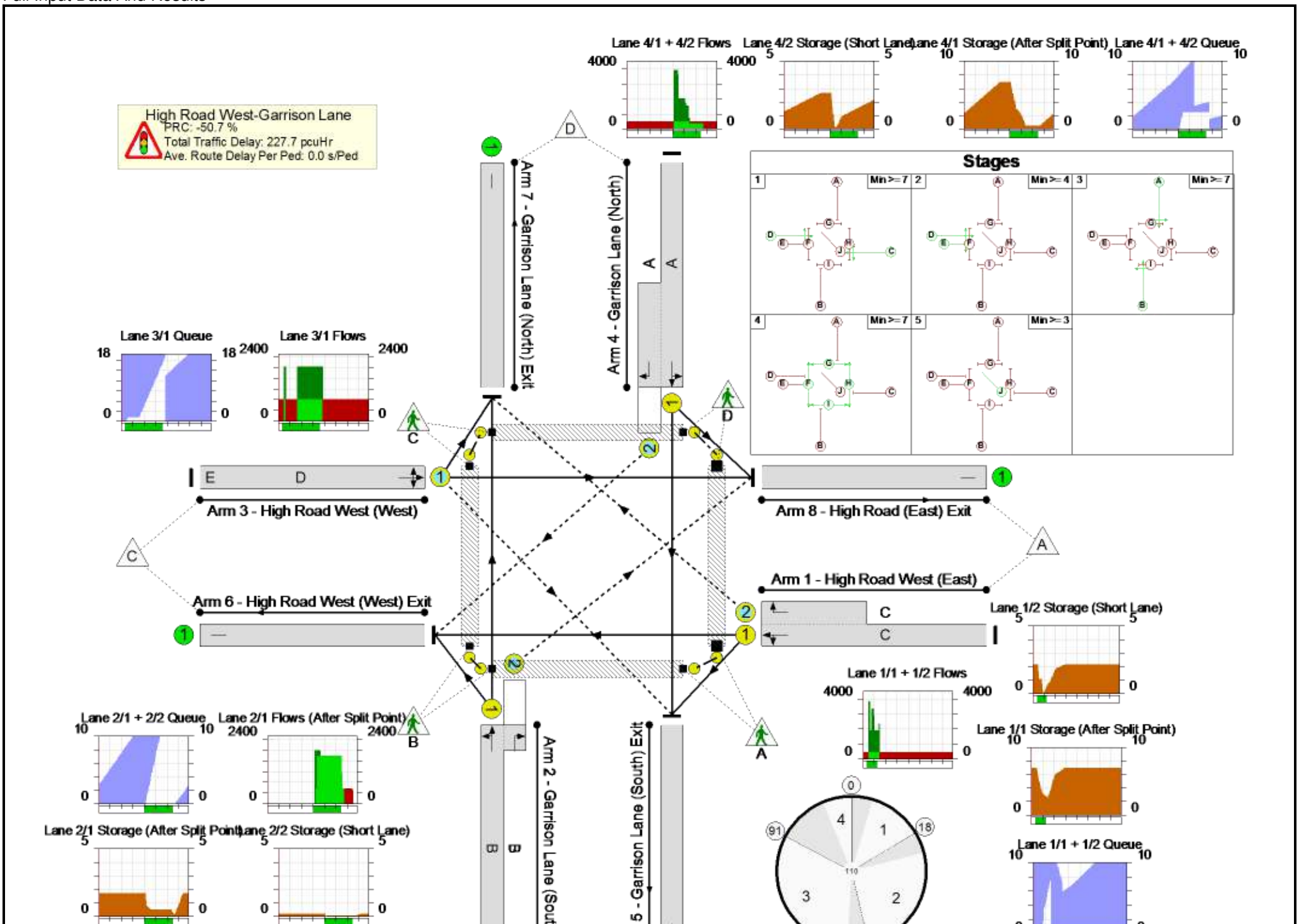
Stage	1	2	3	4
Duration	13	28	35	7
Change Point	0	18	51	91

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


High Road West-Garrison Lane
PRC: -50.7 %
Total Traffic Delay: 227.7 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Lane 4/1 + 4/2 Flows
Lane 4/2 Storage (Short Lane)
Lane 4/1 Storage (After Split Point)
Lane 4/1 + 4/2 Queue
Stages
Min >= 7
Min >= 4
Min >= 7
Min >= 7
Min >= 3
Lane 3/1 Queue
Lane 3/1 Flows
Arm 7 - Garrison Lane (North) Exit
Arm 4 - Garrison Lane (North)
Arm 3 - High Road West (West)
Arm 8 - High Road (East) Exit
Arm 6 - High Road West (West) Exit
Arm 1 - High Road West (East)
Lane 1/2 Storage (Short Lane)
Lane 1/1 + 1/2 Flows
Lane 1/1 Storage (After Split Point)
Lane 2/1 + 2/2 Queue
Lane 2/1 Flows (After Split Point)
Lane 2/1 Storage (After Split Point)
Lane 2/2 Storage (Short Lane)
Arm 2 - Garrison Lane (South)
Arm 5 - Garrison Lane (South) Exit
Lane 1/1 + 1/2 Queue

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: High Road/Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**135.6%**
High Road West-Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**135.6%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	13	-	414	1888:1929	240+75	131.5 : 131.5%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	35	-	625	1966:1912	590+66	95.3 : 95.3%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	46	28	823	2023	607	135.6%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	35	-	490	2043:1874	545+82	69.5 : 134.6%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	644	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	592	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	651	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	465	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	4582	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	4582	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	4582	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		1	7	-	0	-	4582	0.0%

Full Input Data And Results

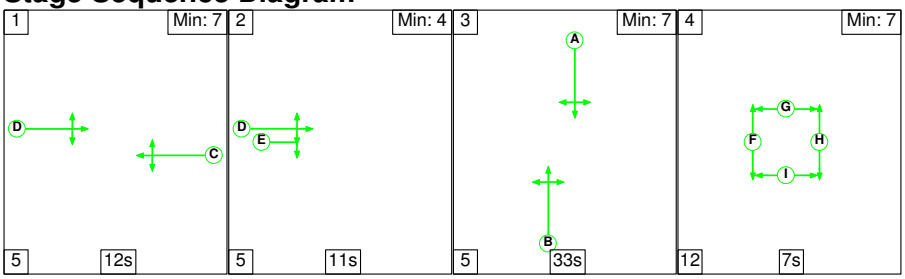
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**119**	**226**	**66**	**41.9**	**184.5**	**1.4**	**227.7**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**119**	**226**	**66**	**41.9**	**184.5**	**1.4**	**227.7**	**-**	**-**	**-**	**-**
1/1+1/2	414	315	39	35	0	11.1	51.6	-	62.7	545.4	14.2	51.6	65.8
2/1+2/2	625	625	62	0	1	6.2	7.0	0.1	13.3	76.7	18.4	7.0	25.4
3/1	823	607	0	191	0	19.6	109.9	-	129.6	566.8	31.8	109.9	141.7
4/1+4/2	490	461	17	0	65	4.9	16.0	1.3	22.1	162.7	10.5	16.0	26.5
5/1	563	563	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	501	501	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	572	572	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	372	372	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P4	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): -50.7 Total Delay for Signalled Lanes (pcuHr): 227.74 Cycle Time (s): 110
PRC Over All Lanes (%): -50.7 Total Delay Over All Lanes(pcuHr): 227.74

Full Input Data And Results

Scenario 6: '2023 With Development PM + Ped' (FG6: '2023 With Development PM', Plan 1: 'With Ped Stage')

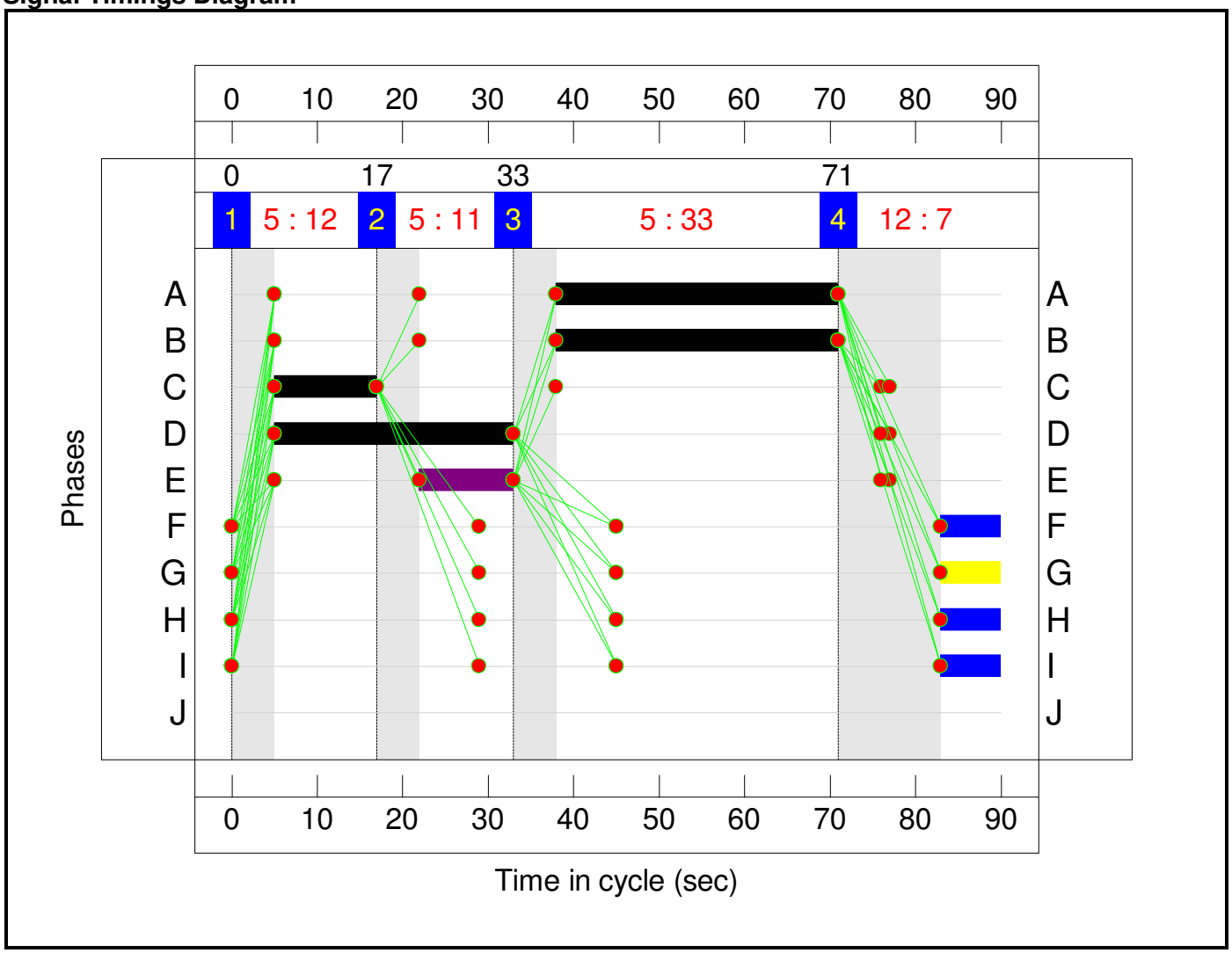
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4
Duration	12	11	33	7
Change Point	0	17	33	71

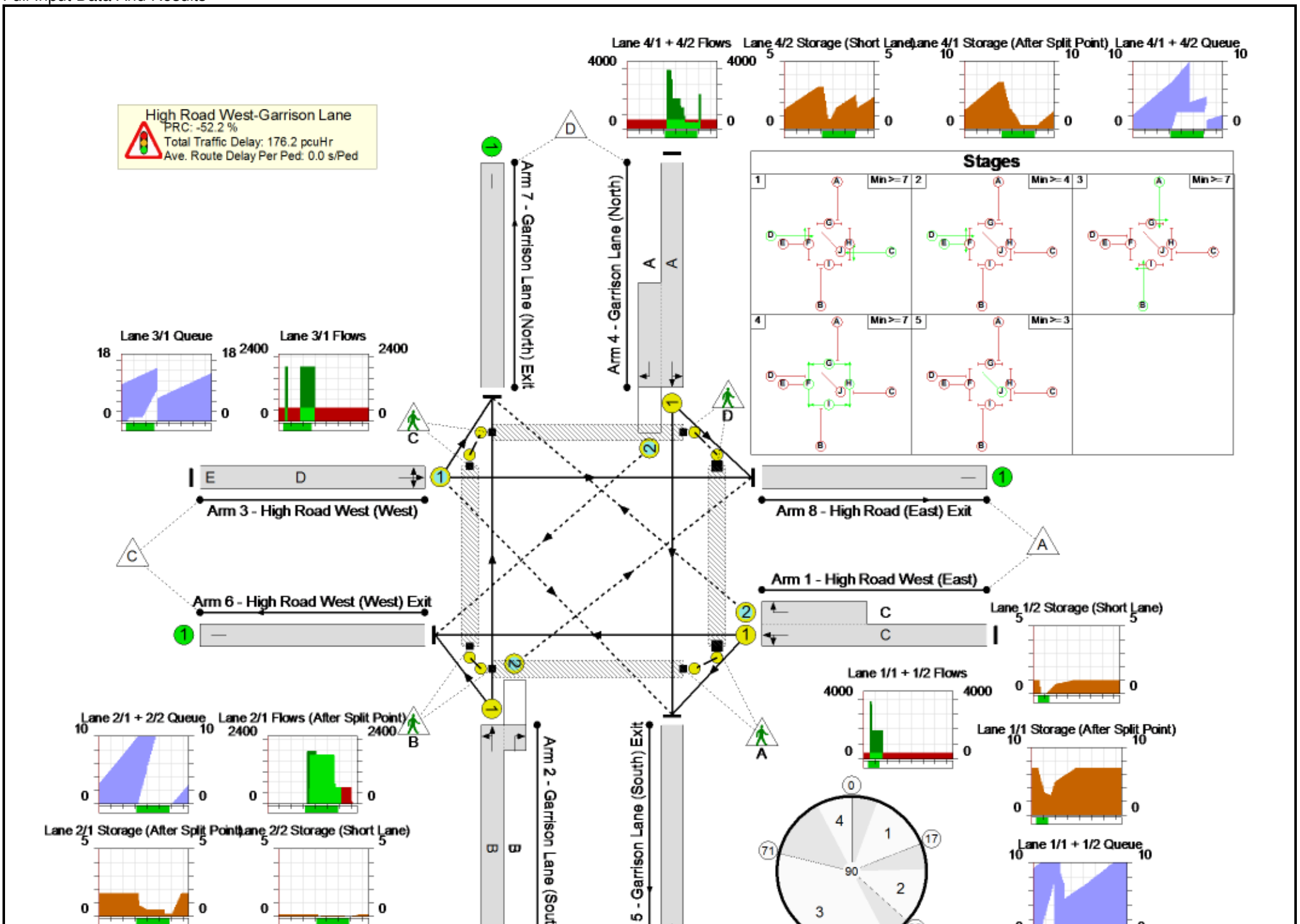
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



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: High Road/Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**137.0%**
High Road West-Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**137.0%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	12	-	404	1895:1929	274+40	128.6 : 128.6%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	33	-	650	1944:1912	695+54	86.8 : 86.8%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	28	11	494	2029	361	137.0%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	33	-	625	2040:1874	472+139	95.2 : 126.4%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	632	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	780	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	435	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	326	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		1	7	-	0	-	5600	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		1	7	-	0	-	5600	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		1	7	-	0	-	5600	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		1	7	-	0	-	5600	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: High Road/Garrison Lane	**-**	**-**	**106**	**189**	**81**	**28.2**	**146.5**	**1.5**	**176.2**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**106**	**189**	**81**	**28.2**	**146.5**	**1.5**	**176.2**	**-**	**-**	**-**	**-**
1/1+1/2	404	314	0	40	0	8.4	47.1	-	55.5	494.3	12.0	47.1	59.1
2/1+2/2	650	650	46	0	1	4.6	3.1	0.1	7.8	43.2	14.9	3.1	17.9
3/1	494	361	0	148	0	10.6	68.4	-	79.0	575.8	15.7	68.4	84.1
4/1+4/2	625	588	59	0	80	4.7	27.9	1.4	33.9	195.3	9.9	27.9	37.8
5/1	567	567	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	675	675	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	403	403	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	268	268	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P4	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): -52.2 Total Delay for Signalled Lanes (pcuHr): 176.18 Cycle Time (s): 90
PRC Over All Lanes (%): -52.2 Total Delay Over All Lanes(pcuHr): 176.18

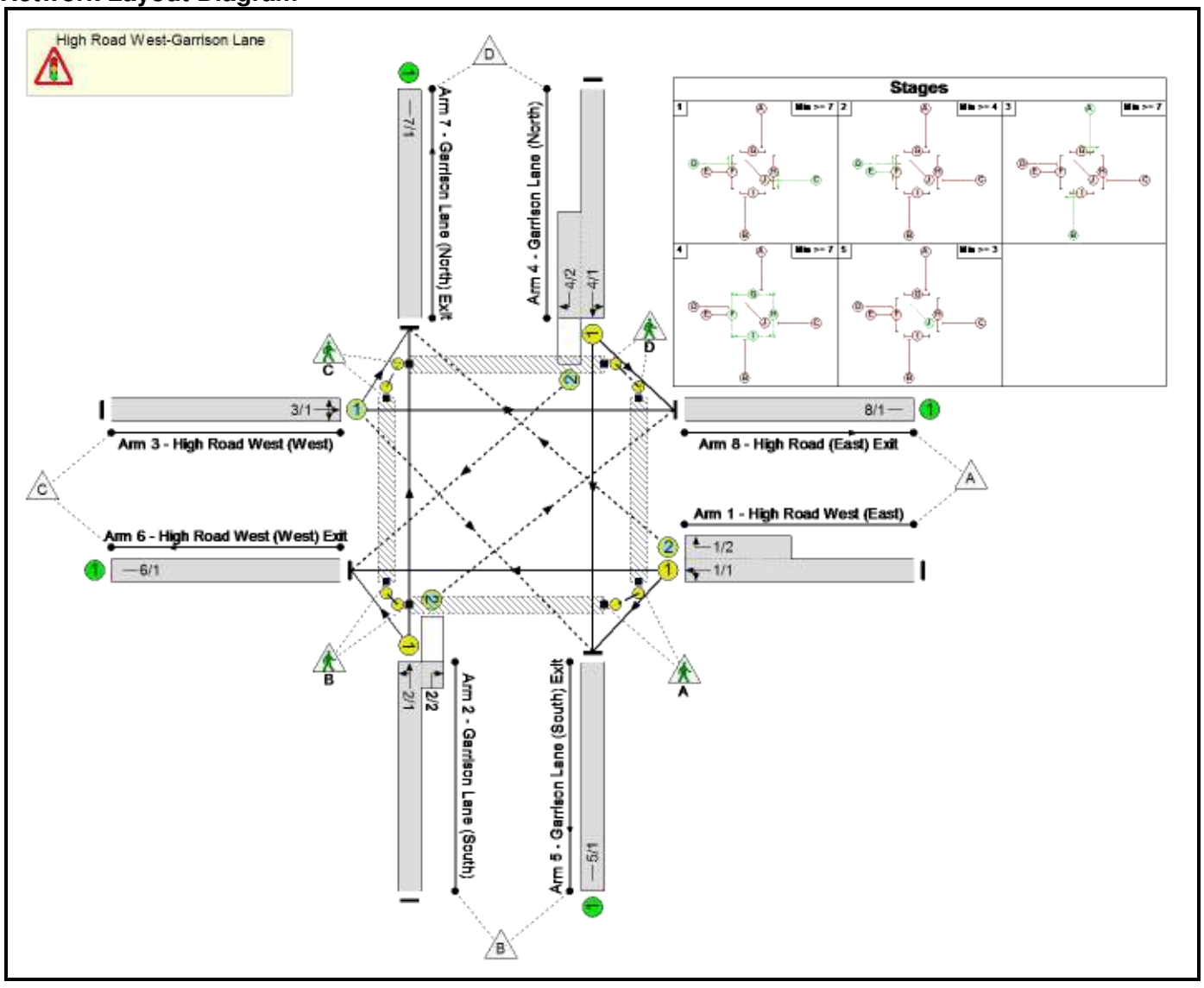
APPENDIX U

Full Input Data And Results

User and Project Details

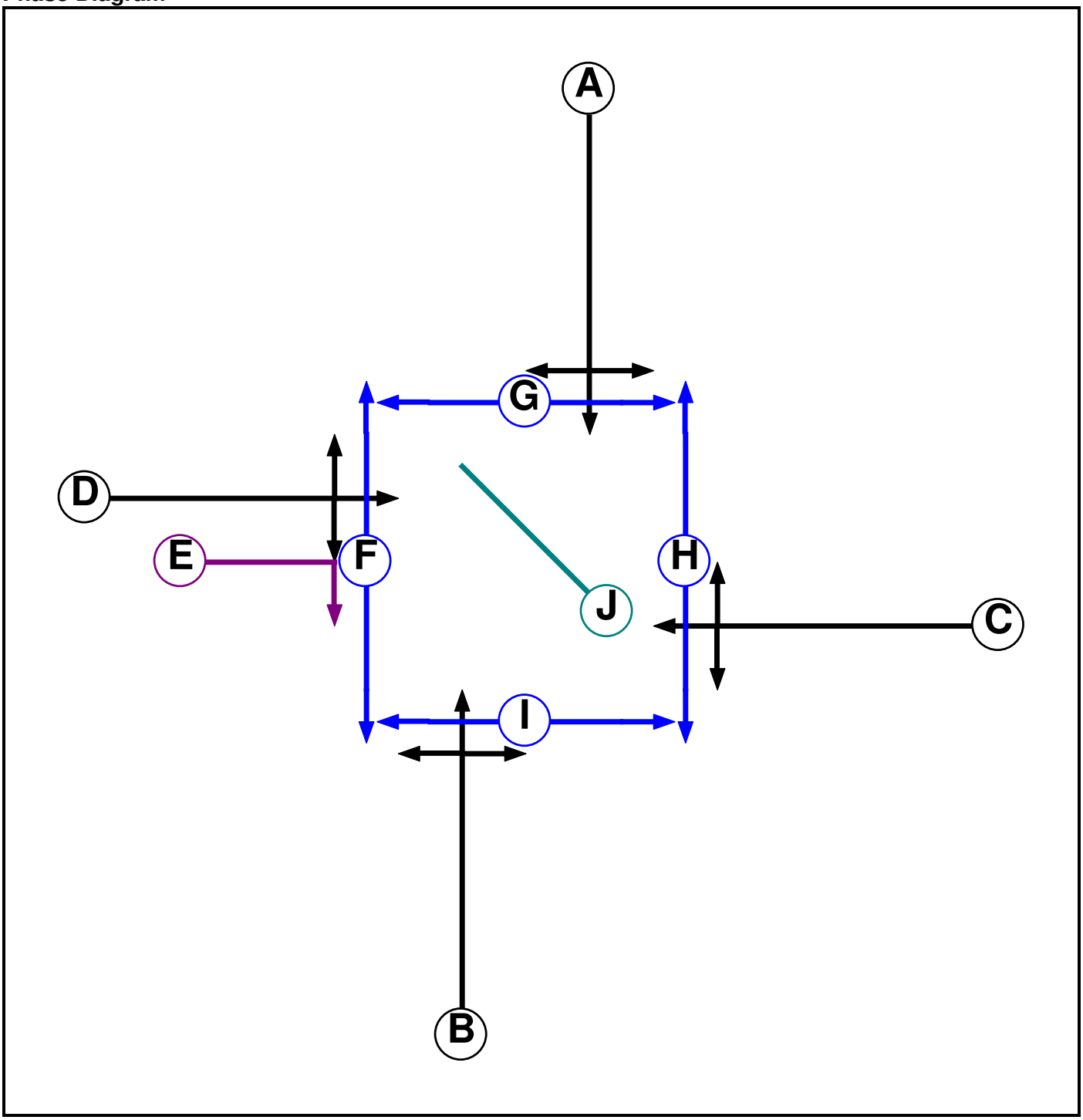
Project:	**Howlett Way, Trimley**
Title:	**High Road/Garrison Lane**
Location:	Felixstowe
Additional detail:	
File name:	High Rd-Garrison Lane - No Ped Phase.lsg3x
Author:	TJMS
Company:	DTPL
Address:	Kingswock House, Kingswick Drive, Sunninghill, SL57BH

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Ind. Arrow	D	4	4
F	Pedestrian		6	6
G	Pedestrian		7	7
H	Pedestrian		6	6
I	Pedestrian		6	6
J	Dummy		3	3

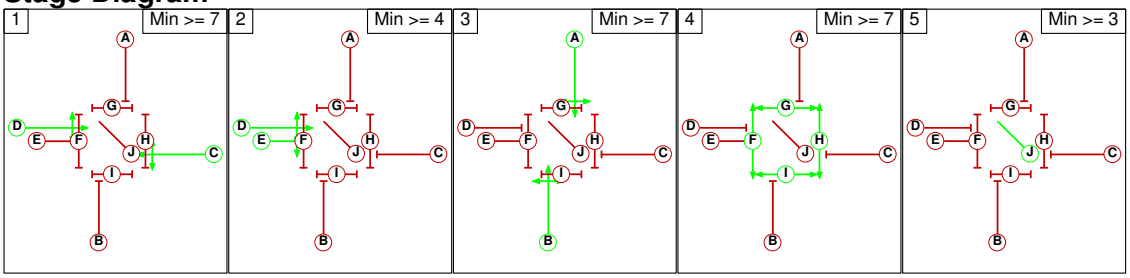
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J
A		-	6	5	5	12	12	12	12	3
B	-		5	6	6	12	12	12	12	3
C	5	5		-	5	12	12	12	12	3
D	5	5	-		-	12	12	12	12	3
E	5	5	5	-		12	12	12	12	3
F	5	5	5	5	5		-	-	-	3
G	5	5	5	5	5	-		-	-	3
H	5	5	5	5	5	-	-		-	3
I	5	5	5	5	5	-	-	-		3
J	2	2	2	2	2	2	2	2	2	

Phases in Stage

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

Stage Diagram



Full Input Data And Results

Phase Delays

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

Prohibited Stage Change

		To Stage				
		1	2	3	4	5
From Stage	1		5	5	12	3
	2	5		5	12	3
	3	6	6		12	3
	4	5	5	5		3
	5	2	2	2	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: High Road West-Garrison Lane											
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)**
1/2 (High Road West (East))	7/1 (Right)	1439	0	3/1	1.09	To 7/1 (Left) To 8/1 (Ahead)	-	-	-	-	-
2/2 (Garrison Lane (South))	8/1 (Right)	1439	0	4/1	1.09	All	3.00	-	0.50	3	2.00
3/1 (High Road West (West))	5/1 (Right)	1439	0	1/1	1.09	All	-	-	-	-	-
4/2 (Garrison Lane (North))	6/1 (Right)	1439	0	2/1	1.09	All	3.00	-	0.50	3	2.00

Full Input Data And Results

Lane Input Data

Junction: High Road West-Garrison Lane

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 (High Road West (East))	U	C	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Left	18.00
											Arm 6 Ahead	Inf
1/2 (High Road West (East))	O	C	2	3	7.0	Geom	-	3.00	0.00	N	Arm 7 Right	23.00
2/1 (Garrison Lane (South))	U	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 6 Left	13.00
											Arm 7 Ahead	Inf
2/2 (Garrison Lane (South))	O	B	2	3	1.7	Geom	-	3.00	0.00	N	Arm 8 Right	20.00
3/1 (High Road West (West))	O	D E	2	3	60.0	Geom	-	3.60	0.00	N	Arm 5 Right	22.00
											Arm 7 Left	16.00
											Arm 8 Ahead	Inf
4/1 (Garrison Lane (North))	U	A	2	3	60.0	Geom	-	3.10	0.00	N	Arm 5 Ahead	Inf
											Arm 8 Left	18.00
4/2 (Garrison Lane (North))	O	A	2	3	7.0	Geom	-	3.20	0.00	N	Arm 6 Right	14.00
5/1 (Garrison Lane (South) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (High Road West (West) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Garrison Lane (North) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (High Road (East) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 Observed AM'	08:00	09:00	01:00	
2: '2018 Observed PM'	17:00	18:00	01:00	
3: '2023 Do Nothing AM'	08:00	09:00	01:00	
4: '2023 Do Nothing PM'	17:00	18:00	01:00	
5: '2023 With Development AM'	08:00	09:00	01:00	
6: '2023 With Development PM'	17:00	18:00	01:00	

Scenario 1: '2018 Observed AM' (FG1: '2018 Observed AM', Plan 2: 'No Ped Stage')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	52	223	52	327
	B	59	0	187	175	421
	C	300	216	0	187	703
	D	28	188	85	0	301
	Tot.	387	456	495	414	1752

Traffic Lane Flows

Lane	Scenario 1: 2018 Observed AM
Junction: High Road West-Garrison Lane	
1/1 (with short)	327(In) 275(Out)
1/2 (short)	52
2/1 (with short)	421(In) 362(Out)
2/2 (short)	59
3/1	703
4/1 (with short)	301(In) 216(Out)
4/2 (short)	85
5/1	456
6/1	495
7/1	414
8/1	387

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	18.9 %	1885	1885
				Arm 6 Ahead	Inf	81.1 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	51.7 %	1939	1939
				Arm 7 Ahead	Inf	48.3 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	30.7 %	2022	2022
				Arm 7 Left	16.00	26.6 %		
				Arm 8 Ahead	Inf	42.7 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	87.0 %	2043	2043
				Arm 8 Left	18.00	13.0 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2018 Observed PM' (FG2: '2018 Observed PM', Plan 2: 'No Ped Stage')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	42	252	25	319
	B	44	0	253	160	457
	C	177	171	0	57	405
	D	34	201	151	0	386
	Tot.	255	414	656	242	1567

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2018 Observed PM
Junction: High Road West-Garrison Lane	
1/1 (with short)	319(In) 294(Out)
1/2 (short)	25
2/1 (with short)	457(In) 413(Out)
2/2 (short)	44
3/1	405
4/1 (with short)	386(In) 235(Out)
4/2 (short)	151
5/1	414
6/1	656
7/1	242
8/1	255

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	14.3 %	1892	1892
				Arm 6 Ahead	Inf	85.7 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	61.3 %	1919	1919
				Arm 7 Ahead	Inf	38.7 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	42.2 %	2030	2030
				Arm 7 Left	16.00	14.1 %		
				Arm 8 Ahead	Inf	43.7 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	85.5 %	2040	2040
				Arm 8 Left	18.00	14.5 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2023 Do Nothing AM' (FG3: '2023 Do Nothing AM', Plan 2: 'No Ped Stage')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	55	253	98	406
	B	63	0	213	340	616
	C	336	243	0	211	790
	D	48	324	111	0	483
	Tot.	447	622	577	649	2295

Traffic Lane Flows

Lane	Scenario 3: 2023 Do Nothing AM
Junction: High Road West-Garrison Lane	
1/1 (with short)	406(In) 308(Out)
1/2 (short)	98
2/1 (with short)	616(In) 553(Out)
2/2 (short)	63
3/1	790
4/1 (with short)	483(In) 372(Out)
4/2 (short)	111
5/1	622
6/1	577
7/1	649
8/1	447

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	17.9 %	1887	1887
				Arm 6 Ahead	Inf	82.1 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	38.5 %	1968	1968
				Arm 7 Ahead	Inf	61.5 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	30.8 %	2022	2022
				Arm 7 Left	16.00	26.7 %		
				Arm 8 Ahead	Inf	42.5 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	87.1 %	2043	2043
				Arm 8 Left	18.00	12.9 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2023 Do Nothing PM' (FG4: '2023 Do Nothing PM', Plan 2: 'No Ped Stage')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	45	297	52	394
	B	47	0	287	301	635
	C	202	191	0	77	470
	D	65	380	176	0	621
	Tot.	314	616	760	430	2120

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: 2023 Do Nothing PM
Junction: High Road West-Garrison Lane	
1/1 (with short)	394(In) 342(Out)
1/2 (short)	52
2/1 (with short)	635(In) 588(Out)
2/2 (short)	47
3/1	470
4/1 (with short)	621(In) 445(Out)
4/2 (short)	176
5/1	616
6/1	760
7/1	430
8/1	314

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	13.2 %	1894	1894
				Arm 6 Ahead	Inf	86.8 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	48.8 %	1945	1945
				Arm 7 Ahead	Inf	51.2 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	40.6 %	2028	2028
				Arm 7 Left	16.00	16.4 %		
				Arm 8 Ahead	Inf	43.0 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	85.4 %	2040	2040
				Arm 8 Left	18.00	14.6 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: '2023 With Development AM' (FG5: '2023 With Development AM', Plan 2: 'No Ped Stage')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	55	261	98	414
	B	63	0	220	342	625
	C	353	259	0	211	823
	D	49	330	111	0	490
	Tot.	465	644	592	651	2352

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2023 With Development AM
Junction: High Road West-Garrison Lane	
1/1 (with short)	414(In) 316(Out)
1/2 (short)	98
2/1 (with short)	625(In) 562(Out)
2/2 (short)	63
3/1	823
4/1 (with short)	490(In) 379(Out)
4/2 (short)	111
5/1	644
6/1	592
7/1	651
8/1	465

Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	17.4 %	1888	1888
				Arm 6 Ahead	Inf	82.6 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	39.1 %	1966	1966
				Arm 7 Ahead	Inf	60.9 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	31.5 %	2023	2023
				Arm 7 Left	16.00	25.6 %		
				Arm 8 Ahead	Inf	42.9 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	87.1 %	2043	2043
				Arm 8 Left	18.00	12.9 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: '2023 With Development PM' (FG6: '2023 With Development PM', Plan 2: 'No Ped Stage')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	45	307	52	404
	B	47	0	297	306	650
	C	214	203	0	77	494
	D	65	384	176	0	625
	Tot.	326	632	780	435	2173

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: 2023 With Development PM
Junction: High Road West-Garrison Lane	
1/1 (with short)	404(In) 352(Out)
1/2 (short)	52
2/1 (with short)	650(In) 603(Out)
2/2 (short)	47
3/1	494
4/1 (with short)	625(In) 449(Out)
4/2 (short)	176
5/1	632
6/1	780
7/1	435
8/1	326

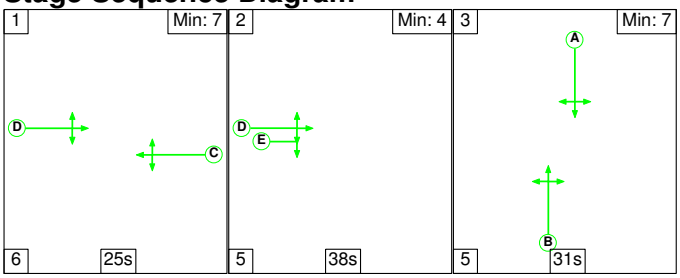
Full Input Data And Results

Lane Saturation Flows

Junction: High Road West-Garrison Lane								
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 (High Road West (East))	3.00	0.00	Y	Arm 5 Left	18.00	12.8 %	1895	1895
				Arm 6 Ahead	Inf	87.2 %		
1/2 (High Road West (East))	3.00	0.00	N	Arm 7 Right	23.00	100.0 %	1929	1929
2/1 (Garrison Lane (South))	3.00	0.00	N	Arm 6 Left	13.00	49.3 %	1944	1944
				Arm 7 Ahead	Inf	50.7 %		
2/2 (Garrison Lane (South))	3.00	0.00	N	Arm 8 Right	20.00	100.0 %	1912	1912
3/1 (High Road West (West))	3.60	0.00	N	Arm 5 Right	22.00	41.1 %	2029	2029
				Arm 7 Left	16.00	15.6 %		
				Arm 8 Ahead	Inf	43.3 %		
4/1 (Garrison Lane (North))	3.10	0.00	N	Arm 5 Ahead	Inf	85.5 %	2040	2040
				Arm 8 Left	18.00	14.5 %		
4/2 (Garrison Lane (North))	3.20	0.00	N	Arm 6 Right	14.00	100.0 %	1874	1874
5/1 (Garrison Lane (South) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (High Road West (West) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (Garrison Lane (North) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (High Road (East) Exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2018 Observed AM' (FG1: '2018 Observed AM', Plan 2: 'No Ped Stage')

Stage Sequence Diagram

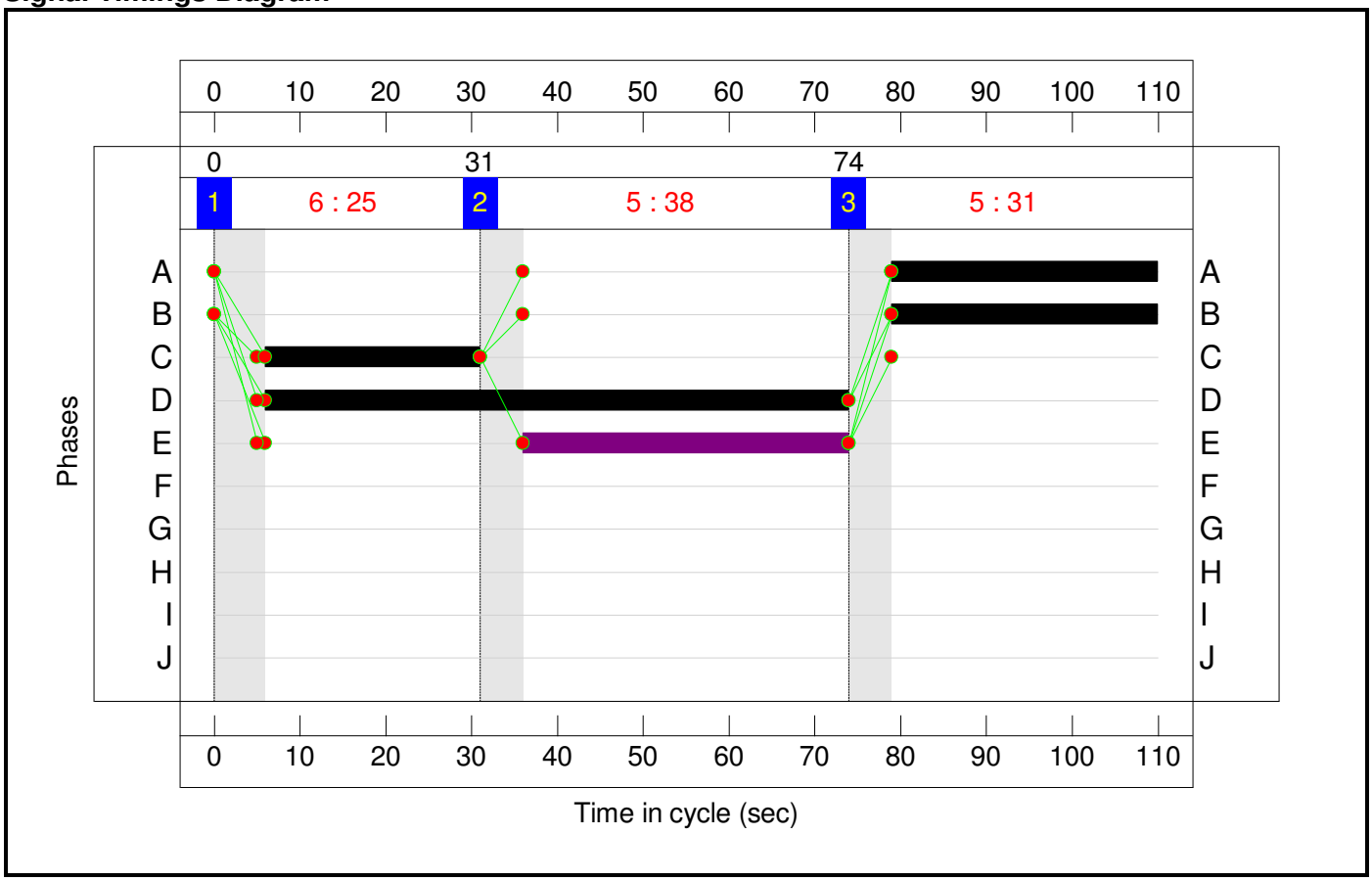


Stage Timings

Stage	1	2	3
Duration	25	38	31
Change Point	0	31	74

Full Input Data And Results

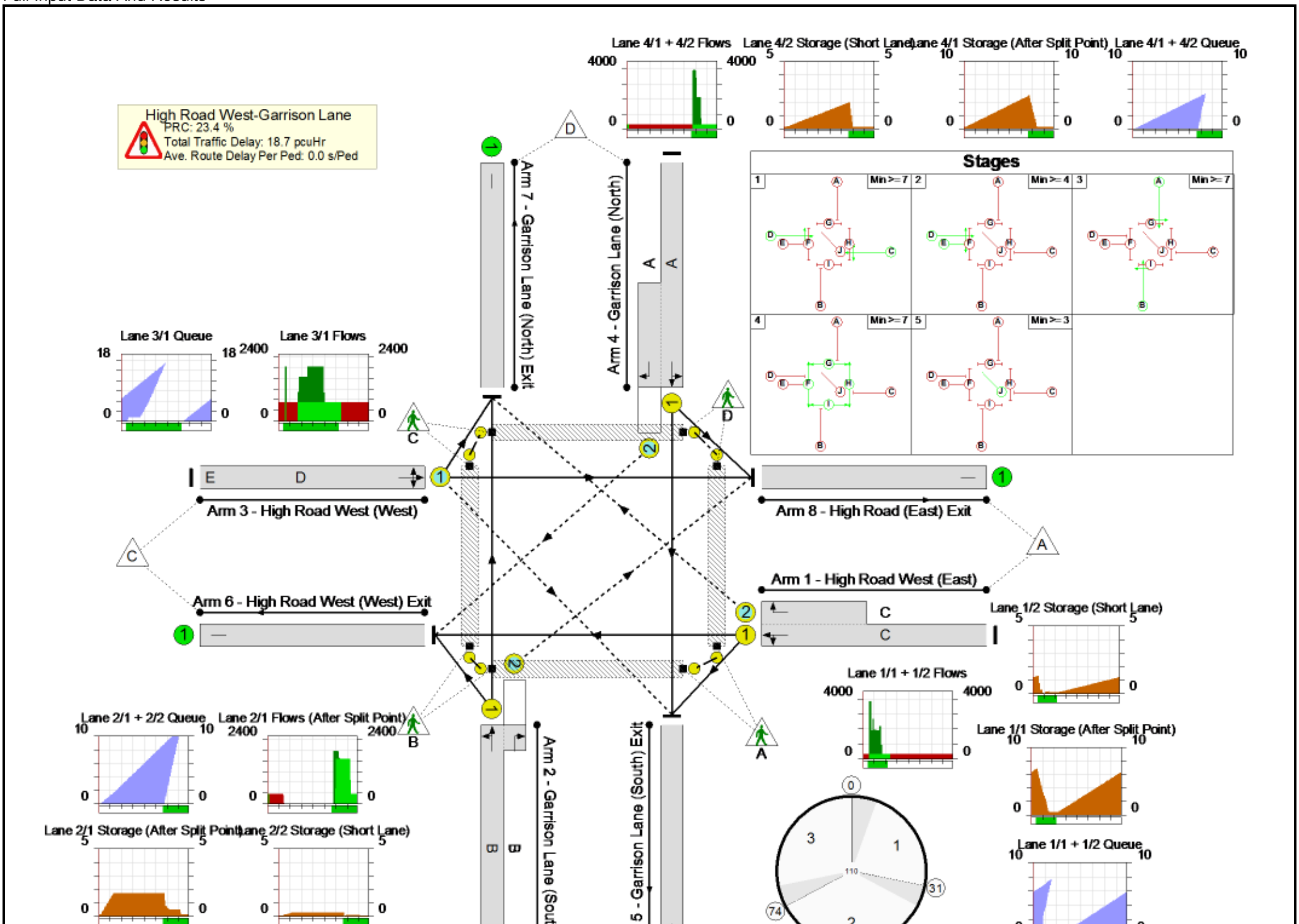
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: High Road/Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.0%**
High Road West-Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.0%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	25	-	327	1885:1929	417+79	65.9 : 65.9%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	31	-	421	1939:1912	499+81	72.5 : 72.5%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	68	38	703	2022	964	73.0%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	31	-	301	2043:1874	489+174	44.2 : 48.8%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	456	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	495	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	414	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	387	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		0	0	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		0	0	-	0	-	0	0.0%

Full Input Data And Results

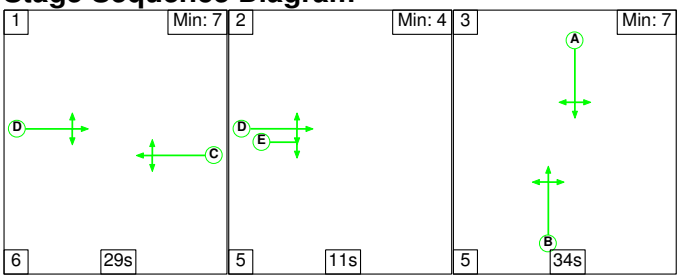
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**213**	**198**	**1**	**14.2**	**4.0**	**0.5**	**18.7**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**213**	**198**	**1**	**14.2**	**4.0**	**0.5**	**18.7**	**-**	**-**	**-**	**-**
1/1+1/2	327	327	17	35	0	3.4	1.0	-	4.3	47.4	7.6	1.0	8.6
2/1+2/2	421	421	58	0	1	4.0	1.3	0.0	5.4	46.0	11.2	1.3	12.5
3/1	703	703	53	163	0	4.3	1.3	-	5.6	28.8	17.2	1.3	18.5
4/1+4/2	301	301	84	0	1	2.5	0.4	0.4	3.4	40.4	5.2	0.4	5.6
5/1	456	456	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	495	495	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	414	414	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	387	387	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P4	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf

C1 PRC for Signalled Lanes (%): 23.4 Total Delay for Signalled Lanes (pcuHr): 18.69 Cycle Time (s): 110
PRC Over All Lanes (%): 23.4 Total Delay Over All Lanes(pcuHr): 18.69

Full Input Data And Results

Scenario 2: '2018 Observed PM' (FG2: '2018 Observed PM', Plan 2: 'No Ped Stage')

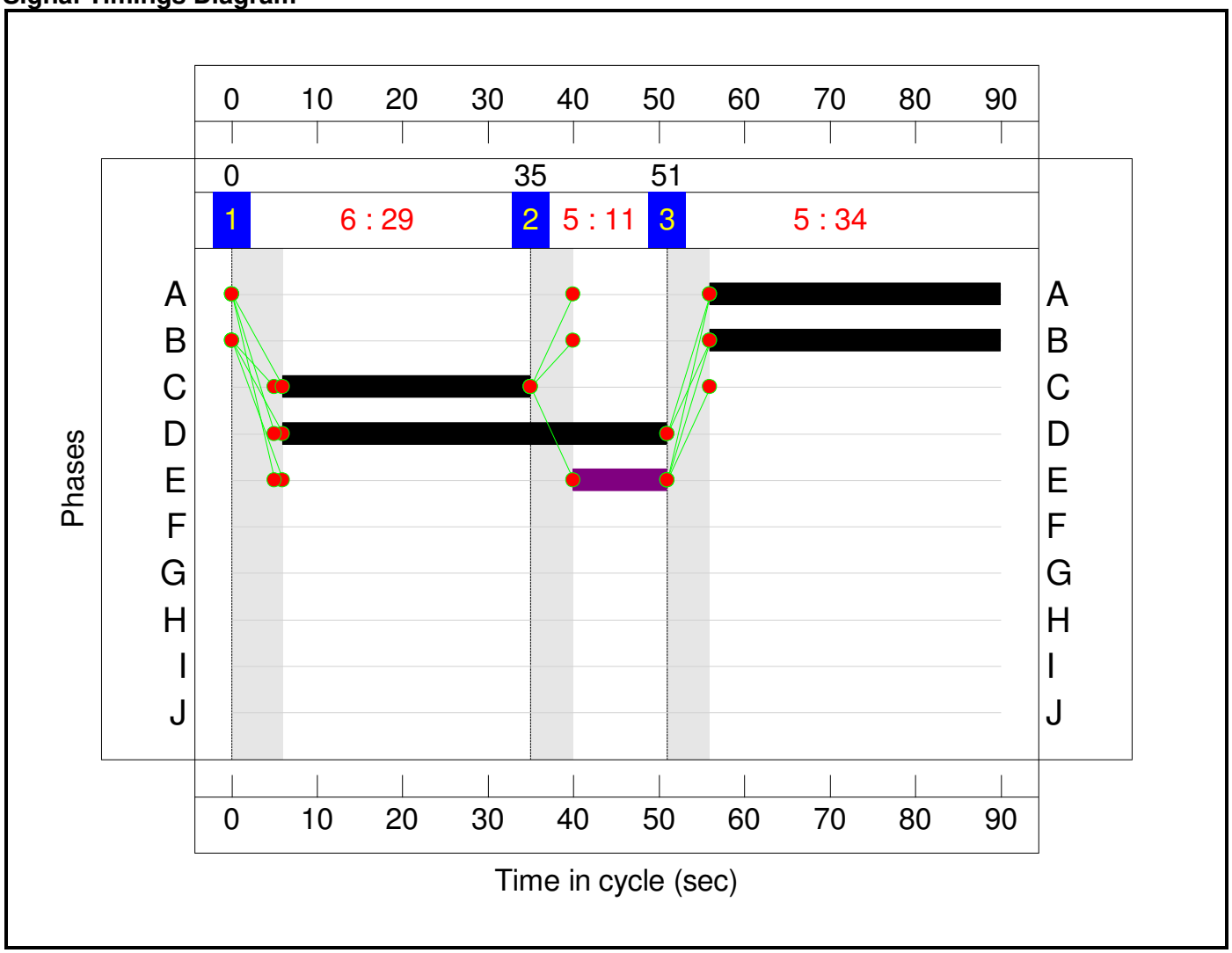
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	29	11	34
Change Point	0	35	51

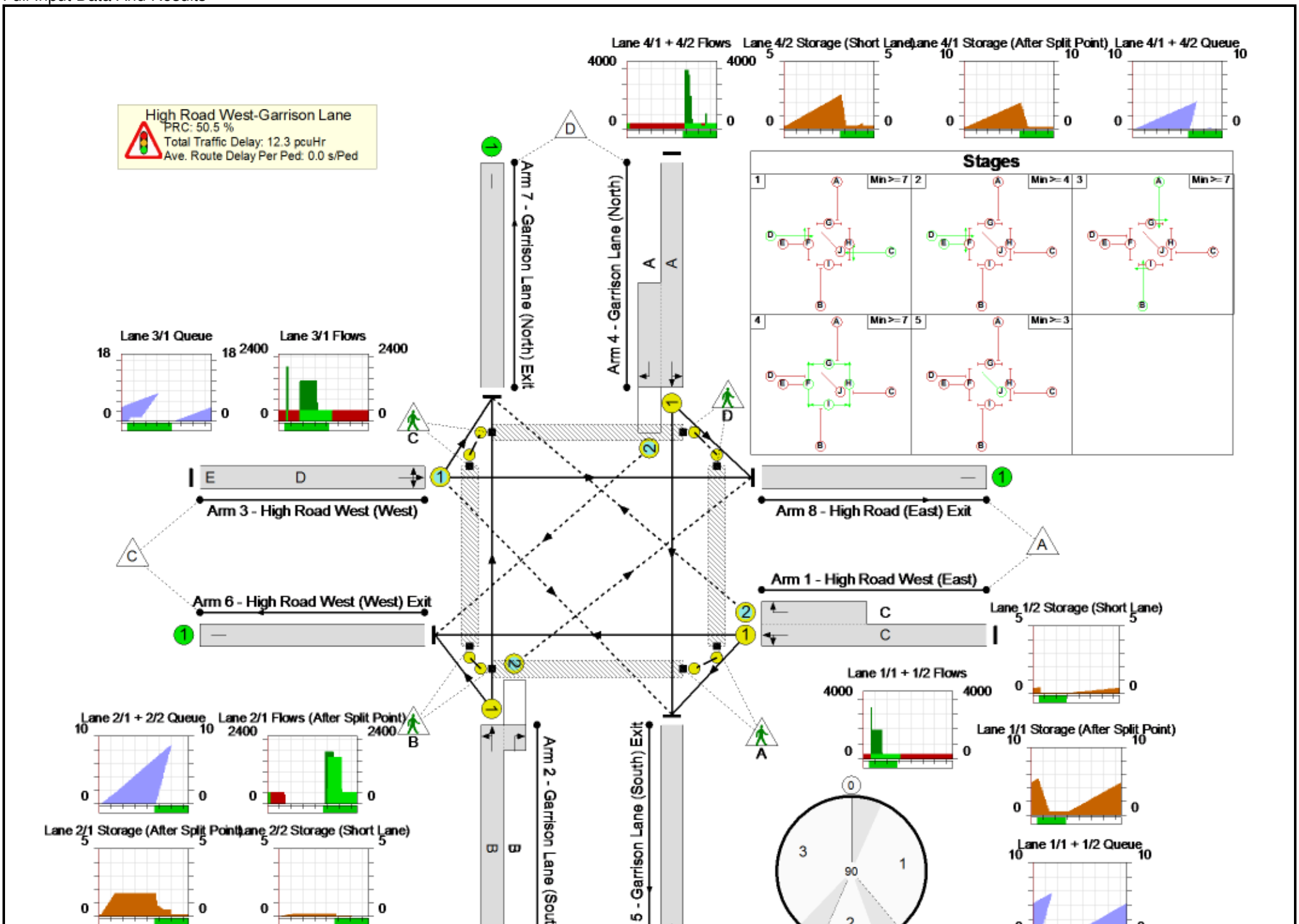
Signal Timings Diagram



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: High Road/Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**59.8%**
High Road West-Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**59.8%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	29	-	319	1892:1929	610+52	48.2 : 48.2%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	34	-	457	1919:1912	691+74	59.8 : 59.8%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	45	11	405	2030	679	59.6%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	34	-	386	2040:1874	447+287	52.5 : 52.5%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	414	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	656	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	242	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	255	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		0	0	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		0	0	-	0	-	0	0.0%

Full Input Data And Results

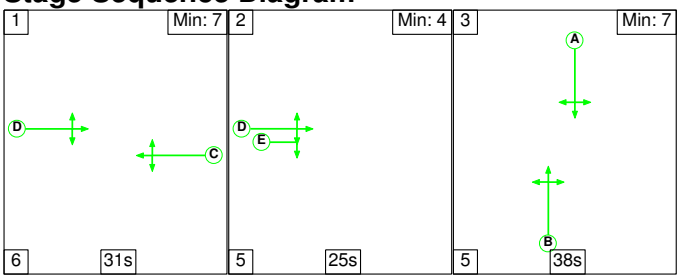
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**326**	**63**	**2**	**9.2**	**2.5**	**0.6**	**12.3**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**326**	**63**	**2**	**9.2**	**2.5**	**0.6**	**12.3**	**-**	**-**	**-**	**-**
1/1+1/2	319	319	8	17	0	2.1	0.5	-	2.5	28.7	5.8	0.5	6.3
2/1+2/2	457	457	44	0	0	2.7	0.7	0.0	3.5	27.5	8.8	0.7	9.6
3/1	405	405	125	46	0	2.4	0.7	-	3.1	27.8	8.3	0.7	9.1
4/1+4/2	386	386	149	0	2	2.0	0.6	0.6	3.1	29.3	4.0	0.6	4.6
5/1	414	414	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	656	656	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	242	242	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	255	255	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P4	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf

C1 PRC for Signalled Lanes (%): 50.5 Total Delay for Signalled Lanes (pcuHr): 12.30 Cycle Time (s): 90
PRC Over All Lanes (%): 50.5 Total Delay Over All Lanes(pcuHr): 12.30

Full Input Data And Results

Scenario 3: '2023 Do Nothing AM' (FG3: '2023 Do Nothing AM', Plan 2: 'No Ped Stage')

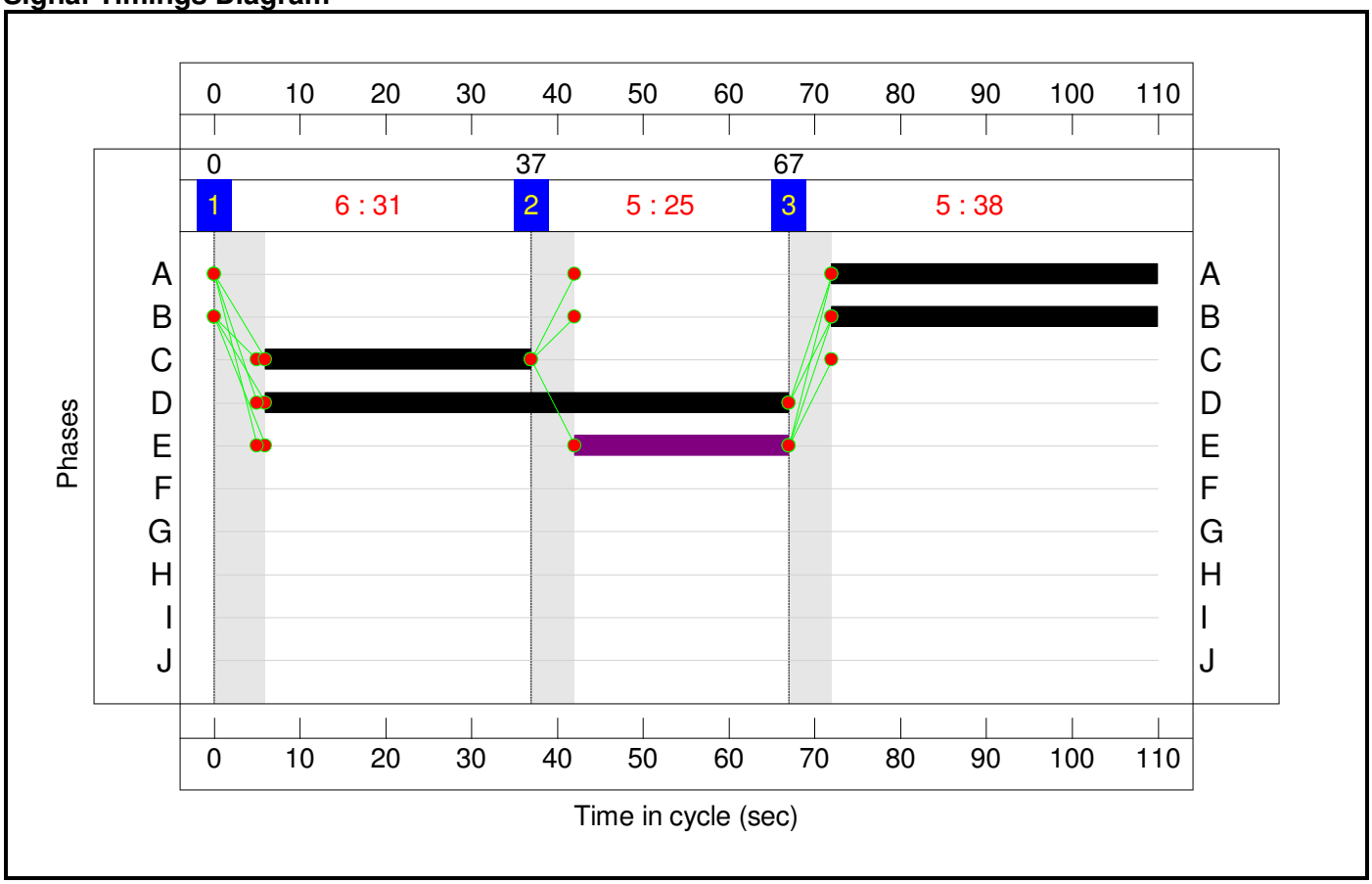
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	31	25	38
Change Point	0	37	67

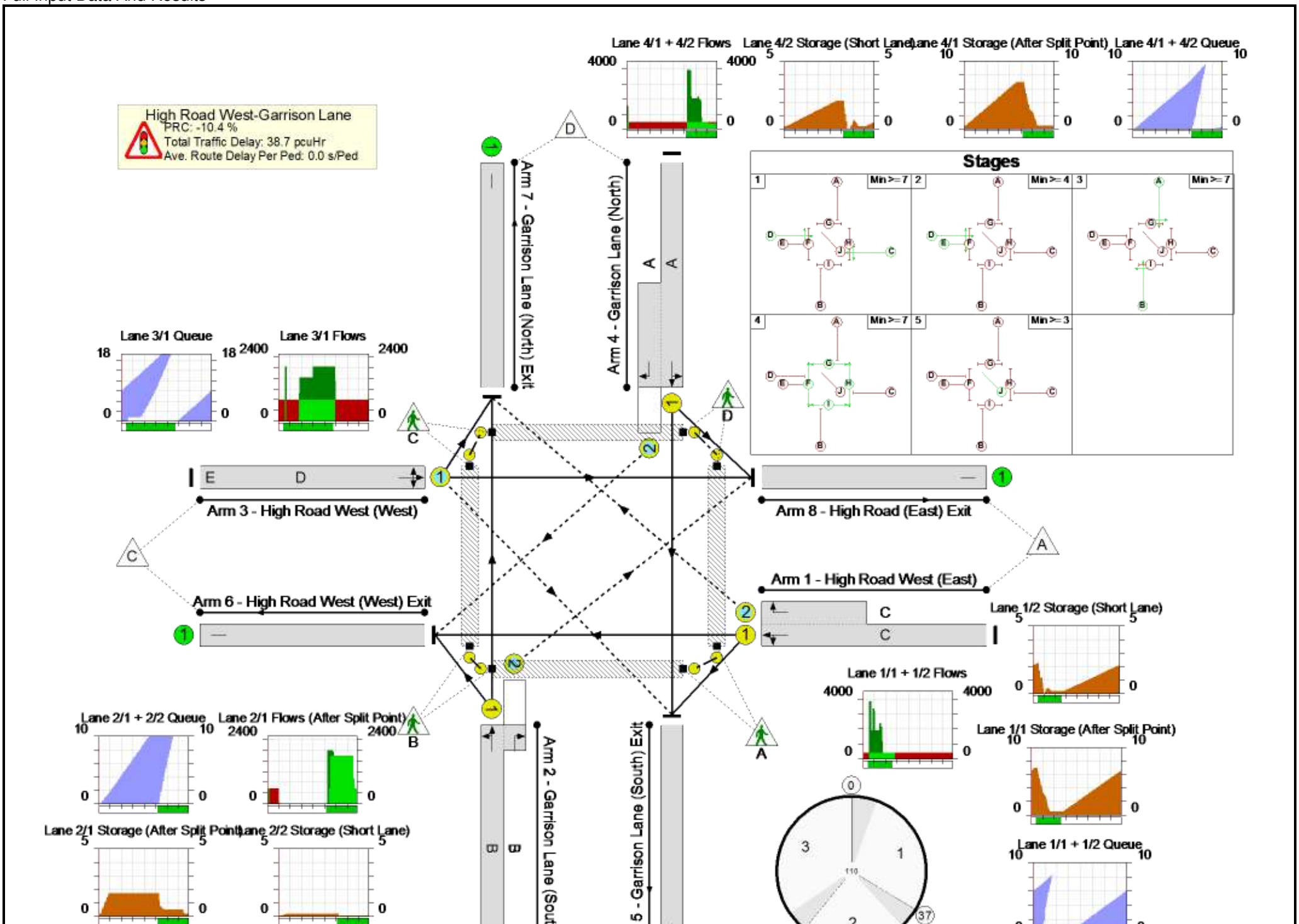
Signal Timings Diagram



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: High Road/Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**99.4%**
High Road West-Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**99.4%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	31	-	406	1887:1929	478+152	64.5 : 64.5%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	38	-	616	1968:1912	637+73	86.8 : 86.8%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	61	25	790	2022	795	99.4%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	38	-	483	2043:1874	607+122	61.2 : 90.7%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	622	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	577	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	649	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	447	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		0	0	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		0	0	-	0	-	0	0.0%

Full Input Data And Results

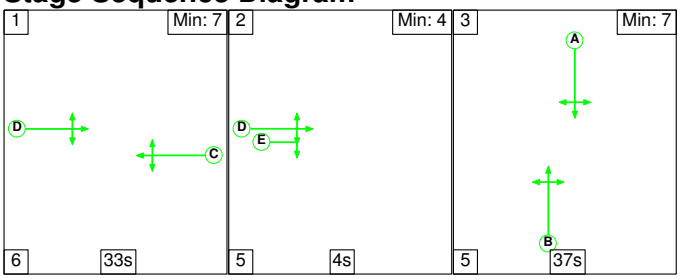
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**257**	**203**	**55**	**20.0**	**17.8**	**0.9**	**38.7**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**257**	**203**	**55**	**20.0**	**17.8**	**0.9**	**38.7**	**-**	**-**	**-**	**-**
1/1+1/2	406	406	63	35	0	3.7	0.9	-	4.6	40.4	8.3	0.9	9.2
2/1+2/2	616	616	62	0	1	5.6	3.1	0.1	8.8	51.2	17.3	3.1	20.3
3/1	790	790	75	168	0	7.0	12.9	-	19.9	90.5	23.9	12.9	36.8
4/1+4/2	483	483	57	0	54	3.7	1.0	0.8	5.5	41.0	9.6	1.0	10.6
5/1	622	622	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	577	577	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	649	649	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	447	447	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P4	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf

C1 PRC for Signalled Lanes (%): -10.4 Total Delay for Signalled Lanes (pcuHr): 38.70 Cycle Time (s): 110
PRC Over All Lanes (%): -10.4 Total Delay Over All Lanes(pcuHr): 38.70

Full Input Data And Results

Scenario 4: '2023 Do Nothing PM' (FG4: '2023 Do Nothing PM', Plan 2: 'No Ped Stage')

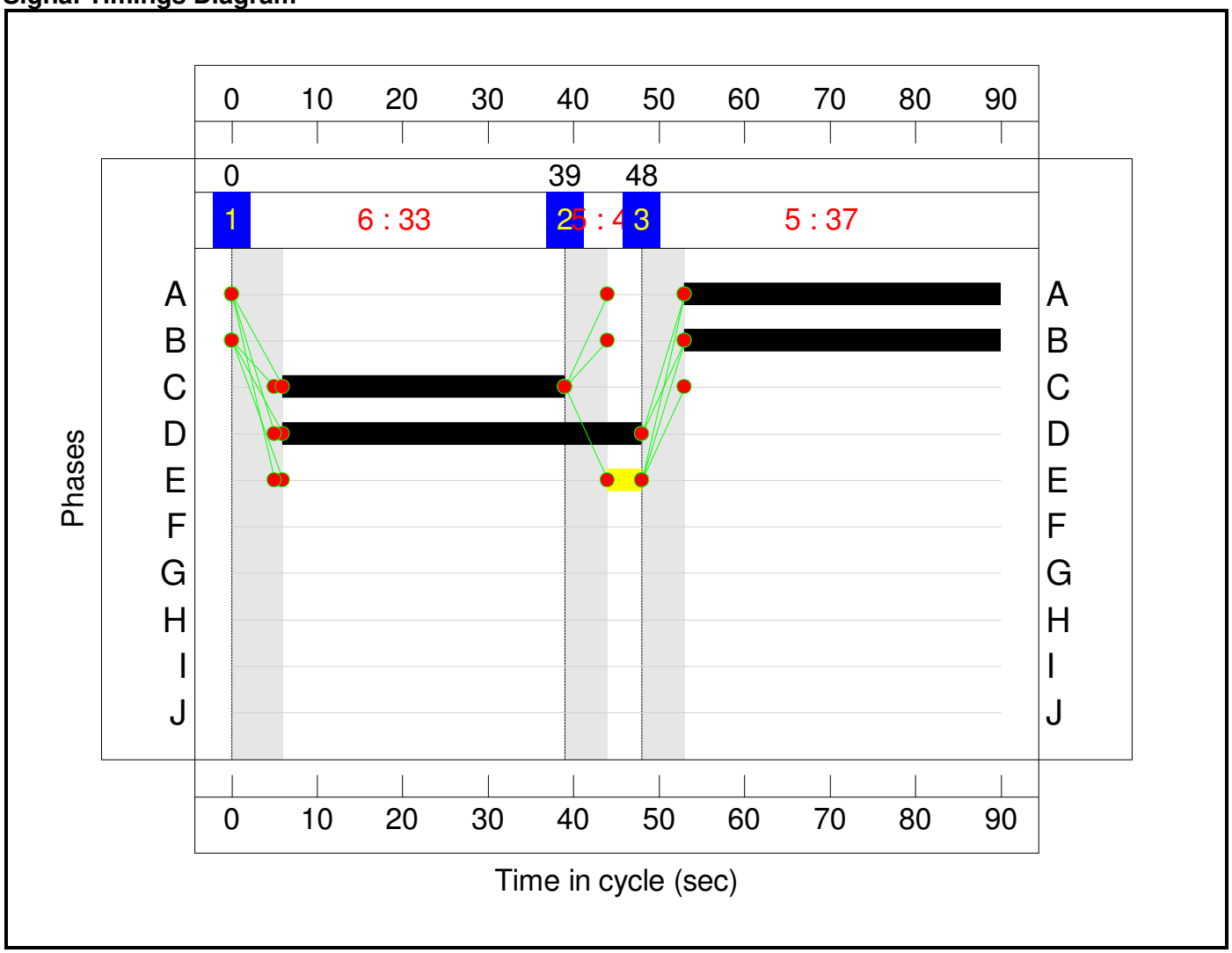
Stage Sequence Diagram



Stage Timings

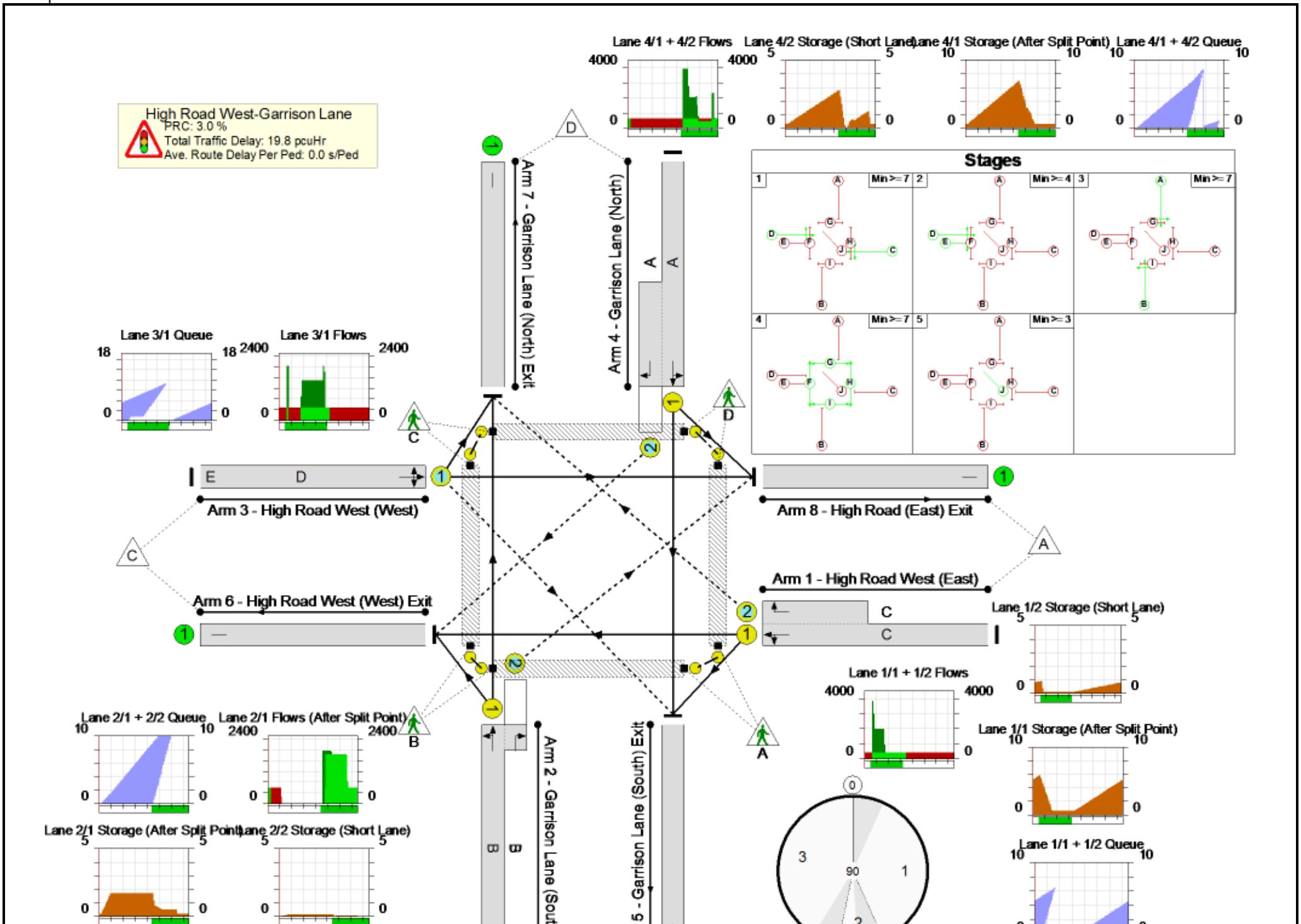
Stage	1	2	3
Duration	33	4	37
Change Point	0	39	48

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


High Road West-Garrison Lane
PRC: 3.0 %
Total Traffic Delay: 19.8 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Lane 4/1 + 4/2 Flows
Lane 4/2 Storage (Short Lane)
Lane 4/1 Storage (After Split Point)
Lane 4/1 + 4/2 Queue
Stages
Arm 7 - Garrison Lane (North) Exit
Arm 4 - Garrison Lane (North)
Lane 3/1 Queue
Lane 3/1 Flows
Arm 3 - High Road West (West)
Arm 8 - High Road (East) Exit
Arm 6 - High Road West (West) Exit
Arm 1 - High Road West (East)
Lane 1/2 Storage (Short Lane)
Lane 1/1 + 1/2 Flows
Lane 2/1 + 2/2 Queue
Lane 2/1 Flows (After Split Point)
Lane 1/1 Storage (After Split Point)
Lane 2/1 Storage (After Split Point)
Lane 2/2 Storage (Short Lane)
Arm 2 - Garrison Lane (South)
Arm 5 - Garrison Lane (South) Exit
Lane 1/1 + 1/2 Queue

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: High Road/Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.4%**
High Road West-Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.4%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	33	-	394	1894:1929	665+101	51.5 : 51.5%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	37	-	635	1945:1912	774+62	76.0 : 76.0%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	42	4	470	2028	559	84.1%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	37	-	621	2040:1874	684+201	65.1 : 87.4%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	616	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	760	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	430	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	314	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		0	0	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		0	0	-	0	-	0	0.0%

Full Input Data And Results

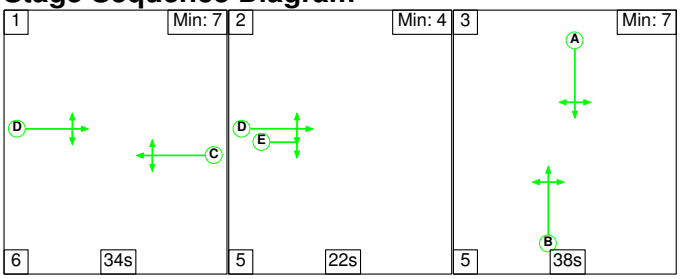
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**331**	**80**	**55**	**12.9**	**5.8**	**1.1**	**19.8**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**331**	**80**	**55**	**12.9**	**5.8**	**1.1**	**19.8**	**-**	**-**	**-**	**-**
1/1+1/2	394	394	18	34	0	2.3	0.5	-	2.8	25.7	6.5	0.5	7.0
2/1+2/2	635	635	46	0	1	3.8	1.6	0.1	5.5	31.0	13.3	1.6	14.8
3/1	470	470	145	46	0	3.5	2.5	-	6.0	45.9	11.0	2.5	13.5
4/1+4/2	621	621	121	0	55	3.3	1.2	1.0	5.5	31.8	8.8	1.2	10.0
5/1	616	616	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	760	760	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	430	430	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	314	314	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P4	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf

C1 PRC for Signalled Lanes (%): 3.0 Total Delay for Signalled Lanes (pcuHr): 19.75 Cycle Time (s): 90
PRC Over All Lanes (%): 3.0 Total Delay Over All Lanes(pcuHr): 19.75

Full Input Data And Results

Scenario 5: '2023 With Development AM' (FG5: '2023 With Development AM', Plan 2: 'No Ped Stage')

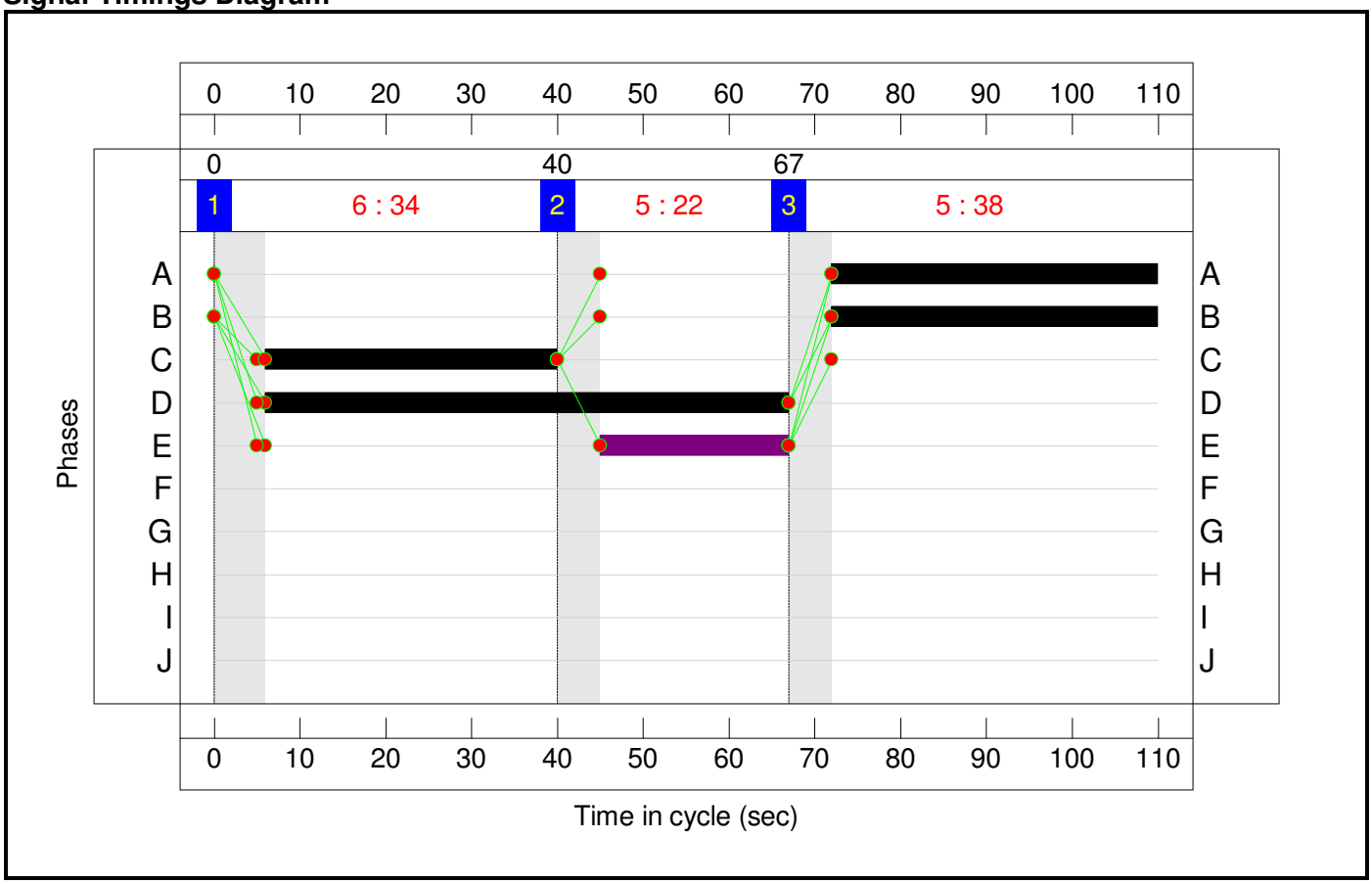
Stage Sequence Diagram



Stage Timings

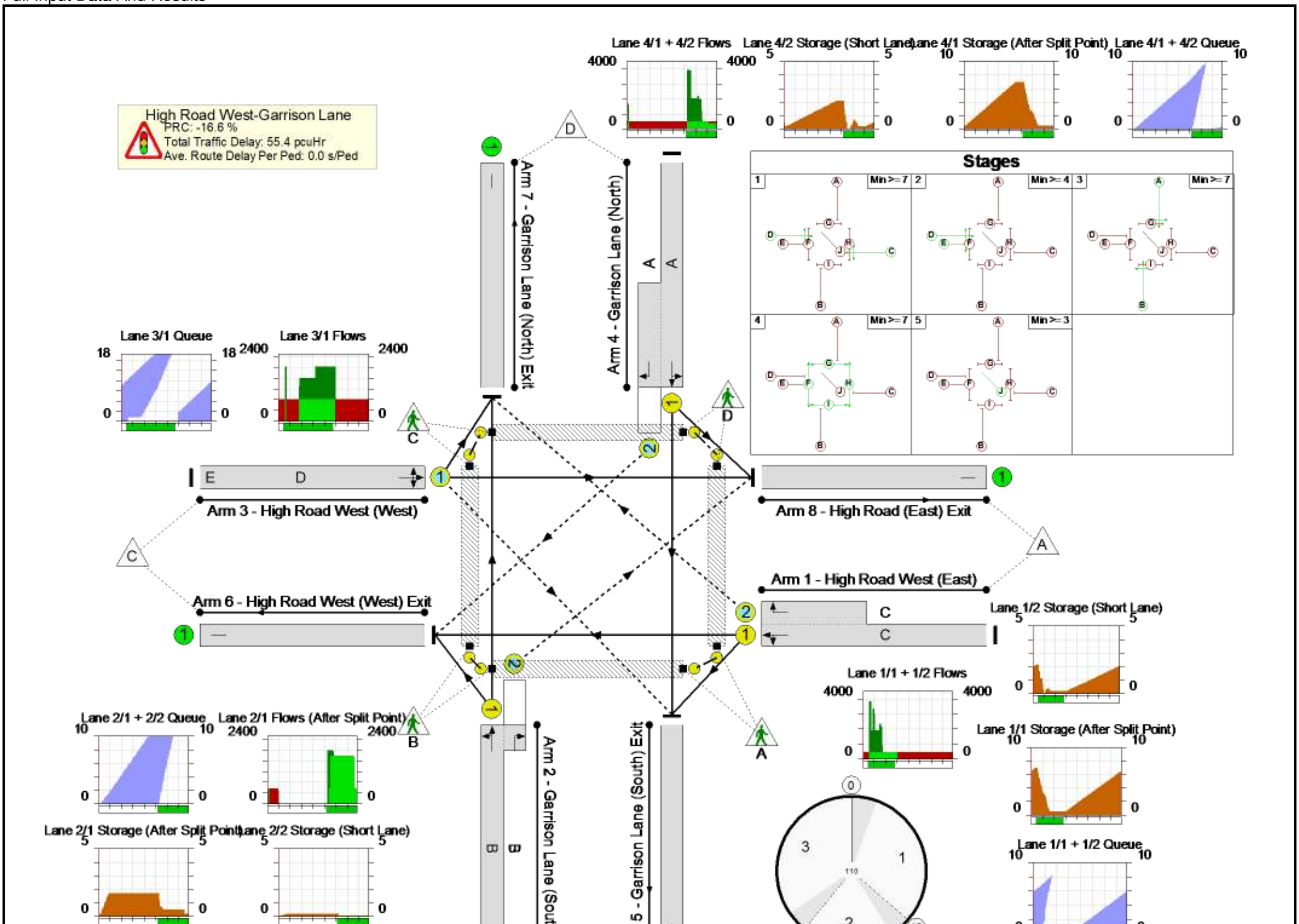
Stage	1	2	3
Duration	34	22	38
Change Point	0	40	67

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


High Road West-Garrison Lane
PRC: -16.6 %
Total Traffic Delay: 55.4 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Lane 4/1 + 4/2 Flows
Lane 4/2 Storage (Short Lane)
Lane 4/1 Storage (After Split Point)
Lane 4/1 + 4/2 Queue
Stages
Min >= 7
Min >= 4
Min >= 7
Min >= 7
Min >= 3
Lane 3/1 Queue
Lane 3/1 Flows
Arm 7 - Garrison Lane (North) Exit
Arm 4 - Garrison Lane (North)
Arm 3 - High Road West (West)
Arm 8 - High Road (East) Exit
Arm 6 - High Road West (West) Exit
Arm 1 - High Road West (East)
Lane 1/2 Storage (Short Lane)
Lane 1/1 + 1/2 Flows
Lane 1/1 Storage (After Split Point)
Lane 2/1 + 2/2 Queue
Lane 2/1 Flows (After Split Point)
Lane 2/1 Storage (After Split Point)
Lane 2/2 Storage (Short Lane)
Arm 2 - Garrison Lane (South)
5 - Garrison Lane (South) Exit
Lane 1/1 + 1/2 Queue
110

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: High Road/Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.0%**
High Road West-Garrison Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**105.0%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	34	-	414	1888:1929	519+161	60.9 : 60.9%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	38	-	625	1966:1912	638+71	88.1 : 88.1%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	61	22	823	2023	784	105.0%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	38	-	490	2043:1874	609+117	62.2 : 94.6%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	644	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	592	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	651	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	465	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		0	0	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		0	0	-	0	-	0	0.0%

Full Input Data And Results

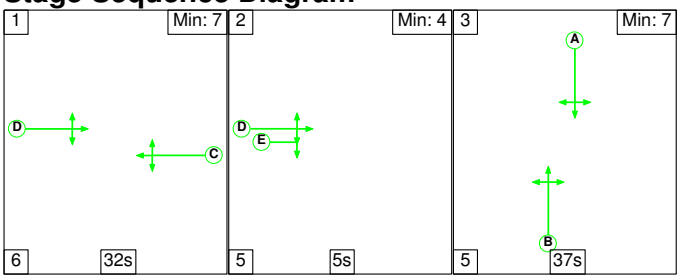
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: High Road/Garrison Lane	**-**	**-**	**268**	**191**	**60**	**22.2**	**32.3**	**0.9**	**55.4**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**268**	**191**	**60**	**22.2**	**32.3**	**0.9**	**55.4**	**-**	**-**	**-**	**-**
1/1+1/2	414	414	63	35	0	3.5	0.8	-	4.2	36.9	8.2	0.8	9.0
2/1+2/2	625	625	62	0	1	5.7	3.4	0.1	9.2	53.3	17.7	3.4	21.1
3/1	823	784	90	156	0	9.2	27.1	-	36.3	158.6	26.3	27.1	53.4
4/1+4/2	490	490	52	0	59	3.8	1.0	0.8	5.6	41.4	9.9	1.0	11.0
5/1	632	632	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	592	592	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	641	641	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	448	448	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P4	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf

C1 PRC for Signalled Lanes (%): -16.6 Total Delay for Signalled Lanes (pcuHr): 55.39 Cycle Time (s): 110
PRC Over All Lanes (%): -16.6 Total Delay Over All Lanes(pcuHr): 55.39

Full Input Data And Results

Scenario 6: '2023 With Development PM' (FG6: '2023 With Development PM', Plan 2: 'No Ped Stage')

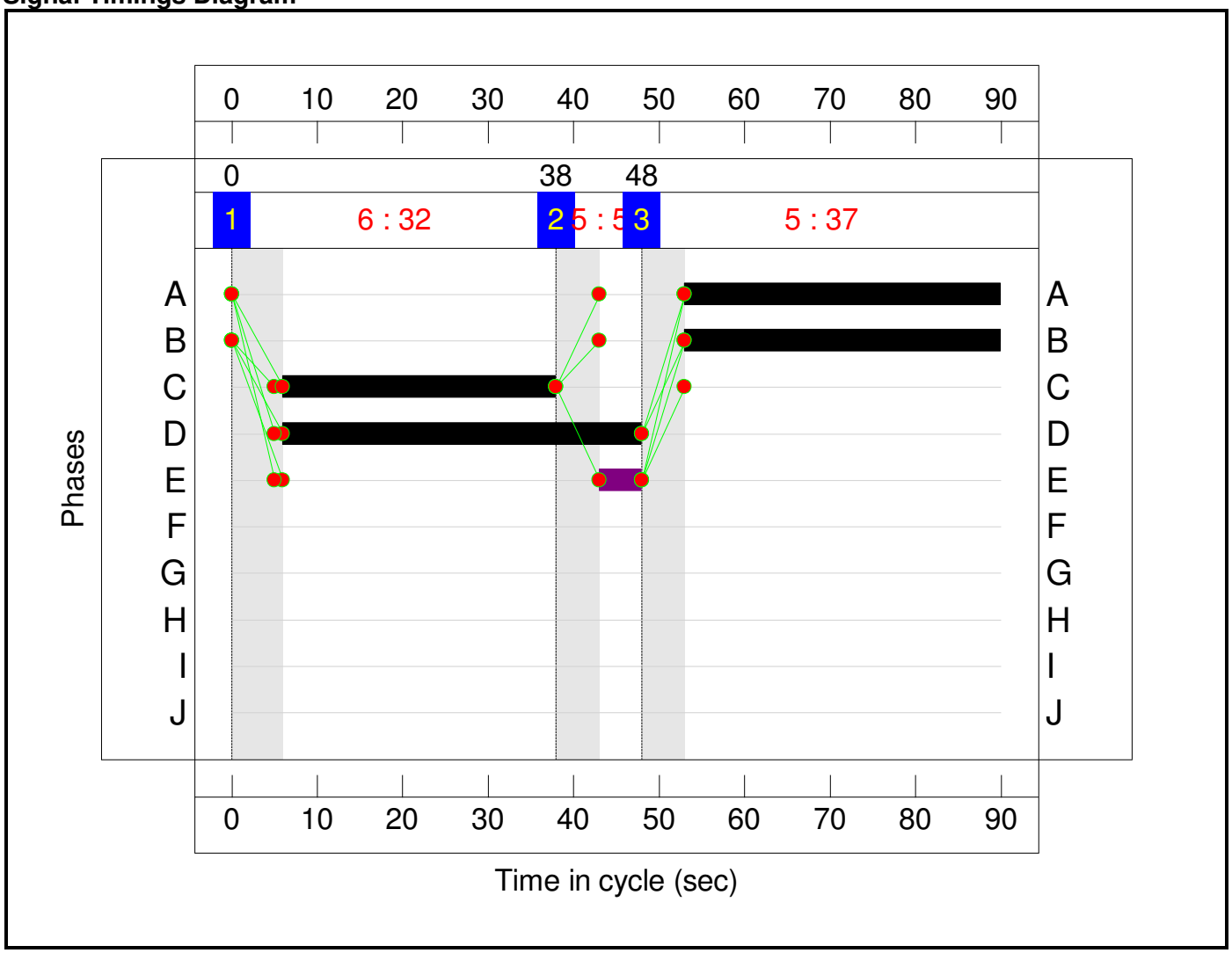
Stage Sequence Diagram



Stage Timings

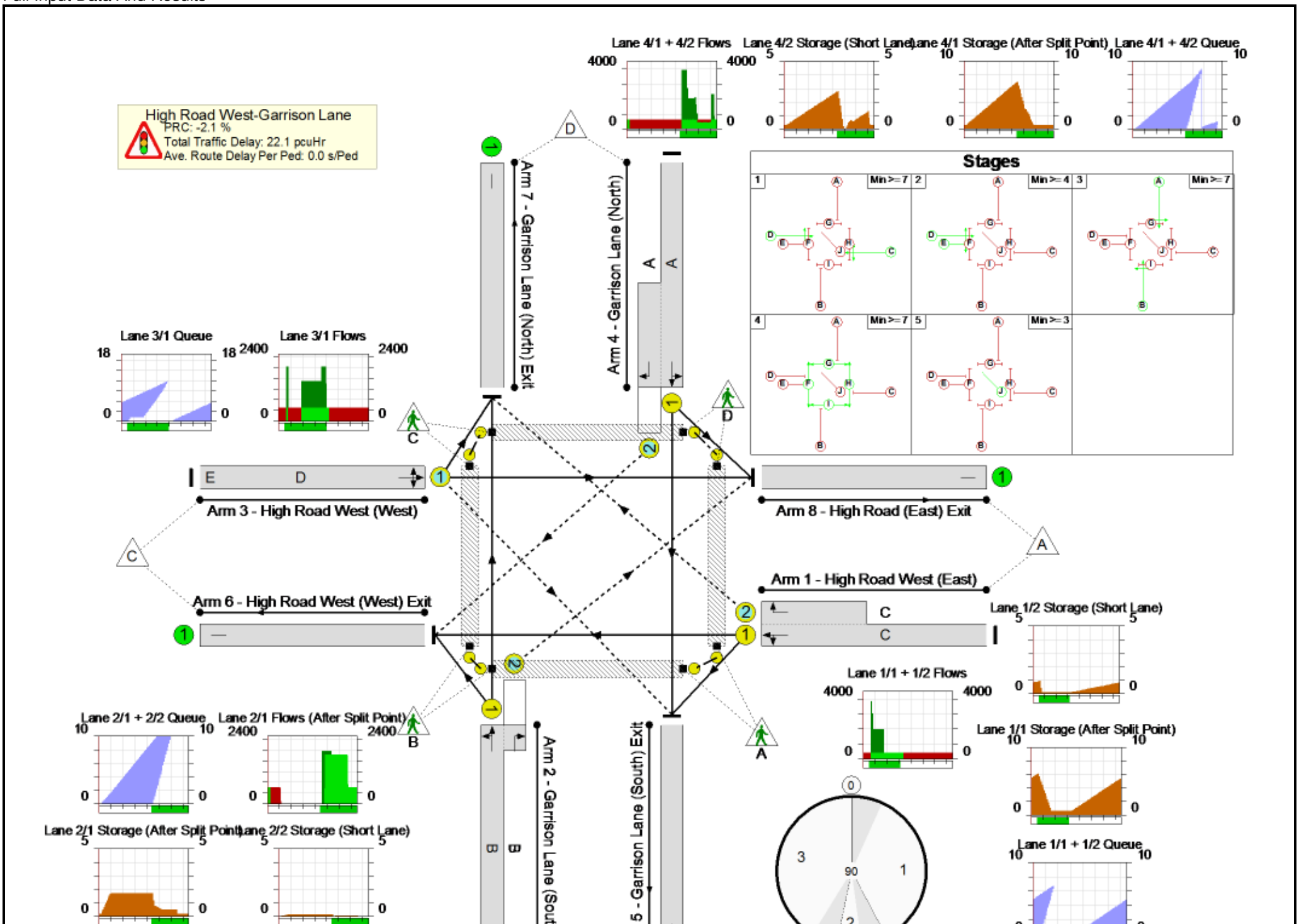
Stage	1	2	3
Duration	32	5	37
Change Point	0	38	48

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


High Road West-Garrison Lane
PRC: -2.1 %
Total Traffic Delay: 22.1 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped
Lane 4/1 + 4/2 Flows
Lane 4/2 Storage (Short Lane)
Lane 4/1 Storage (After Split Point)
Lane 4/1 + 4/2 Queue
Stages
Arm 7 - Garrison Lane (North) Exit
Arm 4 - Garrison Lane (North)
Lane 3/1 Queue
Lane 3/1 Flows
Arm 3 - High Road West (West)
Arm 8 - High Road (East) Exit
Arm 6 - High Road West (West) Exit
Arm 1 - High Road West (East)
Lane 1/2 Storage (Short Lane)
Lane 1/1 + 1/2 Flows
Lane 2/1 + 2/2 Queue
Lane 2/1 Flows (After Split Point)
Lane 1/1 Storage (After Split Point)
Arm 2 - Garrison Lane (South)
Arm 5 - Garrison Lane (South) Exit
Lane 2/1 Storage (After Split Point)
Lane 2/2 Storage (Short Lane)
Lane 1/1 + 1/2 Queue

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: High Road/Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.9%**
High Road West-Garrison Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.9%**
1/1+1/2	High Road West (East) Left Ahead Right	U+O	N/A	N/A	C		1	32	-	404	1895:1929	648+96	54.3 : 54.3%
2/1+2/2	Garrison Lane (South) Left Ahead Right	U+O	N/A	N/A	B		1	37	-	650	1944:1912	775+60	77.8 : 77.8%
3/1	High Road West (West) Right Left Ahead	O	N/A	N/A	D	E	1	42	5	494	2029	552	89.4%
4/1+4/2	Garrison Lane (North) Ahead Right Left	U+O	N/A	N/A	A		1	37	-	625	2040:1874	659+192	68.1 : 91.9%
5/1	Garrison Lane (South) Exit	U	N/A	N/A	-		-	-	-	632	Inf	Inf	0.0%
6/1	High Road West (West) Exit	U	N/A	N/A	-		-	-	-	780	Inf	Inf	0.0%
7/1	Garrison Lane (North) Exit	U	N/A	N/A	-		-	-	-	435	Inf	Inf	0.0%
8/1	High Road (East) Exit	U	N/A	N/A	-		-	-	-	326	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	H		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	I		0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	F		0	0	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	N/A	-	G		0	0	-	0	-	0	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: High Road/Garrison Lane	**-**	**-**	**310**	**103**	**65**	**13.6**	**7.4**	**1.1**	**22.1**	**-**	**-**	**-**	**-**
High Road West-Garrison Lane	**-**	**-**	**310**	**103**	**65**	**13.6**	**7.4**	**1.1**	**22.1**	**-**	**-**	**-**	**-**
1/1+1/2	404	404	18	34	0	2.4	0.6	-	3.0	27.0	6.8	0.6	7.4
2/1+2/2	650	650	46	0	1	4.0	1.7	0.1	5.8	31.9	13.8	1.7	15.5
3/1	494	494	134	69	0	3.8	3.8	-	7.6	55.3	11.8	3.8	15.6
4/1+4/2	625	625	112	0	64	3.4	1.4	1.0	5.8	33.1	8.9	1.4	10.3
5/1	632	632	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	780	780	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	435	435	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	326	326	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P4	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf

C1 PRC for Signalled Lanes (%): -2.1 Total Delay for Signalled Lanes (pcuHr): 22.15 Cycle Time (s): 90
PRC Over All Lanes (%): -2.1 Total Delay Over All Lanes(pcuHr): 22.15