



**Document 3.1- ES Volume 2  
Appendix 4.1 Transport Assessment**

**The Kemsley Mill K4 Combined Heat and  
Power Generating Station Development  
Consent Order**

**Planning Act 2008 The Infrastructure Planning  
(Applications: Prescribed Forms and  
Procedure) Regulations 2009  
Regulation 5(2)q**

**April 2018 - Submission Version**

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The logo consists of the letters 'RPS' in a white, bold, sans-serif font, centered within a dark blue rounded rectangular background.

**KEMSLEY PAPER MILL (K4)  
CHP PLANT  
SITTINGBOURNE  
KENT**

29 March 2018

**Our Ref: DA/AN/JG/AW/adf/JNY9247-02c**

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# QUALITY MANAGEMENT

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# CONTENTS

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1	INTRODUCTION .....	1
2	EXISTING SITUATION .....	3
3	DEVELOPMENT PROPOSALS .....	9
4	COMPATIBILITY WITH TRANSPORT POLICIES.....	12
5	FUTURE YEAR TRAFFIC FLOWS .....	20
6	TRIP GENERATION, MODE SHARE AND ASSIGNMENT.....	27
7	TRANSPORT ASSESSMENT .....	31
8	CUMULATIVE ASSESSMENTS.....	56
9	SUMMARY AND CONCLUSIONS .....	79

## FIGURES

FIGURE 1 – SITE LOCATION PLAN

FIGURE 2 – PERSONAL INJURY ACCIDENTS

## APPENDICES

APPENDIX A – SITE LAYOUT PLAN

APPENDIX B – 2019 TRAFFIC FLOWS

APPENDIX C – COMMITTED DEVELOPMENT TRAFFIC FLOWS

APPENDIX D – 2019 BASELINE TRAFFIC FLOWS

APPENDIX E – AVERAGE CONSTRUCTION TRAFFIC FLOWS

APPENDIX F - PEAK CONSTRUCTION TRAFFIC FLOWS

APPENDIX G - 2019 BASELINE PLUS AVERAGE CONSTRUCTION TRAFFIC FLOWS

APPENDIX H 2019 BASELINE PLUS PEAK CONSTRUCTION TRAFFIC FLOWS

APPENDIX I – CUMULATIVE DEVELOPMENT TRAFFIC FLOWS

APPENDIX J – 2019 BASELINE PLUS CUMULATIVE PLUS AVERAGE CONSTRUCTION  
TRAFFIC FLOWS

APPENDIX K – 2019 BASELINE PLUS CUMULATIVE PLUS PEAK CONSTRUCTION TRAFFIC  
FLOWS

APPENDIX L – JUNCTIONS 9 OUTPUT REPORTS

# 1 INTRODUCTION

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## Context

- 1.1 DS Smith (the Applicant) has prepared an application for a Development Consent Order (DCO) to build, commission and operate a new gas-fired Combined Heat and Power (CHP) plant (K4) to supply steam and power to their Kemsley Paper Mill (the Mill), in Sittingbourne, Kent, as shown on **Figure 1**.
- 1.2 The existing gas fired CHP plant (K1) is around 20 years old with the current operating contract ending in February 2019. The Applicant has assessed the condition of K1 and concluded that significant investment into the gas turbine, waste heat recovery boilers and steam turbine is necessary.
- 1.3 The Applicant intends to replace the existing plant with a new plant, K4, which will integrate with the remaining supply equipment and be constructed on available land adjacent to the existing K1 plant. K4 is expected to provide reliable and efficient operation over its lifespan and is sized to meet the projected energy demands of the Mill.
- 1.4 K4 would be located within the Mill. It would comprise the following:
- Gas turbine technology of around 57 MW nominal power output;
  - A Heat Recovery Steam Generator, producing approximately 110 MWth steam; and
  - A steam turbine, producing in the region of 16MW of electrical power.
- 1.5 The proposed site layout is included at **Appendix A**.
- 1.6 The proposed development is considered a Nationally Significant Infrastructure Project (NSIP) requiring a DCO to be made under the provisions of the 2008 Act. In England, the Planning Inspectorate examines applications for development consent.
- 1.7 The Applicant is seeking to secure consent under the Planning Act 2008 for the project and is undertaking an Environmental Impact Assessment (EIA), including a Transport Assessment (TA) to ensure all the environmental effects of the development are assessed in a formal EIA compliant with the EIA regulations.

## Scope of the Transport Assessment

- 1.8 This TA has been prepared as part of the EIA to provide information on transport related matters and highway network assessments.

- 1.9 It has been prepared in accordance with the National Policy Statements for Energy Infrastructure (NPSs), published by the Department of Energy and Climate Change in 2011, the Department of Communities and Local Government publications 'National Planning Policy Framework', 2012, and 'Planning Practice Guidance: Travel Plans, Transport Assessments and Statements in Decision-Taking', 2014, the Department for Transport publication Circular 02/2013 The Strategic Road Network and the Delivery of Sustainable Development, 2013, and Guidance on Transport Assessments and Travel Plans, published by Kent County Council in 2008.
- 1.10 The Transport Assessment considers the traffic and transport effects associated with K4. The assessment covers potential effects associated with the construction, operation and decommissioning of the project.
- 1.11 Section 2 of the Transport Assessment sets out the existing situation and assesses the local and strategic highway network, road safety, facilities for pedestrians and cyclists, public transport facilities and existing traffic flows. Section 3 provides full details of the proposals, whilst an assessment is made against current local and national policies in respect to transport in Section 4.
- 1.12 Future year traffic flows are set out in Section 5 and details of the likely trip generation, distribution, assignment and modal share of trips is set out in Section 6. An assessment of the likely transport impact is set out in Section 7.
- 1.13 A summary is provided in Section 8 along with a conclusion that there are no transport or highways related reasons for not granting consent to the project.

## 2 EXISTING SITUATION

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### Site Location

- 2.1 K4 will be located within the Mill, west of the Swale Estuary and north of Milton Creek in the Borough of Swale, Kent, as shown on **Figure 1**.
- 2.2 The Mill is located in the industrial northern edge of Sittingbourne, which forms the largest settlement within the district of Swale, Kent. Development in the area dates mainly from the 19th and 20<sup>th</sup> centuries and is clustered around the A2 road and the railway, which pass through the centre of the town. The rapidly expanding industrial and commercial district which extends from the edge of Sittingbourne north to Ridham Docks forms the immediate context to the site.
- 2.3 The Mill comprises a paper mill and associated infrastructure, including access, car parks and administration buildings. The site is accessed from the A249 via Swale Way (western entrance) or from Swale Way onto Barge Way (northern entrance); the location of the accesses is shown on **Figure 1**.
- 2.4 The western access provides access to the car park and to the weighbridges for HGV access. The northern access provides access to a Trailer Park and to K3, which is currently under construction and is located to the south east of the Mill.

### Highway Network

- 2.5 The site is located approximately 5km north-east of Sittingbourne and approximately 2km east of the A249. The local transport network surrounding the site is shown on **Figure 1**.
- 2.6 The construction of K4 will utilise the existing accesses to the Mill; one from the north of the site and another from the west.
- 2.7 From the north, the private access road forms the southern arm of a three-arm roundabout with Barge Way. The roundabout has been constructed to have four-arms, however, the north-western arm is incomplete and only the kerbs forming its entry and exit are constructed to enable later access to the north-west.
- 2.8 Barge Way is a 7.3m wide single carriageway road with a 3.0m wide combined footway / cycleway along its northern side. It has street lighting, a 40mph speed restriction and no parking restrictions. To the north, Barge Way accesses Ridham Docks and to the west it forms the eastern arm of a four-arm roundabout with Fleet End, which provides access to a Morrison's distribution centre. Barge Way continues south to form the northern arm of a three-arm roundabout with Swale Way.
- 2.9 Swale Way forms part of the Sittingbourne Northern Perimeter Road, linking the A249 to the Eurolink Industrial Estate with a number of junctions along it providing access to the surrounding residential and industrial areas of Sittingbourne.
- 2.10 Staff associated with the Mill route from Swale Way via Ridham Avenue. A large staff car park located in the south-west corner of the Mill provides parking for all staff onsite.

- 2.11 Swale Way is a 7.3m wide single carriageway road with street lighting, 40mph speed restriction and no parking restrictions. There is a 3.0m wide combined footway / cycleway along its southern side between Barge Way and the A249 and along its south-western side between Barge Way and the Eurolink Industrial Estate.
- 2.12 At its western end, Swale Way forms a grade separated dumbbell junction with the A249 and the B2005 Grovehurst Road. The eastern roundabout is a five-arm roundabout connecting Swale Way, the B2005 Grovehurst Road, the A249 on-slip road, the A249 off-slip road and the A249 over-bridge. The western roundabout is a four-arm roundabout connecting Grovehurst Road, the A249 on-slip road, the A249 off-slip road and the A249 over-bridge.
- 2.13 The A249 is a dual carriageway road and forms part of the trunk road network. It routes broadly north to south between the Isle of Sheppey and the County town of Maidstone respectively. It forms grade separated junctions with the B2006, A2, M2 and M20 and provides access to London, M25 and the remainder of the strategic highway network.

### **Facilities for Pedestrians and Cyclists**

#### ***Pedestrian Routes***

- 2.14 There are combined footway / cycleways along the northern side of Barge Way and along the southern and south-western sides of Swale Way. These link to the residential streets in the immediate vicinity of Swale Way, which in turn provide access to the wider residential areas of Sittingbourne. These residential streets generally have footways on both sides of the carriageway; therefore, a good network of footways allows pedestrians to route between the site and the surrounding residential areas.
- 2.15 The Saxon Shore Way is a long-distance footpath which follows the shore of the Swale to the east of the Mill. The footpath continues north towards Chetney Marshes and further to Gillingham. To the south it links into Sittingbourne and continues east towards Faversham. The route is not lit and is, for most of the route, not surfaced.

#### ***Cycle Routes***

- 2.16 The site is within close proximity to on and off-road cycle routes which link to the wider Kemsley and Sittingbourne area. The National Cycle Network Route 1 is a long-distance cycle route connecting Dover and the Shetland Islands, which routes along the B2005 Grovehurst Road between Sittingbourne and Kemsley. National Cycle Network Route 174 routes on Sheppey Way linking Route 1 to the Isle of Sheppey.
- 2.17 The combined footway / cycleways along Barge Way and Swale Way provide a range of cycle routes to surrounding areas, linking to Routes 1 and 174 of the National Cycle Network.

### **Public Transport Provision**

- 2.18 A summary of the bus services, in the vicinity of the site, is summarised in **Table 2.1**.
- 2.19 The closest bus stops are located on Ridham Avenue, approximately 1km west of the site, and are served by bus service number 347 which provides a direct link to Sittingbourne town centre. The journey time from Kemsley to Sittingbourne is approximately 20 minutes and the service operates 4 buses per hour throughout the day and 3 buses per hour on a Saturday.



2.20 Additional bus stops are located on Grovehurst Road approximately 2km west of the site. These bus stops are served by service numbers 324, 326, 339, and 341.

**Table 2.1: Summary of Local Bus Services**

No.	Operator	Route	Service Frequencies (per hour)				
			Monday - Friday				Saturday
			AM Peak	Off Peak	PM Peak	Evening	
347	Arriva	Kemsley-Sittingbourne	4	4	4	4	3
324	Chalkwell Coaches	Sheerness – Iwade-Kemsley- Milton Regis – Sittingbourne – Faversham - Canterbury	1 service per day Monday, Wednesday and Friday each way				0
326	Chalkwell Coaches	Sheerness - Sittingbourne – Chatham	1 services per day each way				
339	Chalkwell Coaches	Sheerness – Iwade – Sittingbourne – Hempstead valley	1 service per Tuesday and Thursday each way				0

2.21 Kemsley Railway Station is located approximately 2km west of the site on Grovehurst Road. A summary of the rail services from Kemsley Railway Station can be found in **Table 2.2**. Southeastern Trains operate all services from Kemsley Railway Station.

**Table 2.2: Direct Train Services from Kemsley to London and Sheerness**

Operator	Destination	Hourly Frequency			
		AM Peak	PM Peak	Off Peak	Saturday
Southeastern	Sheerness-on-Sea	1	2	2	2
Southeastern	Sittingbourne	1	2	2	2
Southeastern	London Victoria	Two direct services per day at 06:33 and 07:13			0

Source: National Rail

2.22 Kemsley Railway Station has some direct services to London Victoria with a service frequency of two trains during the weekday morning with a journey time of approximately one hour and twenty-five minutes. Additional half-hourly services are available to London Victoria which require a change at Sittingbourne railway station.

2.23 Kemsley Railway Station has access to far more frequent train services via Sittingbourne Railway Station with services from Kemsley approximately every 20 to 30 minutes and a journey time of 4-6 minutes. Sittingbourne Railway Station has frequent train services to London Victoria, London St Pancras International, Ramsgate and Dover Priory.

## **Traffic Flows**

### ***Local Highway Network***

- 2.24 In order to determine existing traffic flows on the adjacent local highway network, traffic surveys were commissioned and undertaken by an independent traffic survey company in March 2017.
- 2.25 Automatic Traffic Counters (ATCs) were placed at three locations and started at 00:00 hours on Friday 24 March 2017) for seven consecutive days. The survey locations are as follows:
- Swale Way, south of the Barge Way roundabout and north of the Reams Way priority junction;
  - Swale Way, south of Reams Way and north of the Ridham Avenue roundabout; and
  - Swale Way, south of Ridham Avenue.
- 2.26 The ATC on Swale Way, south of Reams Way and north of the Ridham Avenue roundabout had some incomplete data due to damage to the counter. Traffic flows during these periods were therefore calculated using factors from the other ATCs.
- 2.27 Traffic surveys were also undertaken in 2016. ATCs were placed at three locations and started at midnight on Sunday night (5 June 2016) / Monday morning (6 June 2016) for seven consecutive days. The survey locations are as follows:
- Swale Way between the B2005 Grovehurst Roundabout and Barge Way;
  - Barge Way between Swale Way and Fleet End; and
  - Barge Way east of Fleet End.
- 2.28 The ATC on Swale Way between the B2005 Grovehurst Roundabout and Barge Way had some incomplete data due to damage to the counter. This occurred on the Monday between 00:00 and 04:00 and on Sunday between 03:00 and 24:00. Traffic flows during these periods were therefore calculated using factors from the adjacent ATCs.
- 2.29 Manual Classified Counts (MCCs) were also undertaken at key junctions on the network as follows:
- Swale Way / Barge Way Roundabout;
  - Fleet End / Barge Way Roundabout; and
  - Barge Way / Site Access Roundabout.
- 2.30 These surveys were undertaken between 07:00 and 19:00 on Tuesday 28<sup>th</sup> March 2017 and identified the weekday AM and PM peak hours as between 07:30 and 08:30 and between 16:30 and 17:30 respectively.
- 2.31 The Annual Average Daily Traffic Flow (AADT) was obtained from the Department for Transport for the A249, south of the B2005 Grovehurst Road / Swale Way junction.

2.32 Traffic flow data was also obtained from Highways England. Hourly traffic flow data was obtained for the A249 between the A2 and the M2 and the M2 for the month of June 2017 (a neutral month). Hourly data for a weekday, a Saturday and a Sunday was calculated using the hourly data obtained for the A249 between the A2 and the M2.

2.33 Based on the above, the following links have been assessed in terms of development impact;

- Link 1 – Swale Way East of B2005 Grovehurst Roundabout;
- Link 2 – Barge Way North of Swale Roundabout;
- Link 3 – Barge Way West of Fleet End Roundabout;
- Link 4 – A249 South of Swale Way Junction;
- Link 5 – Swale Way North of Reams Way Junction;
- Link 6 - Swale Way South of Reams Way Junction;
- Link 7 – Swale Way South of Ridham Avenue Roundabout;
- Link 8 – M2 East of A249; and
- Link 9 – M2 West of A249.

2.34 Additionally, assessments of the following junctions have been undertaken:

- Swale Way / Barge Way Roundabout;
- Fleet End / Barge Way Roundabout;
- Barge Way / Site Access Roundabout; and
- A249 / Grovehurst Road / Swale Way / B2005 Grade Separated Dumbbell Junction.

### **Road Safety**

2.35 In order to assess road safety along the adjacent highway network, Personal Injury Accident (PIA) data has been obtained from Kent County Council for the five-year period from 1 April 2011 to 31 March 2016. The study area includes Barge Way and Swale Way between the site access to the north, to the Ridham Avenue roundabout to the south. Swale Way between the B2005 Grovehurst Road grade-separated junction with the A249 to the Barge Way roundabout was also obtained. The location of the PIAs are shown on **Figure 2**.

2.36 In total there were 21 injury accidents within the five-year period of which 19 were slight and 2 were serious. There were no fatal injury accidents.

2.37 Both of the serious injury accidents occurred in different locations and had different contributory factors. One occurred at the Swale Way / Ridham Avenue roundabout when a single vehicle lost control on the roundabout. The other occurred at the Swale Way / Lloyd Drive junction when a driver swerved to avoid an animal in the road and collided with an oncoming vehicle.

- 2.38 Only one cluster of four or more injury accidents was recorded in the study area at the Swale Way / Lloyd Drive junction, where five injury accidents occurred. Four of these resulted in slight injury and one resulted in serious injury. The results show that there are no consistent contributory factors to these PIAs.
- 2.39 An analysis of the injury accidents that occurred within the study area suggests that there are no common contributory factors amongst them. It is therefore considered that there are no existing road safety issues in the vicinity of the site.

### 3 DEVELOPMENT PROPOSALS

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#### **Introduction**

- 3.1 The proposed development is the construction, commissioning and operation of a new gas fired CHP plant (K4) to supply steam and power to the Mill, the layout of which is attached at **Appendix A**.
- 3.2 The Mill requires a continuous supply of energy, which is supplied on the wider site by K1; K2, a waste plastics and sludge fired steam generator; and by six back-up boilers. The Wheelabrator Kemsley combined heat and power plant (K3) is currently under construction and will also provide energy for the Mill.
- 3.3 K4 would have a gas turbine nominal power output of approximately 52MW and a steam turbine nominal power output of approximately 16MW. K4 would be located adjacent to the existing K1 plant and fully integrated with the remaining K1 supply equipment. K1 would be decommissioned once K4 is fully operational (although the decommissioning of K1 does not form part of the application).
- 3.4 The K4 turbine of around 52 MW nominal output means that consent to operate at that level will need to be granted by the Secretary of State for Department for Business, Energy & Industrial Strategy under the Planning Act 2008 which replaced the licensing provisions of the Electricity Act 1989, Section 36, for new generating stations greater than 50MW capacity.
- 3.5 The proposed design for the new plant includes the following:
- Gas turbine technology of around 57 MW nominal power output;
  - Waste Heat Recovery Boilers (capable of supplementary firing) sized to provide an output of approximately 110 MWth steam; and
  - Steam Turbine technology of around 16 MW nominal power output.
- 3.6 As with K1, as fuel for K4 arrives via a gas pipeline, K4 will not generate any operational delivery traffic and vehicle movements will be limited to the construction period only. There would be occasional ad-hoc maintenance vehicles but these would be rare, not an everyday occurrence and when they did occur would likely be one van (or similar).

#### **Access, Transport and Site Layout**

##### **Access**

- 3.7 The site would be accessed by construction HGVs via a private access road forming the southern arm of a three-arm roundabout with Barge Way (the northern access). The roundabout has been constructed to have four-arms to allow future development to the north; however, the north-western arm is incomplete and only the kerbs forming its entry and exit are constructed.
- 3.8 Barge Way is a 7.3m wide single carriageway road with 3.0m wide combined footway / cycleway along its northern side. It has street lighting, a 40mph speed restriction and no parking restrictions.

- 3.9 Pedestrians and cyclists would access the site via Ridham Avenue in addition to the Mill northern access. The staff car park for the whole site is located off Ridham Avenue to the south west of the site, and construction staff will access the site from this location.

#### ***Internal Arrangements and Parking***

- 3.10 Construction HGVs will arrive at the Mill northern access. Upon entry to the wider site, HGVs will continue along the access road and would turn to the west directly into the K4 site, in the same manner as all other existing areas within the wider site.
- 3.11 A laydown area will be provided to the north of K4 adjacent to the trailer park and will be accessed from the western side of the access road approximately 40m south of the Barge Way roundabout.
- 3.12 Some vehicles would transport material between the laydown area and the K4 site and this would be undertaken entirely on site using the internal access road. None of these movements would take place using the public highway.
- 3.13 Construction staff would park in the existing staff car park to the south west of the site. There are dedicated pedestrian facilities within the site as well as areas marked out specifically for use by pedestrians only. To enter the site, all pedestrians (whether walking from their car, walking from other areas) must pass through a gate house and sign in, at which point they will be advised of the pedestrian route to K4.
- 3.14 Sheltered and secure cycle parking is provided within the car park adjacent to the gatehouse. Upon parking their bicycle, all cyclists need to walk through the gatehouse and sign in, in the same manner as pedestrians, thus they will be advised of the internal pedestrian route to K4.

#### **Hours of Operation**

- 3.15 K4 (when operational) will operate continuously for 24 hours per day, seven days a week. However, because it is gas fired with fuel arriving by pipeline, there is no requirement for any fuel deliveries. Only the occasional maintenance vehicle will be required to visit the site and this would be on an ad-hoc basis.
- 3.16 During construction, shift patterns for staff will typically be between 07:00 and 19:00 on weekdays and between 07:00 and 16:00 on weekends, all of which is consistent with the K3 construction activities that are currently ongoing and were permitted as part of its planning consent.

#### **Employment and HGV Deliveries**

- 3.17 There is no requirement for any on-site staff when K4 is operational. The only staff who would visit K4 when it is operational is for maintenance purposes, which would be ad-hoc.
- 3.18 During construction, the construction contractors has estimated there will be an average of 100 staff on site with a peak of up to 200 staff on site for 3 – 4 months during the early groundworks and foundation works period.

- 3.19 The construction contractor has estimated that construction of K4 will generate an average of 25 to 30 HGV deliveries per day (average of 50 to 60 HGV movements per day) throughout the 20-month construction period. During the early groundworks and foundation works period, this could peak at up to 40 HGV deliveries per day (up to 80 HGV movements per day). This includes all associated construction activities including all deliveries (including abnormal indivisible loads) and all removal of material / waste etc. The demolition of K1 does not form part of this application and so the vehicle movements associated with that are not included in these numbers.

### **Timescales**

- 3.20 It is intended that the application for development consent for K4 will be submitted in 2018. It is expected that construction could take approximately 20 months with commencement in 2019, commissioning and then becoming operational in August 2020.
- 3.21 It is expected that the peak construction activities would be during the early groundworks and foundation works period, which would be in the 2019 future year. The exact operation life of K4 is currently unknown however, at the point that it reaches the end of its operational life it will be decommissioned.

### **Abnormal Indivisible Loads**

- 3.22 The largest items of plant that will be delivered as part of the construction of K4 include the gas turbines, steam turbines, generators and transformers. The vehicles required to deliver these are likely to fall outside of the Construction and Use Regulations, 1986, and so are likely to be deemed as Abnormal Indivisible Loads (AILs) and require the appropriate notification to be given to the relevant authorities to obtain an Order to enable their movement on the highway via the Motor Vehicles (Authorisation of Special Use) General Order (HMSO, 2003).
- 3.23 During 2010 there were four AILs in connection with delivering quad booster transformers to the Kemsley sub-station. Each load was 428 tonnes and the vehicle used for the transportation of these units was 104 metres long and 5.9 metres wide. The vehicle travelled north on the A249 past the Grovehurst dumbbell junction, turning at the Sheppey Crossing roundabout to travel south on the A249 to exit at the Grovehurst dumbbell junction. This route avoids the use of the small northern roundabout of the dumbbell junction and the A249 overbridge and it is expected that the smaller AILs associated with K4 will utilise this route to gain access to Swale Way and Barge Way which are 7.3 metre carriageways with the ability to accommodate these larger vehicles with police escort.
- 3.24 The escort and management requirements will be agreed with the highway authorities as part of obtaining the AIL permissions in accordance with the regulations.
- 3.25 At this stage, it is estimated there will be around 15 abnormal indivisible loads to be delivered to site under Police or contractor escort.

## 4 COMPATIBILITY WITH TRANSPORT POLICIES

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### National Policy Statements

- 4.1 National Policy Statements (NPSs) have been developed to guide the decision-making process for NSIPs. The NPSs define the national need for certain types of infrastructure, as well as the issues to be considered by the examining body when assessing whether a location is acceptable for the type and scale of development proposed.

### *Overarching National Policy Statement for Energy (EN-1)*

- 4.2 EN-1 (DECC 2011a) sets out national policy for energy infrastructure projects defined as NSIPs under the Planning Act 2008. It is noted that this document makes reference to the former Infrastructure Planning Commission (IPC), whose functions are now replaced by the Planning Inspectorate's National Infrastructure Directorate. Section 1.1 of this document states that:

**“For such applications this NPS, when combined with the relevant topic-specific energy NPS, provides the primary basis for decisions by the IPC.”**

- 4.3 In relation to CHP, paragraph 4.6.3 of EN-1 states:

**“Using less fuel to generate the same amount of heat and power reduces emissions, particularly CO<sub>2</sub>. The Government has therefore committed to promoting Good Quality CHP, which denotes CHP that has been certified as highly efficient under the CHP Quality Assurance programme.”**

- 4.4 In relation to traffic and transport it states that the consideration and mitigation of transport impacts is an essential part of the Government's wider policy objectives for sustainable development.

- 4.5 It highlights that for the applicant if a project is likely to have significant transport implications, the applicant's ES should include a transport assessment. Applicants should consult the Highways Agency (now Highways England) and Highways Authorities as appropriate on the assessment and mitigation. Where appropriate a travel plan should also be prepared and if additional transport infrastructure is proposed, applicants should discuss with network providers the possibility of co-funding by Government for any third-party benefits.

- 4.6 Where mitigation is needed, possible demand management measures must be considered and if feasible and operationally reasonable, required, before considering requirements for the provision of new inland transport infrastructure to deal with remaining transport impacts. The IPC should have regard to the cost-effectiveness of demand management measures compared to new transport infrastructure.

- 4.7 The IPC state that they may attach requirements to a consent where there is likely to be substantial HGV Traffic that:

- **“Control numbers of HGV movements to and from the site in a specified period during its construction and possibly on the routing of such movements;**



- **Make sufficient provision for HGV parking, either on the site or at dedicated facilities elsewhere, to avoid ‘overspill’ parking on public roads, prolonged queuing on approach roads and uncontrolled on-street HGV parking in normal operating conditions; and**
- **Ensure satisfactory arrangements for reasonably foreseeable abnormal disruption, in consultation with network providers and the responsible police force.”**

4.8 It is noted that if an applicant suggests that the costs of meeting any obligations or requirements would make the proposal economically unviable this should not in itself justify the relaxation by the IPC of any obligations or requirements needed to secure the mitigation.

4.9 A further five technology-specific NPSs were published for the energy sector covering fossil fuel electricity generation (EN-2), renewable electricity generation (both onshore and offshore) (EN-3), gas supply infrastructure and gas and oil pipelines (EN-4), the electricity transmission and distribution network (EN-5), and nuclear electricity generation (EN-6).

### **National Policy Guidance**

4.10 The National Planning Policy Framework (NPPF), published in March 2012, sets out national policy for delivering sustainable growth and development. The NPPF aims to make the planning system less complex and more accessible, setting out the Government’s planning policies for England and how these are expected to be applied.

4.11 In terms of transport, the objectives outlined in NPPF are:

**“The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel’. (Paragraph 29).**

**Encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport’. (Paragraph 30).”**

4.12 When determining planning applications, Paragraph 32 of the NPPF states:

**“All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:**

**The opportunities for sustainable transport modes have been taken up depending on the nature and location of the HQ site, to reduce the need for major transport infrastructure;**

**Safe and suitable access to the HQ site can be achieved for all people; and**

**Improvements can be undertaken within the transport network that costs effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.”**

4.13 Paragraph 35 of the NPPF emphasises the importance of protecting and exploiting opportunities for the use of sustainable transport modes for the movement of goods or people:

**“Plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people. Therefore, developments should be located and designed where practical to:**

- **accommodate the efficient delivery of goods and supplies;**
- **give priority to pedestrian and cycle movements, and have access to high quality public transport facilities;**
- **create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate;**
- **establishing home zones;**
- **incorporate facilities for charging plug-in and other ultra-low emission vehicles; and**
- **consider the needs of people with disabilities by all modes of transport.”**

4.14 Having regard to the above objectives, the proposed development’s access and movement will ensure that the development is connected to the adjacent community and sustainable travel network.

4.15 Planning Practice Guidance – Travel Plans, Transport Assessments and Statements in Decision-Taking (PPG) was published in March 2014 and provides a concise report on the use and importance of Transport Assessments / Statements and Travel Plans. With regard to whether to provide a Transport Assessment, Transport Statement or no assessment, the guidance states:

**“Local planning authorities, developers, relevant transport authorities, and neighbourhood planning organisations should agree what evaluation is needed in each instance.**

4.16 The guidance states that Transport Assessments / Statements and Travel Plans can positively contribute to:

- **‘encouraging sustainable travel;**
- **lessening traffic generation and its detrimental impacts;**
- **reducing carbon emissions and climate impacts;**
- **creating accessible, connected, inclusive communities;**
- **improving health outcomes and quality of life;**
- **improving road safety; and**
- **reducing the need for new development to increase existing road capacity or provide new roads.”**

4.17 The guidance states that Transport Assessments / Statements and Travel Plans should be proportionate to the size and scope of the proposed development, be tailored to particular local circumstances and be established at the earliest practicable possible stage of a development proposal.

4.18 The guidance continues by stating that these reports should be brought forward through collaborative ongoing working between the Local Planning Authority / Transport Authority, transport operators, Rail Network Operators, Highways Agency and other relevant bodies.

- 4.19 The proposed development will alter the volume of traffic on the adjacent road network during the construction and decommissioning stages. Vehicle movements will be associated with construction staff (including those during the decommissioning stage), HGV movements and Abnormal Indivisible Loads; however, the volume of construction vehicle is not anticipated to be significant. A construction programme has not yet been established but it is likely that the construction process would be in the order of 20 months, during which it would generate an average of 50 to 60 two-way HGV movements per day.
- 4.20 The vehicle movements generated by the construction and decommissioning are temporary; therefore, the impact of the development on the highway network is temporary. When K4 is operational, there will be no regular vehicle movements at the site. The proposed development will have no associated increase in staffing numbers, there will be no deliveries, and only ad-hoc vehicles associated with maintenance will be generated.
- 4.21 As the PPG states that Transport Assessments / Statements and Travel Plans should be proportionate to the size and scope of the proposed development, a Transport Assessment has been prepared to consider the transport related effects associated with the construction and decommissioning stages of K4.

***Circular 02/2013: The Strategic Road Network and the Delivery of Sustainable Development***

- 4.22 Circular 02/2013: The Strategic Road Network and the Delivery of Sustainable Development was published by the Department for Transport in September 2013. The Circular sets out the way in which the Highways Agency (now Highways England) will engage with communities and the development industry to deliver sustainable development and economic growth whilst safeguarding the primary function and purpose of the strategic road network.
- 4.23 Circular 02/2013 replaces Circular 02/2007 and 01/2008. Circular 02/2013 states that 'the Highways Agency supports the economy through the provision of a safe and reliable strategic road network, which allows for the efficient movement of people and goods'. Similarly, to the NPPF, Circular 02/2013 states that 'development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

**Local Policy**

- 4.24 National policy on transport and land use establishes broad policy objectives that reflect the Government's aspirations for integrating land development and transport. The role of local government is to develop strategies based on specific local social and spatial requirements, which deliver the national aspirations.
- 4.25 Local strategy with respect to land use and transport is articulated in statutory documents prepared by planning and highway authorities which, for this development, comprises of:
- Vision for Kent 2012 – 2022
  - Growth without Gridlock
  - Kent Corridors to M25 Route Strategy Evidence Report

### ***Vision for Kent 2012 – 2022***

- 4.26 This is a countywide strategy for the social, economic and environmental wellbeing of Kent's communities. It has been written around three major ambitions:
- To grow the economy, by supporting businesses to be successful including improvements to the transport network and the provision of high-speed broadband;
  - Tackling disadvantage, by fostering aspiration rather than dependency including the provision of comprehensive reliable and affordable public transport services providing access to education and employment opportunities; and
  - To put citizens in control, by involving people in the making decisions and working with them to design services that meet their needs and suit them.

### ***Growth without Gridlock (2010)***

- 4.27 Growth without Gridlock is the county's 20-year plan for essential transport improvements and innovative funding solutions to support the substantial growth planned: 23,000 new homes and 40,000 new jobs by 2021. The Plan calls for greater transport funding and delivery powers for local transport authorities and calls on the DfT to progress those schemes of national importance, including a third Thames Crossing, a long-term solution to Operation Stack, improvements to the M2/ A2 corridor and a scheme of foreign road user charging.

### ***Highways Agency – Kent Corridors to M25 Route Strategy Evidence Report (2014)***

- 4.28 The A2/ M2 corridor forms part of the Trans European Transport Network (TEN-T) and is one of the gateways to Europe. Traffic flows at the western end of the route as it approaches the M25 are almost 140,000 vehicles per day. In the length of the M2 between Faversham and Sittingbourne, traffic flows are approximately 20,000 vehicles per day. The volume of goods vehicles is reasonably constant between Dover and Sittingbourne at approximately 3,000 per day.
- 4.29 The A249 between the A2 and M2 carries the lightest traffic flow of the strategic road network, but has a low rate of journey time reliability. There is consistently significant delay on the M2 between junctions 6 (Faversham) and 5 (Sittingbourne).
- 4.30 Junction 5 (Sittingbourne) and 7 (Brenley Corner) of the M2 are in the top 50 worst crash sites on the strategic route network. Lengths of route in Swale with poor crash records are:
- M2 J6 to J7 coast bound,
  - A249 southbound between A2 and M2
  - A249 Brielle Way, Sheerness
- 4.31 The condition of the carriageway on the M2/ A2 corridor is considered to be severely degraded in both directions between J5 (Sittingbourne) and Canterbury. The majority of the A249 north of the M2 will reach the end of its design life by 2020. There are gaps in the remote monitoring of motorway incidents, CCTV and Variable message signing on the M2 between junctions 5 (Sittingbourne) and 7 (Brenley Corner).

### ***Local Transport Plan for Kent 2016 - 2031***

4.32 The preparation and submission of a Local Transport Plan (LTP) is a statutory requirement of all local transport authorities in England. An LTP sets out the authority's policies and delivery plans for managing and improving the local transport network. The government's Guidance on LTPs (July 2009) made clear that they should reflect and support Local Plans and that, in two-tier areas, county councils should work closely with districts to ensure alignment between these documents and ensure that the transport implications of development proposals are identified and mitigated at an early stage in the planning process.

4.33 KCC's strategic approach for Kent's fourth Local Transport Plan (LTP4), covering the period 2016 to 2031, stems from the following ambition for Kent:

**“To deliver safe and effective transport, ensuring that all Kent's communities and businesses benefit, the environment is enhanced and economic growth is supported.”**

4.34 This ambition will be realised through five overarching policies that are targeted at delivering specific outcomes. These outcomes are:

- **“Outcome 1: Economic growth and minimised congestion;**
- **Outcome 2: Affordable and accessible door-to-door journeys;**
- **Outcome 3: Safer travel;**
- **Outcome 4: Enhanced Environment;**
- **Outcome 5: Better health and wellbeing.”**

4.35 Transport Priorities for Swale with relevance to the proposed site include:

- **“The A249 / Grovehurst Road junction;**
- **Extension of the Northern relief road to the A2 and then M2;**
- **A249 corridor capacity enhancements to support growth;**
- **Improvements to Key Street junction;**
- **Improvements to M2 Junction 5 – funding committed by Highways England;**
- **Improved transport connections to and from major centres of employment in the borough.**

4.36 The local transport plan highlights that the A249 provides a primary north, south route for Kent. Capacity issues at M2 Junction 5, where the A249 meets, is acting as a major barrier to growth in the Borough. Highways England is currently evaluating options to improve the M2 J5 and consultation with the wider public on final proposed options is proposed for early 2017.

4.37 It also states that a corridor study of the A249 is needed to define what improvements to the principal junctions (Grovehurst, Key Street and Bobbing) will be required to support the new allocations in the Local Plan, with the A249/Grovehurst Road Junction already identified.

### ***Swale Local Plan***

4.38 The Swale Borough Local Plan is a key planning document for Swale, setting out the vision and overall strategy for the area and how it will be achieved for the period from 2014 to 2031. The Local Plan was adopted in July 2017.

4.39 The local plans overarching vision for the transformation of the borough is:

**“to transform its economic, social and environmental prospects, making it one of the best places in Britain in which to live, work, learn and invest.”**

- 4.40 Policy DM 6 – Managing transport demand and impact – states that development proposals generating a significant amount of transport movements will be required to support their proposal with the preparation of a Transport Assessment (including a travel plan) which will be based on the councils most recent strategic modelling work. The highways Agency may also require a Transport Assessment if the development is deemed to impact on the strategic road network.
- 4.41 It also highlights that development proposals should be sustainable, avoid a new direct access onto the strategic or primary distributor route network, integrate air quality management and environmental quality, and where traffic generation leads to a decrease in safety or is in excess of capacity of the highway network, improvements will be required.
- 4.42 The new Swale Borough Local Plan sets out the strategy for the Borough, including the achievement of sustainable development (Chapter 4). The chapter also includes a key diagram which indicates broad locations for growth, protection and enhancement:
- a series of core policies that take important issues for Swale and create the necessary linkages with the policy themes, set out in national planning policy and other local plan policies (Chapter 5);
  - details of allocations, the identification of regeneration areas, a neighbourhood plan and an area of search (Chapter 6);
  - a framework of development management policies to guide the determination of planning applications by setting out criteria for development proposals (Chapter 7); and
  - a framework for implementation and monitoring of the Local Plan. Chapter 8 sets out the issues affecting the delivery of the Local Plan, whilst a separately published Implementation Delivery Schedule details the infrastructure necessary to support the Local Plan.

***The Swale Transportation Strategy 2014-2031 Draft, Appendix***

- 4.43 The transportation strategy for Swale is a comprehensive document looking at the issues regarding transport in Swale and potential solutions to these. It does this in line with national and local policies, which are set out within the policy context. The transportation action plan is structured into four main sections, with each section supported by actions and outcomes, linked to the Borough’s ambitions:
- Encouraging sustainable travel
  - Improvements to transport infrastructure
  - Alternative access to services
  - Road Safety
- 4.44 Several key transport challenges are identified for Swale with those relevant to the site listed:
- Congestion at M2 junction 5 acts as a barrier to further development on Swale

- Capacity improvements required at A49 Key Street and Grovehurst interchanges
- Public transport tends to be inaccessible for the mobility impaired
- Traffic congestion with school / employment commuting into Sittingbourne, causing rural rat runs in the south of town, and air quality issues
- Transport interchange between cycle routes, bus services, and train services is poor, therefore encouraging the use of cars to rail stations, which add to problems with parking and congestion
- Constrained viability of new development to provide significant infrastructure contributions.

4.45 The success of the strategy will be measured objectively against the following target indicators:

- **“Traffic volumes at specific location**
- **Number of journeys to work by car**
- **Mode share: walking cycling and bus**
- **Bus timetable reliability**
- **Number of people killed and seriously injured**
- **Vehicle emissions”**

4.46 Target 1 states to maintain traffic flows at key locations, in relation to the site it states that Grovehurst Road traffic flows should be maintained at 15,400 vehicles per day.

4.47 For employment and other non-residential development, where considered appropriate, the Borough Council will expect the submission of a Travel Plan (as part of a Transport Assessment) alongside the planning application, in accordance with the relevant County Council SPG on such matters.

4.48 Any provision or financial contribution sought will be secured through a planning condition or appropriate legal agreement.

#### **Policy Consideration**

4.49 It is considered that the proposals are generally in accordance with policies relating to transport and highways at the national and local levels since there are walking and cycling facilities to the site as well as public transport services nearby. Additionally, the site is well located in respect to the strategic freight network.

## 5 FUTURE YEAR TRAFFIC FLOWS

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### Future Assessment Year

- 5.1 As set out above, K4 will not generate any regular traffic when it is operational. When K4 is decommissioned, the process will require its removal from site which will generate associated vehicle movements, including HGV movements. Since there is no further use for the materials, such materials can be removed in bulk after demolition. This means that larger payloads can be achieved and the traffic flows associated with decommissioning are lower than those during its construction. This TA, as part of the EIA, is therefore considering the impact of K4 during the construction phase.
- 5.2 The peak construction period is expected at the start of the programme when groundworks and foundation works are ongoing, this would be during 2019. Therefore, for assessment purposes, the traffic flows on the adjacent highway network have been estimated for a future year of 2019.

### Traffic Growth Rates

- 5.3 A future year baseline traffic scenario of 2019 has been created by applying traffic growth rates to the observed traffic flows set out in Section 3 and then adding in the traffic flows of 'committed developments' i.e. developments that have planning consent but are not yet generating traffic on the network.
- 5.4 Before adding in any committed development traffic flows, growth rates have been applied to the observed traffic flows set out in Section 3 using the DfT software TEMPRO to create base 2019 traffic flows. The TEMPRO software presents the output of the DfT's National Trip End Model which forms part of the National Transport Model (NTM). The DfT's Webtag guidance Unit 3.15.2 advises the use of NTM in preference to the National Road Traffic Forecasts (NRTF) as the NTM data is based on a more up-to-date model.
- 5.5 It should be noted that growth rates include allowances for background traffic growth as well as development growth and, in some instances, the application of growth rates and the addition of traffic flows from committed developments and cumulative developments (i.e. emerging developments that do not yet have planning consent) can result in double counting of traffic flows.
- 5.6 In this instance, given that a 2019 baseline year is being developed, any such effect of double counting will be negligible and so no adjustments to the growth rates have been made.
- 5.7 The TEMPRO growth rates obtained are listed in **Table 5.1**.

**Table 5.1: TEMPRO Growth Rates**

	Road Type	
Base Year	Trunk	Principal
2016 to 2019 Daily	1.0341	1.0353
2016 to 2019 AM Peak Hour		1.0347



Base Year	Road Type	
	Trunk	Principal
2016 to 2019 PM Peak Hour		1.0332
2017 to 2019 Daily	1.0239	1.0228
2017 to 2019 AM Peak Hour		1.0218
2017 to 2019 PM Peak Hour		1.0232

- 5.8 These growth rates have been applied to the observed traffic flows to create 2019 base traffic flows (prior to the inclusion of committed development traffic flows). The 2019 traffic flows are attached at **Appendix B**.

#### **Existing Permissions at the Mill**

- 5.9 The transport effects of the proposed development in combination with other schemes that are operational / constructed, consented or for which planning permissions are currently being sought, will be assessed where appropriate and are described below.

#### **K1**

- 5.10 The existing K1 plant, supplied in 1995, operates fully independently from the Mill, which supplies the plant with raw water and hot condensate return.
- 5.11 K1 is around 20 years old with the current operating contract ending in February 2019. The Applicant has assessed the condition of K1 and concluded that significant investment into the gas turbine, waste heat recovery boilers and steam turbine is necessary.
- 5.12 The Applicant intends to replace the existing plant with a new plant, K4, which will integrate with the remaining supply equipment and be constructed on available land adjacent to the existing K1 plant. K4 is expected to provide a reliable and efficient operation and has been sized to meet the projected energy demands of the site until it is decommissioned.
- 5.13 Although K1 is to be decommissioned, it does not form part of this application. Notwithstanding this, K1 does not generate any regular traffic flows and so this does not affect the future year baseline scenario.

#### **K3**

#### ***Wheelabrator Kemsley Generating Station***

- 5.14 Kent County Council granted planning permission for the development of the Wheelabrator Kemsley Generating Station in March 2012 (planning ref. SW/10/444). In addition, the following applications relevant to the facility have been submitted and granted planning permission:
- Application to Kent County Council for a non-material amendment to the site layout (planning ref. PAG/MC/SW/10/444/R) (granted September 2013).

- Application to Kent County Council to vary condition (2) and delete condition (4) of planning permission SW/10/444 to allow a variation to the permitted hours of delivery to allow for 24 hours 7 days per week operation (planning ref. SW/12/506680) (granted April 2015); and
- Application to Kent County Council for a non-material amendment to the building footprint, elevation and site layout (planning ref. SW/10/444/RA) (granted December 2015).

5.15 The Wheelabrator Kemsley Generating Station has already been consented by Kent County Council and is currently under construction. Under the existing programme of construction, the consented scheme is due to be completed and operational by June 2019.

5.16 The estimated traffic flows at the Generating Station and along the adjacent highway network have been taken from the Transport Assessment that was prepared in support of its original planning application.

5.17 The non-material amendments to the planning application did not affect the consented traffic flows at the Generating Station.

***Access to Wheelabrator Kemsley Generating Station***

5.18 The following applications have been made in relation to access provisions to serve the Kemsley Generating Station:

- Application to Kent County Council for the formation of an improved access road and associated development to serve the Wheelabrator Kemsley generating station (planning ref. SW/12/1001) (granted November 2012);
- Application to Kent County Council for a non-material amendment to provide for the repositioning and change to the capacity of the pond to accommodate surface water drainage from the access road (planning ref. PAG/SW/12/1001) (granted August 2013); and
- Application to Kent County Council for the variation of Condition 6 of planning permission SW/12/1001 to provide the formation of improved access road and associated development to serve Wheelabrator Kemsley Generating Station (planning ref. SW/13/1257) (granted February 2014).

5.19 These applications did not affect the consented traffic flows at the Generating Station.

***Access Road to Serve the Mill***

5.20 In addition, the following applications have been made in relation to the Mill:

- Application to Swale Borough Council for formation of new rear access road and extension to trailer park to serve the Mill, together with security cabin and drainage pond (planning ref. SW/12/1011) (granted October 2012); and
- Application to Swale Borough Council for non-material amendment to planning permission SW/12/1011 for formation of new rear access road and extension to trailer park, together with security cabin and drainage pond (planning ref. SW/12/1011/NMA) (granted May 2014).

5.21 These applications did not affect the consented traffic flows at the Mill.

***Incineration Bottom Ash Building***

5.22 Energy production from waste generates Incineration Bottom Ash (IBA), the cooled burnt-out residue from the combustion process. This material is commonly processed to recover metals for recycling and secondary aggregates products used in the construction industry.

5.23 The original permission for the Wheelabrator Kemsley Generating Station (SW/10/444) included an Incineration Bottom Ash (IBA) processing building. The non-material amendment application that was approved in September 2013 (planning ref. PAG/MC/SW/10/444/R) removed the IBA building from the consented scheme.

5.24 This application did not affect the consented traffic flows at the Generating Station.

***IBA Facility***

5.25 There is a separate planning consent for the construction of a standalone IBA facility adjacent to the Wheelabrator Kemsley Generating Station site (planning ref. KCC/SW/0265/2016).

5.26 The IBA permission allows for 84 daily HGV movements.

5.27 The estimated traffic flows generated by the IBA Facility and along the adjacent highway network have been taken from the Transport Assessment that was prepared in support of its original planning application.

**Other Committed Developments**

5.28 An assessment of ‘committed’ developments in the local area that have gained permission has been undertaken to determine whether they are operational, or when they are likely to be operational within the timescales of construction for K4. This is to form a view of whether the traffic generated by the developments will already be present in the traffic surveys undertaken for the assessment of K4, or whether they should be added as ‘committed’ developments within the Future Baseline 2019 traffic flows and assessments. The sites included in **Table 5.2** have been reviewed.

**Table 5.2: Review of ‘Committed’ Developments**

Site Number	Site Name	Application number	Status	Submitted / Decision Date	Status	Traffic Flows
1	KPM Sustainable Energy Plant (SEP) (K3)	SW/10/444	Granted	2010 / 2012	K3 currently under construction – new DCO proposal (Site 13)	Operational traffic flows included within committed flows.
2	KPM Recycling Depot	16/501228/FULL	Permitted	2016 / 2016	Not Built	Operational traffic flows included within committed flows.
3	KPM Incineration	16/507687/COUNTY	Granted	2016 / 2016	Not Built	Operational traffic flows included within

Site Number	Site Name	Application number	Status	Submitted / Decision Date	Status	Traffic Flows
	Bottom Ash Facility (IBA)					committed flows.
4	Gypsum Recycling Building (Ridham Docks)	16/501484/COUNTY	Granted	2016 / 2016	Not Built	Operational traffic flows included within committed flows.
5	KPM Anaerobic Digester	SW/11/1291	Granted	2011 / 2012	Assumed Operational	Operational flows lower than previous site. Reduction in flows not included committed flows. Flows included in surveyed flows.
6	Fulcrum Business Park Development	14/500327/OUT	Granted	2014 / 2016	Not Built	Operational traffic flows included within committed flows.
7	Nicholls Transport Depot	SW/12/0816	Granted	2012 / 2013	Operational	Flows included in surveyed traffic.
8	Materials Recycling Facility (Ridham Docks)	SW/12/1211	No objection	2012 / 2013	Not Built	Operational traffic flows included within committed flows.
9	Eurolink V	15/510589/OUT	Granted	2015 / 2016	Not Built	Operational traffic flows included within committed flows.
10	Tonge Corner Solar Park	SW/14/0224	Granted	2014 / 2015	Partly built	Construction flows only – no operational flows. No flows onto local network, therefore not included within committed flows.
11	Steam Pipeline (Ridham Dock to KPM)	16/506935	Granted	2016 / 2016	Assumed not built	Minimal construction vehicles only, therefore not included within committed flows
12	Kemsley Sustainable Energy Plant (SEP) (K3)	EN010083	Awaiting Decision	2017 / Awaiting Decision	K3 built – new DCO proposal	Operational traffic flows included within committed flows.
13	Thermal Energy Facility Kemsley Field Business Park	15/500348/COUNTY	Granted	2015/2015	Not built	Operational traffic flows included within committed flows

\*Note: Kemsley Paper Mill (KPM)

5.29 Based on the above, the following developments are considered as committed developments and will form part of the future year baseline scenario:

- 1/12 – KPM Sustainable Energy Plant (SEP) (K3);
- 2 – KPM Recycling Depot;
- 3 – KPM Incineration Bottom Ash Facility (IBA);
- 4 – Gypsum Recycling Building;
- 6 – Fulcrum Business Park;
- 8 – Materials Recycling Facility; and
- 9 – Eurolink V
- 13 – Kemsley Field Thermal Energy Facility.

5.30 The traffic flows generated by these committed developments have been taken from their respective Transport Assessments that supported their planning applications; where their Transport Assessment did not assign traffic to the wider network, observed junction turning movements and observed link movements along with distributions used in other applications and Census 2011 Journey to Work data have been used.

5.31 The committed development traffic flows attached at **Appendix C** have been added to the 2019 base traffic and the resultant 2019 baseline scenario is attached at **Appendix D**.

### **Cumulative Sites**

5.32 KCC have requested that the following developments are considered in a cumulative assessment:

- 17/505073/FULL Erection of a tile factory including service yard, storage yard and car parking area;
- 16/506193/ENVSCR EIA Screening Opinion - Land South of Iwade -Outline application for proposed residential development of 275 dwellings including affordable housing with open spaces, appropriate landscaping and minor alterations to the surrounding highway network (access); and
- 17/503713/ENVSCR | EIA Screening Opinion | Land East of Iwade - Outline application for proposed residential development of 440 dwellings.

5.33 A full planning application has been submitted and is currently being decided for the tile factory meaning that if permission is granted these vehicles may be on the highway network at the same time as the K4 construction vehicles.

5.34 With respect to the Iwade residential developments, it is unlikely, as only screening opinions have currently been applied for, that these developments will be generating any traffic before the end of the construction of K4 in 2020 (following completion of construction, K4 will only generate negligible ad-hoc trips associated with maintenance) and therefore, these sites have not been included in the cumulative assessment.

- 5.35 The traffic flows generated by the tile factory have been based on the traffic generation set out in the Transport Statement that supported its planning application; they have been assigned to the highway network using observed HGV movements at the Grovehurst Dumbbell junction and observed traffic flows on the A2 / M2 / A249(S) link flows.
- 5.36 In addition, the following sites have been included in the cumulative assessment:
- 18/500257/EIFUL Proposed development of 155 dwellings on land adjacent to Quinton Farm House, Quinton Road, Sittingbourne; and
  - 18/500393/FULL Erection of a natural gas fuelled reserve power plant at Plot N2c, Castle Road, Eurolink, Sittingbourne.
- 5.37 A sustainable urban extension comprising up to 1,100 new dwellings, a secondary and primary school on Land North of Quinton Road (also known as North West Sittingbourne) has submitted an EIA Scoping (16/506014/EIASCO). Due to its current position in the planning process this site is unlikely to generate traffic movements before the end of the construction of K4 in 2020 and has not been included in the cumulative assessment.
- 5.38 The development traffic flows have been taken from the relevant TA/TS. Where traffic flows have not been assigned, or not assigned to the whole of the network being assessed in this application, professional judgement using 2011 Journey to Work Census and assignment used in the committed development assessment has been used.
- 5.39 Finally, an application is to be submitted for a new road link within the Kemsley Paper Mill site; this scheme will be completed before K4 is commenced and therefore, the site will not be generating construction vehicle movements at the same time as the K4 development. The road will not generate additional traffic after construction. Therefore, it has not been included in the cumulative assessment.
- 5.40 The cumulative development traffic flows attached at **Appendix I**.

## 6 TRIP GENERATION, MODE SHARE AND ASSIGNMENT

### Construction Phase

#### *Trip Generation*

- 6.1 Construction vehicle movements have been estimated by the project team, including input from Costain.
- 6.2 During construction, it is estimated there will be an average of 100 staff on site with a peak of up to 200 staff on site during the early groundworks and foundation works period.
- 6.3 It is estimated that construction of K4 will generate an average of 25 to 30 HGV deliveries per day (average of 50 to 60 HGV movements per day) throughout the 20-month construction period. During the early groundworks and foundation works period, this could peak at up to 40 HGV deliveries per day (up to 80 HGV movements per day). This includes all associated construction activities including all deliveries (including abnormal indivisible loads) and all removal of material / waste etc. The demolition of K1 does not form part of this application and so the vehicle movements associated with that is not included in these numbers.

#### *Mode Share*

- 6.4 To estimate the likely mode of transport that construction workers would use to travel to and from the site, the 2011 Census Journey to Work data has been analysed for the Kemsley Workplace Zone. The workplaces within this zone include the Mill as well as the adjoining employment units, all of which have similar levels of accessibility and shift patterns and is thus reasonably representative for assessment purposes for construction workers to K4.
- 6.5 The Workplace Population Census data as shown in **Table 6.1** has been applied to the level of construction staff to predict the level of vehicle trip generation for the site.

**Table 6.1: Mode Share (Kemsley Travel to Work)**

Mode	% Mode Share*
Car Driver	84.8%
Car Passenger	4.9%
Bus	0.4%
Train	1.5%
Motorcycle	2.6%
Pedal Cycle	3.1%
Walk	2.6%
Other	0.0%
<b>Total</b>	<b>100%</b>

\*Based on existing mode share for Kemsley Workplace Zone (2011 Census)

- 6.6 As can be seen in **Table 6.1**, the Census data predicts that 84.8% of staff will arrive via car, 4.9% would arrive as a car passenger, 3.1% would arrive by bicycle, 2.6% would arrive on foot and 1.5% would arrive by train.

6.7 Due to the nature of teams of construction workers moving from one site to the next, workers tend to quickly identify others in their team who live near to them and quickly car share amongst themselves. It can therefore be expected that the proportion of car sharers may be higher than the above and thus the proportion of car driver may reduce. However, the above provides for a robust analysis on the basis of a robust estimate of construction workers arriving by car.

6.8 Therefore, it is estimated there would be an average of 85 construction staff arriving and departing via car per day to K4. At the construction peak, it is estimated there will be up to 170 construction staff arriving and departing via car per day.

**Temporal Distribution**

6.9 Construction activities will be undertaken during normal construction working hours of 07:00 and 19:00 on weekdays and 07:00 to 16:00 on Saturdays and only very occasionally on Sundays. This work pattern is consistent with the K3 construction activities that are currently ongoing and were permitted as part of its planning consent. Construction HGV movements may occur during the entirety of this period.

6.10 Construction HGV movements will be generated throughout the day and will be typically spread fairly equally in terms of hourly movements. Although there may be occasional peaks of construction HGV movements at various times of the day, these will be balanced by subsequent troughs and balance out on different days to being typically evenly spread. Therefore, an average day will see a fairly equal spread of construction HGV movements across the working day.

6.11 Daily construction HGV movements have therefore been spread equally across the twelve-hour working weekday and nine hour working weekend.

6.12 Construction staff would typically arrive between 06:00 and 07:00, and depart between 19:00 and 20:00 on a weekday. On a weekend, construction staff would typically arrive between 06:00 and 07:00 and depart between 16:00 and 17:00. It is assumed that all staff arrive and depart within these hours to ensure a robust assessment.

6.13 Based upon the calculations set out above, a breakdown of the peak construction traffic flows and the average construction traffic flows are shown in **Tables 6.2** and **6.3** respectively.

**Table 6.2 Peak Construction Traffic Generation**

Time Begin	5 Day Average						Saturday and Sunday					
	Arrivals		Departures		Two Way		Arrivals		Departures		Two Way	
	Cars	HGVs	Cars	HGVs	Cars	HGVs	Cars	HGVs	Cars	HGVs	Cars	HGVs
06:00	170				170		170				170	
07:00		4		3				4		3		
08:00		3		4		7		3		4		7
09:00		4		3		7		4		3		7
10:00		3		4		7		3		4		7
11:00		4		3		7		4		3		7
12:00		3		4		7		3		4		7
13:00		3		3		6		3		3		6
14:00		3		3		6		3		3		6



Time Begin	5 Day Average						Saturday and Sunday					
	Arrivals		Departures		Two Way		Arrivals		Departures		Two Way	
	Cars	HGVs	Cars	HGVs	Cars	HGVs	Cars	HGVs	Cars	HGVs	Cars	HGVs
15:00		3		3		6		3		3		6
16:00		3		3		6			170		170	
17:00		4		3		7						
18:00		3		4		7						
19:00			170		170							
<b>Total</b>	170	40	170	40	340	80	170	30	170	30	340	60

**Table 6.3: Average Construction Traffic Generation**

Time Begin	5 Day Average						Saturday and Sunday					
	Arrivals		Departures		Arrivals		Departures		Arrivals		Departures	
	Cars	HGVs	Cars	HGVs	Cars	HGVs	Cars	HGVs	Cars	HGVs	Cars	HGVs
06:00	85				85		85				85	
07:00		3		2		5		3		2		5
08:00		2		3		5		2		3		5
09:00		3		2		5		3		2		5
10:00		2		3		5		2		3		5
11:00		3		2		5		3		2		5
12:00		2		3		5		2		3		5
13:00		3		2		5		3		2		5
14:00		2		3		5		2		3		5
15:00		3		2		5		3		3		5
16:00		2		3		5			85		85	
17:00		3		2		5						
18:00		2		3		5						
19:00			85		85							
<b>Total</b>	85	30	85	30	170	60	85	23	85	23	170	45

### ***Trip Distribution and Assignment***

- 6.14 The origin of construction HGVs and their route to the site will vary through the process and is expected to vary on a day by day basis depending upon the construction activity being undertaken and the contractor(s) involved. Given the layout of the adjacent highway network and the strategic nature of its routes and destinations, it is likely that the routes by construction HGVs will be on the strategic road network to the A249 then Swale Way and Barge Way.
- 6.15 For the purposes of this assessment, it is assumed that up to 20% of construction HGVs would be from neighbouring areas and these movements would be via the M2 east of the A249 (6.67% i.e. 1/3 of 20%), the M2 west of the A249 (6.67%) and the A249 south of the M2 (6.67%). Of the remaining 80%, 25% could be from areas in south / south of London with HGVs travelling via the M20 and the A249 south of the M2 to / from the site and 55% could be from areas in north / north of London with HGVs travelling via the M2 west of the A249 and the A249 south of the M2 to / from the site.

- 6.16 Census 2011 Journey to Work data has formed the basis of the assumptions of construction staff vehicle routeing.
- 6.17 The Construction traffic has been assigned to the road network in accordance with the above, and the resultant average and peak construction traffic flows on each link and junction are attached at **Appendix E** and **Appendix F** respectively.
- 6.18 These traffic flows have been added to the 2019 baseline traffic flows. To create the following scenarios:
- 2019 Baseline plus Average Construction (**Appendix G**);
  - 2019 Baseline plus Peak Construction (**Appendix H**);
  - 2019 Baseline plus Average Construction plus Cumulative Development (**Appendix J**);  
and
  - 2019 Baseline plus Peak Construction plus Cumulative Development (**Appendix K**).

#### **Operational Phase**

- 6.19 As with K1, K4 will not generate any operational delivery traffic during operation and will be limited to the construction period only. There would be occasional ad-hoc maintenance vehicles but these would be rare, not an everyday occurrence and when they did occur would likely be one van (or similar).
- 6.20 Given this, the number of vehicle movements associated with K4 when it is operational would be minimal and would be unlikely to create any discernible transport impacts. The amount of additional vehicle movements generated during the operational phase would be significantly lower than those during the construction phase. On this basis, no assessments are necessary for the operational phase.

#### **Decommissioning Phase**

- 6.21 When K4 is decommissioned, the process will require its removal from site which will generate associated vehicle movements, including HGV movements. Since there is no further use for the materials, such materials can be removed in bulk after demolition.
- 6.22 This means that larger payloads can be achieved and the traffic flows associated with decommissioning are lower than those during its construction. This TA, as part of the EIA, is not therefore assessing the decommissioning stage and traffic impacts are identified during the construction phase only.

## 7 TRANSPORT ASSESSMENT

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### Introduction

- 7.1 As set out above, this TA assesses the effects of the construction traffic flows generated by K4.
- 7.2 To consider the effects of the traffic generated by the construction of K4, two assessments have been undertaken. Firstly, an assessment of traffic flow increases has been undertaken to provide a context. Secondly, an assessment of junction performance has been undertaken on the local junctions between the northern access and the A249.
- 7.3 These assessments have been undertaken for the average and peak construction traffic flows to enable an understanding of the effects throughout the construction phase to be identified.

### Link Assessment

- 7.4 The average and peak construction traffic flows have been assessed against the 2019 baseline traffic flows within **Tables 7.1 to 7.18**.

**Table 7.1: Swale Way East of B2005 Grovehurst Roundabout Average Construction Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	168	57	0	0	0.0	0.0	188	51	0	0	0.0	0.0	193	20	0	0	0.0	0.0
01:00	156	52	0	0	0.0	0.0	166	62	0	0	0.0	0.0	165	19	0	0	0.0	0.0
02:00	173	48	0	0	0.0	0.0	136	51	0	0	0.0	0.0	104	18	0	0	0.0	0.0
03:00	252	73	0	0	0.0	0.0	173	52	0	0	0.0	0.0	89	20	0	0	0.0	0.0
04:00	379	86	0	0	0.0	0.0	214	67	0	0	0.0	0.0	107	21	0	0	0.0	0.0
05:00	1029	112	0	0	0.0	0.0	605	70	0	0	0.0	0.0	359	22	0	0	0.0	0.0
06:00	1132	172	85	0	7.5	0.0	520	116	85	0	16.3	0.0	237	55	85	0	35.6	0.0
07:00	1864	190	5	5	0.3	2.6	628	112	5	5	0.8	4.5	223	50	5	5	2.2	10.0
08:00	2044	179	5	5	0.2	2.8	648	96	5	5	0.8	5.2	229	50	5	5	2.2	10.0
09:00	1293	196	5	5	0.4	2.5	727	109	5	5	0.7	4.6	254	47	5	5	2.0	10.7
10:00	1171	212	5	5	0.4	2.4	833	103	5	5	0.6	4.8	269	50	5	5	1.9	10.0
11:00	1214	201	5	5	0.4	2.5	877	101	5	5	0.6	4.9	510	50	5	5	1.0	10.0
12:00	1348	206	5	5	0.4	2.4	913	98	5	5	0.5	5.1	830	54	5	5	0.6	9.2
13:00	1419	212	5	5	0.4	2.4	836	83	5	5	0.6	6.0	444	50	5	5	1.1	10.0
14:00	1436	212	5	5	0.3	2.4	845	89	5	5	0.6	5.6	487	54	5	5	1.0	9.2
15:00	1649	230	5	5	0.3	2.2	962	116	6	6	0.6	5.2	593	77	6	6	1.0	7.8
16:00	1685	168	5	5	0.3	3.0	761	84	85	0	11.1	0.0	609	47	85	0	13.9	0.0
17:00	1728	132	5	5	0.3	3.8	804	71	0	0	0.0	0.0	665	47	0	0	0.0	0.0
18:00	1194	106	5	5	0.4	4.7	683	59	0	0	0.0	0.0	448	34	0	0	0.0	0.0
19:00	703	68	85	0	12.0	0.0	507	38	0	0	0.0	0.0	472	21	0	0	0.0	0.0
20:00	520	72	0	0	0.0	0.0	374	47	0	0	0.0	0.0	336	21	0	0	0.0	0.0
21:00	374	58	0	0	0.0	0.0	301	38	0	0	0.0	0.0	208	22	0	0	0.0	0.0
22:00	318	58	0	0	0.0	0.0	294	33	0	0	0.0	0.0	324	18	0	0	0.0	0.0
23:00	214	52	0	0	0.0	0.0	220	35	0	0	0.0	0.0	218	15	0	0	0.0	0.0
12 hr	18045	2245	60	60	0.3	2.7	9518	1121	131	46	1.4	4.1	5560	610	131	46	2.3	7.5
24 hr	23462	3151	229	60	1.0	1.9	13218	1782	215	46	1.6	2.6	8371	883	215	46	2.6	5.2

**Table 7.2: Swale Way East of B2005 Grovehurst Roundabout Peak Construction Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	168	57	0	0	0	0	188	51	0	0	0.0	0.0	193	20	0	0	0.0	0.0
01:00	156	52	0	0	0.0	0.0	166	62	0	0	0.0	0.0	165	19	0	0	0.0	0.0
02:00	173	48	0	0	0.0	0.0	136	51	0	0	0.0	0.0	104	18	0	0	0.0	0.0
03:00	252	73	0	0	0.0	0.0	173	52	0	0	0.0	0.0	89	20	0	0	0.0	0.0
04:00	379	86	0	0	0.0	0.0	214	67	0	0	0.0	0.0	107	21	0	0	0.0	0.0
05:00	1029	112	0	0	0.0	0.0	605	70	0	0	0.0	0.0	359	22	0	0	0.0	0.0
06:00	1132	172	169	0	14.9	0.0	520	116	169	0	32.5	0.0	237	55	169	0	71.3	0.0
07:00	1864	190	7	7	0.4	3.7	628	112	7	7	1.1	6.3	223	50	7	7	3.1	14.0
08:00	2044	179	7	7	0.3	3.9	648	96	7	7	1.1	7.3	229	50	7	7	3.1	14.0
09:00	1293	196	7	7	0.5	3.6	727	109	7	7	1.0	6.4	254	47	7	7	2.8	14.9
10:00	1171	212	7	7	0.6	3.3	833	103	7	7	0.8	6.8	269	50	7	7	2.6	14.0
11:00	1214	201	7	7	0.6	3.5	877	101	7	7	0.8	6.9	510	50	7	7	1.4	14.0
12:00	1348	206	7	7	0.5	3.4	913	98	7	7	0.8	7.1	830	54	7	7	0.8	12.9
13:00	1419	212	6	6	0.4	2.8	836	83	6	6	0.7	7.3	444	50	6	6	1.4	12.0
14:00	1436	212	6	6	0.4	2.8	845	89	6	6	0.7	6.7	487	54	6	6	1.2	11.1
15:00	1649	230	6	6	0.4	2.6	962	116	6	6	0.6	5.2	593	77	6	6	1.0	7.8
16:00	1685	168	6	6	0.4	3.6	761	84	169	0	22.2	0.0	609	47	169	0	27.8	0.0
17:00	1728	132	7	7	0.4	5.3	804	71	0	0	0.0	0.0	665	47	0	0	0.0	0.0
18:00	1194	106	7	7	0.6	6.6	683	59	0	0	0.0	0.0	448	34	0	0	0.0	0.0
19:00	703	68	169	0	24.0	0.0	507	38	0	0	0.0	0.0	472	21	0	0	0.0	0.0
20:00	520	72	0	0	0.0	0.0	374	47	0	0	0.0	0.0	336	21	0	0	0.0	0.0
21:00	374	58	0	0	0.0	0.0	301	38	0	0	0.0	0.0	208	22	0	0	0.0	0.0
22:00	318	58	0	0	0.0	0.0	294	33	0	0	0.0	0.0	324	18	0	0	0.0	0.0
23:00	214	52	0	0	0.0	0.0	220	35	0	0	0.0	0.0	218	15	0	0	0.0	0.0
12 hr	18045	2245	80	80	0.4	3.6	9518	1121	229	60	2.4	5.4	5560	610	229	60	4.1	9.8
24 hr	23462	3151	418	80	1.8	2.5	13218	1782	398	60	3.0	3.4	8371	883	398	60	4.8	6.8

**Table 7.3: Barge Way North of Swale Roundabout Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	135	41	0	0	0.0	0.0	141	37	0	0	0.0	0.0	107	32	0	0	0.0	0.0
01:00	139	37	0	0	0.0	0.0	114	32	0	0	0.0	0.0	94	30	0	0	0.0	0.0
02:00	178	39	0	0	0.0	0.0	138	41	0	0	0.0	0.0	95	27	0	0	0.0	0.0
03:00	233	57	0	0	0.0	0.0	174	49	0	0	0.0	0.0	87	30	0	0	0.0	0.0
04:00	320	69	0	0	0.0	0.0	221	63	0	0	0.0	0.0	111	34	0	0	0.0	0.0
05:00	621	76	0	0	0.0	0.0	417	62	0	0	0.0	0.0	262	30	0	0	0.0	0.0
06:00	532	120	0	0	0.0	0.0	306	105	0	0	0.0	0.0	162	58	0	0	0.0	0.0
07:00	472	138	5	5	1.1	3.6	253	103	5	5	2.0	4.9	104	66	5	5	4.8	7.5
08:00	461	139	5	5	1.1	3.6	219	110	5	5	2.3	4.6	99	59	5	5	5.1	8.5
09:00	381	147	5	5	1.3	3.4	220	105	5	5	2.3	4.8	95	59	5	5	5.2	8.4
10:00	387	147	5	5	1.3	3.4	225	88	5	5	2.2	5.7	93	58	5	5	5.4	8.6
11:00	358	149	5	5	1.4	3.4	210	96	5	5	2.4	5.2	133	74	5	5	3.8	6.8
12:00	385	153	5	5	1.3	3.3	202	79	5	5	2.5	6.3	182	64	5	5	2.7	7.8
13:00	440	160	5	5	1.1	3.1	228	77	5	5	2.2	6.5	136	66	5	5	3.7	7.5
14:00	466	179	5	5	1.1	2.8	229	98	5	5	2.2	5.1	139	74	5	5	3.6	6.8
15:00	566	198	5	5	0.9	2.5	347	128	6	6	1.7	4.7	233	97	6	6	2.6	6.2
16:00	478	145	5	5	1.0	3.5	193	71	0	0	0.0	0.0	168	77	0	0	0.0	0.0
17:00	490	111	5	5	1.0	4.5	186	66	0	0	0.0	0.0	166	57	0	0	0.0	0.0
18:00	362	89	5	5	1.4	5.6	175	47	0	0	0.0	0.0	131	40	0	0	0.0	0.0
19:00	193	56	0	0	0.0	0.0	76	40	0	0	0.0	0.0	72	24	0	0	0.0	0.0
20:00	152	42	0	0	0.0	0.0	72	35	0	0	0.0	0.0	66	27	0	0	0.0	0.0
21:00	129	36	0	0	0.0	0.0	72	29	0	0	0.0	0.0	56	23	0	0	0.0	0.0
22:00	123	41	0	0	0.0	0.0	80	31	0	0	0.0	0.0	86	23	0	0	0.0	0.0
23:00	157	47	0	0	0.0	0.0	89	29	0	0	0.0	0.0	86	25	0	0	0.0	0.0
12 hr	6531	2096	60	60	0.9	2.9	3382	1338	46	46	1.4	3.4	2208	974	46	46	2.1	4.7
24 hr	8157	2415	60	60	0.7	2.5	4588	1620	46	46	1.0	2.8	2964	1158	46	46	1.6	4.0

**Table 7.4: Barge Way North of Swale Roundabout Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	135	41	0	0	0.0	0.0	141	37	0	0	0.0	0.0	107	32	0	0	0.0	0.0
01:00	139	37	0	0	0.0	0.0	114	32	0	0	0.0	0.0	94	30	0	0	0.0	0.0
02:00	178	39	0	0	0.0	0.0	138	41	0	0	0.0	0.0	95	27	0	0	0.0	0.0
03:00	233	57	0	0	0.0	0.0	174	49	0	0	0.0	0.0	87	30	0	0	0.0	0.0
04:00	320	69	0	0	0.0	0.0	221	63	0	0	0.0	0.0	111	34	0	0	0.0	0.0
05:00	621	76	0	0	0.0	0.0	417	62	0	0	0.0	0.0	262	30	0	0	0.0	0.0
06:00	532	120	0	0	0.0	0.0	306	105	0	0	0.0	0.0	162	58	0	0	0.0	0.0
07:00	472	138	7	7	1.5	5.1	253	103	7	7	2.8	6.8	104	66	7	7	6.7	10.5
08:00	461	139	7	7	1.5	5.0	219	110	7	7	3.2	6.4	99	59	7	7	7.1	11.8
09:00	381	147	7	7	1.8	4.8	220	105	7	7	3.2	6.7	95	59	7	7	7.3	11.8
10:00	387	147	7	7	1.8	4.8	225	88	7	7	3.1	7.9	93	58	7	7	7.5	12.0
11:00	358	149	7	7	2.0	4.7	210	96	7	7	3.3	7.3	133	74	7	7	5.3	9.5
12:00	385	153	7	7	1.8	4.6	202	79	7	7	3.5	8.9	182	64	7	7	3.8	10.9
13:00	440	160	6	6	1.4	3.7	228	77	6	6	2.6	7.8	136	66	6	6	4.4	9.0
14:00	466	179	6	6	1.3	3.4	229	98	6	6	2.6	6.1	139	74	6	6	4.3	8.1
15:00	566	198	6	6	1.1	3.0	347	128	6	6	1.7	4.7	233	97	6	6	2.6	6.2
16:00	478	145	6	6	1.3	4.1	193	71	0	0	0.0	0.0	168	77	0	0	0.0	0.0
17:00	490	111	7	7	1.4	6.3	186	66	0	0	0.0	0.0	166	57	0	0	0.0	0.0
18:00	362	89	7	7	1.9	7.9	175	47	0	0	0.0	0.0	131	40	0	0	0.0	0.0
19:00	193	56	0	0	0.0	0.0	76	40	0	0	0.0	0.0	72	24	0	0	0.0	0.0
20:00	152	42	0	0	0.0	0.0	72	35	0	0	0.0	0.0	66	27	0	0	0.0	0.0
21:00	129	36	0	0	0.0	0.0	72	29	0	0	0.0	0.0	56	23	0	0	0.0	0.0
22:00	123	41	0	0	0.0	0.0	80	31	0	0	0.0	0.0	86	23	0	0	0.0	0.0
23:00	157	47	0	0	0.0	0.0	89	29	0	0	0.0	0.0	86	25	0	0	0.0	0.0
12 hr	6531	2096	80	80	1.2	3.8	3382	1338	60	60	1.8	4.5	2208	974	60	60	2.7	6.2
24 hr	8157	2415	80	80	1.0	3.3	4588	1620	60	60	1.3	3.7	2964	1158	60	60	2.0	5.2

**Table 7.5: Barge Way West of Fleet End Roundabout Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	45	23	0	0	0.0	0.0	97	19	0	0	0.0	0.0	19	15	0	0	0.0	0.0
01:00	44	22	0	0	0.0	0.0	40	22	0	0	0.0	0.0	16	15	0	0	0.0	0.0
02:00	63	25	0	0	0.0	0.0	41	30	0	0	0.0	0.0	18	15	0	0	0.0	0.0
03:00	77	27	0	0	0.0	0.0	24	17	0	0	0.0	0.0	16	15	0	0	0.0	0.0
04:00	118	33	0	0	0.0	0.0	44	25	0	0	0.0	0.0	25	15	0	0	0.0	0.0
05:00	325	41	0	0	0.0	0.0	193	22	0	0	0.0	0.0	150	16	0	0	0.0	0.0
06:00	327	90	0	0	0.0	0.0	158	75	0	0	0.0	0.0	102	48	0	0	0.0	0.0
07:00	297	99	5	5	1.7	5.0	117	68	5	5	4.3	7.3	55	46	5	5	9.1	10.9
08:00	275	107	5	5	1.8	4.7	104	73	5	5	4.8	6.9	58	43	5	5	8.7	11.7
09:00	217	109	5	5	2.3	4.6	109	72	5	5	4.6	7.0	48	42	5	5	10.5	12.0
10:00	205	112	5	5	2.4	4.5	96	66	5	5	5.2	7.5	48	42	5	5	10.5	12.0
11:00	192	108	5	5	2.6	4.6	93	52	5	5	5.4	9.6	53	44	5	5	9.4	11.5
12:00	219	109	5	5	2.3	4.6	78	47	5	5	6.4	10.7	53	43	5	5	9.4	11.7
13:00	232	112	5	5	2.2	4.5	83	47	5	5	6.0	10.7	63	43	5	5	7.9	11.7
14:00	231	122	5	5	2.2	4.1	82	46	5	5	6.1	10.9	64	43	5	5	7.8	11.7
15:00	316	149	5	5	1.6	3.4	182	80	6	6	3.3	7.5	163	74	6	6	3.7	8.1
16:00	230	97	5	5	2.2	5.1	71	47	0	0	0.0	0.0	64	46	0	0	0.0	0.0
17:00	295	77	5	5	1.7	6.5	105	44	0	0	0.0	0.0	115	43	0	0	0.0	0.0
18:00	161	50	5	5	3.1	9.9	75	32	0	0	0.0	0.0	72	31	0	0	0.0	0.0
19:00	67	36	0	0	0.0	0.0	24	17	0	0	0.0	0.0	27	17	0	0	0.0	0.0
20:00	73	34	0	0	0.0	0.0	24	19	0	0	0.0	0.0	23	17	0	0	0.0	0.0
21:00	70	27	0	0	0.0	0.0	28	18	0	0	0.0	0.0	27	20	0	0	0.0	0.0
22:00	54	29	0	0	0.0	0.0	24	18	0	0	0.0	0.0	32	19	0	0	0.0	0.0
23:00	52	22	0	0	0.0	0.0	22	15	0	0	0.0	0.0	28	16	0	0	0.0	0.0
12 hr	2871	1252	60	60	2.1	4.8	1195	673	46	46	3.8	6.8	855	536	46	46	5.4	8.6
24 hr	4186	1661	60	60	1.4	3.6	1914	971	46	46	2.4	4.7	1340	764	46	46	3.4	6.0



**Table 7.6: Barge Way West of Fleet End Roundabout Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	45	23	0	0	0.0	0.0	97	19	0	0	0.0	0.0	19	15	0	0	0.0	0.0
01:00	44	22	0	0	0.0	0.0	40	22	0	0	0.0	0.0	16	15	0	0	0.0	0.0
02:00	63	25	0	0	0.0	0.0	41	30	0	0	0.0	0.0	18	15	0	0	0.0	0.0
03:00	77	27	0	0	0.0	0.0	24	17	0	0	0.0	0.0	16	15	0	0	0.0	0.0
04:00	118	33	0	0	0.0	0.0	44	25	0	0	0.0	0.0	25	15	0	0	0.0	0.0
05:00	325	41	0	0	0.0	0.0	193	22	0	0	0.0	0.0	150	16	0	0	0.0	0.0
06:00	327	90	0	0	0.0	0.0	158	75	0	0	0.0	0.0	102	48	0	0	0.0	0.0
07:00	297	99	7	7	2.4	7.1	117	68	7	7	6.0	10.2	55	46	7	7	12.7	15.3
08:00	275	107	7	7	2.5	6.5	104	73	7	7	6.7	9.6	58	43	7	7	12.2	16.4
09:00	217	109	7	7	3.2	6.4	109	72	7	7	6.4	9.8	48	42	7	7	14.6	16.8
10:00	205	112	7	7	3.4	6.3	96	66	7	7	7.3	10.5	48	42	7	7	14.6	16.8
11:00	192	108	7	7	3.7	6.5	93	52	7	7	7.5	13.5	53	44	7	7	13.2	16.0
12:00	219	109	7	7	3.2	6.4	78	47	7	7	9.0	15.0	53	43	7	7	13.2	16.4
13:00	232	112	6	6	2.6	5.4	83	47	6	6	7.2	12.8	63	43	6	6	9.5	14.1
14:00	231	122	6	6	2.6	4.9	82	46	6	6	7.3	13.1	64	43	6	6	9.3	14.1
15:00	316	149	6	6	1.9	4.0	182	80	6	6	3.3	7.5	163	74	6	6	3.7	8.1
16:00	230	97	6	6	2.6	6.2	71	47	0	0	0.0	0.0	64	46	0	0	0.0	0.0
17:00	295	77	7	7	2.4	9.1	105	44	0	0	0.0	0.0	115	43	0	0	0.0	0.0
18:00	161	50	7	7	4.3	13.9	75	32	0	0	0.0	0.0	72	31	0	0	0.0	0.0
19:00	67	36	0	0	0.0	0.0	24	17	0	0	0.0	0.0	27	17	0	0	0.0	0.0
20:00	73	34	0	0	0.0	0.0	24	19	0	0	0.0	0.0	23	17	0	0	0.0	0.0
21:00	70	27	0	0	0.0	0.0	28	18	0	0	0.0	0.0	27	20	0	0	0.0	0.0
22:00	54	29	0	0	0.0	0.0	24	18	0	0	0.0	0.0	32	19	0	0	0.0	0.0
23:00	52	22	0	0	0.0	0.0	22	15	0	0	0.0	0.0	28	16	0	0	0.0	0.0
12 hr	2871	1252	80	80	2.8	6.4	1195	673	60	60	5.0	8.9	855	536	60	60	7.0	11.2
24 hr	4186	1661	80	80	1.9	4.8	1914	971	60	60	3.1	6.2	1340	764	60	60	4.5	7.9

**Table 7.7: A249 South of Swale Way Junction Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	245	68	0	0	0.0	0.0	407	69	0	0	0.0	0.0	468	46	0	0	0.0	0.0
01:00	177	60	0	0	0.0	0.0	273	64	0	0	0.0	0.0	303	39	0	0	0.0	0.0
02:00	176	66	0	0	0.0	0.0	233	74	0	0	0.0	0.0	214	42	0	0	0.0	0.0
03:00	247	84	0	0	0.0	0.0	234	74	0	0	0.0	0.0	180	45	0	0	0.0	0.0
04:00	565	147	0	0	0.0	0.0	317	83	0	0	0.0	0.0	205	45	0	0	0.0	0.0
05:00	1429	219	0	0	0.0	0.0	771	118	0	0	0.0	0.0	478	51	0	0	0.0	0.0
06:00	2249	285	81	0	3.6	0.0	1052	160	81	0	7.7	0.0	625	87	81	0	13.0	0.0
07:00	3123	316	5	5	0.2	1.6	1384	176	5	5	0.4	2.8	761	95	5	5	0.7	5.3
08:00	2730	320	5	5	0.2	1.6	1769	192	5	5	0.3	2.6	1064	98	5	5	0.5	5.1
09:00	2168	327	5	5	0.2	1.5	2015	199	5	5	0.2	2.5	1597	129	5	5	0.3	3.9
10:00	2075	343	5	5	0.2	1.5	2311	182	5	5	0.2	2.7	2053	140	5	5	0.2	3.6
11:00	2128	336	5	5	0.2	1.5	2469	179	5	5	0.2	2.8	2292	141	5	5	0.2	3.5
12:00	2302	350	5	5	0.2	1.4	2675	176	5	5	0.2	2.8	2163	134	5	5	0.2	3.7
13:00	2292	349	5	5	0.2	1.4	2575	164	5	5	0.2	3.1	2084	125	5	5	0.2	4.0
14:00	2570	360	5	5	0.2	1.4	2379	159	5	5	0.2	3.2	2140	135	5	5	0.2	3.7
15:00	2950	371	5	5	0.2	1.3	2425	178	6	6	0.2	3.4	2202	163	6	6	0.3	3.7
16:00	3393	293	5	5	0.1	1.7	2273	139	81	0	3.6	0.0	2221	144	81	0	3.6	0.0
17:00	3612	253	5	5	0.1	2.0	2340	132	0	0	0.0	0.0	1962	133	0	0	0.0	0.0
18:00	2776	223	5	5	0.2	2.2	2040	116	0	0	0.0	0.0	1875	117	0	0	0.0	0.0
19:00	1848	157	81	0	4.4	0.0	1580	89	0	0	0.0	0.0	1526	82	0	0	0.0	0.0
20:00	1266	116	0	0	0.0	0.0	1151	65	0	0	0.0	0.0	1268	73	0	0	0.0	0.0
21:00	951	94	0	0	0.0	0.0	969	56	0	0	0.0	0.0	929	69	0	0	0.0	0.0
22:00	754	78	0	0	0.0	0.0	885	53	0	0	0.0	0.0	570	49	0	0	0.0	0.0
23:00	456	64	0	0	0.0	0.0	685	51	0	0	0.0	0.0	349	47	0	0	0.0	0.0
12 hr	32119	3842	60	60	0.2	1.6	26655	1991	127	46	0.5	2.3	22415	1556	127	46	0.6	3.0
24 hr	42482	5281	222	60	0.5	1.1	35211	2947	208	46	0.6	1.6	29531	2232	208	46	0.7	2.1

**Table 7.8: A249 South of Swale Way Junction Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	245	68	0	0	0.0	0.0	407	69	0	0	0.0	0.0	468	46	0	0	0.0	0.0
01:00	177	60	0	0	0.0	0.0	273	64	0	0	0.0	0.0	303	39	0	0	0.0	0.0
02:00	176	66	0	0	0.0	0.0	233	74	0	0	0.0	0.0	214	42	0	0	0.0	0.0
03:00	247	84	0	0	0.0	0.0	234	74	0	0	0.0	0.0	180	45	0	0	0.0	0.0
04:00	565	147	0	0	0.0	0.0	317	83	0	0	0.0	0.0	205	45	0	0	0.0	0.0
05:00	1429	219	0	0	0.0	0.0	771	118	0	0	0.0	0.0	478	51	0	0	0.0	0.0
06:00	2249	285	162	0	7.2	0.0	1052	160	162	0	15.4	0.0	625	87	162	0	25.9	0.0
07:00	3123	316	7	7	0.2	2.2	1384	176	7	7	0.5	4.0	761	95	7	7	0.9	7.4
08:00	2730	320	7	7	0.3	2.2	1769	192	7	7	0.4	3.7	1064	98	7	7	0.7	7.1
09:00	2168	327	7	7	0.3	2.1	2015	199	7	7	0.3	3.5	1597	129	7	7	0.4	5.4
10:00	2075	343	7	7	0.3	2.0	2311	182	7	7	0.3	3.8	2053	140	7	7	0.3	5.0
11:00	2128	336	7	7	0.3	2.1	2469	179	7	7	0.3	3.9	2292	141	7	7	0.3	4.9
12:00	2302	350	7	7	0.3	2.0	2675	176	7	7	0.3	4.0	2163	134	7	7	0.3	5.2
13:00	2292	349	6	6	0.3	1.7	2575	164	6	6	0.2	3.7	2084	125	6	6	0.3	4.8
14:00	2570	360	6	6	0.2	1.7	2379	159	6	6	0.3	3.8	2140	135	6	6	0.3	4.4
15:00	2950	371	6	6	0.2	1.6	2425	178	6	6	0.2	3.4	2202	163	6	6	0.3	3.7
16:00	3393	293	6	6	0.2	2.0	2273	139	162	0	7.1	0.0	2221	144	162	0	7.3	0.0
17:00	3612	253	7	7	0.2	2.8	2340	132	0	0	0.0	0.0	1962	133	0	0	0.0	0.0
18:00	2776	223	7	7	0.3	3.1	2040	116	0	0	0.0	0.0	1875	117	0	0	0.0	0.0
19:00	1848	157	162	0	8.8	0.0	1580	89	0	0	0.0	0.0	1526	82	0	0	0.0	0.0
20:00	1266	116	0	0	0.0	0.0	1151	65	0	0	0.0	0.0	1268	73	0	0	0.0	0.0
21:00	951	94	0	0	0.0	0.0	969	56	0	0	0.0	0.0	929	69	0	0	0.0	0.0
22:00	754	78	0	0	0.0	0.0	885	53	0	0	0.0	0.0	570	49	0	0	0.0	0.0
23:00	456	64	0	0	0.0	0.0	685	51	0	0	0.0	0.0	349	47	0	0	0.0	0.0
12 hr	32119	3842	80	80	0.2	2.1	26655	1991	222	60	0.8	3.0	22415	1556	222	60	1.0	3.9
24 hr	42482	5281	404	80	1.0	1.5	35211	2947	384	60	1.1	2.0	29531	2232	384	60	1.3	2.7

**Table 7.9: Swale Way north of Reams Way Junction Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	55	11	0	0	0.0	0.0	74	16	0	0	0.0	0.0	60	1	0	0	0.0	0.0
01:00	50	12	0	0	0.0	0.0	46	9	0	0	0.0	0.0	0	0	0	0	0.0	0.0
02:00	58	19	0	0	0.0	0.0	47	9	0	0	0.0	0.0	31	4	0	0	0.0	0.0
03:00	79	13	0	0	0.0	0.0	54	10	0	0	0.0	0.0	32	2	0	0	0.0	0.0
04:00	164	29	0	0	0.0	0.0	71	12	0	0	0.0	0.0	52	5	0	0	0.0	0.0
05:00	528	46	0	0	0.0	0.0	239	13	0	0	0.0	0.0	131	7	0	0	0.0	0.0
06:00	657	52	85	0	12.9	0.0	245	19	85	0	34.6	0.0	132	12	85	0	64.3	0.0
07:00	1378	63	0	0	0.0	0.0	346	15	0	0	0.0	0.0	156	12	0	0	0.0	0.0
08:00	1437	57	0	0	0.0	0.0	448	23	0	0	0.0	0.0	154	14	0	0	0.0	0.0
09:00	888	78	0	0	0.0	0.0	569	24	0	0	0.0	0.0	323	13	0	0	0.0	0.0
10:00	764	85	0	0	0.0	0.0	703	27	0	0	0.0	0.0	439	19	0	0	0.0	0.0
11:00	751	79	0	0	0.0	0.0	769	16	0	0	0.0	0.0	531	25	0	0	0.0	0.0
12:00	856	81	0	0	0.0	0.0	730	18	0	0	0.0	0.0	560	20	0	0	0.0	0.0
13:00	831	72	0	0	0.0	0.0	690	26	0	0	0.0	0.0	660	18	0	0	0.0	0.0
14:00	1010	76	0	0	0.0	0.0	611	16	0	0	0.0	0.0	470	13	0	0	0.0	0.0
15:00	1128	65	0	0	0.0	0.0	589	22	0	0	0.0	0.0	490	17	0	0	0.0	0.0
16:00	1361	55	0	0	0.0	0.0	547	13	85	0	15.5	0.0	542	18	85	0	15.7	0.0
17:00	1249	37	0	0	0.0	0.0	610	12	0	0	0.0	0.0	537	9	0	0	0.0	0.0
18:00	802	41	0	0	0.0	0.0	488	8	0	0	0.0	0.0	416	9	0	0	0.0	0.0
19:00	493	37	85	0	17.2	0.0	304	10	0	0	0.0	0.0	348	10	0	0	0.0	0.0
20:00	333	36	0	0	0.0	0.0	240	11	0	0	0.0	0.0	248	16	0	0	0.0	0.0
21:00	264	27	0	0	0.0	0.0	269	8	0	0	0.0	0.0	223	14	0	0	0.0	0.0
22:00	217	20	0	0	0.0	0.0	159	6	0	0	0.0	0.0	94	15	0	0	0.0	0.0
23:00	103	13	0	0	0.0	0.0	94	4	0	0	0.0	0.0	53	10	0	0	0.0	0.0
12 hr	12456	789	0	0	0.0	0.0	7099	223	85	0	1.2	0.0	5279	187	85	0	1.6	0.0
24 hr	15459	1104	170	0	1.1	0.0	8941	352	170	0	1.9	0.0	6683	285	170	0	2.5	0.0

**Table 7.10: Swale Way north of Reams Way Junction Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	55	11	0	0	0.0	0.0	74	16	0	0	0.0	0.0	60	1	0	0	0.0	0.0
01:00	50	12	0	0	0.0	0.0	46	9	0	0	0.0	0.0	0	0	0	0	0.0	0.0
02:00	58	19	0	0	0.0	0.0	47	9	0	0	0.0	0.0	31	4	0	0	0.0	0.0
03:00	79	13	0	0	0.0	0.0	54	10	0	0	0.0	0.0	32	2	0	0	0.0	0.0
04:00	164	29	0	0	0.0	0.0	71	12	0	0	0.0	0.0	52	5	0	0	0.0	0.0
05:00	528	46	0	0	0.0	0.0	239	13	0	0	0.0	0.0	131	7	0	0	0.0	0.0
06:00	657	52	170	0	25.9	0.0	245	19	170	0	69.3	0.0	132	12	170	0	128.6	0.0
07:00	1378	63	0	0	0.0	0.0	346	15	0	0	0.0	0.0	156	12	0	0	0.0	0.0
08:00	1437	57	0	0	0.0	0.0	448	23	0	0	0.0	0.0	154	14	0	0	0.0	0.0
09:00	888	78	0	0	0.0	0.0	569	24	0	0	0.0	0.0	323	13	0	0	0.0	0.0
10:00	764	85	0	0	0.0	0.0	703	27	0	0	0.0	0.0	439	19	0	0	0.0	0.0
11:00	751	79	0	0	0.0	0.0	769	16	0	0	0.0	0.0	531	25	0	0	0.0	0.0
12:00	856	81	0	0	0.0	0.0	730	18	0	0	0.0	0.0	560	20	0	0	0.0	0.0
13:00	831	72	0	0	0.0	0.0	690	26	0	0	0.0	0.0	660	18	0	0	0.0	0.0
14:00	1010	76	0	0	0.0	0.0	611	16	0	0	0.0	0.0	470	13	0	0	0.0	0.0
15:00	1128	65	0	0	0.0	0.0	589	22	0	0	0.0	0.0	490	17	0	0	0.0	0.0
16:00	1361	55	0	0	0.0	0.0	547	13	170	0	31.1	0.0	542	18	170	0	31.3	0.0
17:00	1249	37	0	0	0.0	0.0	610	12	0	0	0.0	0.0	537	9	0	0	0.0	0.0
18:00	802	41	0	0	0.0	0.0	488	8	0	0	0.0	0.0	416	9	0	0	0.0	0.0
19:00	493	37	170	0	34.5	0.0	304	10	0	0	0.0	0.0	348	10	0	0	0.0	0.0
20:00	333	36	0	0	0.0	0.0	240	11	0	0	0.0	0.0	248	16	0	0	0.0	0.0
21:00	264	27	0	0	0.0	0.0	269	8	0	0	0.0	0.0	223	14	0	0	0.0	0.0
22:00	217	20	0	0	0.0	0.0	159	6	0	0	0.0	0.0	94	15	0	0	0.0	0.0
23:00	103	13	0	0	0.0	0.0	94	4	0	0	0.0	0.0	53	10	0	0	0.0	0.0
12 hr	12456	789	0	0	0.0	0.0	7099	223	170	0	2.4	0.0	5279	187	170	0	3.2	0.0
24 hr	15459	1104	340	0	2.2	0.0	8941	352	340	0	3.8	0.0	6683	285	340	0	5.1	0.0

**Table 7.11: Swale Way south of Reams Way Junction Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Baseline		Construction		% Impact		2019 Baseline		Construction		% Impact		2019 Baseline		Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	55	11	0	0	0.0	0.0	88	12	0	0	0.0	0.0	65	1	0	0	0.0	0.0
01:00	45	10	0	0	0.0	0.0	45	8	0	0	0.0	0.0	34	1	0	0	0.0	0.0
02:00	60	19	0	0	0.0	0.0	76	9	0	0	0.0	0.0	41	2	0	0	0.0	0.0
03:00	78	17	0	0	0.0	0.0	65	11	0	0	0.0	0.0	34	2	0	0	0.0	0.0
04:00	158	27	0	0	0.0	0.0	82	7	0	0	0.0	0.0	33	6	0	0	0.0	0.0
05:00	513	43	0	0	0.0	0.0	224	12	0	0	0.0	0.0	119	5	0	0	0.0	0.0
06:00	670	58	85	0	12.7	0.0	279	20	85	0	30.4	0.0	136	13	85	0	62.4	0.0
07:00	1381	64	0	0	0.0	0.0	344	20	0	0	0.0	0.0	190	12	0	0	0.0	0.0
08:00	1369	67	0	0	0.0	0.0	483	19	0	0	0.0	0.0	156	7	0	0	0.0	0.0
09:00	855	84	0	0	0.0	0.0	573	28	0	0	0.0	0.0	326	16	0	0	0.0	0.0
10:00	754	86	0	0	0.0	0.0	715	18	0	0	0.0	0.0	477	16	0	0	0.0	0.0
11:00	772	87	0	0	0.0	0.0	774	28	0	0	0.0	0.0	508	18	0	0	0.0	0.0
12:00	841	77	0	0	0.0	0.0	748	27	0	0	0.0	0.0	525	16	0	0	0.0	0.0
13:00	882	71	0	0	0.0	0.0	618	25	0	0	0.0	0.0	499	22	0	0	0.0	0.0
14:00	1012	81	0	0	0.0	0.0	541	17	0	0	0.0	0.0	453	21	0	0	0.0	0.0
15:00	1099	72	0	0	0.0	0.0	515	14	0	0	0.0	0.0	413	19	0	0	0.0	0.0
16:00	1373	60	0	0	0.0	0.0	541	12	85	0	15.7	0.0	441	14	85	0	19.3	0.0
17:00	1322	39	0	0	0.0	0.0	594	14	0	0	0.0	0.0	492	22	0	0	0.0	0.0
18:00	833	41	0	0	0.0	0.0	494	10	0	0	0.0	0.0	407	17	0	0	0.0	0.0
19:00	487	34	85	0	17.5	0.0	306	10	0	0	0.0	0.0	308	17	0	0	0.0	0.0
20:00	353	38	0	0	0.0	0.0	219	8	0	0	0.0	0.0	245	13	0	0	0.0	0.0
21:00	258	26	0	0	0.0	0.0	266	5	0	0	0.0	0.0	185	9	0	0	0.0	0.0
22:00	214	22	0	0	0.0	0.0	142	0	0	0	0.0	0.0	89	9	0	0	0.0	0.0
23:00	95	10	0	0	0.0	0.0	123	7	0	0	0.0	0.0	52	6	0	0	0.0	0.0
12 hr	12491	831	0	0	0.0	0.0	6940	235	85	0	1.2	0.0	4887	197	85	0	1.7	0.0
24 hr	15478	1146	170	0	1.1	0.0	8855	346	170	0	1.9	0.0	6228	283	170	0	2.7	0.0

**Table 7.12: Swale Way south of Reams Way Junction Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	55	11	0	0	0.0	0.0	88	12	0	0	0.0	0.0	65	1	0	0	0.0	0.0
01:00	45	10	0	0	0.0	0.0	45	8	0	0	0.0	0.0	34	1	0	0	0.0	0.0
02:00	60	19	0	0	0.0	0.0	76	9	0	0	0.0	0.0	41	2	0	0	0.0	0.0
03:00	78	17	0	0	0.0	0.0	65	11	0	0	0.0	0.0	34	2	0	0	0.0	0.0
04:00	158	27	0	0	0.0	0.0	82	7	0	0	0.0	0.0	33	6	0	0	0.0	0.0
05:00	513	43	0	0	0.0	0.0	224	12	0	0	0.0	0.0	119	5	0	0	0.0	0.0
06:00	670	58	170	0	25.4	0.0	279	20	170	0	60.9	0.0	136	13	170	0	124.7	0.0
07:00	1381	64	0	0	0.0	0.0	344	20	0	0	0.0	0.0	190	12	0	0	0.0	0.0
08:00	1369	67	0	0	0.0	0.0	483	19	0	0	0.0	0.0	156	7	0	0	0.0	0.0
09:00	855	84	0	0	0.0	0.0	573	28	0	0	0.0	0.0	326	16	0	0	0.0	0.0
10:00	754	86	0	0	0.0	0.0	715	18	0	0	0.0	0.0	477	16	0	0	0.0	0.0
11:00	772	87	0	0	0.0	0.0	774	28	0	0	0.0	0.0	508	18	0	0	0.0	0.0
12:00	841	77	0	0	0.0	0.0	748	27	0	0	0.0	0.0	525	16	0	0	0.0	0.0
13:00	882	71	0	0	0.0	0.0	618	25	0	0	0.0	0.0	499	22	0	0	0.0	0.0
14:00	1012	81	0	0	0.0	0.0	541	17	0	0	0.0	0.0	453	21	0	0	0.0	0.0
15:00	1099	72	0	0	0.0	0.0	515	14	0	0	0.0	0.0	413	19	0	0	0.0	0.0
16:00	1373	60	0	0	0.0	0.0	541	12	170	0	31.4	0.0	441	14	170	0	38.5	0.0
17:00	1322	39	0	0	0.0	0.0	594	14	0	0	0.0	0.0	492	22	0	0	0.0	0.0
18:00	833	41	0	0	0.0	0.0	494	10	0	0	0.0	0.0	407	17	0	0	0.0	0.0
19:00	487	34	170	0	34.9	0.0	306	10	0	0	0.0	0.0	308	17	0	0	0.0	0.0
20:00	353	38	0	0	0.0	0.0	219	8	0	0	0.0	0.0	245	13	0	0	0.0	0.0
21:00	258	26	0	0	0.0	0.0	266	5	0	0	0.0	0.0	185	9	0	0	0.0	0.0
22:00	214	22	0	0	0.0	0.0	142	0	0	0	0.0	0.0	89	9	0	0	0.0	0.0
23:00	95	10	0	0	0.0	0.0	123	7	0	0	0.0	0.0	52	6	0	0	0.0	0.0
12 hr	12491	831	0	0	0.0	0.0	6940	235	170	0	2.4	0.0	4887	197	170	0	3.5	0.0
24 hr	15478	1146	340	0	2.2	0.0	8855	346	340	0	3.8	0.0	6228	283	340	0	5.5	0.0

**Table 7.13: M2 East of A249 Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	401	102	0	0	0.0	0.0	667	113	0	0	0.0	0.0	817	62	0	0	0.0	0.0
01:00	305	94	0	0	0.0	0.0	442	97	0	0	0.0	0.0	500	59	0	0	0.0	0.0
02:00	319	108	0	0	0.0	0.0	373	90	0	0	0.0	0.0	332	45	0	0	0.0	0.0
03:00	437	148	0	0	0.0	0.0	392	111	0	0	0.0	0.0	295	64	0	0	0.0	0.0
04:00	1010	248	0	0	0.0	0.0	531	140	0	0	0.0	0.0	316	55	0	0	0.0	0.0
05:00	2655	403	0	0	0.0	0.0	1121	180	0	0	0.0	0.0	638	72	0	0	0.0	0.0
06:00	3992	470	12	0	0.3	0.0	1673	227	12	0	0.7	0.0	943	92	12	0	1.2	0.0
07:00	5311	480	0	0	0.0	0.1	2336	261	0	0	0.0	0.1	1283	101	0	0	0.0	0.3
08:00	4857	530	0	0	0.0	0.1	3002	269	0	0	0.0	0.1	1724	107	0	0	0.0	0.3
09:00	4054	550	0	0	0.0	0.1	3367	262	0	0	0.0	0.1	2572	146	0	0	0.0	0.2
10:00	3732	535	0	0	0.0	0.1	3852	251	0	0	0.0	0.1	3482	169	0	0	0.0	0.2
11:00	3730	521	0	0	0.0	0.1	4279	234	0	0	0.0	0.1	3991	197	0	0	0.0	0.2
12:00	4065	570	0	0	0.0	0.1	4497	225	0	0	0.0	0.1	4315	185	0	0	0.0	0.2
13:00	4205	580	0	0	0.0	0.1	4404	212	0	0	0.0	0.2	4079	184	0	0	0.0	0.2
14:00	4487	585	0	0	0.0	0.1	4059	212	0	0	0.0	0.2	3727	188	0	0	0.0	0.2
15:00	4977	571	0	0	0.0	0.1	3911	198	0	0	0.0	0.2	3569	181	0	0	0.0	0.2
16:00	5849	454	0	0	0.0	0.1	4071	183	12	0	0.3	0.0	3946	170	12	0	0.3	0.0
17:00	6202	367	0	0	0.0	0.1	3865	155	0	0	0.0	0.0	3592	160	0	0	0.0	0.0
18:00	4660	310	0	0	0.0	0.1	3422	148	0	0	0.0	0.0	3176	133	0	0	0.0	0.0
19:00	3029	232	12	0	0.4	0.0	2615	108	0	0	0.0	0.0	2617	108	0	0	0.0	0.0
20:00	2116	156	0	0	0.0	0.0	1891	76	0	0	0.0	0.0	1977	77	0	0	0.0	0.0
21:00	1554	110	0	0	0.0	0.0	1470	64	0	0	0.0	0.0	1402	69	0	0	0.0	0.0
22:00	1256	103	0	0	0.0	0.0	1476	57	0	0	0.0	0.0	911	56	0	0	0.0	0.0
23:00	751	99	0	0	0.0	0.0	1142	62	0	0	0.0	0.0	522	71	0	0	0.0	0.0
12 hr	56128	6053	4	4	0.0	0.1	45064	2609	15	3	0.0	0.1	39453	1922	15	3	0.0	0.2
24 hr	73955	8325	27	4	0.0	0.0	58857	3934	26	3	0.0	0.1	50723	2753	26	3	0.1	0.1



**Table 7.14: M2 East of A249 Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	401	102	0	0	0.0	0.0	667	113	0	0	0.0	0.0	817	62	0	0	0.0	0.0
01:00	305	94	0	0	0.0	0.0	442	97	0	0	0.0	0.0	500	59	0	0	0.0	0.0
02:00	319	108	0	0	0.0	0.0	373	90	0	0	0.0	0.0	332	45	0	0	0.0	0.0
03:00	437	148	0	0	0.0	0.0	392	111	0	0	0.0	0.0	295	64	0	0	0.0	0.0
04:00	1010	248	0	0	0.0	0.0	531	140	0	0	0.0	0.0	316	55	0	0	0.0	0.0
05:00	2655	403	0	0	0.0	0.0	1121	180	0	0	0.0	0.0	638	72	0	0	0.0	0.0
06:00	3992	470	23	0	0.6	0.0	1673	227	23	0	1.4	0.0	943	92	23	0	2.5	0.0
07:00	5311	480	0	0	0.0	0.1	2336	261	0	0	0.0	0.2	1283	101	0	0	0.0	0.4
08:00	4857	530	0	0	0.0	0.1	3002	269	0	0	0.0	0.2	1724	107	0	0	0.0	0.4
09:00	4054	550	0	0	0.0	0.1	3367	262	0	0	0.0	0.2	2572	146	0	0	0.0	0.3
10:00	3732	535	0	0	0.0	0.1	3852	251	0	0	0.0	0.2	3482	169	0	0	0.0	0.3
11:00	3730	521	0	0	0.0	0.1	4279	234	0	0	0.0	0.2	3991	197	0	0	0.0	0.2
12:00	4065	570	0	0	0.0	0.1	4497	225	0	0	0.0	0.2	4315	185	0	0	0.0	0.2
13:00	4205	580	0	0	0.0	0.1	4404	212	0	0	0.0	0.2	4079	184	0	0	0.0	0.2
14:00	4487	585	0	0	0.0	0.1	4059	212	0	0	0.0	0.2	3727	188	0	0	0.0	0.2
15:00	4977	571	0	0	0.0	0.1	3911	198	0	0	0.0	0.2	3569	181	0	0	0.0	0.2
16:00	5849	454	0	0	0.0	0.1	4071	183	23	0	0.6	0.0	3946	170	23	0	0.6	0.0
17:00	6202	367	0	0	0.0	0.1	3865	155	0	0	0.0	0.0	3592	160	0	0	0.0	0.0
18:00	4660	310	0	0	0.0	0.1	3422	148	0	0	0.0	0.0	3176	133	0	0	0.0	0.0
19:00	3029	232	23	0	0.8	0.0	2615	108	0	0	0.0	0.0	2617	108	0	0	0.0	0.0
20:00	2116	156	0	0	0.0	0.0	1891	76	0	0	0.0	0.0	1977	77	0	0	0.0	0.0
21:00	1554	110	0	0	0.0	0.0	1470	64	0	0	0.0	0.0	1402	69	0	0	0.0	0.0
22:00	1256	103	0	0	0.0	0.0	1476	57	0	0	0.0	0.0	911	56	0	0	0.0	0.0
23:00	751	99	0	0	0.0	0.0	1142	62	0	0	0.0	0.0	522	71	0	0	0.0	0.0
12 hr	56128	6053	5	5	0.0	0.1	45064	2609	27	4	0.1	0.2	39453	1922	27	4	0.1	0.2
24 hr	73955	8325	52	5	0.1	0.1	58857	3934	50	4	0.1	0.1	50723	2753	50	4	0.1	0.1

**Table 7.15: M2 West of A249 Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	439	114	0	0	0.0	0.0	730	126	0	0	0.0	0.0	893	71	0	0	0.0	0.0
01:00	335	106	0	0	0.0	0.0	485	109	0	0	0.0	0.0	548	67	0	0	0.0	0.0
02:00	351	120	0	0	0.0	0.0	409	102	0	0	0.0	0.0	364	52	0	0	0.0	0.0
03:00	480	164	0	0	0.0	0.0	430	123	0	0	0.0	0.0	324	73	0	0	0.0	0.0
04:00	1104	274	0	0	0.0	0.0	581	155	0	0	0.0	0.0	347	63	0	0	0.0	0.0
05:00	2912	442	0	0	0.0	0.0	1237	200	0	0	0.0	0.0	711	82	0	0	0.0	0.0
06:00	4362	517	23	0	0.5	0.0	1831	252	23	0	1.3	0.0	1036	105	23	0	2.3	0.0
07:00	5815	537	3	3	0.1	0.6	2558	297	3	3	0.1	1.0	1411	122	3	3	0.2	2.5
08:00	5327	591	3	3	0.1	0.5	3284	306	3	3	0.1	1.0	1892	128	3	3	0.2	2.4
09:00	4443	612	3	3	0.1	0.5	3680	297	3	3	0.1	1.0	2814	171	3	3	0.1	1.8
10:00	4093	596	3	3	0.1	0.5	4209	285	3	3	0.1	1.1	3805	196	3	3	0.1	1.6
11:00	4092	580	3	3	0.1	0.5	4673	267	3	3	0.1	1.2	4360	227	3	3	0.1	1.4
12:00	4460	634	3	3	0.1	0.5	4911	257	3	3	0.1	1.2	4713	213	3	3	0.1	1.4
13:00	4609	645	3	3	0.1	0.5	4811	243	3	3	0.1	1.3	4457	213	3	3	0.1	1.4
14:00	4921	651	3	3	0.1	0.5	4436	243	3	3	0.1	1.3	4074	217	3	3	0.1	1.4
15:00	5463	637	3	3	0.1	0.5	4286	230	3	3	0.1	1.3	3914	211	3	3	0.1	1.5
16:00	6404	508	3	3	0.0	0.6	4448	211	23	0	0.5	0.0	4311	198	23	0	0.5	0.0
17:00	6791	413	3	3	0.0	0.7	4227	181	0	0	0.0	0.0	3930	187	0	0	0.0	0.0
18:00	5092	344	3	3	0.1	0.9	3736	166	0	0	0.0	0.0	3468	151	0	0	0.0	0.0
19:00	3310	257	23	0	0.7	0.0	2853	121	0	0	0.0	0.0	2855	122	0	0	0.0	0.0
20:00	2312	174	0	0	0.0	0.0	2063	87	0	0	0.0	0.0	2158	88	0	0	0.0	0.0
21:00	1700	125	0	0	0.0	0.0	1606	74	0	0	0.0	0.0	1532	80	0	0	0.0	0.0
22:00	1377	117	0	0	0.0	0.0	1612	67	0	0	0.0	0.0	998	65	0	0	0.0	0.0
23:00	823	110	0	0	0.0	0.0	1248	71	0	0	0.0	0.0	573	81	0	0	0.0	0.0
12 hr	61512	6748	37	37	0.1	0.5	49259	2982	51	28	0.1	0.9	43149	2234	51	28	0.1	1.2
24	81015	9268	84	37	0.1	0.4	64345	4468	75	28	0.1	0.6	55488	3184	75	28	0.1	0.9

**Table 7.16: M2 West of A249 Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average						Saturday						Sunday					
	2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact		2019 Future Baseline		Construction Traffic		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	439	114	0	0	0.0	0.0	730	126	0	0	0.0	0.0	893	71	0	0	0.0	0.0
01:00	335	106	0	0	0.0	0.0	485	109	0	0	0.0	0.0	548	67	0	0	0.0	0.0
02:00	351	120	0	0	0.0	0.0	409	102	0	0	0.0	0.0	364	52	0	0	0.0	0.0
03:00	480	164	0	0	0.0	0.0	430	123	0	0	0.0	0.0	324	73	0	0	0.0	0.0
04:00	1104	274	0	0	0.0	0.0	581	155	0	0	0.0	0.0	347	63	0	0	0.0	0.0
05:00	2912	442	0	0	0.0	0.0	1237	200	0	0	0.0	0.0	711	82	0	0	0.0	0.0
06:00	4362	517	47	0	1.1	0.0	1831	252	47	0	2.6	0.0	1036	105	47	0	4.5	0.0
07:00	5815	537	4	4	0.1	0.8	2558	297	4	4	0.2	1.4	1411	122	4	4	0.3	3.4
08:00	5327	591	4	4	0.1	0.7	3284	306	4	4	0.1	1.3	1892	128	4	4	0.2	3.2
09:00	4443	612	4	4	0.1	0.7	3680	297	4	4	0.1	1.4	2814	171	4	4	0.1	2.4
10:00	4093	596	4	4	0.1	0.7	4209	285	4	4	0.1	1.4	3805	196	4	4	0.1	2.1
11:00	4092	580	4	4	0.1	0.7	4673	267	4	4	0.1	1.5	4360	227	4	4	0.1	1.8
12:00	4460	634	4	4	0.1	0.6	4911	257	4	4	0.1	1.6	4713	213	4	4	0.1	1.9
13:00	4609	645	4	4	0.1	0.6	4811	243	4	4	0.1	1.7	4457	213	4	4	0.1	1.9
14:00	4921	651	4	4	0.1	0.6	4436	243	4	4	0.1	1.7	4074	217	4	4	0.1	1.9
15:00	5463	637	4	4	0.1	0.6	4286	230	4	4	0.1	1.8	3914	211	4	4	0.1	1.9
16:00	6404	508	4	4	0.1	0.8	4448	211	47	0	1.1	0.0	4311	198	47	0	1.1	0.0
17:00	6791	413	4	4	0.1	1.0	4227	181	0	0	0.0	0.0	3930	187	0	0	0.0	0.0
18:00	5092	344	4	4	0.1	1.2	3736	166	0	0	0.0	0.0	3468	151	0	0	0.0	0.0
19:00	3310	257	47	0	1.4	0.0	2853	121	0	0	0.0	0.0	2855	122	0	0	0.0	0.0
20:00	2312	174	0	0	0.0	0.0	2063	87	0	0	0.0	0.0	2158	88	0	0	0.0	0.0
21:00	1700	125	0	0	0.0	0.0	1606	74	0	0	0.0	0.0	1532	80	0	0	0.0	0.0
22:00	1377	117	0	0	0.0	0.0	1612	67	0	0	0.0	0.0	998	65	0	0	0.0	0.0
23:00	823	110	0	0	0.0	0.0	1248	71	0	0	0.0	0.0	573	81	0	0	0.0	0.0
12 hr	61512	6748	49	49	0.1	0.7	49259	2982	84	37	0.2	1.2	43149	2234	84	37	0.2	1.7
24 hr	81015	9268	143	49	0.2	0.5	64345	4468	131	37	0.2	0.8	55488	3184	131	37	0.2	1.2

- 7.5 As can be seen from the tables above, the daily increases are small. On Swale Way, east of the A249, the increases are generally less than 0.5% throughout the weekday and the daily (24 hour) increase is predicted to be 1.0% with average construction traffic; the daily (24 hour) increase is predicted to be 1.8% with peak construction traffic. On Saturdays, the increases are generally less than 1% throughout the day and the daily (24 hour) increase is predicted to be 1.6% with average construction traffic; the daily (24 hour) increase is predicted to be 3.0% with peak construction traffic. On Sundays, the daily (24 hour) increase is predicted to be 2.6% with average construction and 4.8% with peak construction traffic. There are peaks throughout the day where the increase is greater; this is during construction worker and arrivals and departures, the flows during these times will be significantly less than the respective days peak hours and therefore, will not result in significant impact on the link.
- 7.6 On Barge Way, north of Swale Road, the increases are less than 1.5% throughout the weekday, and the daily (24 hour) increase is predicted to be 0.7% with average construction traffic; the daily (24 hour) increase is predicted to be 1.0% with peak construction traffic. On Saturdays, the increases are less than 2.5% throughout the day and the daily (24 hour) increase is predicted to be 1.0% with average construction traffic; the daily (24 hour) increase is predicted to be 1.3% with peak construction traffic. On Sundays, the daily (24 hour) increase is predicted to be 1.6% with average construction traffic and 2.0% with peak construction traffic.
- 7.7 On Barge Way, east of Fleet End Road, the increases are generally less than 3% throughout the weekday, and the daily (24 hour) increase is predicted to be 1.4% with average construction traffic; the daily (24 hour) increase is predicted to be 1.9% with peak construction traffic. On Saturdays, the increases are generally less than 6% throughout the day and the daily (24 hour) increase is predicted to be 2.4% with average construction traffic; the daily (24 hour) increase is predicted to be 3.1% with peak construction traffic. On Sundays, the daily (24 hour) increase is predicted to be 3.4% with average construction traffic and 4.5% with peak construction traffic; there are peaks throughout the day where the increase is greater; this is due to a lower baseline traffic flow on a Sunday.
- 7.8 On the A249, South of Swale Way, the increases are generally less than 0.2% throughout the weekday, and the daily (24 hour) increase is predicted to be 0.5% with average construction traffic; the daily (24 hour) increase is predicted to be 1.0% with peak construction traffic. On Saturdays, the increases are generally less than 0.4% throughout the day and the daily (24 hour) increase is predicted to be 0.6% with average construction traffic; the daily (24 hour) increase is predicted to be 1.1% with peak construction traffic. On Sundays, the daily (24 hour) increase is predicted to be 0.7% with average construction traffic and 1.3% with peak construction traffic; there are peaks throughout the day where the increase is greater; this is due to a lower baseline traffic flow on a Sunday.
- 7.9 On Swale Way, north of Realms Way junction, the daily (24 hour) increase is predicted to be 1.1% with average construction traffic and 2.2% with peak construction traffic. On Saturdays and Sundays, with average construction traffic, the daily (24 hour) increases are predicted to be 1.9% and 2.5% respectively; this increases to 3.8% and 5.1% respectively with peak construction traffic.

- 7.10 On Swale Way, south of Reams Way junction, the daily (24 hour) increase is predicted to be 1.1% with average construction traffic and 2.2% with peak construction traffic. On Saturdays and Sundays, with average construction traffic, the daily (24 hour) increases are predicted to be 1.9% and 2.7% respectively; this increases to 3.8% and 5.5% respectively with peak construction traffic.
- 7.11 On Swale Way, south of Ridham Avenue Roundabout, the increases throughout the weekday, Saturday and Sunday, and the daily (24 hour) increase is predicted to be less than 0.1% on all days.
- 7.12 On the M2, east of the A249, the daily (24 hour) increase is predicted to be less than 0.1% with average construction traffic and 0.1% with peak construction traffic. On Saturdays and Sundays, with average and peak construction traffic, the daily (24-hour increases) are predicted to be 0.1%.
- 7.13 On the M2, west of the A249, the daily (24 hour) increase is predicted to be 0.1% with average construction traffic and 0.2% with peak construction traffic. On Saturdays and Sundays, with average construction traffic, the daily (24-hour increases) are predicted to be 0.1% and 0.1% respectively; these increase to 0.2% on Saturday and Sunday with peak construction traffic.
- 7.14 The changes in traffic flows on the A249 and the M2 are low and are significantly lower than what can be typically expected within day-to-day variance and their impact will be unnoticeable.
- 7.15 The results show that the greatest impact of the development is predicted to be on a Sunday during staff arrival and departure. There are a lower number of vehicle movements on the links in the future baseline scenario on Sundays in comparison to weekdays, therefore the percentage increases as a result of the project appear high. Sunday working will not be regular in occurrence.
- 7.16 It can be seen that the greatest impact during the weekday period, is predicted to be on Swale Way south of Reams Way, with total traffic percentage increases of 17.5% with average construction traffic and 34.9% with peak construction traffic, during the hours of 19:00-20:00. As can be seen, there would be significantly less traffic than the existing baseline network peak hours. The network will operate, with the construction traffic, more efficiently than during those periods when there is greatest potential for congestion to occur.
- 7.17 During the network peak hours, there are minimal increases in traffic. The maximum increase in total vehicles is 1.8% in the AM peak hour and 1.7% in the PM peak hour on Link 3 (Barge Way East of Fleet End Road) between 08:00-09:00 during an average weekday with average construction traffic. The maximum increase in HGVs is also on link 3 between 17:00-18:00 during an average weekday, and is an increase of 6.5% with average construction traffic. This is due to an increase of 5 HGVs. Such levels of traffic are unlikely to result in a severe impact on the operation of the highway network. This finding corresponds with KCC's response, with reference to HGV movements, to the K4 Draft Environmental Statement: *'the principle of up to eight movements in a peak hour is unlikely to have a significant impact'*.

### **Junction Assessment**

- 7.18 Operational assessments have been undertaken using the Junctions 9 computer modelling suite at the following junctions:

- Swale Way / Barge Way Roundabout;
- Fleet End / Barge Way Roundabout;
- Barge Way / Site Access Roundabout; and
- A249 / Grovehurst Road / Swale Way / B2005 Grade Separated Dumbbell Junction

7.19 These have been undertaken using 2017 observed traffic flows, 2019 baseline traffic flows and 2019 baseline plus average construction traffic flows.

7.20 The AM and PM peak hours are the periods when the peak flow of traffic is on the highway network and during these periods junctions are at their most sensitive to changes in terms of their operation and capacity; operational assessment therefore, are undertaken for these time periods.

7.21 A summary of the results is presented in **Tables 7.17 to 7.20** below. Full print outs of the model output files are attached at **Appendix L**.

**Table 7.17: Swale Way / Barge Way Roundabout**

2017						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way	0.3	7.43	0.22	0.4	4.74	0.26
Swale Wale South	0.5	3.90	0.32	1.7	6.77	0.63
Swale Way West	4.4	13.55	0.82	0.9	4.74	0.46
2019						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way	0.3	7.57	0.23	0.4	4.81	0.27
Swale Wale South	0.5	3.94	0.33	1.8	7.10	0.65
Swale Way West	5.0	15.03	0.84	0.9	4.84	0.47
2019 Baseline						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way	0.5	10.12	0.34	0.5	5.61	0.35
Swale Wale South	0.7	4.52	0.40	4.6	14.91	0.83
Swale Way West	49.5	108.02	1.05	1.1	5.69	0.54
2019 Baseline + Average Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way	0.5	10.27	0.35	0.5	5.64	0.35
Swale Wale South	0.7	5.54	0.40	4.7	15.07	0.83
Swale Way West	52.0	112.69	1.05	1.2	5.76	0.54

2019 Baseline + Peak Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way	0.5	10.30	0.35	0.5	5.64	0.35
Swale Wale South	0.7	4.55	0.40	4.7	15.07	0.83
Swale Way West	52.6	113.71	1.05	1.2	5.77	0.54

7.22 **Table 7.17** above shows that the Swale Way West arm is just under its design capacity in 2019 AM and exceeds its operational capacity in the AM 2019 Baseline scenario with a RFC of 1.05 in the AM with a queue of 50 vehicles. There is no increase to the RFC and a marginal increase to 53 vehicles when average and peak construction traffic flows are added to the 2019 Baseline. This is not considered to be a severe impact (NPPF test).

**Table 7.18: Barge Way / Site Access Roundabout**

2017						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Access (S)	0.0	4.82	0.04	0.1	3.58	0.05
Barge Way	0.2	3.74	0.13	0.1	3.4	0.10
Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
Private Road	0.1	4.81	0.09	0.1	3.10	0.09
2019						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Access (S)	0.0	4.83	0.05	0.1	3.57	0.05
Barge Way	0.2	3.77	0.14	0.1	3.40	0.1
Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
Private Road	0.1	4.83	0.1	0.1	3.1	0.09
2019 Baseline						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Access (S)	0.1	5.01	0.06	0.1	3.77	0.08
Barge Way	0.2	4.06	0.18	0.2	3.75	0.14
Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
Private Road	0.1	4.75	0.12	0.1	3.30	0.12
2019 Baseline + Average Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Access (S)	0.1	5.05	0.06	0.1	3.86	0.08
Barge Way	0.2	4.10	0.18	0.2	3.80	0.15
Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
Private Road	0.1	4.77	0.12	0.1	3.31	0.12

2019 Baseline + Peak Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Access (S)	0.1	5.05	0.07	0.1	3.84	0.08
Barge Way	0.2	4.12	0.18	0.2	3.82	0.15
Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
Private Road	0.1	4.77	0.13	0.1	3.31	0.12

7.23 **Table 7.18** above shows above shows that the junction will operate within capacity in all scenarios and that there are only minimal increases in delay and RFC with the average and peak construction traffic added to the 2019 Baseline flows.

**Table 7.19: Barge Way south / Fleet End / Barge Way East Roundabout**

2017						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way E	0.0	4.29	0.07	0.1	3.32	0.13
Barge Way S	0.2	3.51	0.17	0.2	3.03	0.14
Fleet End	0.0	4.10	0.04	0.1	4.18	0.08
Private Access	0.0	0.00	0.00	0.0	0.00	0.00
2019						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way E	0.0	4.30	0.08	0.1	3.34	0.13
Barge Way S	0.2	3.53	0.17	0.2	3.04	0.14
Fleet End	0.0	4.06	0.04	0.1	4.22	0.09
Private Access	0.0	0.00	0.00	0.0	0.00	0.00
2019 Baseline						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way E	0.1	4.28	0.11	0.2	3.63	0.18
Barge Way S	0.3	3.75	0.21	0.2	3.31	0.18
Fleet End	0.0	4.17	0.04	0.1	4.33	0.09
Private Access	0.0	0.00	0.00	0.0	0.00	0.00
2019 Baseline + Average Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way E	0.1	4.32	0.12	0.2	3.64	0.18
Barge Way S	0.3	3.79	0.21	0.2	3.35	0.18
Fleet End	0.0	4.18	0.04	0.1	4.35	0.09
Private Access	0.0	0.00	0.00	0.0	0.00	0.00



2019 Baseline + Peak Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way E	0.1	4.33	0.12	0.2	3.68	0.19
Barge Way S	0.3	3.82	0.21	0.2	3.35	0.18
Fleet End	0.0	4.19	0.04	0.1	4.35	0.09
Private Access	0.0	0.00	0.00	0.0	0.00	0.00

7.24 **Table 7.19** above shows above shows that the junction will operate within capacity in all scenarios and that there are only minimal increases in delay and RFC with the average and peak construction traffic added to the 2019 Baseline flows.

**Table 7.20: A249 Grade Separated Dumbbell Junction Swale Way / Barge Way Roundabout**

2017						
	AM			PM		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
North A249 offslip (NB)	6.5	33.77	0.88	43.4	176.66	1.09
North Grovehurst Rd	6.5	57.68	0.90	0.8	12.71	0.46
North B2005 – Link	0.4	3.33	0.30	0.60	3.65	0.38
South B2005 – Link	1.5	4.97	0.60	0.8	3.54	0.44
South A249 offslip (SB)	23.4	138.98	1.06	1.5	11.60	0.61
South Swale Way	14.6	90.60	0.98	362.8	1810.92	1.74
South Grovehurst Rd	17.8	101.37	1.01	4.4	28.52	0.83
2019						
	AM			PM		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
North A249 offslip (NB)	7.7	39.25	0.90	53.8	213.23	1.12
North Grovehurst Rd	8.8	74.76	0.94	0.9	13.01	0.47
North B2005 – Link	0.4	3.33	0.31	0.6	3.67	0.38
South B2005 – Link	1.6	5.11	0.61	0.8	3.55	0.44
South A249 offslip (SB)	33.8	190.20	1.11	1.6	12.13	0.62
South Swale Way	18.4	108.78	1.01	401.1	2031.57	1.79
South Grovehurst Rd	23.7	127.76	1.04	4.8	30.90	0.84

2019 Baseline						
	AM			PM		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
North A249 offslip (NB)	36.6	141.77	1.06	82.2	362.28	1.20
North Grovehurst Rd	40.9	321.88	1.17	1.0	13.63	0.49
North B2005 – Link	0.4	3.38	0.30	0.6	3.71	0.39
South B2005 – Link	1.9	5.81	0.66	0.8	3.69	0.45
South A249 offslip (SB)	127.5	884.17	1.47	1.8	13.62	0.65
South Swale Way	53.6	290.94	1.14	733.4	3714.33	2.21
South Grovehurst Rd	52.9	300.70	1.15	5.4	34.07	0.86
2019 + Average Construction Traffic						
	AM			PM		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
North A249 offslip (NB)	40.2	154.23	1.07	83.8	371.03	1.20
North Grovehurst Rd	41.7	331.53	1.18	1.0	13.65	0.49
North B2005 – Link	0.4	3.37	0.30	0.6	3.71	0.39
South B2005 – Link	1.9	5.83	0.66	0.8	3.69	0.45
South A249 offslip (SB)	129.3	916.90	1.48	1.8	13.66	0.65
South Swale Way	56.1	308.80	1.15	737.4	3733.48	2.21
South Grovehurst Rd	53.4	304.63	1.16	5.4	34.15	0.86
2019 + Peak Construction Traffic						
	AM			PM		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
North A249 offslip (NB)	40.7	155.70	1.07	84.6	375.36	1.21
North Grovehurst Rd	41.7	332.62	1.18	1.0	13.66	0.49
North B2005 – Link	0.4	3.37	0.30	0.6	3.71	0.39
South B2005 – Link	1.9	5.87	0.66	0.8	3.71	0.45
South A249 offslip (SB)	129.4	975.39	1.48	1.8	13.66	0.65

South Swale Way	56.1	308.07	1.15	735.9	3719.44	2.21
South Grovehurst Rd	53.5	305.64	1.16	5.4	34.30	0.86

7.25 **Table 7.20** above shows that the dumbbell junction is currently operating over its design capacity with an RFCs of 1.74 on the Swale Road arm in the PM peak which increases to 2.21 in the 2019 Baseline. The addition of average and peak construction traffic increases the RFC from 1.14 to 1.15 in the AM peak hour and there is no increase in the PM peak hour. This is not considered to be a severe impact (NPPF test).

7.26 As K4 fuel is delivered by a gas pipeline it will only generate insignificant operational vehicle movements. This assessment reviews the impact of its construction traffic and therefore this small increase in RFC will only be a temporary.

**Summary**

7.27 The above assessments show both the average and peak construction traffic flows would not result in any discernible increases along the local road network. Operational assessments of junction performance show that the average and peak construction traffic flows would result in negligible impacts.

7.28 This finding corresponds with KCC’s response, with reference to HGV movements, to the K4 Draft Environmental Statement: *‘the principle of up to eight movements in a peak hour is unlikely to have a significant impact’.*

7.29 As K4 fuel is delivered by a gas pipeline it will only generate insignificant operational vehicle movements. This assessment reviews the impact of its construction traffic and therefore will only be a temporary impact of 4 months for the peak traffic level and 16 months for the average traffic level.

7.30 It is therefore concluded that the average construction traffic flows would not result in a severe impact (NPPF test) along the local road network.

## 8 CUMULATIVE ASSESSMENTS

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- 8.1 As set out in Section 5, a number of sites have been identified to be assessed alongside K4 to understand the cumulative impact of development on the highway network.

### Link Assessment

- 8.2 The cumulative development traffic flows with average and peak construction traffic flows have been assessed against the 2019 baseline traffic flows within **Tables 8.1 to 8.16**.

**Table 8.1: Swale Way East of B2005 Grovehurst Roundabout Average Construction Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	168	57	0	0	0.0	0.0	0	0	0.0	0.0	188	51	0	0	0.0	0.0	0	0	0.0	0.0	193	20	0	0	0.0	0.0	0	0	0.0	0.0
01:00	156	52	0	0	0.0	0.0	0	0	0.0	0.0	166	62	0	0	0.0	0.0	0	0	0.0	0.0	165	19	0	0	0.0	0.0	0	0	0.0	0.0
02:00	173	48	0	0	0.0	0.0	0	0	0.0	0.0	136	51	0	0	0.0	0.0	0	0	0.0	0.0	104	18	0	0	0.0	0.0	0	0	0.0	0.0
03:00	252	73	0	0	0.0	0.0	0	0	0.0	0.0	173	52	0	0	0.0	0.0	0	0	0.0	0.0	89	20	0	0	0.0	0.0	0	0	0.0	0.0
04:00	379	86	0	0	0.0	0.0	0	0	0.0	0.0	214	67	0	0	0.0	0.0	0	0	0.0	0.0	107	21	0	0	0.0	0.0	0	0	0.0	0.0
05:00	1029	112	0	0	0.0	0.0	0	0	0.0	0.0	605	70	0	0	0.0	0.0	0	0	0.0	0.0	359	22	0	0	0.0	0.0	0	0	0.0	0.0
06:00	1132	172	85	0	7.5	0.0	97	0	8.5	0.0	520	116	85	0	16.3	0.0	85	0	16.3	0.0	237	55	85	0	35.6	0.0	85	0	35.6	0.0
07:00	1864	190	5	5	0.3	2.6	23	17	1.2	9.0	628	112	5	5	0.8	4.5	5	5	0.8	4.5	223	50	5	5	2.2	10.0	5	5	2.2	10.0
08:00	2044	179	5	5	0.2	2.8	26	22	1.3	12.3	648	96	5	5	0.8	5.2	5	5	0.8	5.2	229	50	5	5	2.2	10.0	5	5	2.2	10.0
09:00	1293	196	5	5	0.4	2.5	24	18	1.8	9.3	727	109	5	5	0.7	4.6	5	5	0.7	4.6	254	47	5	5	2.0	10.7	5	5	2.0	10.7
10:00	1171	212	5	5	0.4	2.4	24	18	2.0	8.6	833	103	5	5	0.6	4.8	5	5	0.6	4.8	269	50	5	5	1.9	10.0	5	5	1.9	10.0
11:00	1214	201	5	5	0.4	2.5	24	18	2.0	9.1	877	101	5	5	0.6	4.9	5	5	0.6	4.9	510	50	5	5	1.0	10.0	5	5	1.0	10.0
12:00	1348	206	5	5	0.4	2.4	24	18	1.8	8.8	913	98	5	5	0.5	5.1	5	5	0.5	5.1	830	54	5	5	0.6	9.2	5	5	0.6	9.2
13:00	1419	212	5	5	0.4	2.4	24	18	1.7	8.6	836	83	5	5	0.6	6.0	5	5	0.6	6.0	444	50	5	5	1.1	10.0	5	5	1.1	10.0
14:00	1436	212	5	5	0.3	2.4	24	18	1.7	8.6	845	89	5	5	0.6	5.6	5	5	0.6	5.6	487	54	5	5	1.0	9.2	5	5	1.0	9.2
15:00	1649	230	5	5	0.3	2.2	24	18	1.4	7.9	962	116	6	6	0.6	5.2	6	6	0.6	5.2	593	77	6	6	1.0	7.8	6	6	1.0	7.8
16:00	1685	168	5	5	0.3	3.0	24	18	1.4	10.8	761	84	85	0	11.1	0.0	85	0	11.1	0.0	609	47	85	0	13.9	0.0	85	0	13.9	0.0
17:00	1728	132	5	5	0.3	3.8	26	22	1.5	16.6	804	71	0	0	0.0	0.0	0	0	0.0	0.0	665	47	0	0	0.0	0.0	0	0	0.0	0.0
18:00	1194	106	5	5	0.4	4.7	23	17	1.9	16.2	683	59	0	0	0.0	0.0	0	0	0.0	0.0	448	34	0	0	0.0	0.0	0	0	0.0	0.0
19:00	703	68	85	0	12.0	0.0	97	0	13.7	0.0	507	38	0	0	0.0	0.0	0	0	0.0	0.0	472	21	0	0	0.0	0.0	0	0	0.0	0.0
20:00	520	72	0	0	0.0	0.0	0	0	0.0	0.0	374	47	0	0	0.0	0.0	0	0	0.0	0.0	336	21	0	0	0.0	0.0	0	0	0.0	0.0
21:00	374	58	0	0	0.0	0.0	0	0	0.0	0.0	301	38	0	0	0.0	0.0	0	0	0.0	0.0	208	22	0	0	0.0	0.0	0	0	0.0	0.0
22:00	318	58	0	0	0.0	0.0	0	0	0.0	0.0	294	33	0	0	0.0	0.0	0	0	0.0	0.0	324	18	0	0	0.0	0.0	0	0	0.0	0.0
23:00	214	52	0	0	0.0	0.0	0	0	0.0	0.0	220	35	0	0	0.0	0.0	0	0	0.0	0.0	218	15	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	18045	2245	60	60	0.3	2.7	288	224	1.6	10.0	9518	1121	131	46	1.4	4.1	131	46	1.4	4.1	5560	610	131	46	2.3	7.5	131	46	2.3	7.5
24 hr	23462	3151	229	60	1.0	1.9	481	224	2.0	7.1	13218	1782	215	46	1.6	2.6	215	46	1.6	2.6	8371	883	215	46	2.6	5.2	215	46	2.6	5.2

**Table 8.2: Swale Way East of B2005 Grovehurst Roundabout Peak Construction Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday										
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	
00:00	168	57	0	0	0	0	0	0	0	0.0	0.0	188	51	0	0	0.0	0.0	0	0	0.0	0.0	193	20	0	0	0.0	0.0	0	0	0.0	0.0
01:00	156	52	0	0	0.0	0.0	0	0	0.0	0.0	166	62	0	0	0.0	0.0	0	0	0.0	0.0	165	19	0	0	0.0	0.0	0	0	0.0	0.0	
02:00	173	48	0	0	0.0	0.0	0	0	0.0	0.0	136	51	0	0	0.0	0.0	0	0	0.0	0.0	104	18	0	0	0.0	0.0	0	0	0.0	0.0	
03:00	252	73	0	0	0.0	0.0	0	0	0.0	0.0	173	52	0	0	0.0	0.0	0	0	0.0	0.0	89	20	0	0	0.0	0.0	0	0	0.0	0.0	
04:00	379	86	0	0	0.0	0.0	0	0	0.0	0.0	214	67	0	0	0.0	0.0	0	0	0.0	0.0	107	21	0	0	0.0	0.0	0	0	0.0	0.0	
05:00	1029	112	0	0	0.0	0.0	0	0	0.0	0.0	605	70	0	0	0.0	0.0	0	0	0.0	0.0	359	22	0	0	0.0	0.0	0	0	0.0	0.0	
06:00	1132	172	169	0	14.9	0.0	181	0	16.0	0.0	520	116	169	0	32.5	0.0	169	0	32.5	0.0	237	55	169	0	71.3	0.0	169	0	71.3	0.0	
07:00	1864	190	7	7	0.4	3.7	25	19	1.3	10.1	628	112	7	7	1.1	6.3	7	7	1.1	6.3	223	50	7	7	3.1	14.0	7	7	3.1	14.0	
08:00	2044	179	7	7	0.3	3.9	28	24	1.4	13.4	648	96	7	7	1.1	7.3	7	7	1.1	7.3	229	50	7	7	3.1	14.0	7	7	3.1	14.0	
09:00	1293	196	7	7	0.5	3.6	26	20	2.0	10.3	727	109	7	7	1.0	6.4	7	7	1.0	6.4	254	47	7	7	2.8	14.9	7	7	2.8	14.9	
10:00	1171	212	7	7	0.6	3.3	26	20	2.2	9.5	833	103	7	7	0.8	6.8	7	7	0.8	6.8	269	50	7	7	2.6	14.0	7	7	2.6	14.0	
11:00	1214	201	7	7	0.6	3.5	26	20	2.1	10.1	877	101	7	7	0.8	6.9	7	7	0.8	6.9	510	50	7	7	1.4	14.0	7	7	1.4	14.0	
12:00	1348	206	7	7	0.5	3.4	26	20	1.9	9.8	913	98	7	7	0.8	7.1	7	7	0.8	7.1	830	54	7	7	0.8	12.9	7	7	0.8	12.9	
13:00	1419	212	6	6	0.4	2.8	25	19	1.8	9.1	836	83	6	6	0.7	7.3	6	6	0.7	7.3	444	50	6	6	1.4	12.0	6	6	1.4	12.0	
14:00	1436	212	6	6	0.4	2.8	25	19	1.7	9.0	845	89	6	6	0.7	6.7	6	6	0.7	6.7	487	54	6	6	1.2	11.1	6	6	1.2	11.1	
15:00	1649	230	6	6	0.4	2.6	25	19	1.5	8.4	962	116	6	6	0.6	5.2	6	6	0.6	5.2	593	77	6	6	1.0	7.8	6	6	1.0	7.8	
16:00	1685	168	6	6	0.4	3.6	25	19	1.5	11.4	761	84	169	0	22.2	0.0	169	0	22.2	0.0	609	47	169	0	27.8	0.0	169	0	27.8	0.0	
17:00	1728	132	7	7	0.4	5.3	28	24	1.6	18.1	804	71	0	0	0.0	0.0	0	0	0.0	0.0	665	47	0	0	0.0	0.0	0	0	0.0	0.0	
18:00	1194	106	7	7	0.6	6.6	25	19	2.1	18.1	683	59	0	0	0.0	0.0	0	0	0.0	0.0	448	34	0	0	0.0	0.0	0	0	0.0	0.0	
19:00	703	68	169	0	24.0	0.0	181	0	25.7	0.0	507	38	0	0	0.0	0.0	0	0	0.0	0.0	472	21	0	0	0.0	0.0	0	0	0.0	0.0	
20:00	520	72	0	0	0.0	0.0	0	0	0.0	0.0	374	47	0	0	0.0	0.0	0	0	0.0	0.0	336	21	0	0	0.0	0.0	0	0	0.0	0.0	
21:00	374	58	0	0	0.0	0.0	0	0	0.0	0.0	301	38	0	0	0.0	0.0	0	0	0.0	0.0	208	22	0	0	0.0	0.0	0	0	0.0	0.0	
22:00	318	58	0	0	0.0	0.0	0	0	0.0	0.0	294	33	0	0	0.0	0.0	0	0	0.0	0.0	324	18	0	0	0.0	0.0	0	0	0.0	0.0	
23:00	214	52	0	0	0.0	0.0	0	0	0.0	0.0	220	35	0	0	0.0	0.0	0	0	0.0	0.0	218	15	0	0	0.0	0.0	0	0	0.0	0.0	
12 hr	18045	2245	80	80	0.4	3.6	308	244	1.7	10.9	9518	1121	229	60	2.4	5.4	229	60	2.4	5.4	5560	610	229	60	4.1	9.8	229	60	4.1	9.8	
24 hr	23462	3151	418	80	1.8	2.5	670	244	2.9	7.7	13218	1782	398	60	3.0	3.4	398	60	3.0	3.4	8371	883	398	60	4.8	6.8	398	60	4.8	6.8	

**Table 8.3: Barge Way North of Swale Roundabout Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	135	41	0	0	0.0	0.0	0	0	0.0	0.0	141	37	0	0	0.0	0.0	0	0	0.0	0.0	107	32	0	0	0.0	0.0	0	0	0.0	0.0
01:00	139	37	0	0	0.0	0.0	0	0	0.0	0.0	114	32	0	0	0.0	0.0	0	0	0.0	0.0	94	30	0	0	0.0	0.0	0	0	0.0	0.0
02:00	178	39	0	0	0.0	0.0	0	0	0.0	0.0	138	41	0	0	0.0	0.0	0	0	0.0	0.0	95	27	0	0	0.0	0.0	0	0	0.0	0.0
03:00	233	57	0	0	0.0	0.0	0	0	0.0	0.0	174	49	0	0	0.0	0.0	0	0	0.0	0.0	87	30	0	0	0.0	0.0	0	0	0.0	0.0
04:00	320	69	0	0	0.0	0.0	0	0	0.0	0.0	221	63	0	0	0.0	0.0	0	0	0.0	0.0	111	34	0	0	0.0	0.0	0	0	0.0	0.0
05:00	621	76	0	0	0.0	0.0	0	0	0.0	0.0	417	62	0	0	0.0	0.0	0	0	0.0	0.0	262	30	0	0	0.0	0.0	0	0	0.0	0.0
06:00	532	120	0	0	0.0	0.0	0	0	0.0	0.0	306	105	0	0	0.0	0.0	0	0	0.0	0.0	162	58	0	0	0.0	0.0	0	0	0.0	0.0
07:00	472	138	5	5	1.1	3.6	5	5	1.1	3.6	253	103	5	5	2.0	4.9	5	5	2.0	4.9	104	66	5	5	4.8	7.5	5	5	4.8	7.5
08:00	461	139	5	5	1.1	3.6	5	5	1.1	3.6	219	110	5	5	2.3	4.6	5	5	2.3	4.6	99	59	5	5	5.1	8.5	5	5	5.1	8.5
09:00	381	147	5	5	1.3	3.4	5	5	1.3	3.4	220	105	5	5	2.3	4.8	5	5	2.3	4.8	95	59	5	5	5.2	8.4	5	5	5.2	8.4
10:00	387	147	5	5	1.3	3.4	5	5	1.3	3.4	225	88	5	5	2.2	5.7	5	5	2.2	5.7	93	58	5	5	5.4	8.6	5	5	5.4	8.6
11:00	358	149	5	5	1.4	3.4	5	5	1.4	3.4	210	96	5	5	2.4	5.2	5	5	2.4	5.2	133	74	5	5	3.8	6.8	5	5	3.8	6.8
12:00	385	153	5	5	1.3	3.3	5	5	1.3	3.3	202	79	5	5	2.5	6.3	5	5	2.5	6.3	182	64	5	5	2.7	7.8	5	5	2.7	7.8
13:00	440	160	5	5	1.1	3.1	5	5	1.1	3.1	228	77	5	5	2.2	6.5	5	5	2.2	6.5	136	66	5	5	3.7	7.5	5	5	3.7	7.5
14:00	466	179	5	5	1.1	2.8	5	5	1.1	2.8	229	98	5	5	2.2	5.1	5	5	2.2	5.1	139	74	5	5	3.6	6.8	5	5	3.6	6.8
15:00	566	198	5	5	0.9	2.5	5	5	0.9	2.5	347	128	6	6	1.7	4.7	6	6	1.7	4.7	233	97	6	6	2.6	6.2	6	6	2.6	6.2
16:00	478	145	5	5	1.0	3.5	5	5	1.0	3.5	193	71	0	0	0.0	0.0	0	0	0.0	0.0	168	77	0	0	0.0	0.0	0	0	0.0	0.0
17:00	490	111	5	5	1.0	4.5	5	5	1.0	4.5	186	66	0	0	0.0	0.0	0	0	0.0	0.0	166	57	0	0	0.0	0.0	0	0	0.0	0.0
18:00	362	89	5	5	1.4	5.6	5	5	1.4	5.6	175	47	0	0	0.0	0.0	0	0	0.0	0.0	131	40	0	0	0.0	0.0	0	0	0.0	0.0
19:00	193	56	0	0	0.0	0.0	0	0	0.0	0.0	76	40	0	0	0.0	0.0	0	0	0.0	0.0	72	24	0	0	0.0	0.0	0	0	0.0	0.0
20:00	152	42	0	0	0.0	0.0	0	0	0.0	0.0	72	35	0	0	0.0	0.0	0	0	0.0	0.0	66	27	0	0	0.0	0.0	0	0	0.0	0.0
21:00	129	36	0	0	0.0	0.0	0	0	0.0	0.0	72	29	0	0	0.0	0.0	0	0	0.0	0.0	56	23	0	0	0.0	0.0	0	0	0.0	0.0
22:00	123	41	0	0	0.0	0.0	0	0	0.0	0.0	80	31	0	0	0.0	0.0	0	0	0.0	0.0	86	23	0	0	0.0	0.0	0	0	0.0	0.0
23:00	157	47	0	0	0.0	0.0	0	0	0.0	0.0	89	29	0	0	0.0	0.0	0	0	0.0	0.0	86	25	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	6531	2096	60	60	0.9	2.9	60	60	0.9	2.9	3382	1338	46	46	1.4	3.4	46	46	1.4	3.4	2208	974	46	46	2.1	4.7	46	46	2.1	4.7
24 hr	8157	2415	60	60	0.7	2.5	60	60	0.7	2.5	4588	1620	46	46	1.0	2.8	46	46	1.0	2.8	2964	1158	46	46	1.6	4.0	46	46	1.6	4.0

**Table 8.4: Barge Way North of Swale Roundabout Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	135	41	0	0	0.0	0.0	0	0	0.0	0.0	141	37	0	0	0.0	0.0	0	0	0.0	0.0	107	32	0	0	0.0	0.0	0	0	0.0	0.0
01:00	139	37	0	0	0.0	0.0	0	0	0.0	0.0	114	32	0	0	0.0	0.0	0	0	0.0	0.0	94	30	0	0	0.0	0.0	0	0	0.0	0.0
02:00	178	39	0	0	0.0	0.0	0	0	0.0	0.0	138	41	0	0	0.0	0.0	0	0	0.0	0.0	95	27	0	0	0.0	0.0	0	0	0.0	0.0
03:00	233	57	0	0	0.0	0.0	0	0	0.0	0.0	174	49	0	0	0.0	0.0	0	0	0.0	0.0	87	30	0	0	0.0	0.0	0	0	0.0	0.0
04:00	320	69	0	0	0.0	0.0	0	0	0.0	0.0	221	63	0	0	0.0	0.0	0	0	0.0	0.0	111	34	0	0	0.0	0.0	0	0	0.0	0.0
05:00	621	76	0	0	0.0	0.0	0	0	0.0	0.0	417	62	0	0	0.0	0.0	0	0	0.0	0.0	262	30	0	0	0.0	0.0	0	0	0.0	0.0
06:00	532	120	0	0	0.0	0.0	0	0	0.0	0.0	306	105	0	0	0.0	0.0	0	0	0.0	0.0	162	58	0	0	0.0	0.0	0	0	0.0	0.0
07:00	472	138	7	7	1.5	5.1	7	7	1.5	5.1	253	103	7	7	2.8	6.8	7	7	2.8	6.8	104	66	7	7	6.7	10.5	7	7	6.7	10.5
08:00	461	139	7	7	1.5	5.0	7	7	1.5	5.0	219	110	7	7	3.2	6.4	7	7	3.2	6.4	99	59	7	7	7.1	11.8	7	7	7.1	11.8
09:00	381	147	7	7	1.8	4.8	7	7	1.8	4.8	220	105	7	7	3.2	6.7	7	7	3.2	6.7	95	59	7	7	7.3	11.8	7	7	7.3	11.8
10:00	387	147	7	7	1.8	4.8	7	7	1.8	4.8	225	88	7	7	3.1	7.9	7	7	3.1	7.9	93	58	7	7	7.5	12.0	7	7	7.5	12.0
11:00	358	149	7	7	2.0	4.7	7	7	2.0	4.7	210	96	7	7	3.3	7.3	7	7	3.3	7.3	133	74	7	7	5.3	9.5	7	7	5.3	9.5
12:00	385	153	7	7	1.8	4.6	7	7	1.8	4.6	202	79	7	7	3.5	8.9	7	7	3.5	8.9	182	64	7	7	3.8	10.9	7	7	3.8	10.9
13:00	440	160	6	6	1.4	3.7	6	6	1.4	3.7	228	77	6	6	2.6	7.8	6	6	2.6	7.8	136	66	6	6	4.4	9.0	6	6	4.4	9.0
14:00	466	179	6	6	1.3	3.4	6	6	1.3	3.4	229	98	6	6	2.6	6.1	6	6	2.6	6.1	139	74	6	6	4.3	8.1	6	6	4.3	8.1
15:00	566	198	6	6	1.1	3.0	6	6	1.1	3.0	347	128	6	6	1.7	4.7	6	6	1.7	4.7	233	97	6	6	2.6	6.2	6	6	2.6	6.2
16:00	478	145	6	6	1.3	4.1	6	6	1.3	4.1	193	71	0	0	0.0	0.0	0	0	0.0	0.0	168	77	0	0	0.0	0.0	0	0	0.0	0.0
17:00	490	111	7	7	1.4	6.3	7	7	1.4	6.3	186	66	0	0	0.0	0.0	0	0	0.0	0.0	166	57	0	0	0.0	0.0	0	0	0.0	0.0
18:00	362	89	7	7	1.9	7.9	7	7	1.9	7.9	175	47	0	0	0.0	0.0	0	0	0.0	0.0	131	40	0	0	0.0	0.0	0	0	0.0	0.0
19:00	193	56	0	0	0.0	0.0	0	0	0.0	0.0	76	40	0	0	0.0	0.0	0	0	0.0	0.0	72	24	0	0	0.0	0.0	0	0	0.0	0.0
20:00	152	42	0	0	0.0	0.0	0	0	0.0	0.0	72	35	0	0	0.0	0.0	0	0	0.0	0.0	66	27	0	0	0.0	0.0	0	0	0.0	0.0
21:00	129	36	0	0	0.0	0.0	0	0	0.0	0.0	72	29	0	0	0.0	0.0	0	0	0.0	0.0	56	23	0	0	0.0	0.0	0	0	0.0	0.0
22:00	123	41	0	0	0.0	0.0	0	0	0.0	0.0	80	31	0	0	0.0	0.0	0	0	0.0	0.0	86	23	0	0	0.0	0.0	0	0	0.0	0.0
23:00	157	47	0	0	0.0	0.0	0	0	0.0	0.0	89	29	0	0	0.0	0.0	0	0	0.0	0.0	86	25	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	6531	2096	80	80	1.2	3.8	80	80	1.2	3.8	3382	1338	60	60	1.8	4.5	60	60	1.8	4.5	2208	974	60	60	2.7	6.2	60	60	2.7	6.2
24 hr	8157	2415	80	80	1.0	3.3	80	80	1.0	3.3	4588	1620	60	60	1.3	3.7	60	60	1.3	3.7	2964	1158	60	60	2.0	5.2	60	60	2.0	5.2



**Table 8.5: Barge Way East of Fleet End Roundabout Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	45	23	0	0	0.0	0.0	0	0	0.0	0.0	97	19	0	0	0.0	0.0	0	0	0.0	0.0	19	15	0	0	0.0	0.0	0	0	0.0	0.0
01:00	44	22	0	0	0.0	0.0	0	0	0.0	0.0	40	22	0	0	0.0	0.0	0	0	0.0	0.0	16	15	0	0	0.0	0.0	0	0	0.0	0.0
02:00	63	25	0	0	0.0	0.0	0	0	0.0	0.0	41	30	0	0	0.0	0.0	0	0	0.0	0.0	18	15	0	0	0.0	0.0	0	0	0.0	0.0
03:00	77	27	0	0	0.0	0.0	0	0	0.0	0.0	24	17	0	0	0.0	0.0	0	0	0.0	0.0	16	15	0	0	0.0	0.0	0	0	0.0	0.0
04:00	118	33	0	0	0.0	0.0	0	0	0.0	0.0	44	25	0	0	0.0	0.0	0	0	0.0	0.0	25	15	0	0	0.0	0.0	0	0	0.0	0.0
05:00	325	41	0	0	0.0	0.0	0	0	0.0	0.0	193	22	0	0	0.0	0.0	0	0	0.0	0.0	150	16	0	0	0.0	0.0	0	0	0.0	0.0
06:00	327	90	0	0	0.0	0.0	0	0	0.0	0.0	158	75	0	0	0.0	0.0	0	0	0.0	0.0	102	48	0	0	0.0	0.0	0	0	0.0	0.0
07:00	297	99	5	5	1.7	5.0	5	5	1.7	5.0	117	68	5	5	4.3	7.3	5	5	4.3	7.3	55	46	5	5	9.1	10.9	5	5	9.1	10.9
08:00	275	107	5	5	1.8	4.7	5	5	1.8	4.7	104	73	5	5	4.8	6.9	5	5	4.8	6.9	58	43	5	5	8.7	11.7	5	5	8.7	11.7
09:00	217	109	5	5	2.3	4.6	5	5	2.3	4.6	109	72	5	5	4.6	7.0	5	5	4.6	7.0	48	42	5	5	10.5	12.0	5	5	10.5	12.0
10:00	205	112	5	5	2.4	4.5	5	5	2.4	4.5	96	66	5	5	5.2	7.5	5	5	5.2	7.5	48	42	5	5	10.5	12.0	5	5	10.5	12.0
11:00	192	108	5	5	2.6	4.6	5	5	2.6	4.6	93	52	5	5	5.4	9.6	5	5	5.4	9.6	53	44	5	5	9.4	11.5	5	5	9.4	11.5
12:00	219	109	5	5	2.3	4.6	5	5	2.3	4.6	78	47	5	5	6.4	10.7	5	5	6.4	10.7	53	43	5	5	9.4	11.7	5	5	9.4	11.7
13:00	232	112	5	5	2.2	4.5	5	5	2.2	4.5	83	47	5	5	6.0	10.7	5	5	6.0	10.7	63	43	5	5	7.9	11.7	5	5	7.9	11.7
14:00	231	122	5	5	2.2	4.1	5	5	2.2	4.1	82	46	5	5	6.1	10.9	5	5	6.1	10.9	64	43	5	5	7.8	11.7	5	5	7.8	11.7
15:00	316	149	5	5	1.6	3.4	5	5	1.6	3.4	182	80	6	6	3.3	7.5	6	6	3.3	7.5	163	74	6	6	3.7	8.1	6	6	3.7	8.1
16:00	230	97	5	5	2.2	5.1	5	5	2.2	5.1	71	47	0	0	0.0	0.0	0	0	0.0	0.0	64	46	0	0	0.0	0.0	0	0	0.0	0.0
17:00	295	77	5	5	1.7	6.5	5	5	1.7	6.5	105	44	0	0	0.0	0.0	0	0	0.0	0.0	115	43	0	0	0.0	0.0	0	0	0.0	0.0
18:00	161	50	5	5	3.1	9.9	5	5	3.1	9.9	75	32	0	0	0.0	0.0	0	0	0.0	0.0	72	31	0	0	0.0	0.0	0	0	0.0	0.0
19:00	67	36	0	0	0.0	0.0	0	0	0.0	0.0	24	17	0	0	0.0	0.0	0	0	0.0	0.0	27	17	0	0	0.0	0.0	0	0	0.0	0.0
20:00	73	34	0	0	0.0	0.0	0	0	0.0	0.0	24	19	0	0	0.0	0.0	0	0	0.0	0.0	23	17	0	0	0.0	0.0	0	0	0.0	0.0
21:00	70	27	0	0	0.0	0.0	0	0	0.0	0.0	28	18	0	0	0.0	0.0	0	0	0.0	0.0	27	20	0	0	0.0	0.0	0	0	0.0	0.0
22:00	54	29	0	0	0.0	0.0	0	0	0.0	0.0	24	18	0	0	0.0	0.0	0	0	0.0	0.0	32	19	0	0	0.0	0.0	0	0	0.0	0.0
23:00	52	22	0	0	0.0	0.0	0	0	0.0	0.0	22	15	0	0	0.0	0.0	0	0	0.0	0.0	28	16	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	2871	1252	60	60	2.1	4.8	60	60	2.1	4.8	1195	673	46	46	3.8	6.8	46	46	3.8	6.8	855	536	46	46	5.4	8.6	46	46	5.4	8.6
24 hr	4186	1661	60	60	1.4	3.6	60	60	1.4	3.6	1914	971	46	46	2.4	4.7	46	46	2.4	4.7	1340	764	46	46	3.4	6.0	46	46	3.4	6.0

**Table 8.6: Barge Way East of Fleet End Roundabout Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	45	23	0	0	0.0	0.0	0	0	0.0	0.0	97	19	0	0	0.0	0.0	0	0	0.0	0.0	19	15	0	0	0.0	0.0	0	0	0.0	0.0
01:00	44	22	0	0	0.0	0.0	0	0	0.0	0.0	40	22	0	0	0.0	0.0	0	0	0.0	0.0	16	15	0	0	0.0	0.0	0	0	0.0	0.0
02:00	63	25	0	0	0.0	0.0	0	0	0.0	0.0	41	30	0	0	0.0	0.0	0	0	0.0	0.0	18	15	0	0	0.0	0.0	0	0	0.0	0.0
03:00	77	27	0	0	0.0	0.0	0	0	0.0	0.0	24	17	0	0	0.0	0.0	0	0	0.0	0.0	16	15	0	0	0.0	0.0	0	0	0.0	0.0
04:00	118	33	0	0	0.0	0.0	0	0	0.0	0.0	44	25	0	0	0.0	0.0	0	0	0.0	0.0	25	15	0	0	0.0	0.0	0	0	0.0	0.0
05:00	325	41	0	0	0.0	0.0	0	0	0.0	0.0	193	22	0	0	0.0	0.0	0	0	0.0	0.0	150	16	0	0	0.0	0.0	0	0	0.0	0.0
06:00	327	90	0	0	0.0	0.0	0	0	0.0	0.0	158	75	0	0	0.0	0.0	0	0	0.0	0.0	102	48	0	0	0.0	0.0	0	0	0.0	0.0
07:00	297	99	7	7	2.4	7.1	7	7	2.4	7.1	117	68	7	7	6.0	10.2	7	7	6.0	10.2	55	46	7	7	12.7	15.3	7	7	12.7	15.3
08:00	275	107	7	7	2.5	6.5	7	7	2.5	6.5	104	73	7	7	6.7	9.6	7	7	6.7	9.6	58	43	7	7	12.2	16.4	7	7	12.2	16.4
09:00	217	109	7	7	3.2	6.4	7	7	3.2	6.4	109	72	7	7	6.4	9.8	7	7	6.4	9.8	48	42	7	7	14.6	16.8	7	7	14.6	16.8
10:00	205	112	7	7	3.4	6.3	7	7	3.4	6.3	96	66	7	7	7.3	10.5	7	7	7.3	10.5	48	42	7	7	14.6	16.8	7	7	14.6	16.8
11:00	192	108	7	7	3.7	6.5	7	7	3.7	6.5	93	52	7	7	7.5	13.5	7	7	7.5	13.5	53	44	7	7	13.2	16.0	7	7	13.2	16.0
12:00	219	109	7	7	3.2	6.4	7	7	3.2	6.4	78	47	7	7	9.0	15.0	7	7	9.0	15.0	53	43	7	7	13.2	16.4	7	7	13.2	16.4
13:00	232	112	6	6	2.6	5.4	6	6	2.6	5.4	83	47	6	6	7.2	12.8	6	6	7.2	12.8	63	43	6	6	9.5	14.1	6	6	9.5	14.1
14:00	231	122	6	6	2.6	4.9	6	6	2.6	4.9	82	46	6	6	7.3	13.1	6	6	7.3	13.1	64	43	6	6	9.3	14.1	6	6	9.3	14.1
15:00	316	149	6	6	1.9	4.0	6	6	1.9	4.0	182	80	6	6	3.3	7.5	6	6	3.3	7.5	163	74	6	6	3.7	8.1	6	6	3.7	8.1
16:00	230	97	6	6	2.6	6.2	6	6	2.6	6.2	71	47	0	0	0.0	0.0	0	0	0.0	0.0	64	46	0	0	0.0	0.0	0	0	0.0	0.0
17:00	295	77	7	7	2.4	9.1	7	7	2.4	9.1	105	44	0	0	0.0	0.0	0	0	0.0	0.0	115	43	0	0	0.0	0.0	0	0	0.0	0.0
18:00	161	50	7	7	4.3	13.9	7	7	4.3	13.9	75	32	0	0	0.0	0.0	0	0	0.0	0.0	72	31	0	0	0.0	0.0	0	0	0.0	0.0
19:00	67	36	0	0	0.0	0.0	0	0	0.0	0.0	24	17	0	0	0.0	0.0	0	0	0.0	0.0	27	17	0	0	0.0	0.0	0	0	0.0	0.0
20:00	73	34	0	0	0.0	0.0	0	0	0.0	0.0	24	19	0	0	0.0	0.0	0	0	0.0	0.0	23	17	0	0	0.0	0.0	0	0	0.0	0.0
21:00	70	27	0	0	0.0	0.0	0	0	0.0	0.0	28	18	0	0	0.0	0.0	0	0	0.0	0.0	27	20	0	0	0.0	0.0	0	0	0.0	0.0
22:00	54	29	0	0	0.0	0.0	0	0	0.0	0.0	24	18	0	0	0.0	0.0	0	0	0.0	0.0	32	19	0	0	0.0	0.0	0	0	0.0	0.0
23:00	52	22	0	0	0.0	0.0	0	0	0.0	0.0	22	15	0	0	0.0	0.0	0	0	0.0	0.0	28	16	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	2871	1252	80	80	2.8	6.4	80	80	2.8	6.4	1195	673	60	60	5.0	8.9	60	60	5.0	8.9	855	536	60	60	7.0	11.2	60	60	7.0	11.2
24 hr	4186	1661	80	80	1.9	4.8	80	80	1.9	4.8	1914	971	60	60	3.1	6.2	60	60	3.1	6.2	1340	764	60	60	4.5	7.9	60	60	4.5	7.9

**Table 8.7: A249 South of Swale Way Junction Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	245	68	0	0	0.0	0.0	0	0	0.0	0.0	407	69	0	0	0.0	0.0	0	0	0.0	0.0	468	46	0	0	0.0	0.0	0	0	0.0	0.0
01:00	177	60	0	0	0.0	0.0	0	0	0.0	0.0	273	64	0	0	0.0	0.0	0	0	0.0	0.0	303	39	0	0	0.0	0.0	0	0	0.0	0.0
02:00	176	66	0	0	0.0	0.0	0	0	0.0	0.0	233	74	0	0	0.0	0.0	0	0	0.0	0.0	214	42	0	0	0.0	0.0	0	0	0.0	0.0
03:00	247	84	0	0	0.0	0.0	0	0	0.0	0.0	234	74	0	0	0.0	0.0	0	0	0.0	0.0	180	45	0	0	0.0	0.0	0	0	0.0	0.0
04:00	565	147	0	0	0.0	0.0	0	0	0.0	0.0	317	83	0	0	0.0	0.0	0	0	0.0	0.0	205	45	0	0	0.0	0.0	0	0	0.0	0.0
05:00	1429	219	0	0	0.0	0.0	0	0	0.0	0.0	771	118	0	0	0.0	0.0	0	0	0.0	0.0	478	51	0	0	0.0	0.0	0	0	0.0	0.0
06:00	2249	285	81	0	3.6	0.0	92	0	4.1	0.0	1052	160	81	0	7.7	0.0	81	0	7.7	0.0	625	87	81	0	13.0	0.0	81	0	13.0	0.0
07:00	3123	316	5	5	0.2	1.6	20	15	0.7	4.9	1384	176	5	5	0.4	2.8	5	5	0.4	2.8	761	95	5	5	0.7	5.3	5	5	0.7	5.3
08:00	2730	320	5	5	0.2	1.6	22	20	0.8	6.1	1769	192	5	5	0.3	2.6	5	5	0.3	2.6	1064	98	5	5	0.5	5.1	5	5	0.5	5.1
09:00	2168	327	5	5	0.2	1.5	21	16	1.0	5.0	2015	199	5	5	0.2	2.5	5	5	0.2	2.5	1597	129	5	5	0.3	3.9	5	5	0.3	3.9
10:00	2075	343	5	5	0.2	1.5	21	16	1.0	4.7	2311	182	5	5	0.2	2.7	5	5	0.2	2.7	2053	140	5	5	0.2	3.6	5	5	0.2	3.6
11:00	2128	336	5	5	0.2	1.5	21	16	1.0	4.8	2469	179	5	5	0.2	2.8	5	5	0.2	2.8	2292	141	5	5	0.2	3.5	5	5	0.2	3.5
12:00	2302	350	5	5	0.2	1.4	21	16	0.9	4.7	2675	176	5	5	0.2	2.8	5	5	0.2	2.8	2163	134	5	5	0.2	3.7	5	5	0.2	3.7
13:00	2292	349	5	5	0.2	1.4	21	16	0.9	4.7	2575	164	5	5	0.2	3.1	5	5	0.2	3.1	2084	125	5	5	0.2	4.0	5	5	0.2	4.0
14:00	2570	360	5	5	0.2	1.4	21	16	0.8	4.5	2379	159	5	5	0.2	3.2	5	5	0.2	3.2	2140	135	5	5	0.2	3.7	5	5	0.2	3.7
15:00	2950	371	5	5	0.2	1.3	21	16	0.7	4.4	2425	178	6	6	0.2	3.4	6	6	0.2	3.4	2202	163	6	6	0.3	3.7	6	6	0.3	3.7
16:00	3393	293	5	5	0.1	1.7	21	16	0.6	5.6	2273	139	81	0	3.6	0.0	81	0	3.6	0.0	2221	144	81	0	3.6	0.0	81	0	3.6	0.0
17:00	3612	253	5	5	0.1	2.0	22	20	0.6	7.7	2340	132	0	0	0.0	0.0	0	0	0.0	0.0	1962	133	0	0	0.0	0.0	0	0	0.0	0.0
18:00	2776	223	5	5	0.2	2.2	20	15	0.7	6.9	2040	116	0	0	0.0	0.0	0	0	0.0	0.0	1875	117	0	0	0.0	0.0	0	0	0.0	0.0
19:00	1848	157	81	0	4.4	0.0	92	0	5.0	0.0	1580	89	0	0	0.0	0.0	0	0	0.0	0.0	1526	82	0	0	0.0	0.0	0	0	0.0	0.0
20:00	1266	116	0	0	0.0	0.0	0	0	0.0	0.0	1151	65	0	0	0.0	0.0	0	0	0.0	0.0	1268	73	0	0	0.0	0.0	0	0	0.0	0.0
21:00	951	94	0	0	0.0	0.0	0	0	0.0	0.0	969	56	0	0	0.0	0.0	0	0	0.0	0.0	929	69	0	0	0.0	0.0	0	0	0.0	0.0
22:00	754	78	0	0	0.0	0.0	0	0	0.0	0.0	885	53	0	0	0.0	0.0	0	0	0.0	0.0	570	49	0	0	0.0	0.0	0	0	0.0	0.0
23:00	456	64	0	0	0.0	0.0	0	0	0.0	0.0	685	51	0	0	0.0	0.0	0	0	0.0	0.0	349	47	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	32119	3842	60	60	0.2	1.6	256	200	0.8	5.2	26655	1991	127	46	0.5	2.3	127	46	0.5	2.3	22415	1556	127	46	0.6	3.0	127	46	0.6	3.0
24 hr	42482	5281	222	60	0.5	1.1	440	200	1.0	3.8	35211	2947	208	46	0.6	1.6	208	46	0.6	1.6	29531	2232	208	46	0.7	2.1	208	46	0.7	2.1

**Table 8.8: A249 South of Swale Way Junction Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	245	68	0	0	0.0	0.0	0	0	0.0	0.0	407	69	0	0	0.0	0.0	0	0	0.0	0.0	468	46	0	0	0.0	0.0	0	0	0.0	0.0
01:00	177	60	0	0	0.0	0.0	0	0	0.0	0.0	273	64	0	0	0.0	0.0	0	0	0.0	0.0	303	39	0	0	0.0	0.0	0	0	0.0	0.0
02:00	176	66	0	0	0.0	0.0	0	0	0.0	0.0	233	74	0	0	0.0	0.0	0	0	0.0	0.0	214	42	0	0	0.0	0.0	0	0	0.0	0.0
03:00	247	84	0	0	0.0	0.0	0	0	0.0	0.0	234	74	0	0	0.0	0.0	0	0	0.0	0.0	180	45	0	0	0.0	0.0	0	0	0.0	0.0
04:00	565	147	0	0	0.0	0.0	0	0	0.0	0.0	317	83	0	0	0.0	0.0	0	0	0.0	0.0	205	45	0	0	0.0	0.0	0	0	0.0	0.0
05:00	1429	219	0	0	0.0	0.0	0	0	0.0	0.0	771	118	0	0	0.0	0.0	0	0	0.0	0.0	478	51	0	0	0.0	0.0	0	0	0.0	0.0
06:00	2249	285	162	0	7.2	0.0	173	0	7.7	0.0	1052	160	162	0	15.4	0.0	162	0	15.4	0.0	625	87	162	0	25.9	0.0	162	0	25.9	0.0
07:00	3123	316	7	7	0.2	2.2	22	17	0.7	5.5	1384	176	7	7	0.5	4.0	7	7	0.5	4.0	761	95	7	7	0.9	7.4	7	7	0.9	7.4
08:00	2730	320	7	7	0.3	2.2	24	22	0.9	6.7	1769	192	7	7	0.4	3.7	7	7	0.4	3.7	1064	98	7	7	0.7	7.1	7	7	0.7	7.1
09:00	2168	327	7	7	0.3	2.1	23	18	1.1	5.6	2015	199	7	7	0.3	3.5	7	7	0.3	3.5	1597	129	7	7	0.4	5.4	7	7	0.4	5.4
10:00	2075	343	7	7	0.3	2.0	23	18	1.1	5.3	2311	182	7	7	0.3	3.8	7	7	0.3	3.8	2053	140	7	7	0.3	5.0	7	7	0.3	5.0
11:00	2128	336	7	7	0.3	2.1	23	18	1.1	5.4	2469	179	7	7	0.3	3.9	7	7	0.3	3.9	2292	141	7	7	0.3	4.9	7	7	0.3	4.9
12:00	2302	350	7	7	0.3	2.0	23	18	1.0	5.2	2675	176	7	7	0.3	4.0	7	7	0.3	4.0	2163	134	7	7	0.3	5.2	7	7	0.3	5.2
13:00	2292	349	6	6	0.3	1.7	22	17	1.0	4.9	2575	164	6	6	0.2	3.7	6	6	0.2	3.7	2084	125	6	6	0.3	4.8	6	6	0.3	4.8
14:00	2570	360	6	6	0.2	1.7	22	17	0.9	4.8	2379	159	6	6	0.3	3.8	6	6	0.3	3.8	2140	135	6	6	0.3	4.4	6	6	0.3	4.4
15:00	2950	371	6	6	0.2	1.6	22	17	0.8	4.7	2425	178	6	6	0.2	3.4	6	6	0.2	3.4	2202	163	6	6	0.3	3.7	6	6	0.3	3.7
16:00	3393	293	6	6	0.2	2.0	22	17	0.7	5.9	2273	139	162	0	7.1	0.0	162	0	7.1	0.0	2221	144	162	0	7.3	0.0	162	0	7.3	0.0
17:00	3612	253	7	7	0.2	2.8	24	22	0.7	8.5	2340	132	0	0	0.0	0.0	0	0	0.0	0.0	1962	133	0	0	0.0	0.0	0	0	0.0	0.0
18:00	2776	223	7	7	0.3	3.1	22	17	0.8	7.8	2040	116	0	0	0.0	0.0	0	0	0.0	0.0	1875	117	0	0	0.0	0.0	0	0	0.0	0.0
19:00	1848	157	162	0	8.8	0.0	173	0	9.4	0.0	1580	89	0	0	0.0	0.0	0	0	0.0	0.0	1526	82	0	0	0.0	0.0	0	0	0.0	0.0
20:00	1266	116	0	0	0.0	0.0	0	0	0.0	0.0	1151	65	0	0	0.0	0.0	0	0	0.0	0.0	1268	73	0	0	0.0	0.0	0	0	0.0	0.0
21:00	951	94	0	0	0.0	0.0	0	0	0.0	0.0	969	56	0	0	0.0	0.0	0	0	0.0	0.0	929	69	0	0	0.0	0.0	0	0	0.0	0.0
22:00	754	78	0	0	0.0	0.0	0	0	0.0	0.0	885	53	0	0	0.0	0.0	0	0	0.0	0.0	570	49	0	0	0.0	0.0	0	0	0.0	0.0
23:00	456	64	0	0	0.0	0.0	0	0	0.0	0.0	685	51	0	0	0.0	0.0	0	0	0.0	0.0	349	47	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	32119	3842	80	80	0.2	2.1	276	220	0.9	5.7	26655	1991	222	60	0.8	3.0	222	60	0.8	3.0	22415	1556	222	60	1.0	3.9	222	60	1.0	3.9
24 hr	42482	5281	404	80	1.0	1.5	623	220	1.5	4.2	35211	2947	384	60	1.1	2.0	384	60	1.1	2.0	29531	2232	384	60	1.3	2.7	384	60	1.3	2.7

**Table 8.9: Swale Way north of Reams Way Junction Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	55	11	0	0	0.0	0.0	0	0	0.0	0.0	74	16	0	0	0.0	0.0	0	0	0.0	0.0	60	1	0	0	0.0	0.0	0	0	0.0	0.0
01:00	50	12	0	0	0.0	0.0	0	0	0.0	0.0	46	9	0	0	0.0	0.0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0	0	0.0	0.0
02:00	58	19	0	0	0.0	0.0	0	0	0.0	0.0	47	9	0	0	0.0	0.0	0	0	0.0	0.0	31	4	0	0	0.0	0.0	0	0	0.0	0.0
03:00	79	13	0	0	0.0	0.0	0	0	0.0	0.0	54	10	0	0	0.0	0.0	0	0	0.0	0.0	32	2	0	0	0.0	0.0	0	0	0.0	0.0
04:00	164	29	0	0	0.0	0.0	0	0	0.0	0.0	71	12	0	0	0.0	0.0	0	0	0.0	0.0	52	5	0	0	0.0	0.0	0	0	0.0	0.0
05:00	528	46	0	0	0.0	0.0	0	0	0.0	0.0	239	13	0	0	0.0	0.0	0	0	0.0	0.0	131	7	0	0	0.0	0.0	0	0	0.0	0.0
06:00	657	52	85	0	12.9	0.0	97	0	14.8	0.0	245	19	85	0	34.6	0.0	85	0	34.6	0.0	132	12	85	0	64.3	0.0	85	0	64.3	0.0
07:00	1378	63	0	0	0.0	0.0	18	12	1.3	19.3	346	15	0	0	0.0	0.0	0	0	0.0	0.0	156	12	0	0	0.0	0.0	0	0	0.0	0.0
08:00	1437	57	0	0	0.0	0.0	21	17	1.4	29.9	448	23	0	0	0.0	0.0	0	0	0.0	0.0	154	14	0	0	0.0	0.0	0	0	0.0	0.0
09:00	888	78	0	0	0.0	0.0	19	13	2.1	17.0	569	24	0	0	0.0	0.0	0	0	0.0	0.0	323	13	0	0	0.0	0.0	0	0	0.0	0.0
10:00	764	85	0	0	0.0	0.0	19	13	2.5	15.5	703	27	0	0	0.0	0.0	0	0	0.0	0.0	439	19	0	0	0.0	0.0	0	0	0.0	0.0
11:00	751	79	0	0	0.0	0.0	19	13	2.5	16.6	769	16	0	0	0.0	0.0	0	0	0.0	0.0	531	25	0	0	0.0	0.0	0	0	0.0	0.0
12:00	856	81	0	0	0.0	0.0	19	13	2.2	16.3	730	18	0	0	0.0	0.0	0	0	0.0	0.0	560	20	0	0	0.0	0.0	0	0	0.0	0.0
13:00	831	72	0	0	0.0	0.0	19	13	2.3	18.4	690	26	0	0	0.0	0.0	0	0	0.0	0.0	660	18	0	0	0.0	0.0	0	0	0.0	0.0
14:00	1010	76	0	0	0.0	0.0	19	13	1.9	17.4	611	16	0	0	0.0	0.0	0	0	0.0	0.0	470	13	0	0	0.0	0.0	0	0	0.0	0.0
15:00	1128	65	0	0	0.0	0.0	19	13	1.7	20.3	589	22	0	0	0.0	0.0	0	0	0.0	0.0	490	17	0	0	0.0	0.0	0	0	0.0	0.0
16:00	1361	55	0	0	0.0	0.0	19	13	1.4	24.2	547	13	85	0	15.5	0.0	85	0	15.5	0.0	542	18	85	0	15.7	0.0	85	0	15.7	0.0
17:00	1249	37	0	0	0.0	0.0	21	17	1.6	46.3	610	12	0	0	0.0	0.0	0	0	0.0	0.0	537	9	0	0	0.0	0.0	0	0	0.0	0.0
18:00	802	41	0	0	0.0	0.0	18	12	2.2	29.6	488	8	0	0	0.0	0.0	0	0	0.0	0.0	416	9	0	0	0.0	0.0	0	0	0.0	0.0
19:00	493	37	85	0	17.2	0.0	97	0	19.7	0.0	304	10	0	0	0.0	0.0	0	0	0.0	0.0	348	10	0	0	0.0	0.0	0	0	0.0	0.0
20:00	333	36	0	0	0.0	0.0	0	0	0.0	0.0	240	11	0	0	0.0	0.0	0	0	0.0	0.0	248	16	0	0	0.0	0.0	0	0	0.0	0.0
21:00	264	27	0	0	0.0	0.0	0	0	0.0	0.0	269	8	0	0	0.0	0.0	0	0	0.0	0.0	223	14	0	0	0.0	0.0	0	0	0.0	0.0
22:00	217	20	0	0	0.0	0.0	0	0	0.0	0.0	159	6	0	0	0.0	0.0	0	0	0.0	0.0	94	15	0	0	0.0	0.0	0	0	0.0	0.0
23:00	103	13	0	0	0.0	0.0	0	0	0.0	0.0	94	4	0	0	0.0	0.0	0	0	0.0	0.0	53	10	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	12456	789	0	0	0.0	0.0	228	164	1.8	20.8	7099	223	85	0	1.2	0.0	85	0	1.2	0.0	5279	187	85	0	1.6	0.0	85	0	1.6	0.0
24 hr	15459	1104	170	0	1.1	0.0	422	164	2.7	14.9	8941	352	170	0	1.9	0.0	170	0	1.9	0.0	6683	285	170	0	2.5	0.0	170	0	2.5	0.0

**Table 8.10: Swale Way north of Reams Way Junction Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	55	11	0	0	0.0	0.0	0	0	0.0	0.0	74	16	0	0	0.0	0.0	0	0	0.0	0.0	60	1	0	0	0.0	0.0	0	0	0.0	0.0
01:00	50	12	0	0	0.0	0.0	0	0	0.0	0.0	46	9	0	0	0.0	0.0	0	0	0.0	0.0	0	0	0	0	0.0	0.0	0	0	0.0	0.0
02:00	58	19	0	0	0.0	0.0	0	0	0.0	0.0	47	9	0	0	0.0	0.0	0	0	0.0	0.0	31	4	0	0	0.0	0.0	0	0	0.0	0.0
03:00	79	13	0	0	0.0	0.0	0	0	0.0	0.0	54	10	0	0	0.0	0.0	0	0	0.0	0.0	32	2	0	0	0.0	0.0	0	0	0.0	0.0
04:00	164	29	0	0	0.0	0.0	0	0	0.0	0.0	71	12	0	0	0.0	0.0	0	0	0.0	0.0	52	5	0	0	0.0	0.0	0	0	0.0	0.0
05:00	528	46	0	0	0.0	0.0	0	0	0.0	0.0	239	13	0	0	0.0	0.0	0	0	0.0	0.0	131	7	0	0	0.0	0.0	0	0	0.0	0.0
06:00	657	52	170	0	25.9	0.0	182	0	27.7	0.0	245	19	170	0	69.3	0.0	170	0	69.3	0.0	132	12	170	0	128.6	0.0	170	0	128.6	0.0
07:00	1378	63	0	0	0.0	0.0	18	12	1.3	19.3	346	15	0	0	0.0	0.0	0	0	0.0	0.0	156	12	0	0	0.0	0.0	0	0	0.0	0.0
08:00	1437	57	0	0	0.0	0.0	21	17	1.4	29.9	448	23	0	0	0.0	0.0	0	0	0.0	0.0	154	14	0	0	0.0	0.0	0	0	0.0	0.0
09:00	888	78	0	0	0.0	0.0	19	13	2.1	17.0	569	24	0	0	0.0	0.0	0	0	0.0	0.0	323	13	0	0	0.0	0.0	0	0	0.0	0.0
10:00	764	85	0	0	0.0	0.0	19	13	2.5	15.5	703	27	0	0	0.0	0.0	0	0	0.0	0.0	439	19	0	0	0.0	0.0	0	0	0.0	0.0
11:00	751	79	0	0	0.0	0.0	19	13	2.5	16.6	769	16	0	0	0.0	0.0	0	0	0.0	0.0	531	25	0	0	0.0	0.0	0	0	0.0	0.0
12:00	856	81	0	0	0.0	0.0	19	13	2.2	16.3	730	18	0	0	0.0	0.0	0	0	0.0	0.0	560	20	0	0	0.0	0.0	0	0	0.0	0.0
13:00	831	72	0	0	0.0	0.0	19	13	2.3	18.4	690	26	0	0	0.0	0.0	0	0	0.0	0.0	660	18	0	0	0.0	0.0	0	0	0.0	0.0
14:00	1010	76	0	0	0.0	0.0	19	13	1.9	17.4	611	16	0	0	0.0	0.0	0	0	0.0	0.0	470	13	0	0	0.0	0.0	0	0	0.0	0.0
15:00	1128	65	0	0	0.0	0.0	19	13	1.7	20.3	589	22	0	0	0.0	0.0	0	0	0.0	0.0	490	17	0	0	0.0	0.0	0	0	0.0	0.0
16:00	1361	55	0	0	0.0	0.0	19	13	1.4	24.2	547	13	170	0	31.1	0.0	170	0	31.1	0.0	542	18	170	0	31.3	0.0	170	0	31.3	0.0
17:00	1249	37	0	0	0.0	0.0	21	17	1.6	46.3	610	12	0	0	0.0	0.0	0	0	0.0	0.0	537	9	0	0	0.0	0.0	0	0	0.0	0.0
18:00	802	41	0	0	0.0	0.0	18	12	2.2	29.6	488	8	0	0	0.0	0.0	0	0	0.0	0.0	416	9	0	0	0.0	0.0	0	0	0.0	0.0
19:00	493	37	170	0	34.5	0.0	182	0	36.9	0.0	304	10	0	0	0.0	0.0	0	0	0.0	0.0	348	10	0	0	0.0	0.0	0	0	0.0	0.0
20:00	333	36	0	0	0.0	0.0	0	0	0.0	0.0	240	11	0	0	0.0	0.0	0	0	0.0	0.0	248	16	0	0	0.0	0.0	0	0	0.0	0.0
21:00	264	27	0	0	0.0	0.0	0	0	0.0	0.0	269	8	0	0	0.0	0.0	0	0	0.0	0.0	223	14	0	0	0.0	0.0	0	0	0.0	0.0
22:00	217	20	0	0	0.0	0.0	0	0	0.0	0.0	159	6	0	0	0.0	0.0	0	0	0.0	0.0	94	15	0	0	0.0	0.0	0	0	0.0	0.0
23:00	103	13	0	0	0.0	0.0	0	0	0.0	0.0	94	4	0	0	0.0	0.0	0	0	0.0	0.0	53	10	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	12456	789	0	0	0.0	0.0	228	164	1.8	20.8	7099	223	170	0	2.4	0.0	170	0	2.4	0.0	5279	187	170	0	3.2	0.0	170	0	3.2	0.0
24 hr	15459	1104	340	0	2.2	0.0	592	164	3.8	14.9	8941	352	340	0	3.8	0.0	340	0	3.8	0.0	6683	285	340	0	5.1	0.0	340	0	5.1	0.0

**Table 8.11: Swale Way south of Reams Way Junction Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	55	11	0	0	0.0	0.0	0	0	0.0	0.0	88	12	0	0	0.0	0.0	0	0	0.0	0.0	65	1	0	0	0.0	0.0	0	0	0.0	0.0
01:00	45	10	0	0	0.0	0.0	0	0	0.0	0.0	45	8	0	0	0.0	0.0	0	0	0.0	0.0	34	1	0	0	0.0	0.0	0	0	0.0	0.0
02:00	60	19	0	0	0.0	0.0	0	0	0.0	0.0	76	9	0	0	0.0	0.0	0	0	0.0	0.0	41	2	0	0	0.0	0.0	0	0	0.0	0.0
03:00	78	17	0	0	0.0	0.0	0	0	0.0	0.0	65	11	0	0	0.0	0.0	0	0	0.0	0.0	34	2	0	0	0.0	0.0	0	0	0.0	0.0
04:00	158	27	0	0	0.0	0.0	0	0	0.0	0.0	82	7	0	0	0.0	0.0	0	0	0.0	0.0	33	6	0	0	0.0	0.0	0	0	0.0	0.0
05:00	513	43	0	0	0.0	0.0	0	0	0.0	0.0	224	12	0	0	0.0	0.0	0	0	0.0	0.0	119	5	0	0	0.0	0.0	0	0	0.0	0.0
06:00	670	58	85	0	12.7	0.0	97	0	14.5	0.0	279	20	85	0	30.4	0.0	85	0	30.4	0.0	136	13	85	0	62.4	0.0	85	0	62.4	0.0
07:00	1381	64	0	0	0.0	0.0	18	12	1.3	19.1	344	20	0	0	0.0	0.0	0	0	0.0	0.0	190	12	0	0	0.0	0.0	0	0	0.0	0.0
08:00	1369	67	0	0	0.0	0.0	21	17	1.5	25.2	483	19	0	0	0.0	0.0	0	0	0.0	0.0	156	7	0	0	0.0	0.0	0	0	0.0	0.0
09:00	855	84	0	0	0.0	0.0	19	13	2.2	15.7	573	28	0	0	0.0	0.0	0	0	0.0	0.0	326	16	0	0	0.0	0.0	0	0	0.0	0.0
10:00	754	86	0	0	0.0	0.0	19	13	2.5	15.3	715	18	0	0	0.0	0.0	0	0	0.0	0.0	477	16	0	0	0.0	0.0	0	0	0.0	0.0
11:00	772	87	0	0	0.0	0.0	19	13	2.4	15.1	774	28	0	0	0.0	0.0	0	0	0.0	0.0	508	18	0	0	0.0	0.0	0	0	0.0	0.0
12:00	841	77	0	0	0.0	0.0	19	13	2.2	17.1	748	27	0	0	0.0	0.0	0	0	0.0	0.0	525	16	0	0	0.0	0.0	0	0	0.0	0.0
13:00	882	71	0	0	0.0	0.0	19	13	2.1	18.7	618	25	0	0	0.0	0.0	0	0	0.0	0.0	499	22	0	0	0.0	0.0	0	0	0.0	0.0
14:00	1012	81	0	0	0.0	0.0	19	13	1.9	16.2	541	17	0	0	0.0	0.0	0	0	0.0	0.0	453	21	0	0	0.0	0.0	0	0	0.0	0.0
15:00	1099	72	0	0	0.0	0.0	19	13	1.7	18.3	515	14	0	0	0.0	0.0	0	0	0.0	0.0	413	19	0	0	0.0	0.0	0	0	0.0	0.0
16:00	1373	60	0	0	0.0	0.0	19	13	1.4	21.9	541	12	85	0	15.7	0.0	85	0	15.7	0.0	441	14	85	0	19.3	0.0	85	0	19.3	0.0
17:00	1322	39	0	0	0.0	0.0	21	17	1.6	43.4	594	14	0	0	0.0	0.0	0	0	0.0	0.0	492	22	0	0	0.0	0.0	0	0	0.0	0.0
18:00	833	41	0	0	0.0	0.0	18	12	2.2	29.6	494	10	0	0	0.0	0.0	0	0	0.0	0.0	407	17	0	0	0.0	0.0	0	0	0.0	0.0
19:00	487	34	85	0	17.5	0.0	97	0	19.9	0.0	306	10	0	0	0.0	0.0	0	0	0.0	0.0	308	17	0	0	0.0	0.0	0	0	0.0	0.0
20:00	353	38	0	0	0.0	0.0	0	0	0.0	0.0	219	8	0	0	0.0	0.0	0	0	0.0	0.0	245	13	0	0	0.0	0.0	0	0	0.0	0.0
21:00	258	26	0	0	0.0	0.0	0	0	0.0	0.0	266	5	0	0	0.0	0.0	0	0	0.0	0.0	185	9	0	0	0.0	0.0	0	0	0.0	0.0
22:00	214	22	0	0	0.0	0.0	0	0	0.0	0.0	142	0	0	0	0.0	0.0	0	0	0.0	0.0	89	9	0	0	0.0	0.0	0	0	0.0	0.0
23:00	95	10	0	0	0.0	0.0	0	0	0.0	0.0	123	7	0	0	0.0	0.0	0	0	0.0	0.0	52	6	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	12491	831	0	0	0.0	0.0	228	164	1.8	19.7	6940	235	85	0	1.2	0.0	85	0	1.2	0.0	4887	197	85	0	1.7	0.0	85	0	1.7	0.0
24 hr	15478	1146	170	0	1.1	0.0	422	164	2.7	14.3	8855	346	170	0	1.9	0.0	170	0	1.9	0.0	6228	283	170	0	2.7	0.0	170	0	2.7	0.0

**Table 8.12: Swale Way south of Reams Way Junction Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	55	11	0	0	0.0	0.0	0	0	0.0	0.0	88	12	0	0	0.0	0.0	0	0	0.0	0.0	65	1	0	0	0.0	0.0	0	0	0.0	0.0
01:00	45	10	0	0	0.0	0.0	0	0	0.0	0.0	45	8	0	0	0.0	0.0	0	0	0.0	0.0	34	1	0	0	0.0	0.0	0	0	0.0	0.0
02:00	60	19	0	0	0.0	0.0	0	0	0.0	0.0	76	9	0	0	0.0	0.0	0	0	0.0	0.0	41	2	0	0	0.0	0.0	0	0	0.0	0.0
03:00	78	17	0	0	0.0	0.0	0	0	0.0	0.0	65	11	0	0	0.0	0.0	0	0	0.0	0.0	34	2	0	0	0.0	0.0	0	0	0.0	0.0
04:00	158	27	0	0	0.0	0.0	0	0	0.0	0.0	82	7	0	0	0.0	0.0	0	0	0.0	0.0	33	6	0	0	0.0	0.0	0	0	0.0	0.0
05:00	513	43	0	0	0.0	0.0	0	0	0.0	0.0	224	12	0	0	0.0	0.0	0	0	0.0	0.0	119	5	0	0	0.0	0.0	0	0	0.0	0.0
06:00	670	58	170	0	25.4	0.0	182	0	27.2	0.0	279	20	170	0	60.9	0.0	170	0	60.9	0.0	136	13	170	0	124.7	0.0	170	0	124.7	0.0
07:00	1381	64	0	0	0.0	0.0	18	12	1.3	19.1	344	20	0	0	0.0	0.0	0	0	0.0	0.0	190	12	0	0	0.0	0.0	0	0	0.0	0.0
08:00	1369	67	0	0	0.0	0.0	21	17	1.5	25.2	483	19	0	0	0.0	0.0	0	0	0.0	0.0	156	7	0	0	0.0	0.0	0	0	0.0	0.0
09:00	855	84	0	0	0.0	0.0	19	13	2.2	15.7	573	28	0	0	0.0	0.0	0	0	0.0	0.0	326	16	0	0	0.0	0.0	0	0	0.0	0.0
10:00	754	86	0	0	0.0	0.0	19	13	2.5	15.3	715	18	0	0	0.0	0.0	0	0	0.0	0.0	477	16	0	0	0.0	0.0	0	0	0.0	0.0
11:00	772	87	0	0	0.0	0.0	19	13	2.4	15.1	774	28	0	0	0.0	0.0	0	0	0.0	0.0	508	18	0	0	0.0	0.0	0	0	0.0	0.0
12:00	841	77	0	0	0.0	0.0	19	13	2.2	17.1	748	27	0	0	0.0	0.0	0	0	0.0	0.0	525	16	0	0	0.0	0.0	0	0	0.0	0.0
13:00	882	71	0	0	0.0	0.0	19	13	2.1	18.7	618	25	0	0	0.0	0.0	0	0	0.0	0.0	499	22	0	0	0.0	0.0	0	0	0.0	0.0
14:00	1012	81	0	0	0.0	0.0	19	13	1.9	16.2	541	17	0	0	0.0	0.0	0	0	0.0	0.0	453	21	0	0	0.0	0.0	0	0	0.0	0.0
15:00	1099	72	0	0	0.0	0.0	19	13	1.7	18.3	515	14	0	0	0.0	0.0	0	0	0.0	0.0	413	19	0	0	0.0	0.0	0	0	0.0	0.0
16:00	1373	60	0	0	0.0	0.0	19	13	1.4	21.9	541	12	170	0	31.4	0.0	170	0	31.4	0.0	441	14	170	0	38.5	0.0	170	0	38.5	0.0
17:00	1322	39	0	0	0.0	0.0	21	17	1.6	43.4	594	14	0	0	0.0	0.0	0	0	0.0	0.0	492	22	0	0	0.0	0.0	0	0	0.0	0.0
18:00	833	41	0	0	0.0	0.0	18	12	2.2	29.6	494	10	0	0	0.0	0.0	0	0	0.0	0.0	407	17	0	0	0.0	0.0	0	0	0.0	0.0
19:00	487	34	170	0	34.9	0.0	182	0	37.4	0.0	306	10	0	0	0.0	0.0	0	0	0.0	0.0	308	17	0	0	0.0	0.0	0	0	0.0	0.0
20:00	353	38	0	0	0.0	0.0	0	0	0.0	0.0	219	8	0	0	0.0	0.0	0	0	0.0	0.0	245	13	0	0	0.0	0.0	0	0	0.0	0.0
21:00	258	26	0	0	0.0	0.0	0	0	0.0	0.0	266	5	0	0	0.0	0.0	0	0	0.0	0.0	185	9	0	0	0.0	0.0	0	0	0.0	0.0
22:00	214	22	0	0	0.0	0.0	0	0	0.0	0.0	142	0	0	0	0.0	0.0	0	0	0.0	0.0	89	9	0	0	0.0	0.0	0	0	0.0	0.0
23:00	95	10	0	0	0.0	0.0	0	0	0.0	0.0	123	7	0	0	0.0	0.0	0	0	0.0	0.0	52	6	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	12491	831	0	0	0.0	0.0	228	164	1.8	19.7	6940	235	170	0	2.4	0.0	170	0	2.4	0.0	4887	197	170	0	3.5	0.0	170	0	3.5	0.0
24 hr	15478	1146	340	0	2.2	0.0	592	164	3.8	14.3	8855	346	340	0	3.8	0.0	340	0	3.8	0.0	6228	283	340	0	5.5	0.0	340	0	5.5	0.0



**Table 8.13: M2 East of A249 Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	401	102	0	0	0.0	0.0	0	0	0.0	0.0	667	113	0	0	0.0	0.0	0	0	0.0	0.0	817	62	0	0	0.0	0.0	0	0	0.0	0.0
01:00	305	94	0	0	0.0	0.0	0	0	0.0	0.0	442	97	0	0	0.0	0.0	0	0	0.0	0.0	500	59	0	0	0.0	0.0	0	0	0.0	0.0
02:00	319	108	0	0	0.0	0.0	0	0	0.0	0.0	373	90	0	0	0.0	0.0	0	0	0.0	0.0	332	45	0	0	0.0	0.0	0	0	0.0	0.0
03:00	437	148	0	0	0.0	0.0	0	0	0.0	0.0	392	111	0	0	0.0	0.0	0	0	0.0	0.0	295	64	0	0	0.0	0.0	0	0	0.0	0.0
04:00	1010	248	0	0	0.0	0.0	0	0	0.0	0.0	531	140	0	0	0.0	0.0	0	0	0.0	0.0	316	55	0	0	0.0	0.0	0	0	0.0	0.0
05:00	2655	403	0	0	0.0	0.0	0	0	0.0	0.0	1121	180	0	0	0.0	0.0	0	0	0.0	0.0	638	72	0	0	0.0	0.0	0	0	0.0	0.0
06:00	3992	470	12	0	0.3	0.0	13	0	0.3	0.0	1673	227	12	0	0.7	0.0	12	0	0.7	0.0	943	92	12	0	1.2	0.0	12	0	1.2	0.0
07:00	5311	480	0	0	0.0	0.1	5	4	0.1	0.7	2336	261	0	0	0.0	0.1	0	0	0.0	0.1	1283	101	0	0	0.0	0.3	0	0	0.0	0.3
08:00	4857	530	0	0	0.0	0.1	6	5	0.1	0.9	3002	269	0	0	0.0	0.1	0	0	0.0	0.1	1724	107	0	0	0.0	0.3	0	0	0.0	0.3
09:00	4054	550	0	0	0.0	0.1	5	4	0.1	0.7	3367	262	0	0	0.0	0.1	0	0	0.0	0.1	2572	146	0	0	0.0	0.2	0	0	0.0	0.2
10:00	3732	535	0	0	0.0	0.1	5	4	0.1	0.7	3852	251	0	0	0.0	0.1	0	0	0.0	0.1	3482	169	0	0	0.0	0.2	0	0	0.0	0.2
11:00	3730	521	0	0	0.0	0.1	5	4	0.1	0.7	4279	234	0	0	0.0	0.1	0	0	0.0	0.1	3991	197	0	0	0.0	0.2	0	0	0.0	0.2
12:00	4065	570	0	0	0.0	0.1	5	4	0.1	0.7	4497	225	0	0	0.0	0.1	0	0	0.0	0.1	4315	185	0	0	0.0	0.2	0	0	0.0	0.2
13:00	4205	580	0	0	0.0	0.1	5	4	0.1	0.7	4404	212	0	0	0.0	0.2	0	0	0.0	0.2	4079	184	0	0	0.0	0.2	0	0	0.0	0.2
14:00	4487	585	0	0	0.0	0.1	5	4	0.1	0.7	4059	212	0	0	0.0	0.2	0	0	0.0	0.2	3727	188	0	0	0.0	0.2	0	0	0.0	0.2
15:00	4977	571	0	0	0.0	0.1	5	4	0.1	0.7	3911	198	0	0	0.0	0.2	0	0	0.0	0.2	3569	181	0	0	0.0	0.2	0	0	0.0	0.2
16:00	5849	454	0	0	0.0	0.1	5	4	0.1	0.9	4071	183	12	0	0.3	0.0	12	0	0.3	0.0	3946	170	12	0	0.3	0.0	12	0	0.3	0.0
17:00	6202	367	0	0	0.0	0.1	6	5	0.1	1.3	3865	155	0	0	0.0	0.0	0	0	0.0	0.0	3592	160	0	0	0.0	0.0	0	0	0.0	0.0
18:00	4660	310	0	0	0.0	0.1	5	4	0.1	1.2	3422	148	0	0	0.0	0.0	0	0	0.0	0.0	3176	133	0	0	0.0	0.0	0	0	0.0	0.0
19:00	3029	232	12	0	0.4	0.0	13	0	0.4	0.0	2615	108	0	0	0.0	0.0	0	0	0.0	0.0	2617	108	0	0	0.0	0.0	0	0	0.0	0.0
20:00	2116	156	0	0	0.0	0.0	0	0	0.0	0.0	1891	76	0	0	0.0	0.0	0	0	0.0	0.0	1977	77	0	0	0.0	0.0	0	0	0.0	0.0
21:00	1554	110	0	0	0.0	0.0	0	0	0.0	0.0	1470	64	0	0	0.0	0.0	0	0	0.0	0.0	1402	69	0	0	0.0	0.0	0	0	0.0	0.0
22:00	1256	103	0	0	0.0	0.0	0	0	0.0	0.0	1476	57	0	0	0.0	0.0	0	0	0.0	0.0	911	56	0	0	0.0	0.0	0	0	0.0	0.0
23:00	751	99	0	0	0.0	0.0	0	0	0.0	0.0	1142	62	0	0	0.0	0.0	0	0	0.0	0.0	522	71	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	56128	6053	4	4	0.0	0.1	59	48	0.1	0.8	45064	2609	15	3	0.0	0.1	15	3	0.0	0.1	39453	1922	15	3	0.0	0.2	15	3	0.0	0.2
24 hr	73955	8325	27	4	0.0	0.0	85	48	0.1	0.6	58857	3934	26	3	0.0	0.1	26	3	0.0	0.1	50723	2753	26	3	0.1	0.1	26	3	0.1	0.1

**Table 8.14: M2 East of A249 Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	401	102	0	0	0.0	0.0	0	0	0.0	0.0	667	113	0	0	0.0	0.0	0	0	0.0	0.0	817	62	0	0	0.0	0.0	0	0	0.0	0.0
01:00	305	94	0	0	0.0	0.0	0	0	0.0	0.0	442	97	0	0	0.0	0.0	0	0	0.0	0.0	500	59	0	0	0.0	0.0	0	0	0.0	0.0
02:00	319	108	0	0	0.0	0.0	0	0	0.0	0.0	373	90	0	0	0.0	0.0	0	0	0.0	0.0	332	45	0	0	0.0	0.0	0	0	0.0	0.0
03:00	437	148	0	0	0.0	0.0	0	0	0.0	0.0	392	111	0	0	0.0	0.0	0	0	0.0	0.0	295	64	0	0	0.0	0.0	0	0	0.0	0.0
04:00	1010	248	0	0	0.0	0.0	0	0	0.0	0.0	531	140	0	0	0.0	0.0	0	0	0.0	0.0	316	55	0	0	0.0	0.0	0	0	0.0	0.0
05:00	2655	403	0	0	0.0	0.0	0	0	0.0	0.0	1121	180	0	0	0.0	0.0	0	0	0.0	0.0	638	72	0	0	0.0	0.0	0	0	0.0	0.0
06:00	3992	470	23	0	0.6	0.0	25	0	0.6	0.0	1673	227	23	0	1.4	0.0	23	0	1.4	0.0	943	92	23	0	2.5	0.0	23	0	2.5	0.0
07:00	5311	480	0	0	0.0	0.1	5	4	0.1	0.8	2336	261	0	0	0.0	0.2	0	0	0.0	0.2	1283	101	0	0	0.0	0.4	0	0	0.0	0.4
08:00	4857	530	0	0	0.0	0.1	6	5	0.1	0.9	3002	269	0	0	0.0	0.2	0	0	0.0	0.2	1724	107	0	0	0.0	0.4	0	0	0.0	0.4
09:00	4054	550	0	0	0.0	0.1	5	4	0.1	0.7	3367	262	0	0	0.0	0.2	0	0	0.0	0.2	2572	146	0	0	0.0	0.3	0	0	0.0	0.3
10:00	3732	535	0	0	0.0	0.1	5	4	0.1	0.7	3852	251	0	0	0.0	0.2	0	0	0.0	0.2	3482	169	0	0	0.0	0.3	0	0	0.0	0.3
11:00	3730	521	0	0	0.0	0.1	5	4	0.1	0.8	4279	234	0	0	0.0	0.2	0	0	0.0	0.2	3991	197	0	0	0.0	0.2	0	0	0.0	0.2
12:00	4065	570	0	0	0.0	0.1	5	4	0.1	0.7	4497	225	0	0	0.0	0.2	0	0	0.0	0.2	4315	185	0	0	0.0	0.2	0	0	0.0	0.2
13:00	4205	580	0	0	0.0	0.1	5	4	0.1	0.7	4404	212	0	0	0.0	0.2	0	0	0.0	0.2	4079	184	0	0	0.0	0.2	0	0	0.0	0.2
14:00	4487	585	0	0	0.0	0.1	5	4	0.1	0.7	4059	212	0	0	0.0	0.2	0	0	0.0	0.2	3727	188	0	0	0.0	0.2	0	0	0.0	0.2
15:00	4977	571	0	0	0.0	0.1	5	4	0.1	0.7	3911	198	0	0	0.0	0.2	0	0	0.0	0.2	3569	181	0	0	0.0	0.2	0	0	0.0	0.2
16:00	5849	454	0	0	0.0	0.1	5	4	0.1	0.9	4071	183	23	0	0.6	0.0	23	0	0.6	0.0	3946	170	23	0	0.6	0.0	23	0	0.6	0.0
17:00	6202	367	0	0	0.0	0.1	6	5	0.1	1.4	3865	155	0	0	0.0	0.0	0	0	0.0	0.0	3592	160	0	0	0.0	0.0	0	0	0.0	0.0
18:00	4660	310	0	0	0.0	0.1	5	4	0.1	1.2	3422	148	0	0	0.0	0.0	0	0	0.0	0.0	3176	133	0	0	0.0	0.0	0	0	0.0	0.0
19:00	3029	232	23	0	0.8	0.0	25	0	0.8	0.0	2615	108	0	0	0.0	0.0	0	0	0.0	0.0	2617	108	0	0	0.0	0.0	0	0	0.0	0.0
20:00	2116	156	0	0	0.0	0.0	0	0	0.0	0.0	1891	76	0	0	0.0	0.0	0	0	0.0	0.0	1977	77	0	0	0.0	0.0	0	0	0.0	0.0
21:00	1554	110	0	0	0.0	0.0	0	0	0.0	0.0	1470	64	0	0	0.0	0.0	0	0	0.0	0.0	1402	69	0	0	0.0	0.0	0	0	0.0	0.0
22:00	1256	103	0	0	0.0	0.0	0	0	0.0	0.0	1476	57	0	0	0.0	0.0	0	0	0.0	0.0	911	56	0	0	0.0	0.0	0	0	0.0	0.0
23:00	751	99	0	0	0.0	0.0	0	0	0.0	0.0	1142	62	0	0	0.0	0.0	0	0	0.0	0.0	522	71	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	56128	6053	5	5	0.0	0.1	60	49	0.1	0.8	45064	2609	27	4	0.1	0.2	27	4	0.1	0.2	39453	1922	27	4	0.1	0.2	27	4	0.1	0.2
24 hr	73955	8325	52	5	0.1	0.1	110	49	0.1	0.6	58857	3934	50	4	0.1	0.1	50	4	0.1	0.1	50723	2753	50	4	0.1	0.1	50	4	0.1	0.1

**Table 8.15: M2 West of A249 Average Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	439	114	0	0	0.0	0.0	0	0	0.0	0.0	730	126	0	0	0.0	0.0	0	0	0.0	0.0	893	71	0	0	0.0	0.0	0	0	0.0	0.0
01:00	335	106	0	0	0.0	0.0	0	0	0.0	0.0	485	109	0	0	0.0	0.0	0	0	0.0	0.0	548	67	0	0	0.0	0.0	0	0	0.0	0.0
02:00	351	120	0	0	0.0	0.0	0	0	0.0	0.0	409	102	0	0	0.0	0.0	0	0	0.0	0.0	364	52	0	0	0.0	0.0	0	0	0.0	0.0
03:00	480	164	0	0	0.0	0.0	0	0	0.0	0.0	430	123	0	0	0.0	0.0	0	0	0.0	0.0	324	73	0	0	0.0	0.0	0	0	0.0	0.0
04:00	1104	274	0	0	0.0	0.0	0	0	0.0	0.0	581	155	0	0	0.0	0.0	0	0	0.0	0.0	347	63	0	0	0.0	0.0	0	0	0.0	0.0
05:00	2912	442	0	0	0.0	0.0	0	0	0.0	0.0	1237	200	0	0	0.0	0.0	0	0	0.0	0.0	711	82	0	0	0.0	0.0	0	0	0.0	0.0
06:00	4362	517	23	0	0.5	0.0	27	0	0.6	0.0	1831	252	23	0	1.3	0.0	23	0	1.3	0.0	1036	105	23	0	2.3	0.0	23	0	2.3	0.0
07:00	5815	537	3	3	0.1	0.6	10	7	0.2	1.4	2558	297	3	3	0.1	1.0	3	3	0.1	1.0	1411	122	3	3	0.2	2.5	3	3	0.2	2.5
08:00	5327	591	3	3	0.1	0.5	12	9	0.2	1.5	3284	306	3	3	0.1	1.0	3	3	0.1	1.0	1892	128	3	3	0.2	2.4	3	3	0.2	2.4
09:00	4443	612	3	3	0.1	0.5	10	8	0.2	1.2	3680	297	3	3	0.1	1.0	3	3	0.1	1.0	2814	171	3	3	0.1	1.8	3	3	0.1	1.8
10:00	4093	596	3	3	0.1	0.5	10	8	0.2	1.3	4209	285	3	3	0.1	1.1	3	3	0.1	1.1	3805	196	3	3	0.1	1.6	3	3	0.1	1.6
11:00	4092	580	3	3	0.1	0.5	10	8	0.2	1.3	4673	267	3	3	0.1	1.2	3	3	0.1	1.2	4360	227	3	3	0.1	1.4	3	3	0.1	1.4
12:00	4460	634	3	3	0.1	0.5	10	8	0.2	1.2	4911	257	3	3	0.1	1.2	3	3	0.1	1.2	4713	213	3	3	0.1	1.4	3	3	0.1	1.4
13:00	4609	645	3	3	0.1	0.5	10	8	0.2	1.2	4811	243	3	3	0.1	1.3	3	3	0.1	1.3	4457	213	3	3	0.1	1.4	3	3	0.1	1.4
14:00	4921	651	3	3	0.1	0.5	10	8	0.2	1.2	4436	243	3	3	0.1	1.3	3	3	0.1	1.3	4074	217	3	3	0.1	1.4	3	3	0.1	1.4
15:00	5463	637	3	3	0.1	0.5	11	8	0.2	1.2	4286	230	3	3	0.1	1.3	3	3	0.1	1.3	3914	211	3	3	0.1	1.5	3	3	0.1	1.5
16:00	6404	508	3	3	0.0	0.6	11	8	0.2	1.5	4448	211	23	0	0.5	0.0	23	0	0.5	0.0	4311	198	23	0	0.5	0.0	23	0	0.5	0.0
17:00	6791	413	3	3	0.0	0.7	12	9	0.2	2.2	4227	181	0	0	0.0	0.0	0	0	0.0	0.0	3930	187	0	0	0.0	0.0	0	0	0.0	0.0
18:00	5092	344	3	3	0.1	0.9	11	7	0.2	2.1	3736	166	0	0	0.0	0.0	0	0	0.0	0.0	3468	151	0	0	0.0	0.0	0	0	0.0	0.0
19:00	3310	257	23	0	0.7	0.0	27	0	0.8	0.0	2853	121	0	0	0.0	0.0	0	0	0.0	0.0	2855	122	0	0	0.0	0.0	0	0	0.0	0.0
20:00	2312	174	0	0	0.0	0.0	0	0	0.0	0.0	2063	87	0	0	0.0	0.0	0	0	0.0	0.0	2158	88	0	0	0.0	0.0	0	0	0.0	0.0
21:00	1700	125	0	0	0.0	0.0	0	0	0.0	0.0	1606	74	0	0	0.0	0.0	0	0	0.0	0.0	1532	80	0	0	0.0	0.0	0	0	0.0	0.0
22:00	1377	117	0	0	0.0	0.0	0	0	0.0	0.0	1612	67	0	0	0.0	0.0	0	0	0.0	0.0	998	65	0	0	0.0	0.0	0	0	0.0	0.0
23:00	823	110	0	0	0.0	0.0	0	0	0.0	0.0	1248	71	0	0	0.0	0.0	0	0	0.0	0.0	573	81	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	61512	6748	37	37	0.1	0.5	127	94	0.2	1.4	49259	2982	51	28	0.1	0.9	51	28	0.1	0.9	43149	2234	51	28	0.1	1.2	51	28	0.1	1.2
24 hr	81015	9268	84	37	0.1	0.4	180	94	0.2	1.0	64345	4468	75	28	0.1	0.6	75	28	0.1	0.6	55488	3184	75	28	0.1	0.9	75	28	0.1	0.9

**Table 8.16: M2 West of A249 Peak Construction Traffic Percentage Impact**

Time Begin	5 Day Average										Saturday										Sunday									
	2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact		2019 Future Baseline		Construction Traffic		% Impact		Cumulative + Construction		% Impact	
	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
00:00	439	114	0	0	0.0	0.0	0	0	0.0	0.0	730	126	0	0	0.0	0.0	0	0	0.0	0.0	893	71	0	0	0.0	0.0	0	0	0.0	0.0
01:00	335	106	0	0	0.0	0.0	0	0	0.0	0.0	485	109	0	0	0.0	0.0	0	0	0.0	0.0	548	67	0	0	0.0	0.0	0	0	0.0	0.0
02:00	351	120	0	0	0.0	0.0	0	0	0.0	0.0	409	102	0	0	0.0	0.0	0	0	0.0	0.0	364	52	0	0	0.0	0.0	0	0	0.0	0.0
03:00	480	164	0	0	0.0	0.0	0	0	0.0	0.0	430	123	0	0	0.0	0.0	0	0	0.0	0.0	324	73	0	0	0.0	0.0	0	0	0.0	0.0
04:00	1104	274	0	0	0.0	0.0	0	0	0.0	0.0	581	155	0	0	0.0	0.0	0	0	0.0	0.0	347	63	0	0	0.0	0.0	0	0	0.0	0.0
05:00	2912	442	0	0	0.0	0.0	0	0	0.0	0.0	1237	200	0	0	0.0	0.0	0	0	0.0	0.0	711	82	0	0	0.0	0.0	0	0	0.0	0.0
06:00	4362	517	47	0	1.1	0.0	50	0	1.1	0.0	1831	252	47	0	2.6	0.0	47	0	2.6	0.0	1036	105	47	0	4.5	0.0	47	0	4.5	0.0
07:00	5815	537	4	4	0.1	0.8	11	8	0.2	1.6	2558	297	4	4	0.2	1.4	4	4	0.2	1.4	1411	122	4	4	0.3	3.4	4	4	0.3	3.4
08:00	5327	591	4	4	0.1	0.7	13	10	0.2	1.7	3284	306	4	4	0.1	1.3	4	4	0.1	1.3	1892	128	4	4	0.2	3.2	4	4	0.2	3.2
09:00	4443	612	4	4	0.1	0.7	11	9	0.3	1.4	3680	297	4	4	0.1	1.4	4	4	0.1	1.4	2814	171	4	4	0.1	2.4	4	4	0.1	2.4
10:00	4093	596	4	4	0.1	0.7	11	9	0.3	1.5	4209	285	4	4	0.1	1.4	4	4	0.1	1.4	3805	196	4	4	0.1	2.1	4	4	0.1	2.1
11:00	4092	580	4	4	0.1	0.7	11	9	0.3	1.5	4673	267	4	4	0.1	1.5	4	4	0.1	1.5	4360	227	4	4	0.1	1.8	4	4	0.1	1.8
12:00	4460	634	4	4	0.1	0.6	11	9	0.3	1.4	4911	257	4	4	0.1	1.6	4	4	0.1	1.6	4713	213	4	4	0.1	1.9	4	4	0.1	1.9
13:00	4609	645	4	4	0.1	0.6	11	9	0.2	1.3	4811	243	4	4	0.1	1.7	4	4	0.1	1.7	4457	213	4	4	0.1	1.9	4	4	0.1	1.9
14:00	4921	651	4	4	0.1	0.6	11	9	0.2	1.3	4436	243	4	4	0.1	1.7	4	4	0.1	1.7	4074	217	4	4	0.1	1.9	4	4	0.1	1.9
15:00	5463	637	4	4	0.1	0.6	12	9	0.2	1.4	4286	230	4	4	0.1	1.8	4	4	0.1	1.8	3914	211	4	4	0.1	1.9	4	4	0.1	1.9
16:00	6404	508	4	4	0.1	0.8	12	9	0.2	1.7	4448	211	47	0	1.1	0.0	47	0	1.1	0.0	4311	198	47	0	1.1	0.0	47	0	1.1	0.0
17:00	6791	413	4	4	0.1	1.0	13	10	0.2	2.4	4227	181	0	0	0.0	0.0	0	0	0.0	0.0	3930	187	0	0	0.0	0.0	0	0	0.0	0.0
18:00	5092	344	4	4	0.1	1.2	12	8	0.2	2.4	3736	166	0	0	0.0	0.0	0	0	0.0	0.0	3468	151	0	0	0.0	0.0	0	0	0.0	0.0
19:00	3310	257	47	0	1.4	0.0	50	0	1.5	0.0	2853	121	0	0	0.0	0.0	0	0	0.0	0.0	2855	122	0	0	0.0	0.0	0	0	0.0	0.0
20:00	2312	174	0	0	0.0	0.0	0	0	0.0	0.0	2063	87	0	0	0.0	0.0	0	0	0.0	0.0	2158	88	0	0	0.0	0.0	0	0	0.0	0.0
21:00	1700	125	0	0	0.0	0.0	0	0	0.0	0.0	1606	74	0	0	0.0	0.0	0	0	0.0	0.0	1532	80	0	0	0.0	0.0	0	0	0.0	0.0
22:00	1377	117	0	0	0.0	0.0	0	0	0.0	0.0	1612	67	0	0	0.0	0.0	0	0	0.0	0.0	998	65	0	0	0.0	0.0	0	0	0.0	0.0
23:00	823	110	0	0	0.0	0.0	0	0	0.0	0.0	1248	71	0	0	0.0	0.0	0	0	0.0	0.0	573	81	0	0	0.0	0.0	0	0	0.0	0.0
12 hr	61512	6748	49	49	0.1	0.7	139	106	0.2	1.6	49259	2982	84	37	0.2	1.2	84	37	0.2	1.2	43149	2234	84	37	0.2	1.7	84	37	0.2	1.7
24 hr	81015	9268	143	49	0.2	0.5	239	106	0.3	1.1	64345	4468	131	37	0.2	0.8	131	37	0.2	0.8	55488	3184	131	37	0.2	1.2	131	37	0.2	1.2

8.3 As can be seen from the tables above the daily (24 hour) impact is below 6% when the cumulative traffic is considered against the 2019 Baseline although there are a few peaks throughout the days where the increase is greater. However, these peaks do not occur during the network peak hours and therefore traffic flows throughout the day remain below the existing 2019 Baseline peak hours. Higher peaks are seen during the day on Saturday and Sundays due to the lower baseline.

**Junction Assessment**

8.4 Operational assessments have been undertaken using the Junctions 9 computer modelling suite at the following junctions:

- Swale Way / Barge Way Roundabout;
- Fleet End / Barge Way Roundabout;
- Barge Way / Site Access Roundabout; and
- A249 / Grovehurst Road / Swale Way / B2005 Grade Separated Dumbbell Junction

8.5 These have been undertaken using 2019 baseline traffic flows, 2019 baseline plus cumulative without construction traffic flows, 2019 baseline plus cumulative with average construction traffic flows and 2019 baseline plus cumulative with peak construction traffic flows.

8.6 A summary of the results is presented in **Tables 8.17 to 8.20** below. Full print outs of the model output files are attached at **Appendix L**.

**Table 8.17: Swale Way / Barge Way Roundabout**

2019 Baseline						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way	0.5	10.12	0.34	0.5	5.61	0.35
Swale Wale South	0.7	4.52	0.40	4.6	14.91	0.83
Swale Way West	49.5	108.02	1.05	1.1	5.69	0.54
2019 Baseline + Cumulative without Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way	0.5	10.19	0.34	0.5	5.67	0.35
Swale Wale South	0.7	4.69	0.41	4.9	15.74	0.84
Swale Way West	54.9	117.55	1.05	1.2	5.84	0.54

2019 Baseline + Cumulative with Average Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way	0.5	10.33	0.35	0.6	5.70	0.36
Swale Wale South	0.7	4.71	0.42	5.0	15.91	0.84
Swale Way West	57.5	122.41	1.06	1.2	5.91	0.55
2019 Baseline + Cumulative with Peak Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way	0.5	10.35	0.35	0.6	5.70	0.36
Swale Wale South	0.7	4.72	0.42	5.0	15.91	0.84
Swale Way West	58.4	123.98	1.06	1.2	5.92	0.55

8.7 **Table 8.17** above shows above shows that the Swale Way Westarm is over capacity in the AM 2019 Baseline with a RFC of 1.05 and a queue of 50 vehicles. There is no increase to the RFC but a marginal increase in queue length to 55 vehicles when the cumulative traffic is added. The RFC increases by 0.01 when the construction traffic is added and queue length increases to 59 vehicles. This is not considered to be a severe impact (NPPF test).

**Table 8.18: Barge Way / Site Access Roundabout**

2019 Baseline						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Access (S)	0.1	5.01	0.06	0.1	3.77	0.08
Barge Way	0.2	4.06	0.18	0.2	3.75	0.14
Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
Private Road	0.1	4.75	0.12	0.1	3.30	0.12
2019 Baseline + Cumulative without Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Access (S)	0.1	5.01	0.06	0.1	3.77	0.08
Barge Way	0.2	4.06	0.18	0.2	3.75	0.14
Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
Private Road	0.1	4.75	0.12	0.1	3.30	0.12
2019 Baseline + Cumulative with Average Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Access (S)	0.1	5.05	0.06	0.1	3.86	0.08
Barge Way	0.2	4.10	0.18	0.2	3.80	0.15
Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
Private Road	0.1	4.77	0.12	0.1	3.31	0.12

2019 Baseline + Cumulative with Peak Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Access (S)	0.1	5.05	0.07	0.1	3.84	0.08
Barge Way	0.2	4.12	0.18	0.2	3.82	0.15
Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
Private Road	0.1	4.77	0.13	0.1	3.31	0.12

8.8 **Table 8.18** above shows above shows that the cumulative traffic has no impact on this roundabout and that there is a minimal increase in delay or RFC at all of the arms with the construction traffic added. The roundabout continues to operate within its design capacity.

**Table 8.19: Barge Way / Fleet Road / Barge Way East Roundabout**

2019 Baseline						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way E	0.1	4.28	0.11	0.2	3.63	0.18
Barge Way S	0.3	3.75	0.21	0.2	3.31	0.18
Fleet End	0.0	4.17	0.04	0.1	4.33	0.09
Private Access	0.0	0.00	0.00	0.0	0.00	0.00
2019 Baseline + Cumulative without Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way E	0.1	4.28	0.11	0.2	3.63	0.18
Barge Way S	0.3	3.75	0.21	0.2	3.32	0.18
Fleet End	0.0	4.17	0.04	0.1	4.33	0.09
Private Access	0.0	0.00	0.00	0.0	0.00	0.00
2019 Baseline + Cumulative with Average Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way E	0.1	4.32	0.12	0.2	3.64	0.18
Barge Way S	0.3	3.79	0.21	0.2	3.35	0.18
Fleet End	0.0	4.18	0.04	0.1	4.35	0.09
Private Access	0.0	0.00	0.00	0.0	0.00	0.00
2019 Baseline + Cumulative with Peak Construction Traffic						
	AM			PM		
	Queue	Delay	RFC	Queue	Delay	RFC
Barge Way E	0.1	4.33	0.12	0.2	3.68	0.19
Barge Way S	0.3	3.82	0.21	0.2	3.35	0.18
Fleet End	0.0	4.19	0.04	0.1	4.35	0.09
Private Access	0.0	0.00	0.00	0.0	0.00	0.00

8.9 **Table 8.19** above shows there is minimal increase in delay or RFC on all of the arms with the cumulative traffic added to the 2019 Baseline flows and that there is a minimal increase in delay or RFC at all of the arms with the construction traffic added. The roundabout continues to operate with its design capacity.

**Table 8.20: A249 Grade Separated Dumbbell Junction Swale Way / Barge Way Roundabout**

2019 Baseline						
	AM			PM		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
North A249 offslip (NB)	36.6	141.77	1.06	82.2	362.28	1.20
North Grovehurst Road	40.9	321.88	1.17	1.0	13.63	0.49
North B2005 – Link	0.4	3.38	0.30	0.6	3.71	0.39
South B2005 – Link	1.9	5.81	0.66	0.8	3.69	0.45
South A249 offslip (SB)	127.5	884.17	1.47	1.8	13.62	0.65
South Swale Way	53.6	290.94	1.14	733.4	3714.33	2.21
South Grovehurst Rd	52.9	300.70	1.15	5.4	34.07	0.86
2019 Baseline + Cumulative without Construction Traffic						
	AM			PM		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
North A249 offslip (NB)	44.5	167.70	1.08	88.3	397.52	1.22
North Grovehurst Rd	42.5	342.11	1.18	1.0	13.76	0.50
North B2005 – Link	0.4	3.37	0.30	0.6	3.72	0.39
South B2005 – Link	1.9	5.88	0.66	0.8	3.72	0.45
South A249 offslip (SB)	132.2	998.05	1.48	1.9	14.01	0.66
South Swale Way	57.8	318.91	1.15	753.5	3825.78	2.23
South Grovehurst Rd	54.0	309.43	1.16	5.4	34.50	0.86



2019 + Cumulative with Average Construction Traffic						
	AM			PM		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
North A249 offslip (NB)	44.8	168.50	1.08	90.1	407.24	1.22
North Grovehurst Rd	42.6	343.32	1.18	1.0	13.78	0.50
North B2005 – Link	0.4	3.36	0.30	0.6	3.72	0.39
South B2005 – Link	1.9	5.89	0.66	0.8	3.73	0.45
South A249 offslip (SB)	133.1	1006.31	1.49	1.9	14.04	0.66
South Swale Way	61.0	342.12	1.16	755.7	3834.12	2.23
South Grovehurst Rd	54.5	313.54	1.16	5.4	34.60	0.86
2019 + Cumulative with Peak Construction Traffic						
	AM			PM		
	Queue	Delay (s)	RFC	Queue	Delay (s)	RFC
North A249 offslip (NB)	48.1	180.49	1.09	90.8	411.17	1.22
North Grovehurst Rd	43.1	350.88	1.18	1.0	13.79	0.50
North B2005 – Link	0.4	3.36	0.30	0.6	3.72	0.39
South B2005 – Link	1.9	5.90	0.66	0.8	3.75	0.45
South A249 offslip (SB)	134.2	1018.15	1.49	1.9	14.04	0.66
South Swale Way	61.6	346.19	1.16	755.6	3827.42	2.23
South Grovehurst Rd	54.6	314.61	1.16	5.5	34.77	0.86

8.10 **Table 8.20** above shows that the dumbbell junction is operating over its design capacity in the 2019 baseline scenario with RFCs of 1.14 and 2.21 on the Swale Way arm on the AM and PM peak hours respectively. When the cumulative traffic is added then the RFCs marginally increase to 1.15 and 2.23 respectively. Finally when the construction traffic is added there is an increase in the RFC of 0.01 in the AM peak hour and no increase in the PM peak hour. This is not considered to be a severe impact (NPPF test).

8.11 As K4 fuel is delivered by a gas pipeline it will only generate insignificant operational vehicle movements. This assessment reviews the impact of its construction traffic and therefore this small increase in RFC will only be a temporary whilst the impact of the cumulative developments will be permanent.

## **Summary**

- 8.12 The above assessments show both the average and peak construction traffic flows would not result in any discernible increases along the local road network. Operational assessments of junction performance show that the average and peak construction traffic flows would result in negligible impacts.
- 8.13 This finding corresponds with KCC's response, with reference to HGV movements, to the K4 Draft Environmental Statement: *'the principle of up to eight movements in a peak hour is unlikely to have a significant impact'*.
- 8.14 It is therefore concluded that the average construction traffic flows would not result in a severe impact (NPPF test) along the local road network.

## 9 SUMMARY AND CONCLUSIONS

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- 9.1 This Transport Assessment has been prepared by RPS Planning and Development Ltd as part of an Environmental Impact Assessment to inform a DCO application.
- 9.2 DS Smith (the Applicant) is submitting an application for a Development Consent Order to build, commission and operate a new gas-fired Combined Heat and Power plant (K4) to supply steam and power to their Kemsley Paper Mill, in Sittingbourne, Kent.
- 9.3 K1 is around 20 years old with the current operating contract ending in February 2019. The Applicant has assessed the condition of K1 and concluded that significant investment into the gas turbine, waste heat recovery boilers and steam turbine is necessary.
- 9.4 The Applicant intends to replace the existing plant with a new plant, K4, which will integrate with the remaining supply equipment and be constructed on available land adjacent to the existing K1 plant. K4 is expected to provide a reliable and efficient operation and is sized to meet the projected energy demands of the site.
- 9.5 It is proposed to gain HGV access to K4 from the existing northern access that connects with Barge Way. Construction staff would access via the western access from Swale Way. Those travelling to the site by public transport, on foot and by bicycle can also access the site via Ridham Avenue.
- 9.6 The route between the site and the A249 includes Swale Way and Barge Way. These recently constructed high quality distributor roads have been designed to carry mixed industrial traffic and are provided with off-road shared pedestrian/cycle paths to link to the surrounding residential areas.
- 9.7 There is no requirement for any on-site staff when K4 is operational. The only staff who would visit K4 when it is operational is for maintenance purposes which would be ad-hoc.
- 9.8 During construction, it is estimated there will be an average of 100 staff on site with a peak of up to 200 staff on site during the early groundworks and foundation works period.
- 9.9 It is estimated that construction of K4 will generate an average of 25 to 30 HGV deliveries per day (average of 50 to 60 HGV movements per day) throughout the 20-month construction period. During the early groundworks and foundation works period, this could peak at up to 40 HGV deliveries per day (up to 80 HGV movements per day).
- 9.10 It is expected that construction could take approximately 20 months with commencement in 2019, commissioning and then becoming operational in 2020.
- 9.11 It is expected that the peak construction activities would be during the early groundworks and foundation works period, which would be in the 2019 future year. /
- 9.12 An assessment of the project against the future baseline position indicates the project generated traffic will lead to temporary increases in vehicle movements of generally less than 1% or, in most cases, significantly less than this.

- 9.13 An analysis of the traffic volumes forms a view that the project would not result in a severe impact upon the operation of the highway network.
- 9.14 Specific mitigation measures are not required and the project will not impact upon the transport network.

## **FIGURES**

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Figure 1 – Site Location Plan

Figure 2 – Personal Injury Accidents

**Preliminary Environmental Information Report**

**Legend**

 Site Boundary



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Client **DS Smith**

Project **Kemsley K4**

Title **Site Location Plan**

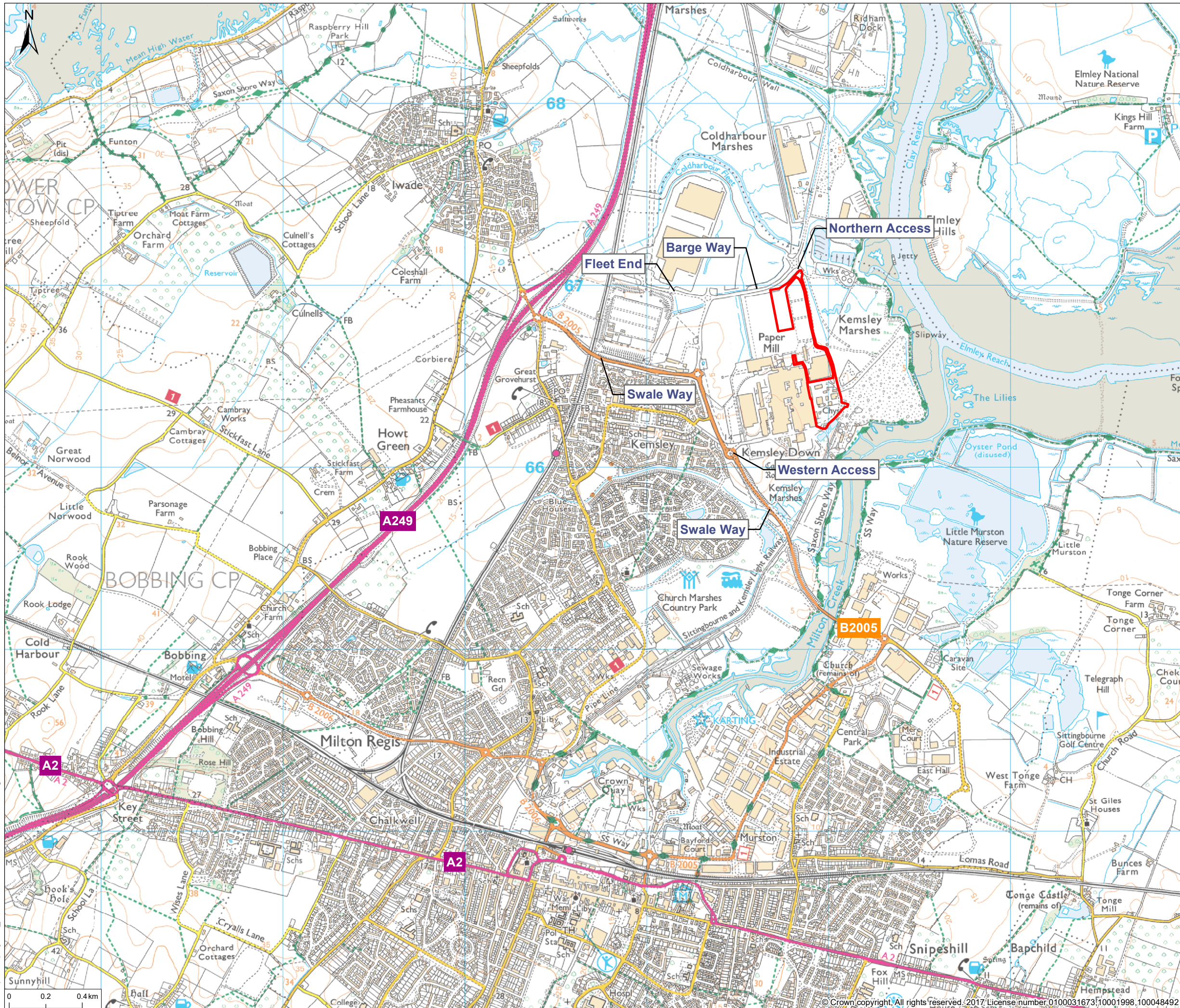
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Job Ref **JNY9247** Scale @ A3: **1:20,000** Date Created: **MAR 2018**

Figure Number

**4.1**

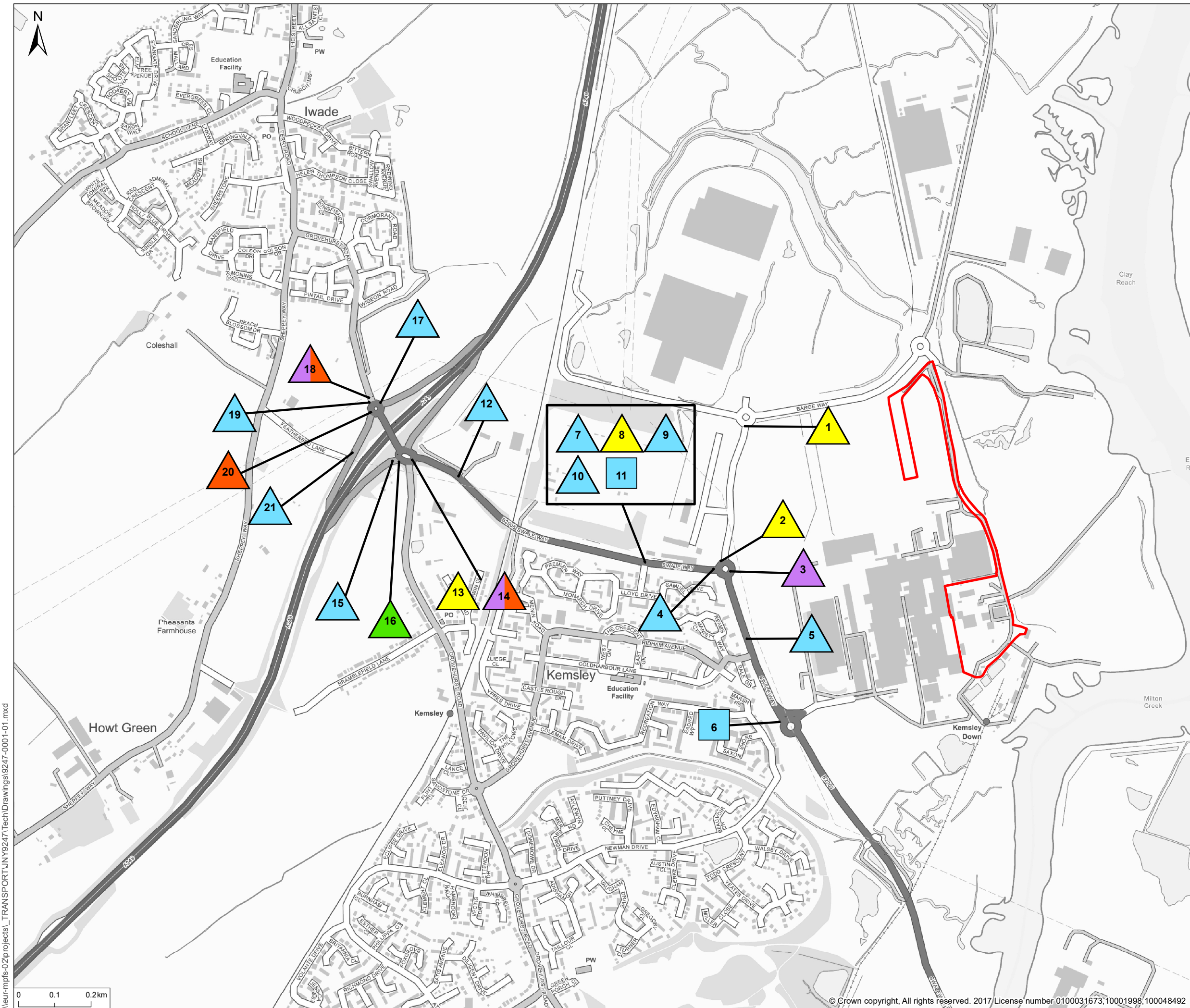
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# Preliminary Environmental Information Report

## Legend

### Severity of accident:

- △ Slight injury
- Serious injury
- Fatal injury

### Accident involving:

- Car
- Goods vehicle
- Motorcycle
- Pedal cycle
- Agricultural vehicle



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Client **DS Smith**  
 Project **Kemsley K4**  
 Title **5 Year Personal Injury Accident Plan**

Status **DRAFT** Drawn By: **BM** PM/Checked By: **JG**  
 Job Ref **JNY9247** Scale @ A3: **1:10,000** Date Created: **OCT 2017**

Figure Number  
**4.2**

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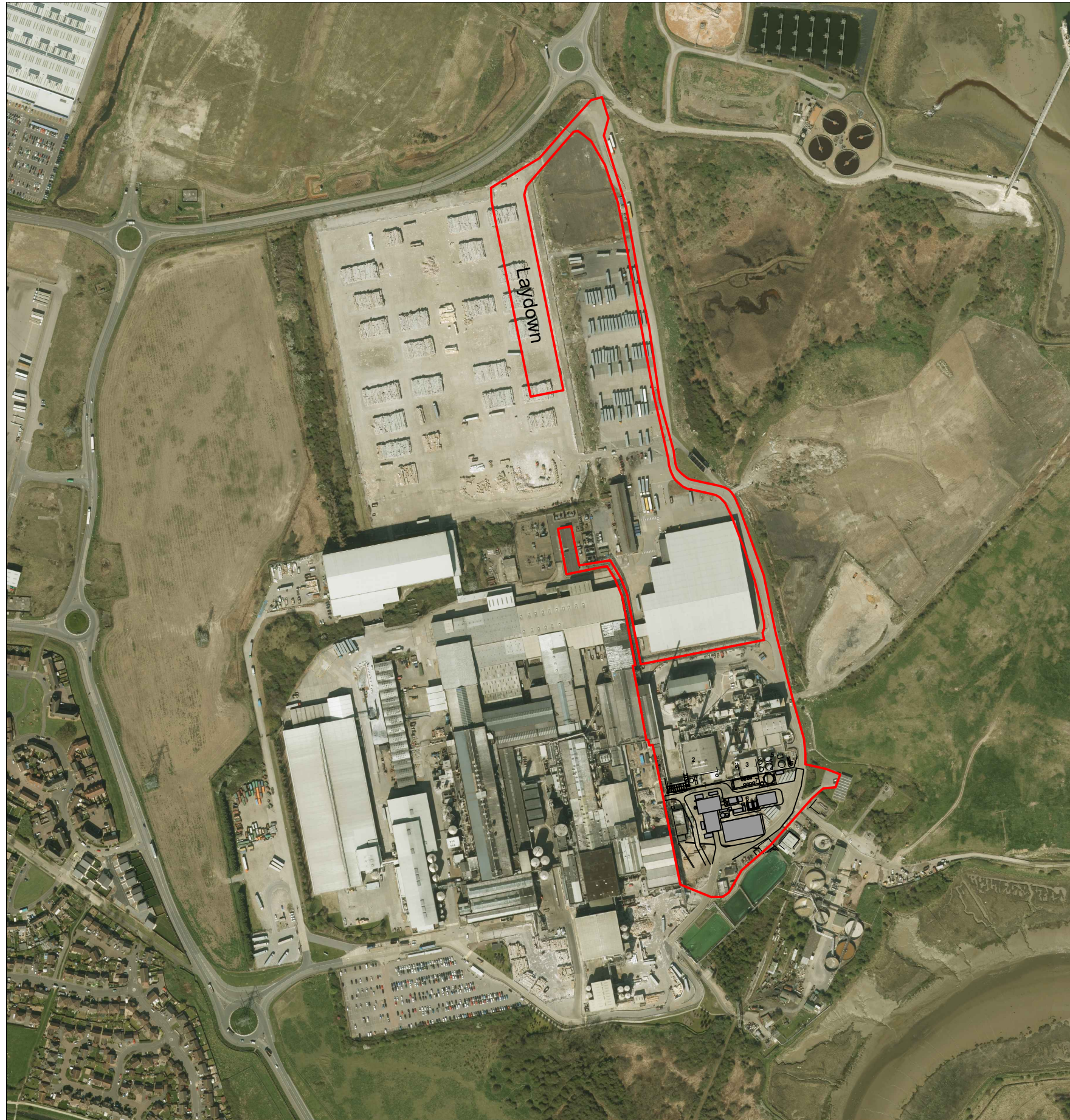
# APPENDICES

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# APPENDIX A – SITE LAYOUT PLAN


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# REQUEST FOR SCOPING OPINION

## Legend

 Application boundary

 Proposed buildings

1. Towns water
2. Package Boilers (6 off)
3. old WTP
4. Feed water tanks
5. Sewerage pumps
6. Gas stations
7. New WTP
8. New CHP
9. Raw water
10. LP & MP manifolds



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Client **DS Smith**

Project **Kemsley K4**

Title **Aerial view of the site**

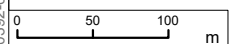
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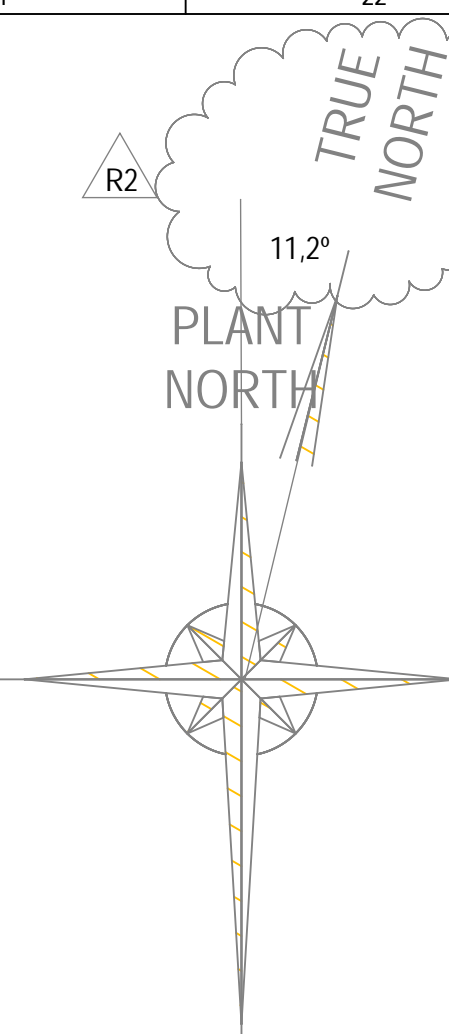
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Figure Number	Figure Number
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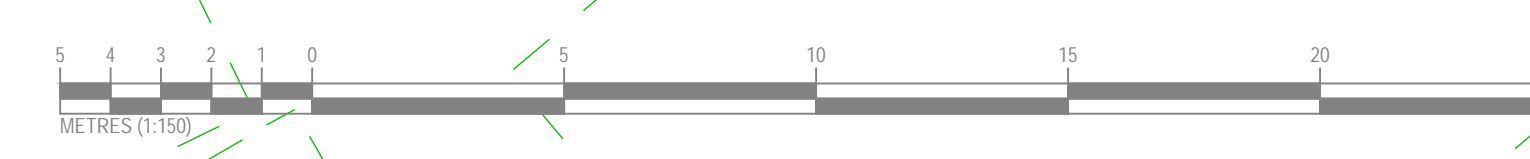
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10392-0002-004.dwg





R2  
O.S. CO-ORDINATES  
CENTRE OF STACK  
N.16639.587  
E.59173.288



ITEM No.	DESCRIPTION	O/ALL SIZE
1	GENERATOR	5m x 4m x 6m
2	GAS TURBINE	15m x 8m x 9m
3	LOCAL EQUIPMENT ROOM	21m x 21.5m x 9m
4	START TRANSFORMER	2.5m x 1.5m x 3m
5	FIRE EXTINGUISHING CABINET	3m x 3m x 3m
6	SWITCHGEAR	10m x 4m x 4m
7	BATTERY ENCLOSURE	2.5m x 6m x 2m
8	BLOCK TRANSFORMER	4m x 7m x 6m
9	EB TRANSFORMER	3m x 6m x 6m
10	HEAT RECOVERY STEAM GENERATOR	28m x 15m x 32m
11	H.R.S.G. STACK	65m x 3m
12	PACKAGE BOILER	8m x 4.5m x 5m
13	PACKAGE BOILER STACK	35m x 0.6m
14	FUEL GAS SKID	10m x 3m x 4m
15	CONDENSATE PUMPS	3m x 4m x 3m
16	CHEMICAL DOSING	8.5m x 3.5 x 3m
17	EFFLUENT SUMP	9m x 4.5m x 3m
18	DUMP CONDENSOR	43m x 22m x 20m
19	CONDENSATE TANK	5m x 6m
20	TURBINE HALL	16m x 23m x 15m
21	BOILER WATER FEED PUMPS	8.5m x 4m x 3m
22	FIN FAN COOLER	9m x 2.5m x 3m

Rev	Date	Drawn By	Checked By	Approved By	Reviewed By	Status
Rev 1		jhbr432	Peter Mathews	Peter Mathews	Steve Travis	Issued for Planning Approval
Rev 2		jhbr432	James Hughes	Peter Mathews	Steve Travis	O.S Co-ordinates added to stack location

COSTAIN - NATURAL RESOURCE DIVISION  
Costain House, 1500 Aviator Way  
Manchester Business Park  
Manchester, M22 3JG  
Web: www.costain.com

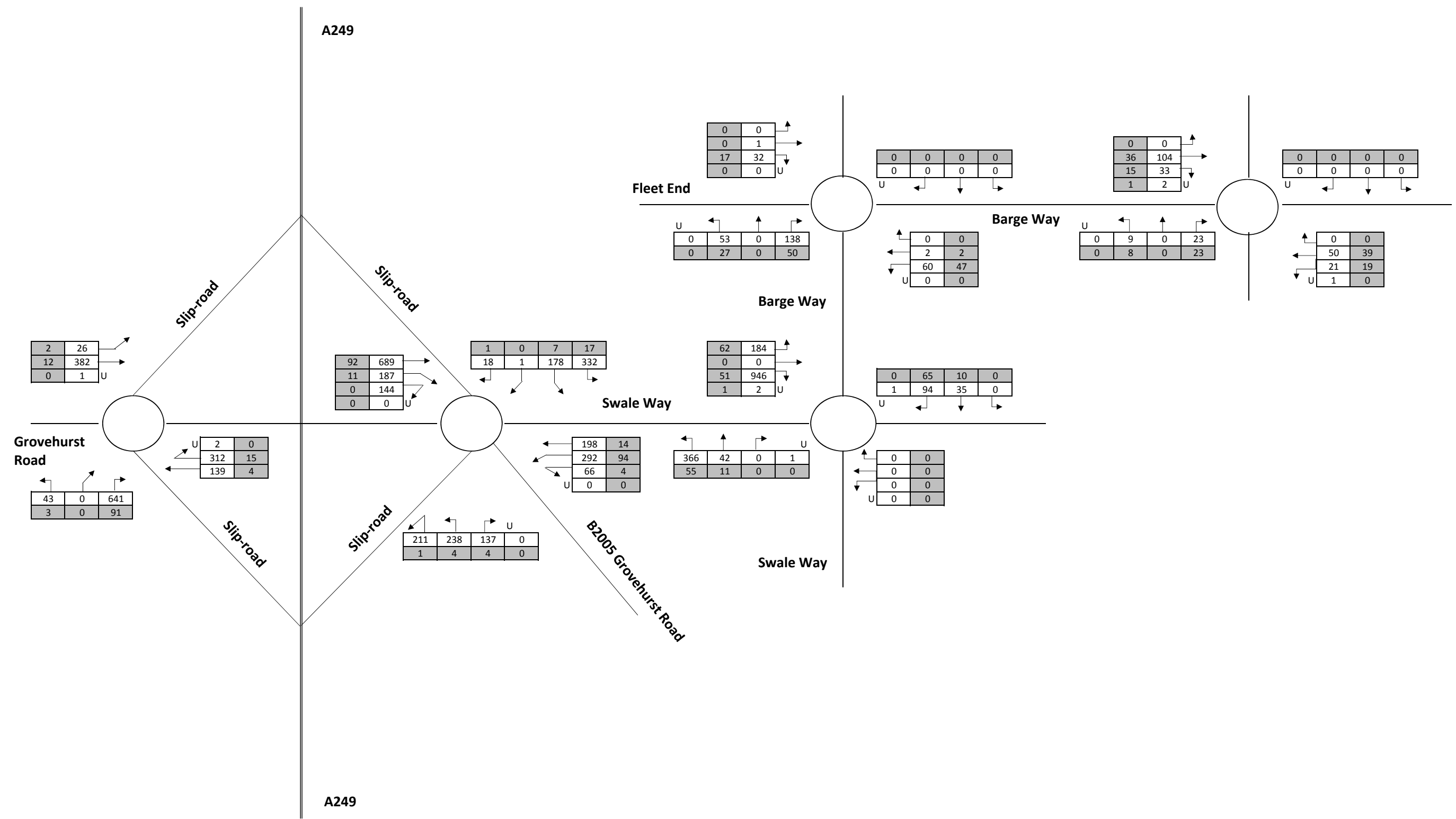
Project Title  
**E.ON KEMSLEY MILL CHP (K4)**  
Title  
**SITE PLOT PLAN WITH HORIZONTAL H.R.S.G.**

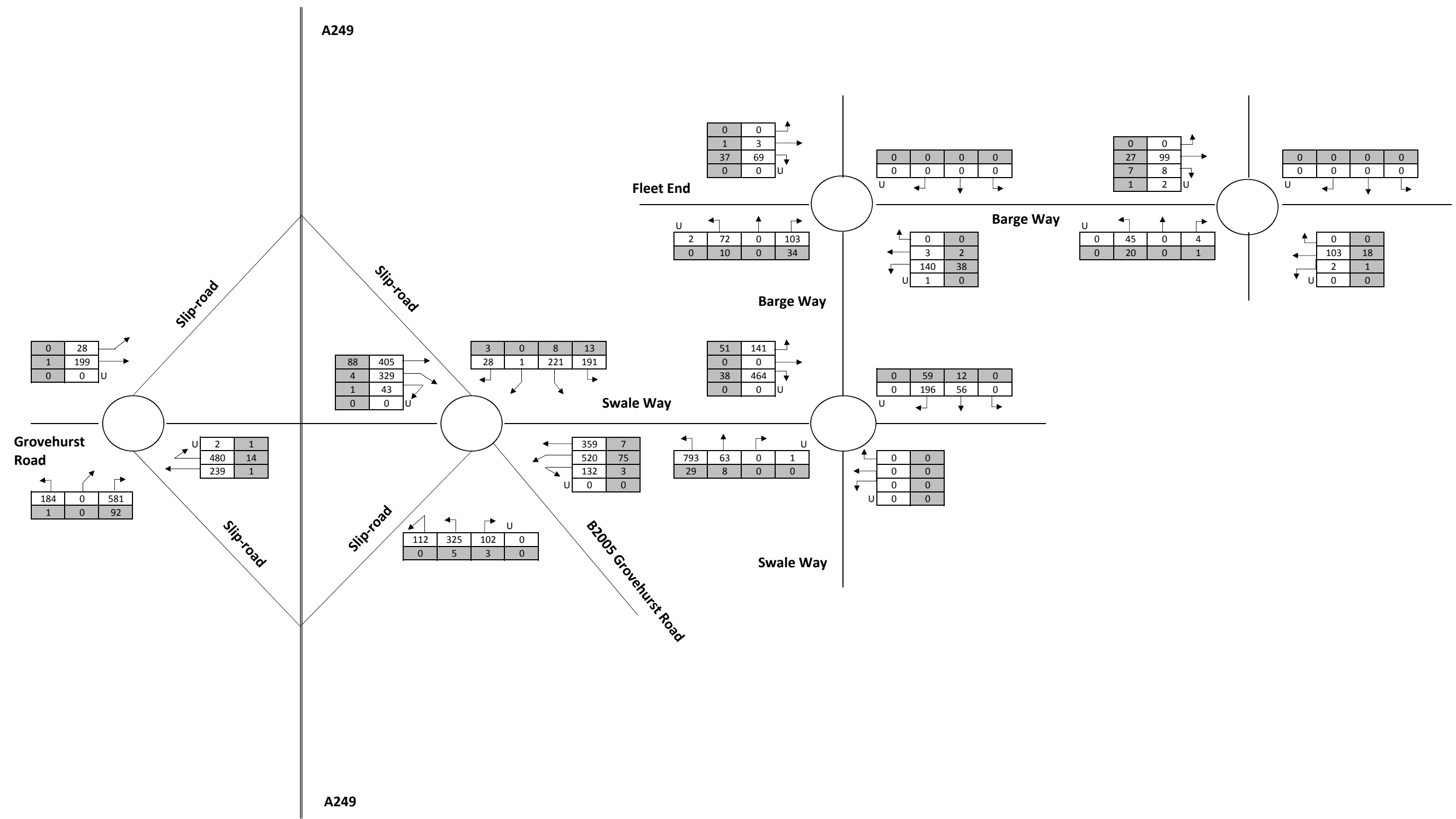
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Revision  
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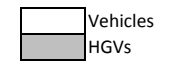
# APPENDIX B – 2019 TRAFFIC FLOWS

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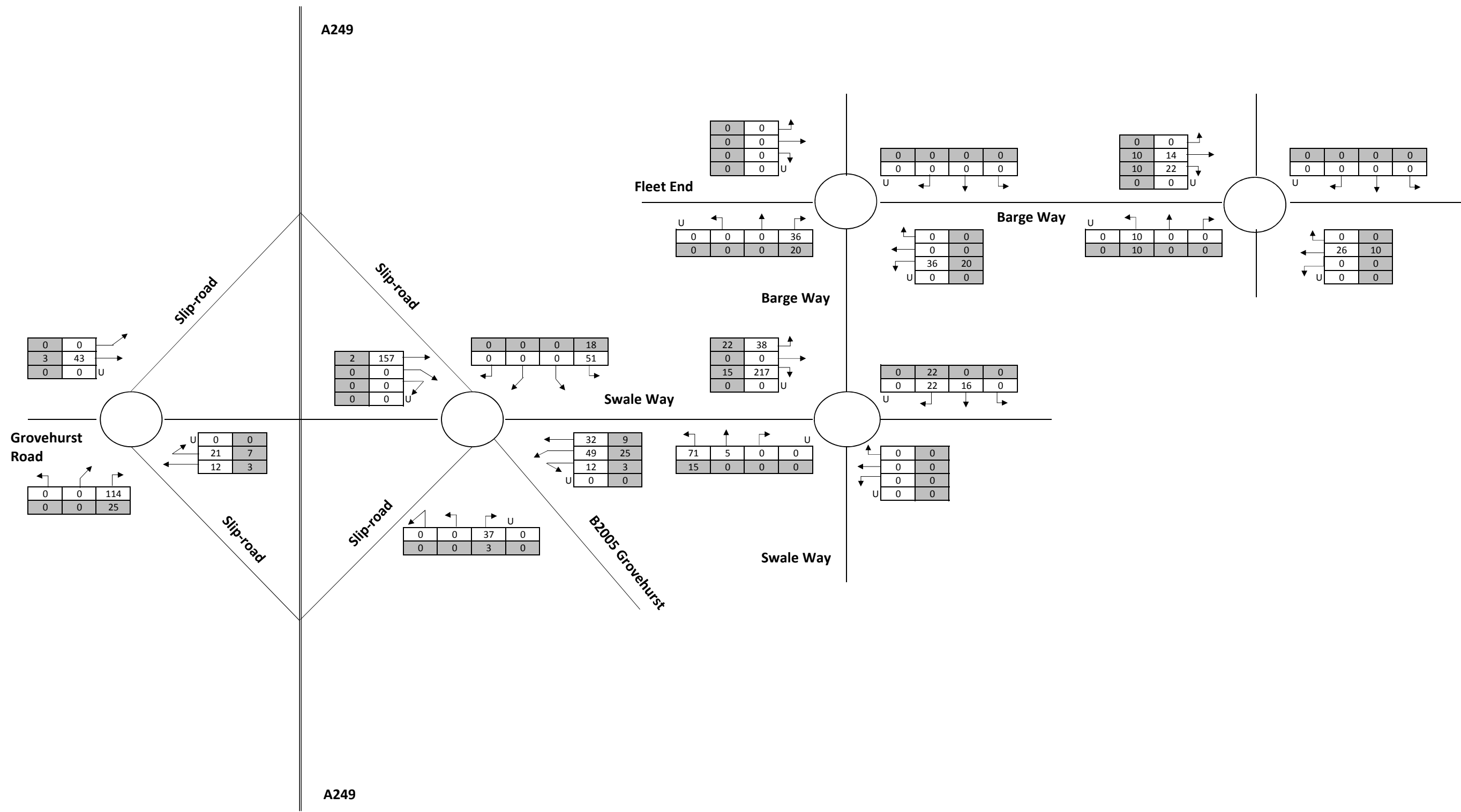
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**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: 2019 Base PM Peak Hour

# APPENDIX C – COMMITTED DEVELOPMENT TRAFFIC FLOWS

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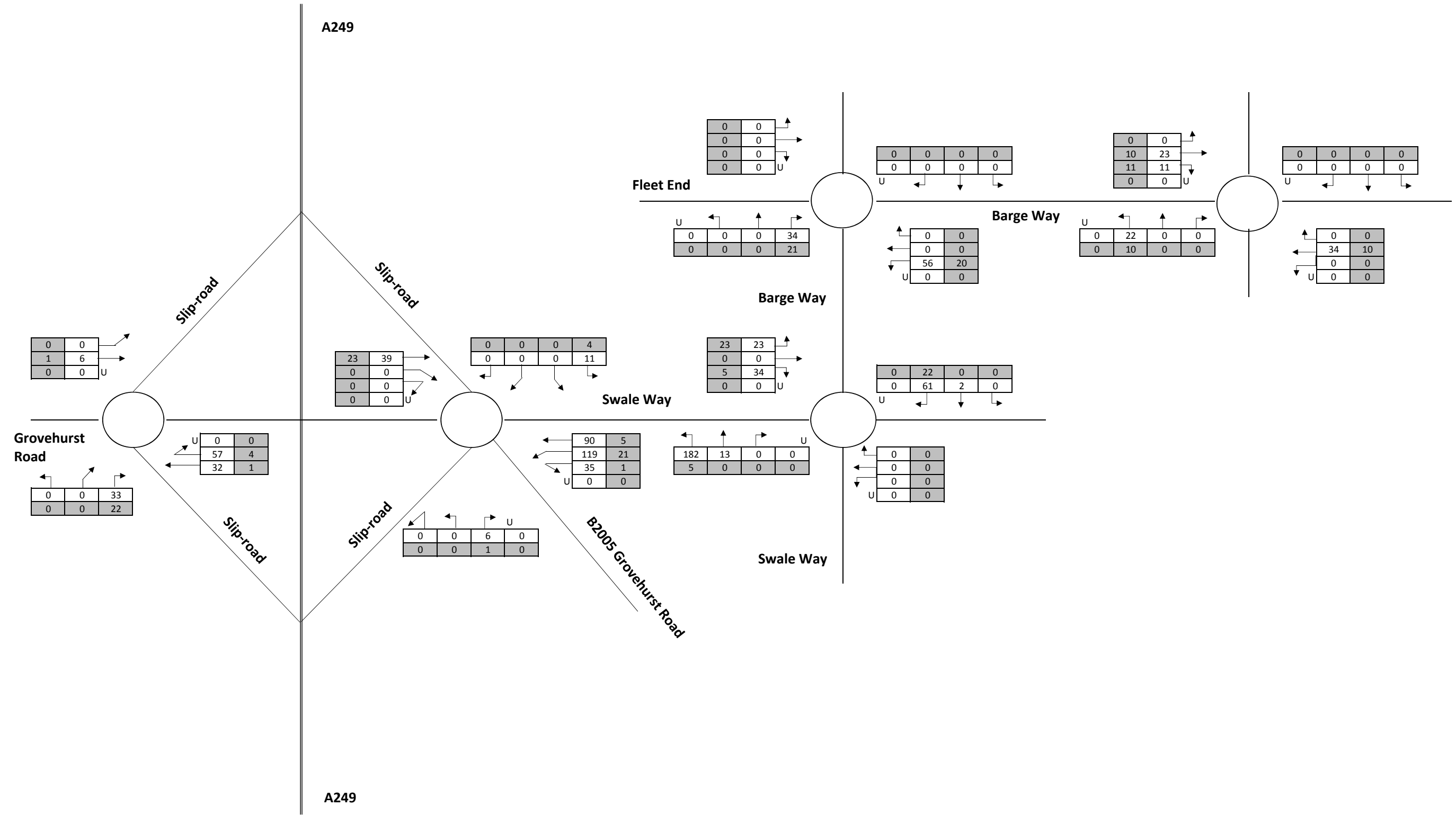


140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com

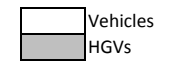
	Vehicles
	HGVs

**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: 2017 Base AM Peak Hour





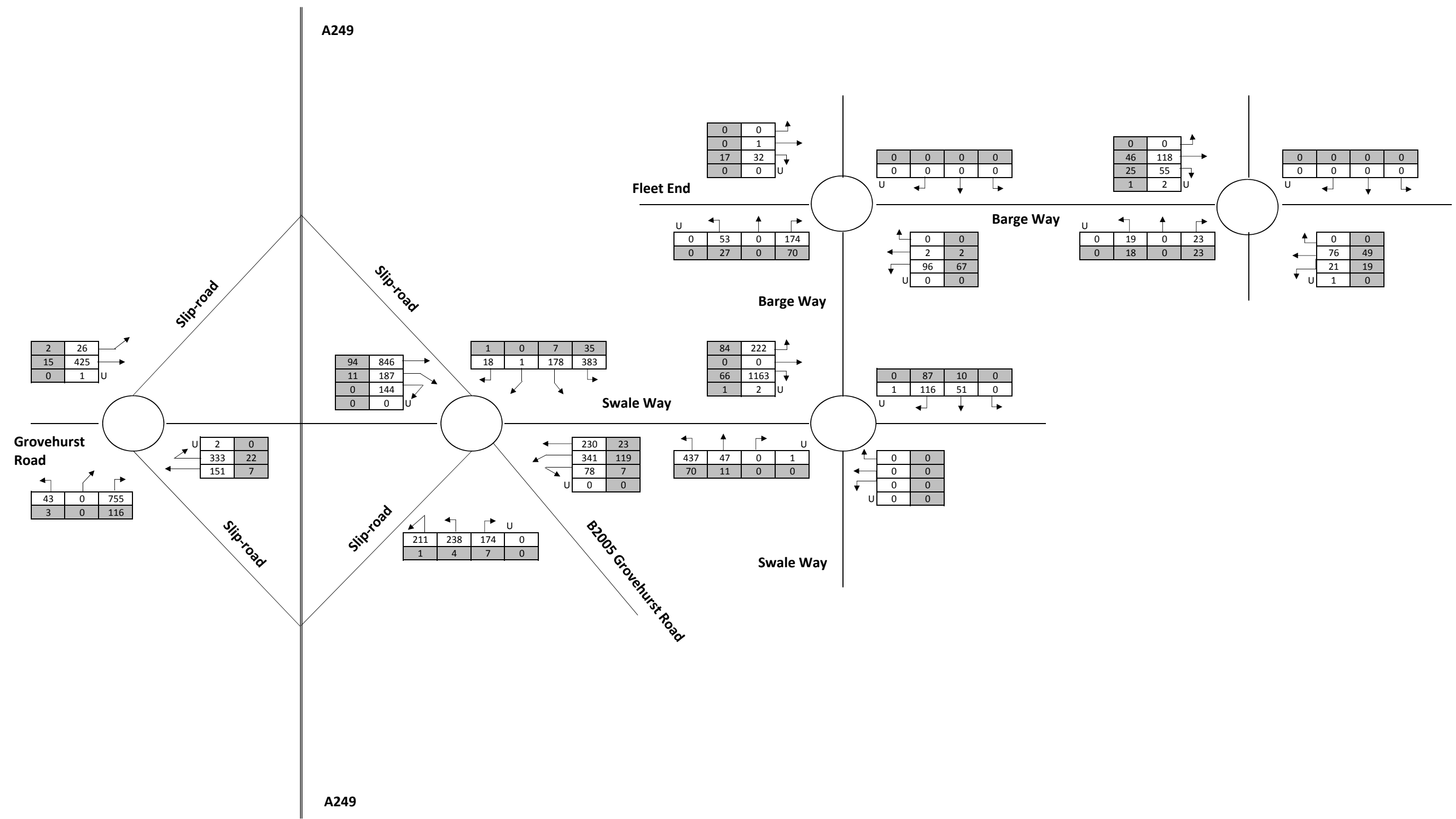
140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com



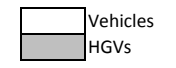
**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: 2017 Base AM Peak Hour

**APPENDIX D – 2019 BASELINE TRAFFIC FLOWS**

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140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com

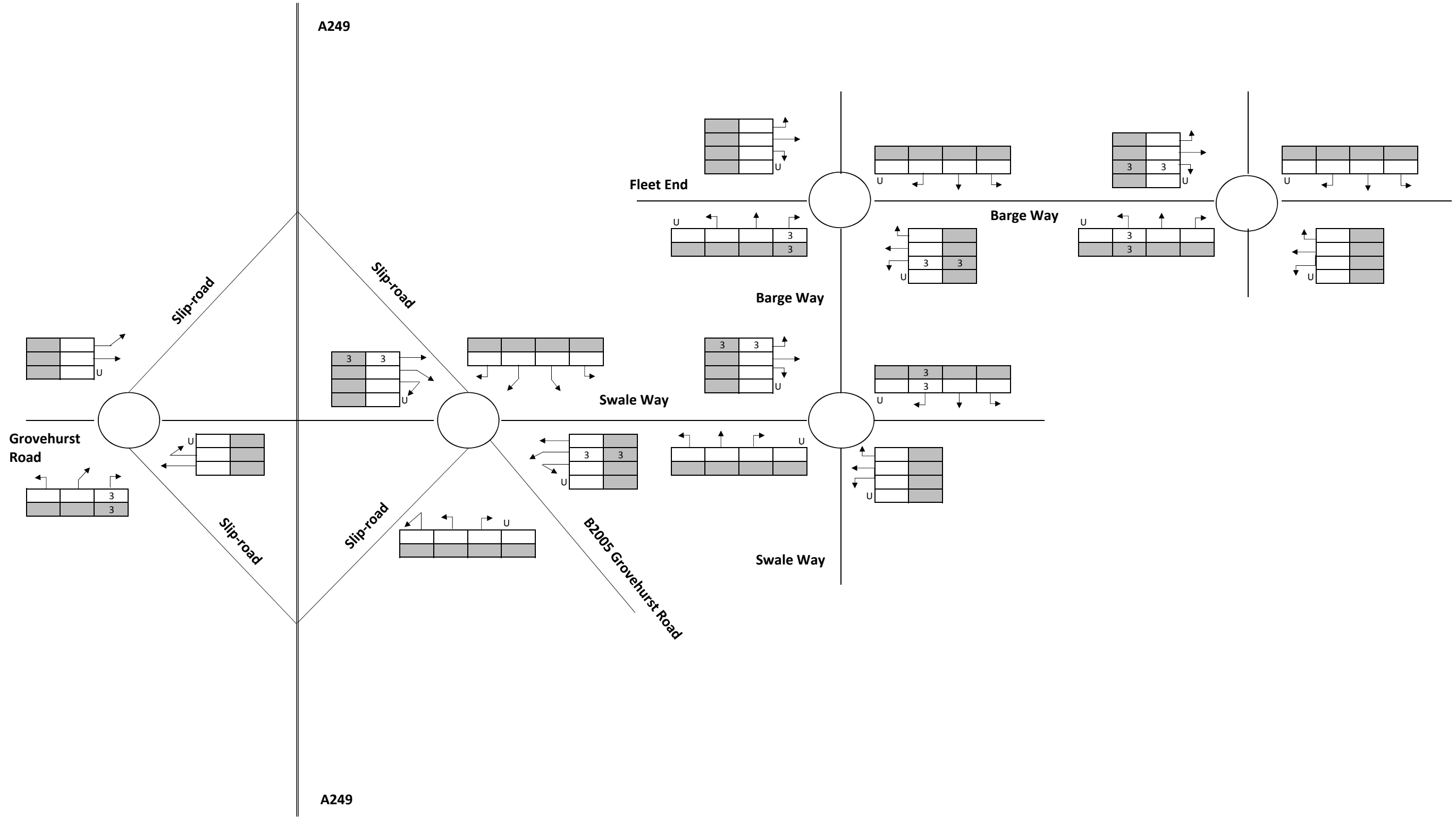


**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: 2019 + Committed Development AM Peak Hour



# APPENDIX E – AVERAGE CONSTRUCTION TRAFFIC FLOWS

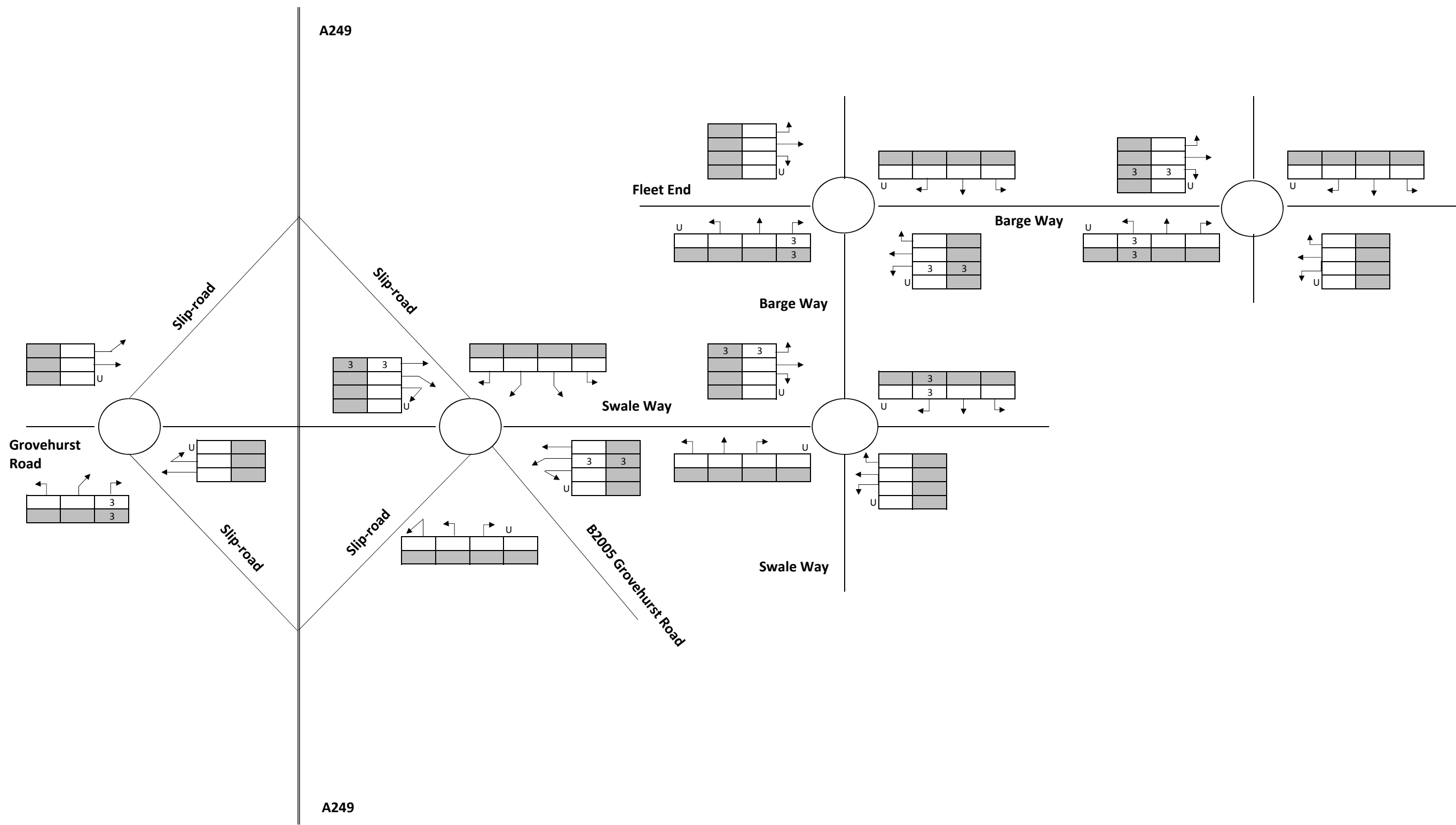
---



140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com



**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: **Average Proposed Development AM Peak Hour**



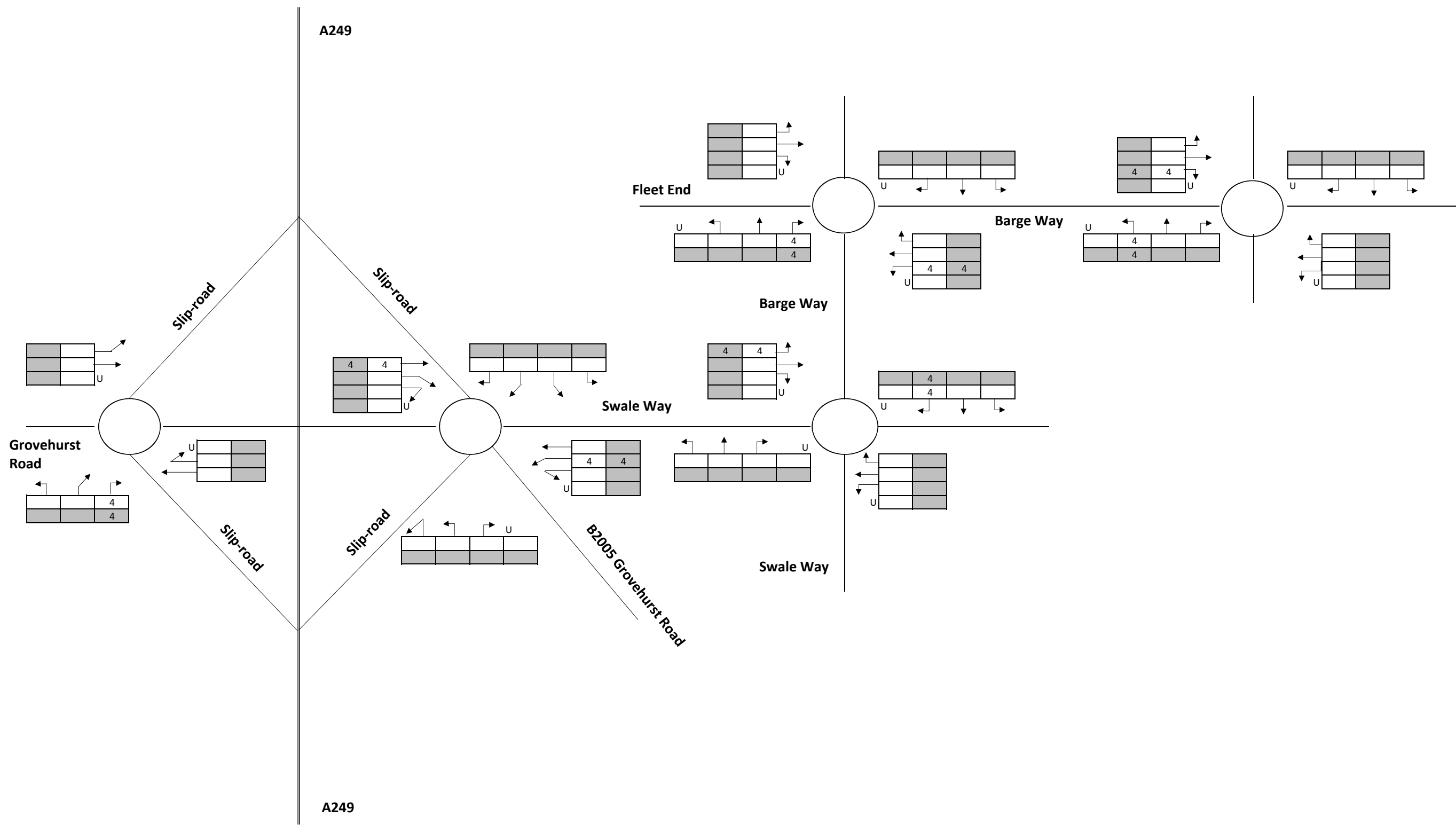
140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com

Vehicles  
 HGVs

# APPENDIX F - PEAK CONSTRUCTION TRAFFIC FLOWS

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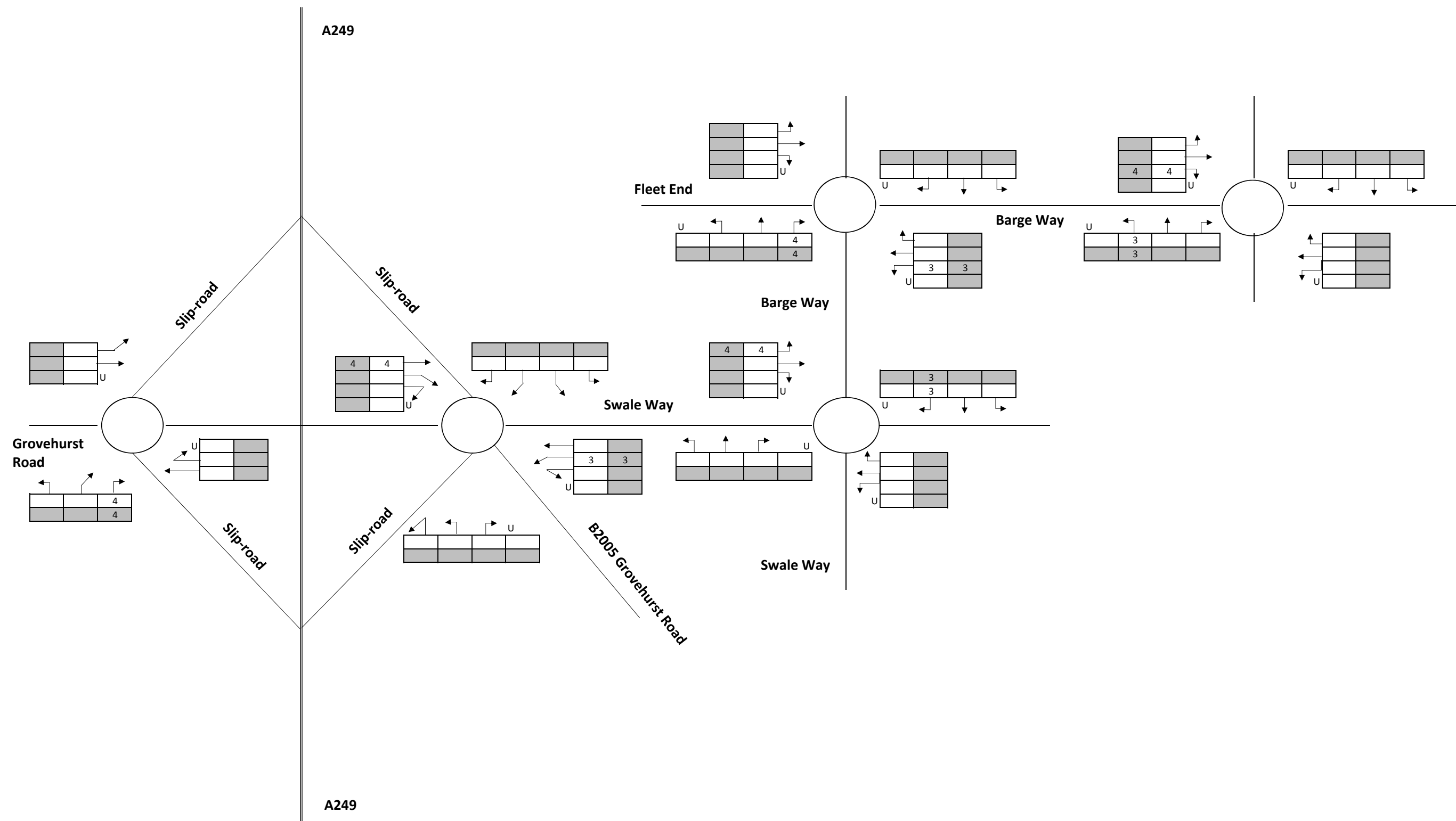




140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com



**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: **Peak Proposed Development AM Peak Hour**



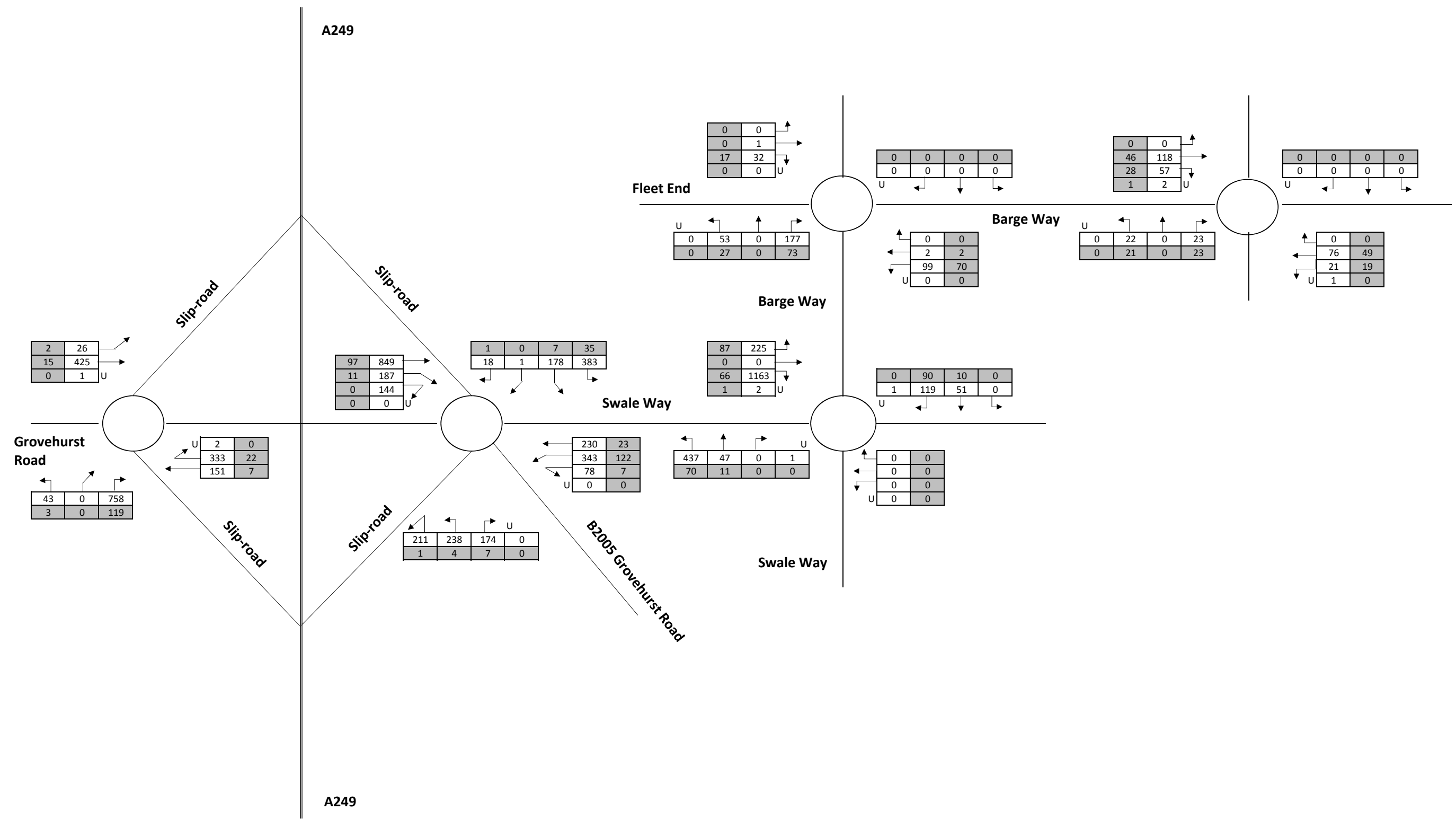
140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com



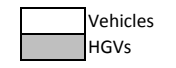
**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: **Peak Proposed Development PM Peak Hour**

**APPENDIX G - 2019 BASELINE PLUS AVERAGE  
CONSTRUCTION TRAFFIC FLOWS**

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140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com

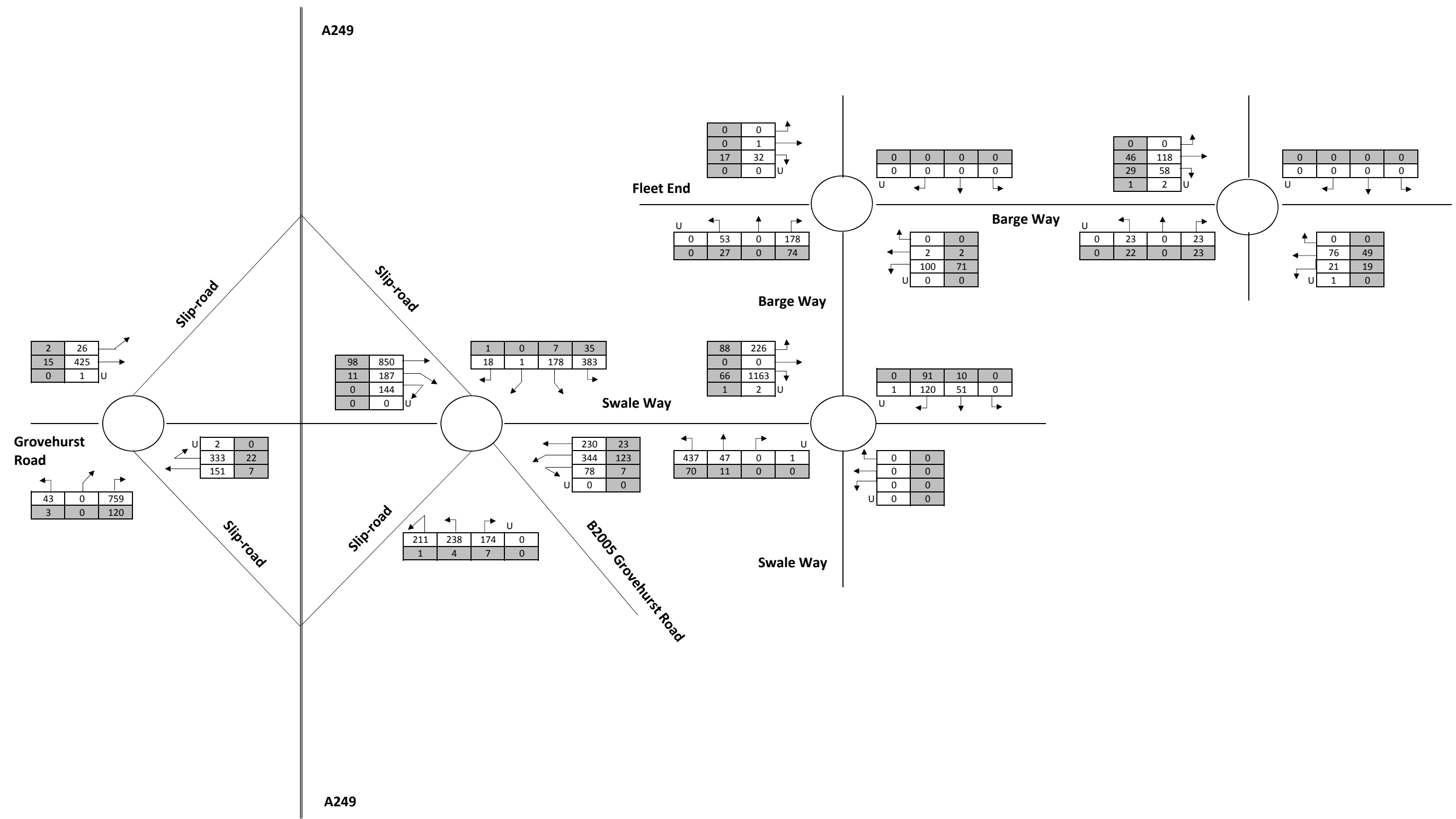


**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: 2019 + Committed Development + Average Development AM Peak Hour



**APPENDIX H 2019 BASELINE PLUS PEAK CONSTRUCTION  
TRAFFIC FLOWS**

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140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com

[White Box] Vehicles  
 [Grey Box] HGVs

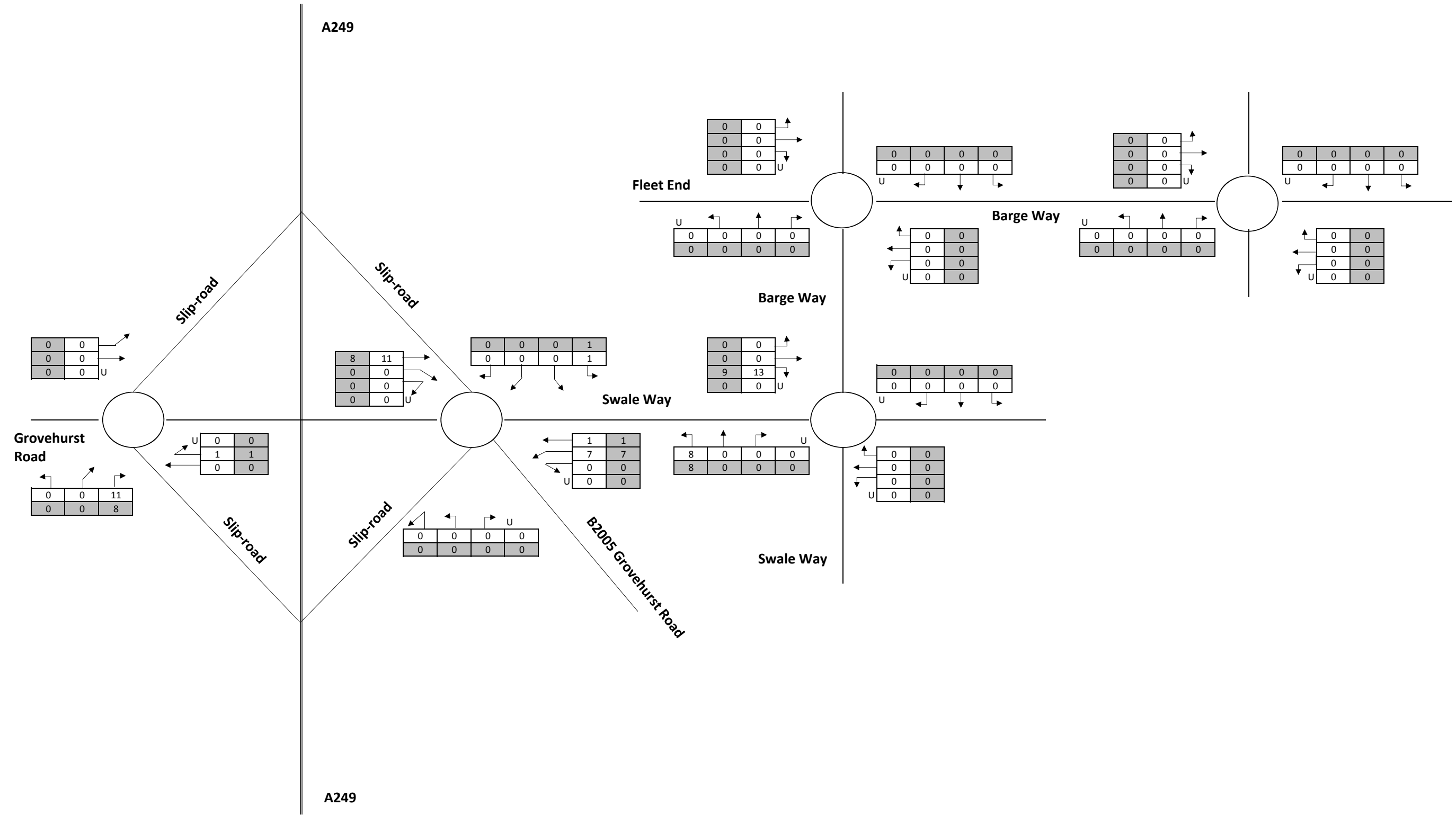
**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: 2019 + Committed Development + Peak Development  
 AM Peak Hour



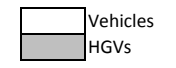


# APPENDIX I – CUMULATIVE DEVELOPMENT TRAFFIC FLOWS

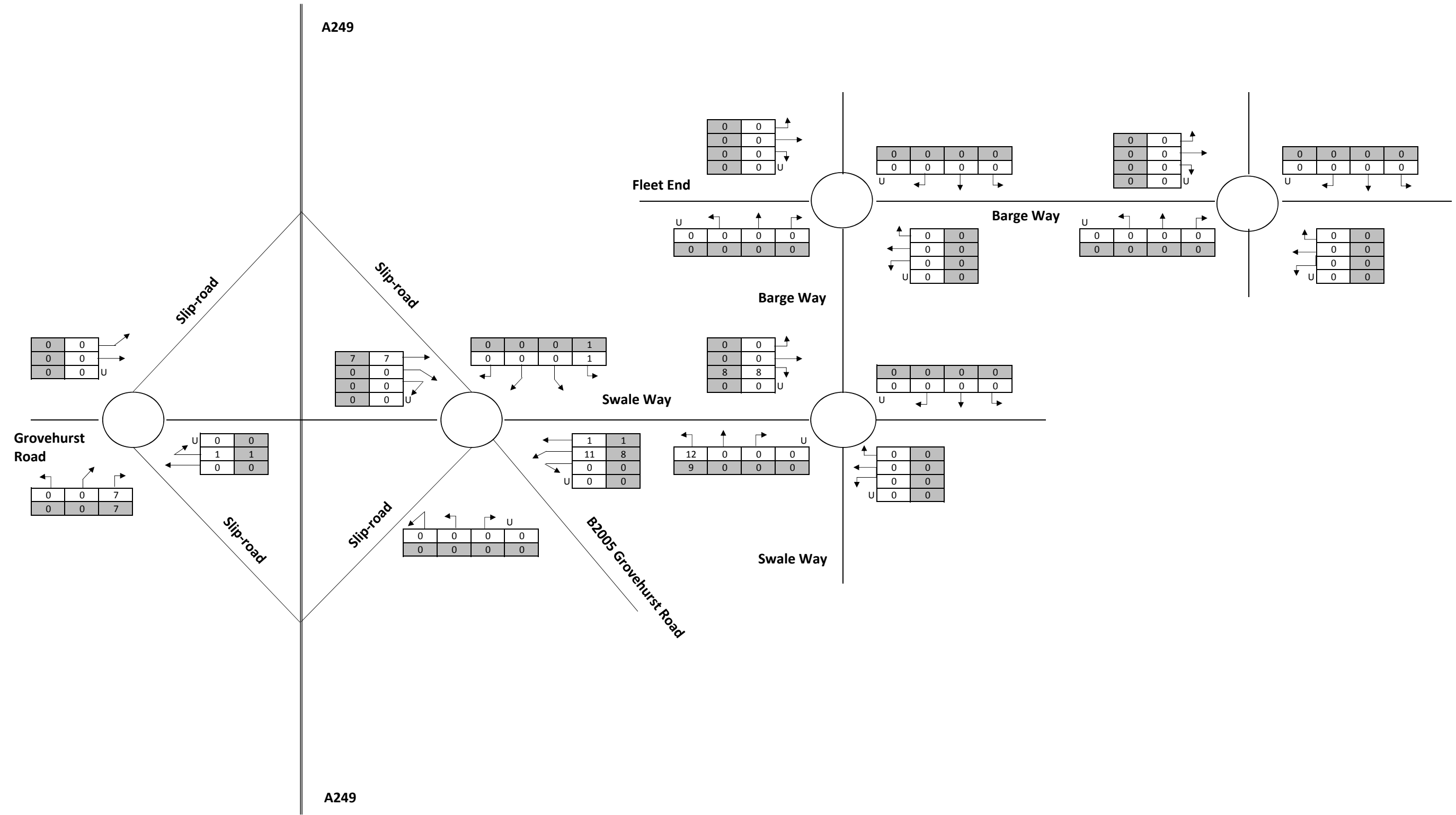
---



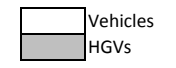
140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com



**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: Cumulative Development AM Peak Hour



140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com

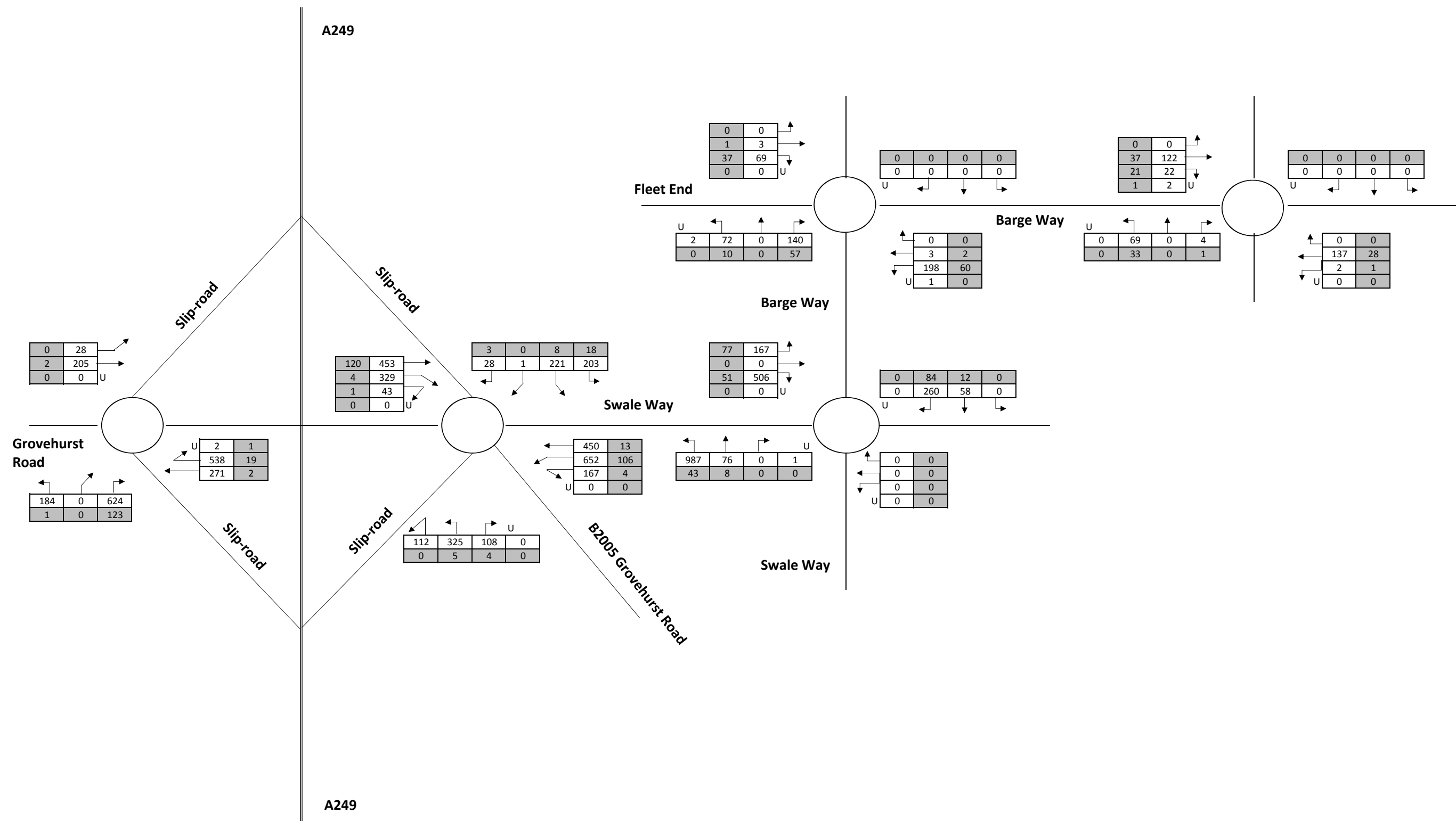


**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: Cumulative Development PM Peak Hour

**APPENDIX J – 2019 BASELINE PLUS CUMULATIVE PLUS  
AVERAGE CONSTRUCTION TRAFFIC FLOWS**

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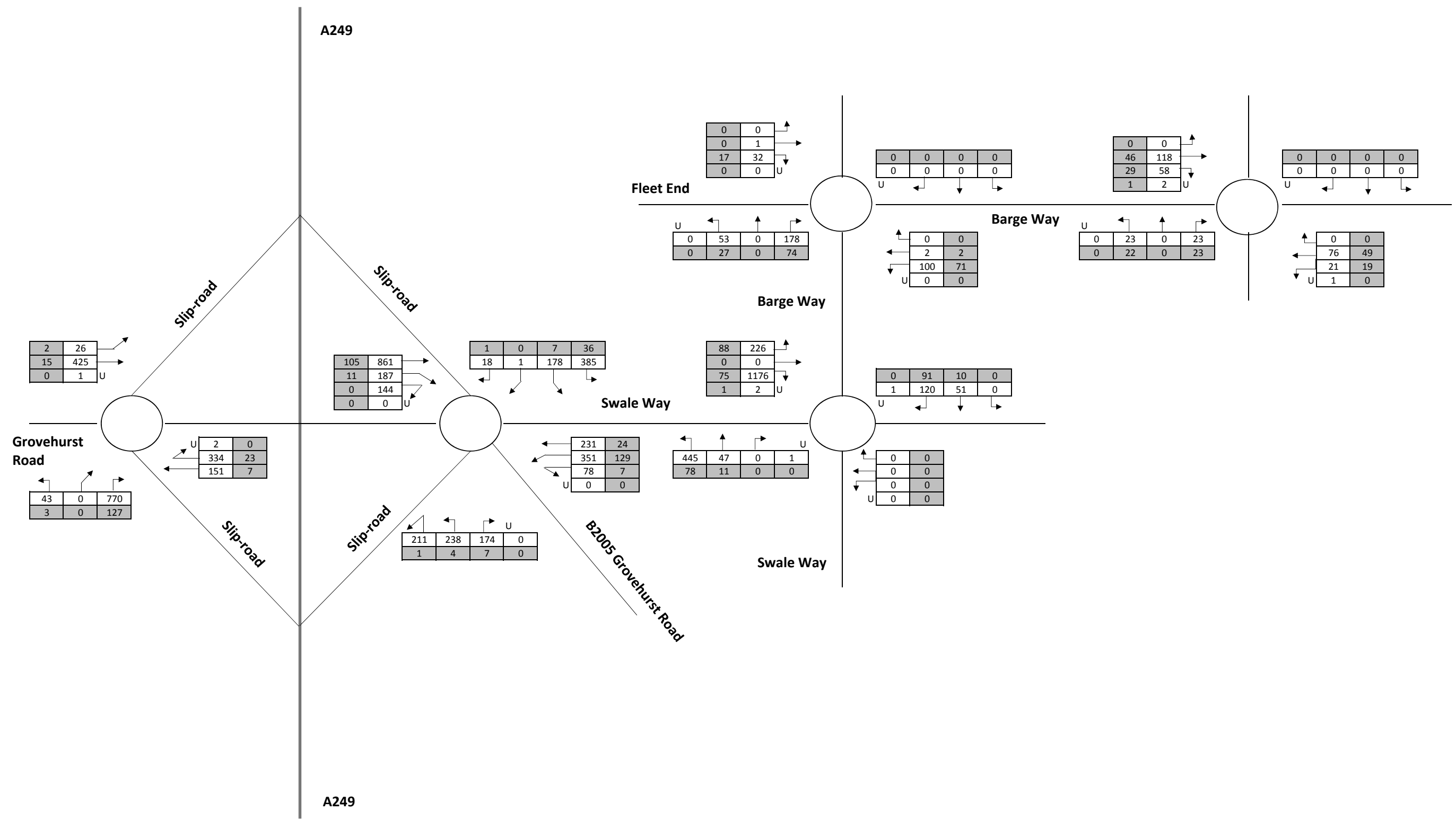
140 London Wall  
London, EC2Y 5DN  
T: +44(0)20 7280 3300 E: transport@rpsgroup.com



**Figure:**  
Client: DS Smith  
Project: Kemsley K4  
Title: 2019+Committed Development+Cumulative Development+Average Development PM Peak Hour

**APPENDIX K – 2019 BASELINE PLUS CUMULATIVE PLUS  
PEAK CONSTRUCTION TRAFFIC FLOWS**

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140 London Wall  
 London, EC2Y 5DN  
 T: +44(0)20 7280 3300 E: transport@rpsgroup.com

[White box] Vehicles  
 [Grey box] HGVs

**Figure:**  
 Client: DS Smith  
 Project: Kemsley K4  
 Title: 2019+Committed Development+Cumulative Development+Peak Development AM Peak Hour





# APPENDIX L – JUNCTIONS 9 OUTPUT REPORTS

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<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
Version: 9.0.2.5947 © Copyright TRL Limited, 2017
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk
<b>The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution</b>

**Filename:** Swale Way - Barge Way.j9

**Path:** P:\JNY9247 - Kemsley K4\Transport\Arcady\Swale Way - Barge Way

**Report generation date:** 29/03/2018 13:28:48

- 
- »2017, AM
  - »2017, PM
  - »2019, AM
  - »2019, PM
  - »2019 + Committed Development, AM
  - »2019 + Committed Development, PM
  - »2019 + Committed + Peak Development, AM
  - »2019 + Committed + Peak Development, PM
  - »2019 + Committed + Average Development, AM
  - »2019 + Committed + Average Development, PM
  - »2019 + Committed + Cumulative, AM
  - »2019 + Committed + Cumulative, PM
  - »2019 + Committed + Cumulative + Peak Development, AM
  - »2019 + Committed + Cumulative + Peak Development, PM
  - »2019 + Committed + Cumulative + Average Development, AM
  - »2019 + Committed + Cumulative + Average Development, PM

## Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
<b>2017</b>						
Arm Barge	0.3	7.43	0.22	0.4	4.74	0.26
Arm Swa S	0.5	3.90	0.32	1.7	6.77	0.63
Arm Swa W	4.4	13.55	0.82	0.9	4.74	0.46
<b>2019</b>						
Arm Barge	0.3	7.57	0.23	0.4	4.81	0.27
Arm Swa S	0.5	3.94	0.33	1.8	7.10	0.65
Arm Swa W	5.0	15.03	0.84	0.9	4.84	0.47
<b>2019 + Committed Development</b>						
Arm Barge	0.5	10.12	0.34	0.5	5.61	0.35
Arm Swa S	0.7	4.52	0.40	4.6	14.91	0.83
Arm Swa W	49.5	108.02	1.05	1.1	5.69	0.54
<b>2019 + Committed + Peak Development</b>						
Arm Barge	0.5	10.30	0.35	0.5	5.64	0.35
Arm Swa S	0.7	4.55	0.40	4.7	15.07	0.83
Arm Swa W	52.6	113.71	1.05	1.2	5.77	0.54
<b>2019 + Committed + Average Development</b>						
Arm Barge	0.5	10.27	0.35	0.5	5.64	0.35
Arm Swa S	0.7	4.54	0.40	4.7	15.07	0.83
Arm Swa W	52.0	112.69	1.05	1.2	5.76	0.54
<b>2019 + Committed + Cumulative</b>						
Arm Barge	0.5	10.19	0.34	0.5	5.67	0.35
Arm Swa S	0.7	4.69	0.41	4.9	15.74	0.84
Arm Swa W	54.9	117.55	1.05	1.2	5.84	0.54
<b>2019 + Committed + Cumulative + Peak Development</b>						
Arm Barge	0.5	10.35	0.35	0.6	5.70	0.36
Arm Swa S	0.7	4.72	0.42	5.0	15.91	0.84
Arm Swa W	58.4	123.98	1.06	1.2	5.92	0.55
<b>2019 + Committed + Cumulative + Average Development</b>						
Arm Barge	0.5	10.33	0.35	0.6	5.70	0.36
Arm Swa S	0.7	4.71	0.42	5.0	15.91	0.84
Arm Swa W	57.5	122.41	1.06	1.2	5.91	0.55

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

### File Description

Title	(untitled)
Location	
Site number	
Date	08/11/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EUR\jack.clarke-williams
Description	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2017	AM	ONE HOUR	07:15	08:45	15	✓
D2	2017	PM	ONE HOUR	16:15	17:45	15	✓
D3	2019	AM	ONE HOUR	07:15	08:45	15	✓
D4	2019	PM	ONE HOUR	16:15	17:45	15	✓
D5	2019 + Committed Development	AM	ONE HOUR	07:15	08:45	15	✓
D6	2019 + Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D7	2019 + Committed + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓
D8	2019 + Committed + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓
D9	2019 + Committed + Average Development	AM	ONE HOUR	07:15	08:45	15	✓
D10	2019 + Committed + Average Development	PM	ONE HOUR	16:15	17:45	15	✓
D11	2019 + Committed + Cumulative	AM	ONE HOUR	07:15	08:45	15	✓
D12	2019 + Committed + Cumulative	PM	ONE HOUR	16:15	17:45	15	✓
D13	2019 + Committed + Cumulative + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓
D14	2019 + Committed + Cumulative + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓
D15	2019 + Committed + Cumulative + Average Development	AM	ONE HOUR	07:15	08:45	15	✓
D16	2019 + Committed + Cumulative + Average Development	PM	ONE HOUR	16:15	17:45	15	✓

### Analysis Set Details

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

# 2017, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	10.51	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
Barge	Barge Way	
Swa S	Swale Way South	
Swa W	Swale Way West	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
Barge	3.50	6.50	16.5	23.0	45.5	28.0	
Swa S	3.75	7.00	13.0	23.0	45.5	30.0	
Swa W	3.75	7.00	10.0	47.5	45.5	30.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
Barge	0.622	1657
Swa S	0.627	1694
Swa W	0.628	1665

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	2017	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	127	100.000
Swa S		ONE HOUR	✓	400	100.000
Swa W		ONE HOUR	✓	1107	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To			
	Barge	Swa S	Swa W	
Barge	1	34	92	
Swa S	41	1	358	
Swa W	180	925	2	

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	Barge	Swa S	Swa W	
Barge	0	29	70	
Swa S	27	0	15	
Swa W	34	5	50	

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.22	7.43	0.3	A	117	175
Swa S	0.32	3.90	0.5	A	367	551
Swa W	0.82	13.55	4.4	B	1016	1524

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	96	24	694	759	0.126	95	166	0.0	0.1	5.415	A
Swa S	301	75	71	1393	0.216	300	718	0.0	0.3	3.290	A
Swa W	833	208	32	1493	0.558	828	339	0.0	1.2	5.377	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	114	29	832	703	0.162	114	199	0.1	0.2	6.114	A
Swa S	360	90	85	1380	0.261	359	861	0.3	0.4	3.525	A
Swa W	995	249	39	1488	0.669	992	406	1.2	2.0	7.210	A

**07:45 - 08:00**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	140	35	1014	628	0.223	139	243	0.2	0.3	7.371	A
Swa S	440	110	104	1363	0.323	440	1049	0.4	0.5	3.898	A
Swa W	1219	305	47	1482	0.822	1210	497	2.0	4.3	12.778	B

**08:00 - 08:15**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	140	35	1021	625	0.224	140	244	0.3	0.3	7.426	A
Swa S	440	110	105	1363	0.323	440	1056	0.5	0.5	3.902	A
Swa W	1219	305	47	1482	0.822	1218	498	4.3	4.4	13.549	B

**08:15 - 08:30**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	114	29	842	698	0.163	115	201	0.3	0.2	6.169	A
Swa S	360	90	86	1380	0.261	360	871	0.5	0.4	3.533	A
Swa W	995	249	39	1488	0.669	1005	407	4.4	2.1	7.584	A

**08:30 - 08:45**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	96	24	701	756	0.126	96	168	0.2	0.1	5.452	A
Swa S	301	75	72	1393	0.216	301	725	0.4	0.3	3.299	A
Swa W	833	208	32	1493	0.558	837	341	2.1	1.3	5.511	A



# 2017, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	5.69	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2017	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	247	100.000
Swa S		ONE HOUR	✓	838	100.000
Swa W		ONE HOUR	✓	592	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	55	192
	Swa S	62	0	776
	Swa W	138	454	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	22	30
	Swa S	13	0	4
	Swa W	36	8	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.26	4.74	0.4	A	227	340
Swa S	0.63	6.77	1.7	A	769	1153
Swa W	0.46	4.74	0.9	A	543	815

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	186	46	340	1114	0.167	185	150	0.0	0.2	3.872	A
Swa S	631	158	144	1506	0.419	628	382	0.0	0.7	4.085	A
Swa W	446	111	46	1425	0.313	444	725	0.0	0.5	3.664	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	222	56	408	1079	0.206	222	180	0.2	0.3	4.200	A
Swa S	753	188	172	1484	0.508	752	457	0.7	1.0	4.909	A
Swa W	532	133	56	1419	0.375	532	869	0.5	0.6	4.053	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	272	68	499	1031	0.264	272	220	0.3	0.4	4.739	A
Swa S	923	231	211	1454	0.634	920	560	1.0	1.7	6.703	A
Swa W	652	163	68	1411	0.462	651	1063	0.6	0.8	4.727	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	272	68	500	1031	0.264	272	220	0.4	0.4	4.745	A
Swa S	923	231	211	1454	0.635	923	560	1.7	1.7	6.772	A
Swa W	652	163	68	1411	0.462	652	1066	0.8	0.9	4.739	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	222	56	409	1078	0.206	222	180	0.4	0.3	4.208	A
Swa S	753	188	173	1484	0.508	756	458	1.7	1.0	4.965	A
Swa W	532	133	56	1419	0.375	533	873	0.9	0.6	4.068	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	186	46	342	1113	0.167	186	151	0.3	0.2	3.884	A
Swa S	631	158	145	1506	0.419	632	384	1.0	0.7	4.126	A
Swa W	446	111	47	1425	0.313	446	730	0.6	0.5	3.683	A

# 2019, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	11.49	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2019	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	130	100.000
Swa S		ONE HOUR	✓	409	100.000
Swa W		ONE HOUR	✓	1132	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	1	35	94
	Swa S	42	1	366
	Swa W	184	946	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	29	69
	Swa S	26	0	15
	Swa W	34	5	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.23	7.57	0.3	A	119	179
Swa S	0.33	3.94	0.5	A	375	563
Swa W	0.84	15.03	5.0	C	1039	1558

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	98	24	710	757	0.129	97	170	0.0	0.1	5.454	A
Swa S	308	77	73	1394	0.221	307	735	0.0	0.3	3.309	A
Swa W	852	213	33	1494	0.570	847	346	0.0	1.3	5.521	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	117	29	850	699	0.167	117	204	0.1	0.2	6.184	A
Swa S	368	92	87	1381	0.266	367	880	0.3	0.4	3.552	A
Swa W	1018	254	40	1489	0.683	1014	415	1.3	2.1	7.530	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	143	36	1036	622	0.230	143	248	0.2	0.3	7.504	A
Swa S	450	113	106	1363	0.330	450	1072	0.4	0.5	3.939	A
Swa W	1246	312	48	1483	0.840	1236	508	2.1	4.8	13.965	B

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	143	36	1044	619	0.231	143	250	0.3	0.3	7.571	A
Swa S	450	113	107	1363	0.330	450	1081	0.5	0.5	3.944	A
Swa W	1246	312	48	1483	0.840	1246	509	4.8	5.0	15.025	C

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	117	29	863	694	0.168	117	206	0.3	0.2	6.248	A
Swa S	368	92	87	1380	0.266	368	892	0.5	0.4	3.557	A
Swa W	1018	254	40	1489	0.683	1029	416	5.0	2.2	8.000	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	98	24	717	754	0.130	98	171	0.2	0.2	5.493	A
Swa S	308	77	73	1393	0.221	308	742	0.4	0.3	3.320	A
Swa W	852	213	33	1494	0.570	856	348	2.2	1.3	5.673	A

# 2019, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	5.89	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2019	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	252	100.000
Swa S		ONE HOUR	✓	857	100.000
Swa W		ONE HOUR	✓	605	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	56	196
	Swa S	63	1	793
	Swa W	141	464	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	21	30
	Swa S	13	0	4
	Swa W	36	8	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.27	4.81	0.4	A	231	347
Swa S	0.65	7.10	1.8	A	786	1180
Swa W	0.47	4.84	0.9	A	555	833

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	190	47	349	1112	0.171	189	153	0.0	0.2	3.898	A
Swa S	645	161	147	1504	0.429	642	391	0.0	0.7	4.162	A
Swa W	455	114	48	1424	0.320	454	741	0.0	0.5	3.704	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	227	57	418	1075	0.211	226	183	0.2	0.3	4.238	A
Swa S	770	193	176	1482	0.520	769	468	0.7	1.1	5.043	A
Swa W	544	136	57	1418	0.384	543	888	0.5	0.6	4.112	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	277	69	511	1026	0.270	277	224	0.3	0.4	4.802	A
Swa S	944	236	215	1451	0.650	941	573	1.1	1.8	7.011	A
Swa W	666	167	70	1410	0.472	665	1086	0.6	0.9	4.824	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	277	69	512	1026	0.270	277	225	0.4	0.4	4.809	A
Swa S	944	236	216	1451	0.650	943	574	1.8	1.8	7.095	A
Swa W	666	167	70	1410	0.472	666	1089	0.9	0.9	4.838	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	227	57	419	1075	0.211	227	184	0.4	0.3	4.249	A
Swa S	770	193	177	1481	0.520	773	469	1.8	1.1	5.106	A
Swa W	544	136	58	1418	0.384	545	892	0.9	0.6	4.128	A



17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	190	47	351	1111	0.171	190	154	0.3	0.2	3.911	A
Swa S	645	161	148	1504	0.429	647	393	1.1	0.8	4.208	A
Swa W	455	114	48	1424	0.320	456	746	0.6	0.5	3.721	A

# 2019 + Committed Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	72.41	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2019 + Committed Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	168	100.000
Swa S		ONE HOUR	✓	485	100.000
Swa W		ONE HOUR	✓	1387	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	1	51	116
	Swa S	47	1	437
	Swa W	222	1163	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	20	75
	Swa S	23	0	16
	Swa W	38	6	50

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.34	10.12	0.5	B	154	231
Swa S	0.40	4.52	0.7	A	445	668
Swa W	1.05	108.02	49.5	F	1273	1909

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	126	32	870	686	0.184	126	202	0.0	0.2	6.410	A
Swa S	365	91	89	1369	0.267	364	907	0.0	0.4	3.576	A
Swa W	1044	261	37	1472	0.709	1035	416	0.0	2.4	8.067	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	151	38	1039	616	0.245	151	241	0.2	0.3	7.736	A
Swa S	436	109	107	1353	0.322	436	1083	0.4	0.5	3.924	A
Swa W	1247	312	44	1467	0.850	1236	498	2.4	5.1	14.893	B

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	185	46	1199	549	0.337	184	281	0.3	0.5	9.858	A
Swa S	534	133	130	1330	0.401	533	1253	0.5	0.7	4.512	A
Swa W	1527	382	54	1460	1.046	1426	610	5.1	30.3	55.645	F

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	185	46	1219	540	0.342	185	285	0.5	0.5	10.125	B
Swa S	534	133	131	1330	0.402	534	1273	0.7	0.7	4.522	A
Swa W	1527	382	54	1460	1.046	1450	611	30.3	49.5	108.018	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	151	38	1190	553	0.273	152	270	0.5	0.4	8.988	A
Swa S	436	109	108	1352	0.323	437	1234	0.7	0.5	3.938	A
Swa W	1247	312	44	1467	0.850	1415	500	49.5	7.4	71.863	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	126	32	894	676	0.187	127	206	0.4	0.2	6.563	A
Swa S	365	91	90	1368	0.267	366	931	0.5	0.4	3.594	A
Swa W	1044	261	37	1472	0.709	1064	419	7.4	2.5	9.220	A

# 2019 + Committed Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	10.10	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2019 + Committed Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	315	100.000
Swa S		ONE HOUR	✓	1052	100.000
Swa W		ONE HOUR	✓	662	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	58	257
	Swa S	76	1	975
	Swa W	164	498	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	21	32
	Swa S	11	0	4
	Swa W	45	9	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.35	5.61	0.5	A	289	434
Swa S	0.83	14.91	4.6	B	965	1448
Swa W	0.54	5.69	1.1	A	607	911

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	237	59	374	1080	0.220	236	180	0.0	0.3	4.261	A
Swa S	792	198	193	1469	0.539	787	417	0.0	1.2	5.249	A
Swa W	498	125	58	1378	0.362	496	922	0.0	0.6	4.074	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	283	71	448	1041	0.272	283	215	0.3	0.4	4.744	A
Swa S	946	236	231	1438	0.657	943	500	1.2	1.9	7.223	A
Swa W	595	149	69	1371	0.434	594	1105	0.6	0.8	4.629	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	347	87	548	989	0.351	346	263	0.4	0.5	5.594	A
Swa S	1158	290	282	1397	0.829	1148	612	1.9	4.4	13.885	B
Swa W	729	182	84	1362	0.535	727	1346	0.8	1.1	5.656	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	347	87	549	988	0.351	347	264	0.5	0.5	5.610	A
Swa S	1158	290	283	1397	0.829	1158	613	4.4	4.6	14.908	B
Swa W	729	182	85	1362	0.535	729	1356	1.1	1.1	5.686	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	283	71	450	1040	0.272	284	217	0.5	0.4	4.761	A
Swa S	946	236	232	1438	0.658	956	502	4.6	2.0	7.639	A
Swa W	595	149	70	1371	0.434	597	1118	1.1	0.8	4.660	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	237	59	376	1079	0.220	238	181	0.4	0.3	4.283	A
Swa S	792	198	194	1468	0.540	795	420	2.0	1.2	5.376	A
Swa W	498	125	58	1377	0.362	499	931	0.8	0.6	4.104	A

# 2019 + Committed + Peak Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	76.02	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2019 + Committed + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	172	100.000
Swa S		ONE HOUR	✓	485	100.000
Swa W		ONE HOUR	✓	1391	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	1	51	120
	Swa S	47	1	437
	Swa W	226	1163	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	20	76
	Swa S	23	0	16
	Swa W	39	6	50



## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.35	10.30	0.5	B	158	237
Swa S	0.40	4.55	0.7	A	445	668
Swa W	1.05	113.71	52.6	F	1276	1915

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	129	32	870	682	0.190	129	205	0.0	0.2	6.499	A
Swa S	365	91	92	1366	0.267	364	906	0.0	0.4	3.587	A
Swa W	1047	262	37	1469	0.713	1038	419	0.0	2.4	8.176	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	155	39	1039	612	0.253	154	244	0.2	0.3	7.864	A
Swa S	436	109	110	1349	0.323	436	1083	0.4	0.5	3.941	A
Swa W	1250	313	44	1464	0.854	1239	502	2.4	5.3	15.268	C

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	189	47	1195	547	0.346	189	284	0.3	0.5	10.034	B
Swa S	534	133	135	1326	0.403	533	1249	0.5	0.7	4.538	A
Swa W	1532	383	54	1457	1.051	1426	614	5.3	31.8	57.738	F

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	189	47	1214	539	0.352	189	288	0.5	0.5	10.299	B
Swa S	534	133	135	1325	0.403	534	1268	0.7	0.7	4.550	A
Swa W	1532	383	54	1457	1.051	1448	615	31.8	52.6	113.705	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	155	39	1197	546	0.283	155	275	0.5	0.4	9.224	A
Swa S	436	109	111	1348	0.324	437	1241	0.7	0.5	3.956	A
Swa W	1250	313	44	1464	0.854	1428	504	52.6	8.3	80.038	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	129	32	897	670	0.193	130	210	0.4	0.2	6.671	A
Swa S	365	91	93	1365	0.268	366	934	0.5	0.4	3.603	A
Swa W	1047	262	37	1469	0.713	1070	422	8.3	2.6	9.511	A

# 2019 + Committed + Peak Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	10.19	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2019 + Committed + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	318	100.000
Swa S		ONE HOUR	✓	1052	100.000
Swa W		ONE HOUR	✓	666	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	58	260
	Swa S	76	1	975
	Swa W	168	498	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	21	32
	Swa S	11	0	4
	Swa W	46	9	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.35	5.64	0.5	A	292	438
Swa S	0.83	15.07	4.7	C	965	1448
Swa W	0.54	5.77	1.2	A	611	917

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	239	60	374	1080	0.222	238	183	0.0	0.3	4.273	A
Swa S	792	198	195	1467	0.540	787	417	0.0	1.2	5.263	A
Swa W	501	125	58	1373	0.365	499	925	0.0	0.6	4.109	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	286	71	448	1041	0.275	286	219	0.3	0.4	4.762	A
Swa S	946	236	233	1436	0.658	943	500	1.2	1.9	7.252	A
Swa W	599	150	69	1366	0.438	598	1107	0.6	0.8	4.680	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	350	88	548	989	0.354	349	268	0.4	0.5	5.624	A
Swa S	1158	290	286	1395	0.830	1148	612	1.9	4.5	14.012	B
Swa W	733	183	84	1357	0.540	732	1350	0.8	1.2	5.739	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	350	88	549	988	0.354	350	269	0.5	0.5	5.640	A
Swa S	1158	290	286	1394	0.831	1158	613	4.5	4.7	15.067	C
Swa W	733	183	85	1357	0.540	733	1359	1.2	1.2	5.770	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	286	71	450	1040	0.275	287	221	0.5	0.4	4.780	A
Swa S	946	236	234	1436	0.659	957	502	4.7	2.0	7.679	A
Swa W	599	150	70	1366	0.438	600	1121	1.2	0.8	4.711	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	239	60	376	1079	0.222	240	184	0.4	0.3	4.295	A
Swa S	792	198	196	1466	0.540	795	420	2.0	1.2	5.391	A
Swa W	501	125	58	1373	0.365	502	933	0.8	0.6	4.141	A

# 2019 + Committed + Average Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	75.38	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2019 + Committed + Average Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	171	100.000
Swa S		ONE HOUR	✓	485	100.000
Swa W		ONE HOUR	✓	1390	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	1	51	119
	Swa S	47	1	437
	Swa W	225	1163	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	20	76
	Swa S	23	0	16
	Swa W	39	6	50

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.35	10.27	0.5	B	157	235
Swa S	0.40	4.54	0.7	A	445	668
Swa W	1.05	112.69	52.0	F	1275	1913

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	129	32	870	682	0.189	128	204	0.0	0.2	6.485	A
Swa S	365	91	91	1367	0.267	364	906	0.0	0.4	3.585	A
Swa W	1046	262	37	1469	0.712	1037	418	0.0	2.4	8.158	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	154	38	1039	612	0.251	153	244	0.2	0.3	7.843	A
Swa S	436	109	109	1349	0.323	436	1083	0.4	0.5	3.937	A
Swa W	1250	312	44	1464	0.853	1238	501	2.4	5.2	15.202	C

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	188	47	1196	547	0.344	188	283	0.3	0.5	10.002	B
Swa S	534	133	134	1327	0.403	533	1250	0.5	0.7	4.532	A
Swa W	1530	383	54	1457	1.050	1425	613	5.2	31.5	57.366	F

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	188	47	1215	539	0.349	188	287	0.5	0.5	10.268	B
Swa S	534	133	134	1326	0.403	534	1269	0.7	0.7	4.544	A
Swa W	1530	383	54	1457	1.050	1448	614	31.5	52.0	112.688	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	154	38	1196	547	0.281	154	274	0.5	0.4	9.185	A
Swa S	436	109	110	1349	0.323	437	1240	0.7	0.5	3.952	A
Swa W	1250	312	44	1464	0.854	1425	503	52.0	8.1	78.554	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	129	32	896	671	0.192	129	209	0.4	0.2	6.656	A
Swa S	365	91	92	1366	0.267	366	933	0.5	0.4	3.603	A
Swa W	1046	262	37	1469	0.712	1069	421	8.1	2.6	9.456	A



# 2019 + Committed + Average Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	10.19	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2019 + Committed + Average Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	318	100.000
Swa S		ONE HOUR	✓	1052	100.000
Swa W		ONE HOUR	✓	665	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	58	260
	Swa S	76	1	975
	Swa W	167	498	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	21	32
	Swa S	11	0	4
	Swa W	46	9	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.35	5.64	0.5	A	292	438
Swa S	0.83	15.07	4.7	C	965	1448
Swa W	0.54	5.76	1.2	A	610	915

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	239	60	374	1080	0.222	238	182	0.0	0.3	4.273	A
Swa S	792	198	195	1467	0.540	787	417	0.0	1.2	5.263	A
Swa W	501	125	58	1373	0.365	498	925	0.0	0.6	4.103	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	286	71	448	1041	0.275	286	218	0.3	0.4	4.762	A
Swa S	946	236	233	1436	0.658	943	500	1.2	1.9	7.252	A
Swa W	598	149	69	1367	0.437	597	1107	0.6	0.8	4.672	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	350	88	548	989	0.354	349	266	0.4	0.5	5.624	A
Swa S	1158	290	286	1395	0.830	1148	612	1.9	4.5	14.012	B
Swa W	732	183	84	1358	0.539	731	1350	0.8	1.2	5.725	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	350	88	549	988	0.354	350	267	0.5	0.5	5.640	A
Swa S	1158	290	286	1394	0.831	1158	613	4.5	4.7	15.067	C
Swa W	732	183	85	1358	0.539	732	1359	1.2	1.2	5.756	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	286	71	450	1040	0.275	287	220	0.5	0.4	4.780	A
Swa S	946	236	234	1436	0.659	957	502	4.7	2.0	7.676	A
Swa W	598	149	70	1366	0.438	599	1121	1.2	0.8	4.705	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	239	60	376	1079	0.222	240	183	0.4	0.3	4.293	A
Swa S	792	198	196	1466	0.540	795	420	2.0	1.2	5.391	A
Swa W	501	125	58	1373	0.365	501	933	0.8	0.6	4.133	A

# 2019 + Committed + Cumulative, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	78.34	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2019 + Committed + Cumulative	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	167	100.000
Swa S		ONE HOUR	✓	493	100.000
Swa W		ONE HOUR	✓	1400	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	51	116
	Swa S	47	1	445
	Swa W	222	1176	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	20	75
	Swa S	23	0	18
	Swa W	38	6	50

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.34	10.19	0.5	B	153	230
Swa S	0.41	4.69	0.7	A	452	679
Swa W	1.05	117.55	54.9	F	1285	1927

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	126	31	879	681	0.185	125	201	0.0	0.2	6.464	A
Swa S	371	93	88	1349	0.275	370	916	0.0	0.4	3.672	A
Swa W	1054	263	36	1473	0.716	1044	422	0.0	2.4	8.219	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	150	38	1050	610	0.246	150	240	0.2	0.3	7.820	A
Swa S	443	111	106	1333	0.333	443	1094	0.4	0.5	4.044	A
Swa W	1259	315	43	1468	0.857	1247	505	2.4	5.4	15.477	C

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	184	46	1205	545	0.337	183	279	0.3	0.5	9.931	A
Swa S	543	136	129	1311	0.414	542	1259	0.5	0.7	4.677	A
Swa W	1541	385	53	1461	1.055	1431	618	5.4	32.9	59.095	F

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	184	46	1224	537	0.342	184	282	0.5	0.5	10.185	B
Swa S	543	136	130	1310	0.414	543	1278	0.7	0.7	4.689	A
Swa W	1541	385	53	1461	1.055	1453	620	32.9	54.9	117.546	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	150	38	1214	541	0.277	151	271	0.5	0.4	9.224	A
Swa S	443	111	107	1332	0.333	444	1258	0.7	0.5	4.060	A
Swa W	1259	315	43	1468	0.857	1441	507	54.9	9.2	85.764	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	126	31	910	668	0.188	126	207	0.4	0.2	6.651	A
Swa S	371	93	89	1348	0.275	372	947	0.5	0.4	3.691	A
Swa W	1054	263	36	1473	0.716	1080	425	9.2	2.6	9.751	A

# 2019 + Committed + Cumulative, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	10.56	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2019 + Committed + Cumulative	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	315	100.000
Swa S		ONE HOUR	✓	1064	100.000
Swa W		ONE HOUR	✓	670	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	58	257
	Swa S	76	1	987
	Swa W	164	506	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	21	32
	Swa S	11	0	4
	Swa W	45	10	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.35	5.67	0.5	A	289	434
Swa S	0.84	15.74	4.9	C	976	1465
Swa W	0.54	5.84	1.2	A	615	922

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	237	59	380	1075	0.221	236	180	0.0	0.3	4.286	A
Swa S	801	200	193	1469	0.545	796	423	0.0	1.2	5.317	A
Swa W	504	126	58	1370	0.368	502	931	0.0	0.6	4.136	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	283	71	455	1035	0.274	283	215	0.3	0.4	4.781	A
Swa S	957	239	231	1438	0.665	953	507	1.2	1.9	7.375	A
Swa W	602	151	69	1364	0.442	601	1115	0.6	0.8	4.719	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	347	87	557	982	0.353	346	263	0.4	0.5	5.657	A
Swa S	1171	293	282	1398	0.838	1160	621	1.9	4.7	14.534	B
Swa W	738	184	84	1355	0.544	736	1359	0.8	1.2	5.803	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	347	87	558	981	0.353	347	264	0.5	0.5	5.674	A
Swa S	1171	293	283	1397	0.839	1171	622	4.7	4.9	15.738	C
Swa W	738	184	85	1354	0.545	738	1369	1.2	1.2	5.836	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	283	71	457	1034	0.274	284	217	0.5	0.4	4.801	A
Swa S	957	239	232	1438	0.665	968	509	4.9	2.0	7.846	A
Swa W	602	151	70	1363	0.442	604	1130	1.2	0.8	4.753	A



17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	237	59	382	1074	0.221	238	181	0.4	0.3	4.308	A
Swa S	801	200	194	1468	0.546	804	426	2.0	1.2	5.454	A
Swa W	504	126	58	1370	0.368	505	940	0.8	0.6	4.167	A

# 2019 + Committed + Cumulative + Peak Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	82.39	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2019 + Committed + Cumulative + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	172	100.000
Swa S		ONE HOUR	✓	493	100.000
Swa W		ONE HOUR	✓	1404	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	1	51	120
	Swa S	47	1	445
	Swa W	226	1176	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	20	76
	Swa S	23	0	18
	Swa W	39	6	50

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.35	10.35	0.5	B	158	237
Swa S	0.42	4.72	0.7	A	452	679
Swa W	1.06	123.98	58.4	F	1288	1932

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	129	32	879	678	0.191	129	205	0.0	0.2	6.546	A
Swa S	371	93	92	1345	0.276	370	916	0.0	0.4	3.686	A
Swa W	1057	264	37	1470	0.719	1047	425	0.0	2.5	8.338	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	155	39	1050	607	0.255	154	244	0.2	0.3	7.943	A
Swa S	443	111	110	1328	0.334	443	1094	0.4	0.5	4.064	A
Swa W	1262	316	44	1465	0.862	1250	509	2.5	5.6	15.909	C

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	189	47	1201	544	0.348	189	283	0.3	0.5	10.100	B
Swa S	543	136	135	1306	0.416	542	1255	0.5	0.7	4.710	A
Swa W	1546	386	54	1458	1.060	1430	623	5.6	34.6	61.458	F

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	189	47	1218	537	0.353	189	286	0.5	0.5	10.351	B
Swa S	543	136	135	1305	0.416	543	1272	0.7	0.7	4.722	A
Swa W	1546	386	54	1458	1.060	1451	624	34.6	58.4	123.982	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	155	39	1209	541	0.286	155	275	0.5	0.4	9.347	A
Swa S	443	111	111	1327	0.334	444	1253	0.7	0.5	4.080	A
Swa W	1262	316	44	1464	0.862	1440	511	58.4	14.0	95.370	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	129	32	926	658	0.197	130	214	0.4	0.2	6.824	A
Swa S	371	93	93	1344	0.276	372	963	0.5	0.4	3.705	A
Swa W	1057	264	37	1469	0.719	1102	428	14.0	2.7	10.962	B

# 2019 + Committed + Cumulative + Peak Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	10.66	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2019 + Committed + Cumulative + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	318	100.000
Swa S		ONE HOUR	✓	1064	100.000
Swa W		ONE HOUR	✓	674	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	58	260
	Swa S	76	1	987
	Swa W	168	506	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	21	32
	Swa S	11	0	4
	Swa W	46	10	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.36	5.70	0.6	A	292	438
Swa S	0.84	15.91	5.0	C	976	1465
Swa W	0.55	5.92	1.2	A	618	928

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	239	60	380	1075	0.223	238	183	0.0	0.3	4.298	A
Swa S	801	200	195	1467	0.546	796	423	0.0	1.2	5.331	A
Swa W	507	127	58	1366	0.372	505	933	0.0	0.6	4.173	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	286	71	455	1035	0.276	285	219	0.3	0.4	4.799	A
Swa S	957	239	233	1436	0.666	953	507	1.2	1.9	7.408	A
Swa W	606	151	69	1359	0.446	605	1118	0.6	0.8	4.770	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	350	88	557	982	0.357	349	267	0.4	0.5	5.688	A
Swa S	1171	293	286	1395	0.840	1160	621	1.9	4.8	14.672	B
Swa W	742	186	84	1350	0.550	740	1362	0.8	1.2	5.889	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	350	88	558	981	0.357	350	269	0.5	0.6	5.705	A
Swa S	1171	293	286	1395	0.840	1171	622	4.8	5.0	15.914	C
Swa W	742	186	85	1350	0.550	742	1372	1.2	1.2	5.923	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	286	71	457	1034	0.276	287	221	0.6	0.4	4.818	A
Swa S	957	239	234	1436	0.666	968	509	5.0	2.0	7.887	A
Swa W	606	151	70	1358	0.446	608	1132	1.2	0.8	4.806	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	239	60	382	1074	0.223	240	184	0.4	0.3	4.321	A
Swa S	801	200	196	1466	0.546	804	426	2.0	1.2	5.467	A
Swa W	507	127	58	1365	0.372	508	942	0.8	0.6	4.204	A

# 2019 + Committed + Cumulative + Average Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	81.42	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2019 + Committed + Cumulative + Average Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	170	100.000
Swa S		ONE HOUR	✓	493	100.000
Swa W		ONE HOUR	✓	1403	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	51	119
	Swa S	47	1	445
	Swa W	225	1176	2

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	20	76
	Swa S	23	0	18
	Swa W	39	6	50



## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.35	10.33	0.5	B	156	234
Swa S	0.42	4.71	0.7	A	452	679
Swa W	1.06	122.41	57.5	F	1287	1931

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	128	32	879	677	0.189	127	203	0.0	0.2	6.540	A
Swa S	371	93	90	1346	0.276	370	916	0.0	0.4	3.682	A
Swa W	1056	264	36	1470	0.718	1046	424	0.0	2.5	8.312	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	153	38	1050	606	0.252	152	243	0.2	0.3	7.929	A
Swa S	443	111	108	1330	0.333	443	1094	0.4	0.5	4.058	A
Swa W	1261	315	43	1465	0.861	1249	508	2.5	5.5	15.808	C

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	187	47	1202	543	0.345	186	281	0.3	0.5	10.075	B
Swa S	543	136	133	1307	0.415	542	1256	0.5	0.7	4.700	A
Swa W	1545	386	53	1459	1.059	1430	622	5.5	34.2	60.883	F

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	187	47	1220	536	0.349	187	284	0.5	0.5	10.327	B
Swa S	543	136	133	1307	0.415	543	1274	0.7	0.7	4.712	A
Swa W	1545	386	53	1459	1.059	1451	623	34.2	57.5	122.405	F

#### 08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	153	38	1210	540	0.283	153	273	0.5	0.4	9.335	A
Swa S	443	111	109	1329	0.334	444	1254	0.7	0.5	4.072	A
Swa W	1261	315	43	1465	0.861	1440	510	57.5	12.8	93.025	F

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	128	32	922	659	0.194	129	211	0.4	0.2	6.797	A
Swa S	371	93	92	1345	0.276	372	959	0.5	0.4	3.698	A
Swa W	1056	264	36	1470	0.719	1097	427	12.8	2.6	10.645	B

# 2019 + Committed + Cumulative + Average Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Barge, Swa S, Swa W	10.66	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2019 + Committed + Cumulative + Average Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Barge		ONE HOUR	✓	318	100.000
Swa S		ONE HOUR	✓	1064	100.000
Swa W		ONE HOUR	✓	673	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		Barge	Swa S	Swa W
From	Barge	0	58	260
	Swa S	76	1	987
	Swa W	167	506	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		Barge	Swa S	Swa W
From	Barge	0	21	32
	Swa S	11	0	4
	Swa W	46	10	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Barge	0.36	5.70	0.6	A	292	438
Swa S	0.84	15.91	5.0	C	976	1465
Swa W	0.55	5.91	1.2	A	618	926

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	239	60	380	1075	0.223	238	182	0.0	0.3	4.298	A
Swa S	801	200	195	1467	0.546	796	423	0.0	1.2	5.331	A
Swa W	507	127	58	1366	0.371	504	933	0.0	0.6	4.167	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	286	71	455	1035	0.276	285	218	0.3	0.4	4.799	A
Swa S	957	239	233	1436	0.666	953	507	1.2	1.9	7.408	A
Swa W	605	151	69	1359	0.445	604	1118	0.6	0.8	4.762	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	350	88	557	982	0.357	349	266	0.4	0.5	5.688	A
Swa S	1171	293	286	1395	0.840	1160	621	1.9	4.8	14.672	B
Swa W	741	185	84	1351	0.549	739	1362	0.8	1.2	5.874	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	350	88	558	981	0.357	350	267	0.5	0.6	5.705	A
Swa S	1171	293	286	1395	0.840	1171	622	4.8	5.0	15.914	C
Swa W	741	185	85	1350	0.549	741	1372	1.2	1.2	5.908	A

#### 17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	286	71	457	1034	0.276	287	220	0.6	0.4	4.818	A
Swa S	957	239	234	1436	0.666	968	509	5.0	2.0	7.887	A
Swa W	605	151	70	1359	0.445	607	1132	1.2	0.8	4.795	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Barge	239	60	382	1074	0.223	240	183	0.4	0.3	4.319	A
Swa S	801	200	196	1466	0.546	804	426	2.0	1.2	5.467	A
Swa W	507	127	58	1366	0.371	508	942	0.8	0.6	4.198	A

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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**Filename:** Barge Way - Site Access (N).j9

**Path:** P:\JNY9247 - Kemsley K4\Transport\Arcady\Barge Way - Site Access (N)

**Report generation date:** 29/03/2018 12:24:49

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**«2019 + Committed + Cumulative + Average Development, PM**

- »Junction Network
- »Arms
- »Traffic Demand
- »Origin-Destination Data
- »Vehicle Mix
- »Results

## Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
<b>2017</b>						
1 - Access (S)	0.0	4.82	0.04	0.1	3.58	0.05
2 - Barge Way	0.2	3.74	0.13	0.1	3.40	0.10
3 - Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - Private Road	0.1	4.81	0.09	0.1	3.10	0.09
<b>2019</b>						
1 - Access (S)	0.0	4.83	0.05	0.1	3.57	0.05
2 - Barge Way	0.2	3.77	0.14	0.1	3.40	0.10
3 - Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - Private Road	0.1	4.83	0.10	0.1	3.10	0.09
<b>2019 + Committed Development</b>						
1 - Access (S)	0.1	5.01	0.06	0.1	3.77	0.08
2 - Barge Way	0.2	4.06	0.18	0.2	3.75	0.14
3 - Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - Private Road	0.1	4.75	0.12	0.1	3.30	0.12
<b>2019 + Committed + Peak Development</b>						
1 - Access (S)	0.1	5.05	0.07	0.1	3.84	0.08
2 - Barge Way	0.2	4.12	0.18	0.2	3.82	0.15
3 - Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - Private Road	0.1	4.77	0.13	0.1	3.31	0.12
<b>2019 + Committed + Average Development</b>						
1 - Access (S)	0.1	5.05	0.06	0.1	3.86	0.08
2 - Barge Way	0.2	4.10	0.18	0.2	3.80	0.15
3 - Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - Private Road	0.1	4.77	0.12	0.1	3.31	0.12
<b>2019 + Committed + Cumulative</b>						
1 - Access (S)	0.1	5.01	0.06	0.1	3.77	0.08
2 - Barge Way	0.2	4.06	0.18	0.2	3.75	0.14
3 - Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - Private Road	0.1	4.75	0.12	0.1	3.30	0.12
<b>2019 + Committed + Cumulative + Peak Development</b>						
1 - Access (S)	0.1	5.05	0.07	0.1	3.84	0.08
2 - Barge Way	0.2	4.12	0.18	0.2	3.82	0.15
3 - Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - Private Road	0.1	4.77	0.13	0.1	3.31	0.12
<b>2019 + Committed + Cumulative + Average Development</b>						
1 - Access (S)	0.1	5.05	0.06	0.1	3.86	0.08
2 - Barge Way	0.2	4.10	0.18	0.2	3.80	0.15
3 - Access Road (N)	0.0	0.00	0.00	0.0	0.00	0.00
4 - Private Road	0.1	4.77	0.12	0.1	3.31	0.12

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

### File Description

Title	(untitled)
Location	
Site number	
Date	08/11/2017
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EUR\jack.clarke-williams
Description	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Analysis Set Details

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

### 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
D16	2019 + Committed + Cumulative + Average Development	PM	ONE HOUR	16:15	17:45	15	✓



# 2019 + Committed + Cumulative + Average Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4	3.64	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
1	Access (S)	
2	Barge Way	
3	Access Road (N)	
4	Private Road	

### 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 - Access (S)	3.75	6.00	16.5	13.5	48.0	26.0	
2 - Barge Way	3.75	7.00	8.5	18.5	47.5	33.0	
3 - Access Road (N)	3.75	6.50	12.5	11.5	43.0	47.0	
4 - Private Road	3.60	6.50	8.0	13.5	45.0	18.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Access (S)	0.594	1595
2 - Barge Way	0.587	1556
3 - Access Road (N)	0.560	1471
4 - Private Road	0.599	1525

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

## Traffic Demand

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 (Veh/hr)	Scaling Factor (%)
1 - Access (S)		ONE HOUR	✓	73	100.000
2 - Barge Way		ONE HOUR	✓	146	100.000
3 - Access Road (N)		ONE HOUR	✓	0	100.000
4 - Private Road		ONE HOUR	✓	139	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To			
	1 - Access (S)	2 - Barge Way	3 - Access Road (N)	4 - Private Road
From				
1 - Access (S)	0	69	0	4
2 - Barge Way	22	2	0	122
3 - Access Road (N)	0	0	0	0
4 - Private Road	2	137	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	1 - Access (S)	2 - Barge Way	3 - Access Road (N)	4 - Private Road
From				
1 - Access (S)	0	48	0	25
2 - Barge Way	96	50	0	30
3 - Access Road (N)	0	0	0	0
4 - Private Road	50	20	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Access (S)	0.08	3.86	0.1	A	67	100
2 - Barge Way	0.15	3.80	0.2	A	134	201
3 - Access Road (N)	0.00	0.00	0.0	A	0	0
4 - Private Road	0.12	3.31	0.1	A	128	191

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - Access (S)	55	14	104	1036	0.053	55	18	0.0	0.1	3.667	A
2 - Barge Way	110	27	3	1108	0.099	109	156	0.0	0.1	3.601	A
3 - Access Road (N)	0	0	112	1383	0.000	0	0	0.0	0.0	0.000	A
4 - Private Road	105	26	18	1249	0.084	104	94	0.0	0.1	3.145	A

**16:30 - 16:45**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - Access (S)	66	16	125	1026	0.064	66	22	0.1	0.1	3.746	A
2 - Barge Way	131	33	4	1108	0.118	131	187	0.1	0.1	3.684	A
3 - Access Road (N)	0	0	135	1365	0.000	0	0	0.0	0.0	0.000	A
4 - Private Road	125	31	22	1245	0.100	125	113	0.1	0.1	3.212	A

**16:45 - 17:00**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - Access (S)	80	20	153	1013	0.079	80	26	0.1	0.1	3.861	A
2 - Barge Way	161	40	4	1108	0.145	161	229	0.1	0.2	3.800	A
3 - Access Road (N)	0	0	165	1341	0.000	0	0	0.0	0.0	0.000	A
4 - Private Road	153	38	26	1241	0.123	153	139	0.1	0.1	3.308	A

**17:00 - 17:15**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - Access (S)	80	20	153	1013	0.079	80	26	0.1	0.1	3.861	A
2 - Barge Way	161	40	4	1108	0.145	161	229	0.2	0.2	3.800	A
3 - Access Road (N)	0	0	165	1341	0.000	0	0	0.0	0.0	0.000	A
4 - Private Road	153	38	26	1241	0.123	153	139	0.1	0.1	3.308	A

**17:15 - 17:30**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - Access (S)	66	16	125	1026	0.064	66	22	0.1	0.1	3.750	A
2 - Barge Way	131	33	4	1108	0.118	131	187	0.2	0.1	3.685	A
3 - Access Road (N)	0	0	135	1365	0.000	0	0	0.0	0.0	0.000	A
4 - Private Road	125	31	22	1245	0.100	125	113	0.1	0.1	3.212	A

**17:30 - 17:45**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - Access (S)	55	14	105	1036	0.053	55	18	0.1	0.1	3.671	A
2 - Barge Way	110	27	3	1108	0.099	110	157	0.1	0.1	3.608	A
3 - Access Road (N)	0	0	113	1382	0.000	0	0	0.0	0.0	0.000	A
4 - Private Road	105	26	18	1249	0.084	105	95	0.1	0.1	3.148	A

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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**Filename:** Fleet End - Barge Way.j9

**Path:** P:\JNY9247 - Kemsley K4\Transport\Arcady\Fleet End - Barge Way

**Report generation date:** 29/03/2018 13:11:21

- 
- »2017, AM
  - »2017, PM
  - »2019, AM
  - »2019, PM
  - »2019 + Committed Development, AM
  - »2019 + Committed Development, PM
  - »2019 + Committed + Peak Development, AM
  - »2019 + Committed + Peak Development, PM
  - »2019 + Committed + Average Development, AM
  - »2019 + Committed + Average Development , PM
  - »2019 + Committed + Cumulative, AM
  - »2019 + Committed + Cumulative, PM
  - »2019 + Committed + Cumulative + Peak Development, AM
  - »2019 + Committed + Cumulative + Peak Development, PM
  - »2019 + Committed + Cumulative + Average Development, AM
  - »2019 + Committed + Cumulative + Average Development, PM

### Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
<b>2017</b>						
Arm Bar E	0.1	4.29	0.07	0.1	3.32	0.13
Arm Bar S	0.2	3.51	0.17	0.2	3.03	0.14
Arm Fleet	0.0	4.10	0.04	0.1	4.18	0.08
Arm Site	0.0	0.00	0.00	0.0	0.00	0.00
<b>2019</b>						
Arm Bar E	0.1	4.30	0.08	0.1	3.34	0.13
Arm Bar S	0.2	3.53	0.17	0.2	3.04	0.14
Arm Fleet	0.0	4.06	0.04	0.1	4.22	0.09
Arm Site	0.0	0.00	0.00	0.0	0.00	0.00
<b>2019 + Committed Development</b>						
Arm Bar E	0.1	4.28	0.11	0.2	3.63	0.18
Arm Bar S	0.3	3.75	0.21	0.2	3.31	0.18
Arm Fleet	0.0	4.17	0.04	0.1	4.33	0.09
Arm Site	0.0	0.00	0.00	0.0	0.00	0.00
<b>2019 + Committed + Peak Development</b>						
Arm Bar E	0.1	4.33	0.12	0.2	3.68	0.19
Arm Bar S	0.3	3.82	0.21	0.2	3.35	0.18
Arm Fleet	0.0	4.19	0.04	0.1	4.35	0.09
Arm Site	0.0	0.00	0.00	0.0	0.00	0.00
<b>2019 + Committed + Average Development</b>						
Arm Bar E	0.1	4.32	0.12	0.2	3.64	0.18
Arm Bar S	0.3	3.79	0.21	0.2	3.35	0.18
Arm Fleet	0.0	4.18	0.04	0.1	4.35	0.09
Arm Site	0.0	0.00	0.00	0.0	0.00	0.00
<b>2019 + Committed + Cumulative</b>						
Arm Bar E	0.1	4.28	0.11	0.2	3.63	0.18
Arm Bar S	0.3	3.75	0.21	0.2	3.32	0.18
Arm Fleet	0.0	4.17	0.04	0.1	4.33	0.09
Arm Site	0.0	0.00	0.00	0.0	0.00	0.00
<b>2019 + Committed + Cumulative + Peak Development</b>						
Arm Bar E	0.1	4.33	0.12	0.2	3.68	0.19
Arm Bar S	0.3	3.82	0.21	0.2	3.35	0.18
Arm Fleet	0.0	4.19	0.04	0.1	4.35	0.09
Arm Site	0.0	0.00	0.00	0.0	0.00	0.00
<b>2019 + Committed + Cumulative + Average Development</b>						
Arm Bar E	0.1	4.32	0.12	0.2	3.64	0.18
Arm Bar S	0.3	3.79	0.21	0.2	3.35	0.18
Arm Fleet	0.0	4.18	0.04	0.1	4.35	0.09
Arm Site	0.0	0.00	0.00	0.0	0.00	0.00

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

## File summary

### File Description

<b>Title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>Date</b>	08/11/2017
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	EUR\jack.clarke-williams
<b>Description</b>	

### Units

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

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2017	AM	ONE HOUR	07:15	08:45	15	✓
D2	2017	PM	ONE HOUR	16:15	17:45	15	✓
D3	2019	AM	ONE HOUR	07:15	08:45	15	✓
D4	2019	PM	ONE HOUR	16:15	17:45	15	✓
D5	2019 + Committed Development	AM	ONE HOUR	07:15	08:45	15	✓
D6	2019 + Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D7	2019 + Committed + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓
D8	2019 + Committed + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓
D9	2019 + Committed + Average Development	AM	ONE HOUR	07:15	08:45	15	✓
D10	2019 + Committed + Average Development	PM	ONE HOUR	16:15	17:45	15	✓
D11	2019 + Committed + Cumulative	AM	ONE HOUR	07:15	08:45	15	✓
D12	2019 + Committed + Cumulative	PM	ONE HOUR	16:15	17:45	15	✓
D13	2019 + Committed + Cumulative + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓
D14	2019 + Committed + Cumulative + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓
D15	2019 + Committed + Cumulative + Average Development	AM	ONE HOUR	07:15	08:45	15	✓
D16	2019 + Committed + Cumulative + Average Development	PM	ONE HOUR	16:15	17:45	15	✓

### Analysis Set Details

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

# 2017, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.78	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
Bar E	untitled	
Bar S	untitled	
Fleet	untitled	
Site	untitled	

### 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
Bar E	3.50	7.00	21.0	18.0	44.0	45.0	
Bar S	4.00	6.50	23.0	24.0	45.0	40.0	
Fleet	3.50	7.00	16.5	11.5	44.0	50.0	
Site	3.50	6.50	11.0	13.5	44.0	40.0	

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
Bar E	0.604	1651
Bar S	0.625	1727
Fleet	0.563	1514
Site	0.566	1456

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	2017	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

## Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	61	100.000
Bar S		ONE HOUR	✓	187	100.000
Fleet		ONE HOUR	✓	32	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To				
	Bar E	Bar S	Fleet	Site	
From	Bar E	0	59	2	0
	Bar S	135	0	52	0
	Fleet	1	31	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
	Bar E	Bar S	Fleet	Site	
From	Bar E	0	78	100	0
	Bar S	36	0	50	0
	Fleet	0	55	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.07	4.29	0.1	A	56	84
Bar S	0.17	3.51	0.2	A	172	257
Fleet	0.04	4.10	0.0	A	29	44
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	46	11	23	912	0.050	46	102	0.0	0.1	4.155	A
Bar S	141	35	1	1233	0.114	140	67	0.0	0.1	3.292	A
Fleet	24	6	101	937	0.026	24	41	0.0	0.0	3.943	A
Site	0	0	125	1357	0.000	0	0	0.0	0.0	0.000	A



**07:30 - 07:45**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	55	14	28	909	0.060	55	122	0.1	0.1	4.212	A
Bar S	168	42	2	1233	0.136	168	81	0.1	0.2	3.380	A
Fleet	29	7	121	927	0.031	29	49	0.0	0.0	4.008	A
Site	0	0	150	1338	0.000	0	0	0.0	0.0	0.000	A

**07:45 - 08:00**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	67	17	34	906	0.074	67	150	0.1	0.1	4.290	A
Bar S	206	51	2	1232	0.167	206	99	0.2	0.2	3.505	A
Fleet	35	9	149	913	0.039	35	59	0.0	0.0	4.099	A
Site	0	0	184	1311	0.000	0	0	0.0	0.0	0.000	A

**08:00 - 08:15**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	67	17	34	906	0.074	67	150	0.1	0.1	4.290	A
Bar S	206	51	2	1232	0.167	206	99	0.2	0.2	3.505	A
Fleet	35	9	149	913	0.039	35	59	0.0	0.0	4.100	A
Site	0	0	184	1311	0.000	0	0	0.0	0.0	0.000	A

**08:15 - 08:30**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	55	14	28	909	0.060	55	122	0.1	0.1	4.214	A
Bar S	168	42	2	1233	0.136	168	81	0.2	0.2	3.384	A
Fleet	29	7	121	927	0.031	29	49	0.0	0.0	4.010	A
Site	0	0	150	1337	0.000	0	0	0.0	0.0	0.000	A

**08:30 - 08:45**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	46	11	23	912	0.050	46	102	0.1	0.1	4.159	A
Bar S	141	35	2	1233	0.114	141	68	0.2	0.1	3.295	A
Fleet	24	6	102	937	0.026	24	41	0.0	0.0	3.946	A
Site	0	0	126	1357	0.000	0	0	0.0	0.0	0.000	A

# 2017, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.38	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2017	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	141	100.000
Bar S		ONE HOUR	✓	173	100.000
Fleet		ONE HOUR	✓	71	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	1	137	3	0
	Bar S	101	2	70	0
	Fleet	3	68	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	27	67	0
	Bar S	33	0	14	0
	Fleet	33	53	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.13	3.32	0.1	A	129	194
Bar S	0.14	3.03	0.2	A	159	238
Fleet	0.08	4.18	0.1	A	65	98
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	106	27	52	1256	0.085	106	79	0.0	0.1	3.130	A
Bar S	130	33	3	1380	0.094	130	155	0.0	0.1	2.879	A
Fleet	53	13	78	957	0.056	53	55	0.0	0.1	3.984	A
Site	0	0	131	1352	0.000	0	0	0.0	0.0	0.000	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	127	32	63	1249	0.102	127	94	0.1	0.1	3.208	A
Bar S	156	39	4	1380	0.113	155	186	0.1	0.1	2.940	A
Fleet	64	16	93	949	0.067	64	66	0.1	0.1	4.066	A
Site	0	0	157	1331	0.000	0	0	0.0	0.0	0.000	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	155	39	77	1238	0.125	155	116	0.1	0.1	3.322	A
Bar S	190	48	4	1379	0.138	190	228	0.1	0.2	3.028	A
Fleet	78	20	114	939	0.083	78	80	0.1	0.1	4.182	A
Site	0	0	193	1303	0.000	0	0	0.0	0.0	0.000	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	155	39	77	1238	0.125	155	116	0.1	0.1	3.323	A
Bar S	190	48	4	1379	0.138	190	228	0.2	0.2	3.028	A
Fleet	78	20	115	939	0.083	78	80	0.1	0.1	4.182	A
Site	0	0	193	1303	0.000	0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	127	32	63	1248	0.102	127	94	0.1	0.1	3.211	A
Bar S	156	39	4	1380	0.113	156	186	0.2	0.1	2.940	A
Fleet	64	16	94	949	0.067	64	66	0.1	0.1	4.067	A
Site	0	0	157	1331	0.000	0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	106	27	53	1256	0.085	106	79	0.1	0.1	3.131	A
Bar S	130	33	3	1380	0.094	130	156	0.1	0.1	2.882	A
Fleet	53	13	78	956	0.056	54	55	0.1	0.1	3.988	A
Site	0	0	132	1351	0.000	0	0	0.0	0.0	0.000	A

# 2019, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.79	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2019	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	62	100.000
Bar S		ONE HOUR	✓	191	100.000
Fleet		ONE HOUR	✓	33	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	60	2	0
	Bar S	138	0	53	0
	Fleet	1	32	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	78	100	0
	Bar S	36	0	51	0
	Fleet	0	53	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.08	4.30	0.1	A	57	85
Bar S	0.17	3.53	0.2	A	175	263
Fleet	0.04	4.06	0.0	A	30	45
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	47	12	24	912	0.051	46	104	0.0	0.1	4.159	A
Bar S	144	36	1	1231	0.117	143	69	0.0	0.1	3.308	A
Fleet	25	6	104	947	0.026	25	41	0.0	0.0	3.901	A
Site	0	0	128	1355	0.000	0	0	0.0	0.0	0.000	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	56	14	29	909	0.061	56	125	0.1	0.1	4.217	A
Bar S	172	43	2	1230	0.140	172	83	0.1	0.2	3.399	A
Fleet	30	7	124	937	0.032	30	49	0.0	0.0	3.967	A
Site	0	0	154	1335	0.000	0	0	0.0	0.0	0.000	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	68	17	35	906	0.075	68	153	0.1	0.1	4.297	A
Bar S	210	53	2	1230	0.171	210	101	0.2	0.2	3.529	A
Fleet	36	9	152	923	0.039	36	61	0.0	0.0	4.059	A
Site	0	0	188	1308	0.000	0	0	0.0	0.0	0.000	A

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	68	17	35	906	0.075	68	153	0.1	0.1	4.297	A
Bar S	210	53	2	1230	0.171	210	101	0.2	0.2	3.529	A
Fleet	36	9	152	923	0.039	36	61	0.0	0.0	4.060	A
Site	0	0	188	1308	0.000	0	0	0.0	0.0	0.000	A

**08:15 - 08:30**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	56	14	29	909	0.061	56	125	0.1	0.1	4.218	A
Bar S	172	43	2	1230	0.140	172	83	0.2	0.2	3.400	A
Fleet	30	7	124	937	0.032	30	49	0.0	0.0	3.969	A
Site	0	0	154	1335	0.000	0	0	0.0	0.0	0.000	A

**08:30 - 08:45**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	47	12	24	912	0.051	47	105	0.1	0.1	4.162	A
Bar S	144	36	2	1231	0.117	144	69	0.2	0.1	3.314	A
Fleet	25	6	104	947	0.026	25	41	0.0	0.0	3.904	A
Site	0	0	129	1355	0.000	0	0	0.0	0.0	0.000	A

# 2019, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.40	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2019	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	143	100.000
Bar S		ONE HOUR	✓	177	100.000
Fleet		ONE HOUR	✓	72	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	140	3	0
	Bar S	103	2	72	0
	Fleet	3	69	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	27	67	0
	Bar S	33	0	14	0
	Fleet	33	54	0	0
	Site	0	0	0	0



## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.13	3.34	0.1	A	131	197
Bar S	0.14	3.04	0.2	A	162	244
Fleet	0.09	4.22	0.1	A	66	99
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	108	27	53	1253	0.086	107	80	0.0	0.1	3.141	A
Bar S	133	33	2	1381	0.097	133	158	0.0	0.1	2.885	A
Fleet	54	14	79	950	0.057	54	56	0.0	0.1	4.016	A
Site	0	0	133	1350	0.000	0	0	0.0	0.0	0.000	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	129	32	64	1246	0.103	128	95	0.1	0.1	3.221	A
Bar S	159	40	3	1380	0.115	159	190	0.1	0.1	2.947	A
Fleet	65	16	94	943	0.069	65	67	0.1	0.1	4.100	A
Site	0	0	159	1329	0.000	0	0	0.0	0.0	0.000	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	157	39	78	1235	0.127	157	117	0.1	0.1	3.338	A
Bar S	195	49	3	1380	0.141	195	232	0.1	0.2	3.037	A
Fleet	79	20	116	932	0.085	79	83	0.1	0.1	4.220	A
Site	0	0	195	1301	0.000	0	0	0.0	0.0	0.000	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	157	39	78	1235	0.127	157	117	0.1	0.1	3.338	A
Bar S	195	49	3	1380	0.141	195	232	0.2	0.2	3.037	A
Fleet	79	20	116	932	0.085	79	83	0.1	0.1	4.220	A
Site	0	0	195	1301	0.000	0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	129	32	64	1246	0.103	129	95	0.1	0.1	3.222	A
Bar S	159	40	3	1380	0.115	159	190	0.2	0.1	2.950	A
Fleet	65	16	94	942	0.069	65	67	0.1	0.1	4.103	A
Site	0	0	159	1329	0.000	0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	108	27	54	1253	0.086	108	80	0.1	0.1	3.144	A
Bar S	133	33	2	1381	0.097	133	159	0.1	0.1	2.887	A
Fleet	54	14	79	950	0.057	54	57	0.1	0.1	4.020	A
Site	0	0	133	1350	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.95	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2019 + Committed Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	98	100.000
Bar S		ONE HOUR	✓	227	100.000
Fleet		ONE HOUR	✓	33	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	96	2	0
	Bar S	174	0	53	0
	Fleet	1	32	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	70	100	0
	Bar S	40	0	51	0
	Fleet	0	53	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.11	4.28	0.1	A	90	135
Bar S	0.21	3.75	0.3	A	208	312
Fleet	0.04	4.17	0.0	A	30	45
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	74	18	24	955	0.077	73	131	0.0	0.1	4.083	A
Bar S	171	43	1	1210	0.141	170	96	0.0	0.2	3.461	A
Fleet	25	6	130	932	0.027	25	41	0.0	0.0	3.968	A
Site	0	0	155	1331	0.000	0	0	0.0	0.0	0.000	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	88	22	29	952	0.093	88	157	0.1	0.1	4.165	A
Bar S	204	51	2	1210	0.169	204	115	0.2	0.2	3.578	A
Fleet	30	7	156	918	0.032	30	49	0.0	0.0	4.050	A
Site	0	0	186	1307	0.000	0	0	0.0	0.0	0.000	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	108	27	35	949	0.114	108	193	0.1	0.1	4.280	A
Bar S	250	62	2	1209	0.207	250	141	0.2	0.3	3.751	A
Fleet	36	9	191	900	0.040	36	61	0.0	0.0	4.167	A
Site	0	0	228	1273	0.000	0	0	0.0	0.0	0.000	A

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	108	27	35	949	0.114	108	193	0.1	0.1	4.280	A
Bar S	250	62	2	1209	0.207	250	141	0.3	0.3	3.751	A
Fleet	36	9	192	900	0.040	36	61	0.0	0.0	4.167	A
Site	0	0	228	1273	0.000	0	0	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	88	22	29	952	0.093	88	157	0.1	0.1	4.166	A
Bar S	204	51	2	1210	0.169	204	115	0.3	0.2	3.583	A
Fleet	30	7	157	918	0.032	30	49	0.0	0.0	4.051	A
Site	0	0	186	1306	0.000	0	0	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	74	18	24	955	0.077	74	132	0.1	0.1	4.086	A
Bar S	171	43	2	1210	0.141	171	96	0.2	0.2	3.467	A
Fleet	25	6	131	932	0.027	25	41	0.0	0.0	3.972	A
Site	0	0	156	1331	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.62	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2019 + Committed Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	199	100.000
Bar S		ONE HOUR	✓	211	100.000
Fleet		ONE HOUR	✓	72	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	196	3	0
	Bar S	137	2	72	0
	Fleet	3	69	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	30	67	0
	Bar S	40	0	14	0
	Fleet	33	54	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.18	3.63	0.2	A	183	274
Bar S	0.18	3.31	0.2	A	194	290
Fleet	0.09	4.33	0.1	A	66	99
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	150	37	53	1227	0.122	149	105	0.0	0.1	3.337	A
Bar S	159	40	2	1319	0.120	158	200	0.0	0.1	3.099	A
Fleet	54	14	104	935	0.058	54	56	0.0	0.1	4.085	A
Site	0	0	158	1327	0.000	0	0	0.0	0.0	0.000	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	179	45	64	1220	0.147	179	126	0.1	0.2	3.457	A
Bar S	190	47	3	1319	0.144	190	240	0.1	0.2	3.188	A
Fleet	65	16	125	924	0.070	65	67	0.1	0.1	4.187	A
Site	0	0	190	1301	0.000	0	0	0.0	0.0	0.000	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	219	55	78	1210	0.181	219	154	0.2	0.2	3.633	A
Bar S	232	58	3	1318	0.176	232	294	0.2	0.2	3.314	A
Fleet	79	20	153	910	0.087	79	83	0.1	0.1	4.332	A
Site	0	0	232	1267	0.000	0	0	0.0	0.0	0.000	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	219	55	78	1210	0.181	219	154	0.2	0.2	3.633	A
Bar S	232	58	3	1318	0.176	232	294	0.2	0.2	3.314	A
Fleet	79	20	153	910	0.087	79	83	0.1	0.1	4.333	A
Site	0	0	232	1266	0.000	0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	179	45	64	1220	0.147	179	126	0.2	0.2	3.461	A
Bar S	190	47	3	1319	0.144	190	240	0.2	0.2	3.191	A
Fleet	65	16	125	924	0.070	65	67	0.1	0.1	4.189	A
Site	0	0	190	1301	0.000	0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	150	37	54	1227	0.122	150	105	0.2	0.1	3.341	A
Bar S	159	40	2	1319	0.120	159	201	0.2	0.1	3.103	A
Fleet	54	14	105	935	0.058	54	57	0.1	0.1	4.088	A
Site	0	0	159	1326	0.000	0	0	0.0	0.0	0.000	A



# 2019 + Committed + Peak Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	4.01	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2019 + Committed + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	102	100.000
Bar S		ONE HOUR	✓	231	100.000
Fleet		ONE HOUR	✓	33	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	100	2	0
	Bar S	178	0	53	0
	Fleet	1	32	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	71	100	0
	Bar S	42	0	51	0
	Fleet	0	53	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.12	4.33	0.1	A	94	140
Bar S	0.21	3.82	0.3	A	212	318
Fleet	0.04	4.19	0.0	A	30	45
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	77	19	24	950	0.081	76	134	0.0	0.1	4.120	A
Bar S	174	43	1	1197	0.145	173	99	0.0	0.2	3.513	A
Fleet	25	6	133	929	0.027	25	41	0.0	0.0	3.980	A
Site	0	0	158	1327	0.000	0	0	0.0	0.0	0.000	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	92	23	29	947	0.097	92	161	0.1	0.1	4.208	A
Bar S	208	52	2	1197	0.173	208	119	0.2	0.2	3.637	A
Fleet	30	7	160	915	0.032	30	49	0.0	0.0	4.064	A
Site	0	0	190	1302	0.000	0	0	0.0	0.0	0.000	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	112	28	35	944	0.119	112	197	0.1	0.1	4.330	A
Bar S	254	64	2	1197	0.213	254	145	0.2	0.3	3.818	A
Fleet	36	9	196	896	0.041	36	60	0.0	0.0	4.185	A
Site	0	0	232	1267	0.000	0	0	0.0	0.0	0.000	A

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	112	28	35	944	0.119	112	197	0.1	0.1	4.330	A
Bar S	254	64	2	1197	0.213	254	145	0.3	0.3	3.818	A
Fleet	36	9	196	896	0.041	36	61	0.0	0.0	4.186	A
Site	0	0	232	1267	0.000	0	0	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	92	23	29	947	0.097	92	161	0.1	0.1	4.209	A
Bar S	208	52	2	1197	0.173	208	119	0.3	0.2	3.639	A
Fleet	30	7	160	915	0.032	30	49	0.0	0.0	4.065	A
Site	0	0	190	1302	0.000	0	0	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	77	19	24	950	0.081	77	135	0.1	0.1	4.125	A
Bar S	174	43	2	1197	0.145	174	99	0.2	0.2	3.517	A
Fleet	25	6	134	929	0.027	25	41	0.0	0.0	3.983	A
Site	0	0	159	1327	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed + Peak Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.65	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2019 + Committed + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	203	100.000
Bar S		ONE HOUR	✓	215	100.000
Fleet		ONE HOUR	✓	72	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	1	199	3	0
	Bar S	141	2	72	0
	Fleet	3	69	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	31	67	0
	Bar S	41	0	14	0
	Fleet	33	54	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.19	3.68	0.2	A	186	279
Bar S	0.18	3.35	0.2	A	197	296
Fleet	0.09	4.35	0.1	A	66	99
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	153	38	53	1220	0.125	152	109	0.0	0.1	3.371	A
Bar S	162	40	3	1310	0.124	161	202	0.0	0.1	3.131	A
Fleet	54	14	108	933	0.058	54	56	0.0	0.1	4.095	A
Site	0	0	162	1323	0.000	0	0	0.0	0.0	0.000	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	182	46	64	1212	0.151	182	130	0.1	0.2	3.495	A
Bar S	193	48	4	1310	0.148	193	243	0.1	0.2	3.223	A
Fleet	65	16	129	922	0.070	65	67	0.1	0.1	4.199	A
Site	0	0	194	1297	0.000	0	0	0.0	0.0	0.000	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	224	56	78	1202	0.186	223	160	0.2	0.2	3.677	A
Bar S	237	59	4	1309	0.181	237	297	0.2	0.2	3.355	A
Fleet	79	20	158	907	0.087	79	83	0.1	0.1	4.349	A
Site	0	0	238	1262	0.000	0	0	0.0	0.0	0.000	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	224	56	78	1202	0.186	224	160	0.2	0.2	3.677	A
Bar S	237	59	4	1309	0.181	237	297	0.2	0.2	3.355	A
Fleet	79	20	159	907	0.087	79	83	0.1	0.1	4.350	A
Site	0	0	238	1261	0.000	0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	182	46	64	1212	0.151	183	130	0.2	0.2	3.499	A
Bar S	193	48	4	1310	0.148	193	243	0.2	0.2	3.224	A
Fleet	65	16	130	922	0.070	65	67	0.1	0.1	4.201	A
Site	0	0	194	1297	0.000	0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	153	38	54	1219	0.125	153	109	0.2	0.1	3.375	A
Bar S	162	40	3	1310	0.124	162	203	0.2	0.1	3.137	A
Fleet	54	14	108	933	0.058	54	57	0.1	0.1	4.098	A
Site	0	0	163	1323	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed + Average Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.99	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2019 + Committed + Average Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	101	100.000
Bar S		ONE HOUR	✓	230	100.000
Fleet		ONE HOUR	✓	33	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	99	2	0
	Bar S	177	0	53	0
	Fleet	1	32	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	71	100	0
	Bar S	41	0	51	0
	Fleet	0	53	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.12	4.32	0.1	A	93	139
Bar S	0.21	3.79	0.3	A	211	317
Fleet	0.04	4.18	0.0	A	30	45
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	76	19	24	950	0.080	76	133	0.0	0.1	4.116	A
Bar S	173	43	1	1204	0.144	172	98	0.0	0.2	3.489	A
Fleet	25	6	133	930	0.027	25	41	0.0	0.0	3.976	A
Site	0	0	157	1329	0.000	0	0	0.0	0.0	0.000	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	91	23	29	947	0.096	91	160	0.1	0.1	4.204	A
Bar S	207	52	2	1204	0.172	207	118	0.2	0.2	3.610	A
Fleet	30	7	159	916	0.032	30	49	0.0	0.0	4.059	A
Site	0	0	189	1304	0.000	0	0	0.0	0.0	0.000	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	111	28	35	944	0.118	111	196	0.1	0.1	4.324	A
Bar S	253	63	2	1203	0.210	253	144	0.2	0.3	3.788	A
Fleet	36	9	195	898	0.040	36	60	0.0	0.0	4.179	A
Site	0	0	231	1269	0.000	0	0	0.0	0.0	0.000	A

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	111	28	35	944	0.118	111	196	0.1	0.1	4.324	A
Bar S	253	63	2	1203	0.210	253	144	0.3	0.3	3.788	A
Fleet	36	9	195	898	0.040	36	61	0.0	0.0	4.179	A
Site	0	0	231	1269	0.000	0	0	0.0	0.0	0.000	A



08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	91	23	29	947	0.096	91	160	0.1	0.1	4.205	A
Bar S	207	52	2	1204	0.172	207	118	0.3	0.2	3.615	A
Fleet	30	7	159	916	0.032	30	49	0.0	0.0	4.062	A
Site	0	0	189	1303	0.000	0	0	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	76	19	24	950	0.080	76	134	0.1	0.1	4.123	A
Bar S	173	43	2	1204	0.144	173	99	0.2	0.2	3.493	A
Fleet	25	6	133	930	0.027	25	41	0.0	0.0	3.977	A
Site	0	0	158	1328	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed + Average Development , PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.63	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2019 + Committed + Average Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	202	100.000
Bar S		ONE HOUR	✓	214	100.000
Fleet		ONE HOUR	✓	72	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	1	198	3	0
	Bar S	140	2	72	0
	Fleet	3	69	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	30	67	0
	Bar S	41	0	14	0
	Fleet	33	54	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.18	3.64	0.2	A	185	278
Bar S	0.18	3.35	0.2	A	196	295
Fleet	0.09	4.35	0.1	A	66	99
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	152	38	53	1229	0.124	152	108	0.0	0.1	3.340	A
Bar S	161	40	3	1311	0.123	161	202	0.0	0.1	3.128	A
Fleet	54	14	107	933	0.058	54	56	0.0	0.1	4.093	A
Site	0	0	161	1324	0.000	0	0	0.0	0.0	0.000	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	182	45	64	1221	0.149	181	129	0.1	0.2	3.461	A
Bar S	192	48	4	1310	0.147	192	242	0.1	0.2	3.219	A
Fleet	65	16	128	922	0.070	65	67	0.1	0.1	4.197	A
Site	0	0	193	1298	0.000	0	0	0.0	0.0	0.000	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	222	56	78	1211	0.184	222	158	0.2	0.2	3.639	A
Bar S	236	59	4	1310	0.180	235	296	0.2	0.2	3.350	A
Fleet	79	20	157	907	0.087	79	83	0.1	0.1	4.346	A
Site	0	0	237	1263	0.000	0	0	0.0	0.0	0.000	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	222	56	78	1211	0.184	222	159	0.2	0.2	3.640	A
Bar S	236	59	4	1310	0.180	236	296	0.2	0.2	3.350	A
Fleet	79	20	157	907	0.087	79	83	0.1	0.1	4.347	A
Site	0	0	237	1262	0.000	0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	182	45	64	1221	0.149	182	130	0.2	0.2	3.463	A
Bar S	192	48	4	1310	0.147	193	242	0.2	0.2	3.222	A
Fleet	65	16	129	922	0.070	65	67	0.1	0.1	4.199	A
Site	0	0	193	1298	0.000	0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	152	38	54	1229	0.124	152	108	0.2	0.1	3.346	A
Bar S	161	40	3	1311	0.123	161	203	0.2	0.1	3.133	A
Fleet	54	14	108	933	0.058	54	57	0.1	0.1	4.098	A
Site	0	0	162	1323	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed + Cumulative, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.95	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2019 + Committed + Cumulative	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	98	100.000
Bar S		ONE HOUR	✓	227	100.000
Fleet		ONE HOUR	✓	33	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	96	2	0
	Bar S	174	0	53	0
	Fleet	1	32	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	70	100	0
	Bar S	40	0	51	0
	Fleet	0	53	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.11	4.28	0.1	A	90	135
Bar S	0.21	3.75	0.3	A	208	312
Fleet	0.04	4.17	0.0	A	30	45
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	74	18	24	955	0.077	73	131	0.0	0.1	4.083	A
Bar S	171	43	1	1210	0.141	170	96	0.0	0.2	3.461	A
Fleet	25	6	130	932	0.027	25	41	0.0	0.0	3.968	A
Site	0	0	155	1331	0.000	0	0	0.0	0.0	0.000	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	88	22	29	952	0.093	88	157	0.1	0.1	4.165	A
Bar S	204	51	2	1210	0.169	204	115	0.2	0.2	3.578	A
Fleet	30	7	156	918	0.032	30	49	0.0	0.0	4.050	A
Site	0	0	186	1307	0.000	0	0	0.0	0.0	0.000	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	108	27	35	949	0.114	108	193	0.1	0.1	4.280	A
Bar S	250	62	2	1209	0.207	250	141	0.2	0.3	3.751	A
Fleet	36	9	191	900	0.040	36	61	0.0	0.0	4.167	A
Site	0	0	228	1273	0.000	0	0	0.0	0.0	0.000	A

#### 08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	108	27	35	949	0.114	108	193	0.1	0.1	4.280	A
Bar S	250	62	2	1209	0.207	250	141	0.3	0.3	3.751	A
Fleet	36	9	192	900	0.040	36	61	0.0	0.0	4.167	A
Site	0	0	228	1273	0.000	0	0	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	88	22	29	952	0.093	88	157	0.1	0.1	4.166	A
Bar S	204	51	2	1210	0.169	204	115	0.3	0.2	3.583	A
Fleet	30	7	157	918	0.032	30	49	0.0	0.0	4.051	A
Site	0	0	186	1306	0.000	0	0	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	74	18	24	955	0.077	74	132	0.1	0.1	4.086	A
Bar S	171	43	2	1210	0.141	171	96	0.2	0.2	3.467	A
Fleet	25	6	131	932	0.027	25	41	0.0	0.0	3.972	A
Site	0	0	156	1331	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed + Cumulative, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.62	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2019 + Committed + Cumulative	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	200	100.000
Bar S		ONE HOUR	✓	211	100.000
Fleet		ONE HOUR	✓	72	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To				
	Bar E	Bar S	Fleet	Site	
From	Bar E	1	196	3	0
	Bar S	137	2	72	0
	Fleet	3	69	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
	Bar E	Bar S	Fleet	Site	
From	Bar E	0	30	67	0
	Bar S	40	0	14	0
	Fleet	33	54	0	0
	Site	0	0	0	0



## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.18	3.63	0.2	A	184	275
Bar S	0.18	3.32	0.2	A	194	290
Fleet	0.09	4.33	0.1	A	66	99
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	151	38	53	1229	0.123	150	106	0.0	0.1	3.335	A
Bar S	159	40	3	1319	0.120	158	200	0.0	0.1	3.100	A
Fleet	54	14	105	935	0.058	54	56	0.0	0.1	4.086	A
Site	0	0	159	1326	0.000	0	0	0.0	0.0	0.000	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	180	45	64	1221	0.147	180	127	0.1	0.2	3.455	A
Bar S	190	47	4	1318	0.144	190	240	0.1	0.2	3.189	A
Fleet	65	16	126	924	0.070	65	67	0.1	0.1	4.188	A
Site	0	0	190	1301	0.000	0	0	0.0	0.0	0.000	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	220	55	78	1211	0.182	220	155	0.2	0.2	3.631	A
Bar S	232	58	4	1318	0.176	232	294	0.2	0.2	3.316	A
Fleet	79	20	154	910	0.087	79	83	0.1	0.1	4.334	A
Site	0	0	233	1266	0.000	0	0	0.0	0.0	0.000	A

#### 17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	220	55	78	1211	0.182	220	155	0.2	0.2	3.632	A
Bar S	232	58	4	1318	0.176	232	294	0.2	0.2	3.316	A
Fleet	79	20	154	910	0.087	79	83	0.1	0.1	4.335	A
Site	0	0	233	1266	0.000	0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	180	45	64	1221	0.147	180	127	0.2	0.2	3.459	A
Bar S	190	47	4	1318	0.144	190	240	0.2	0.2	3.190	A
Fleet	65	16	126	924	0.070	65	67	0.1	0.1	4.191	A
Site	0	0	191	1301	0.000	0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	151	38	54	1229	0.123	151	106	0.2	0.1	3.342	A
Bar S	159	40	3	1319	0.120	159	201	0.2	0.1	3.104	A
Fleet	54	14	105	935	0.058	54	57	0.1	0.1	4.091	A
Site	0	0	160	1326	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed + Cumulative + Peak Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	4.01	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2019 + Committed + Cumulative + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	102	100.000
Bar S		ONE HOUR	✓	231	100.000
Fleet		ONE HOUR	✓	33	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	100	2	0
	Bar S	178	0	53	0
	Fleet	1	32	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
	Bar E	Bar S	Fleet	Site	
From	Bar E	0	71	100	0
	Bar S	42	0	51	0
	Fleet	0	53	0	0
	Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.12	4.33	0.1	A	94	140
Bar S	0.21	3.82	0.3	A	212	318
Fleet	0.04	4.19	0.0	A	30	45
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	77	19	24	950	0.081	76	134	0.0	0.1	4.120	A
Bar S	174	43	1	1197	0.145	173	99	0.0	0.2	3.513	A
Fleet	25	6	133	929	0.027	25	41	0.0	0.0	3.980	A
Site	0	0	158	1327	0.000	0	0	0.0	0.0	0.000	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	92	23	29	947	0.097	92	161	0.1	0.1	4.208	A
Bar S	208	52	2	1197	0.173	208	119	0.2	0.2	3.637	A
Fleet	30	7	160	915	0.032	30	49	0.0	0.0	4.064	A
Site	0	0	190	1302	0.000	0	0	0.0	0.0	0.000	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	112	28	35	944	0.119	112	197	0.1	0.1	4.330	A
Bar S	254	64	2	1197	0.213	254	145	0.2	0.3	3.818	A
Fleet	36	9	196	896	0.041	36	60	0.0	0.0	4.185	A
Site	0	0	232	1267	0.000	0	0	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	112	28	35	944	0.119	112	197	0.1	0.1	4.330	A
Bar S	254	64	2	1197	0.213	254	145	0.3	0.3	3.818	A
Fleet	36	9	196	896	0.041	36	61	0.0	0.0	4.186	A
Site	0	0	232	1267	0.000	0	0	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	92	23	29	947	0.097	92	161	0.1	0.1	4.209	A
Bar S	208	52	2	1197	0.173	208	119	0.3	0.2	3.639	A
Fleet	30	7	160	915	0.032	30	49	0.0	0.0	4.065	A
Site	0	0	190	1302	0.000	0	0	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	77	19	24	950	0.081	77	135	0.1	0.1	4.125	A
Bar S	174	43	2	1197	0.145	174	99	0.2	0.2	3.517	A
Fleet	25	6	134	929	0.027	25	41	0.0	0.0	3.983	A
Site	0	0	159	1327	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed + Cumulative + Peak Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.65	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2019 + Committed + Cumulative + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	203	100.000
Bar S		ONE HOUR	✓	215	100.000
Fleet		ONE HOUR	✓	72	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	1	199	3	0
	Bar S	141	2	72	0
	Fleet	3	69	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	Bar E	Bar S	Fleet	Site
Bar E	0	31	67	0
Bar S	41	0	14	0
Fleet	33	54	0	0
Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.19	3.68	0.2	A	186	279
Bar S	0.18	3.35	0.2	A	197	296
Fleet	0.09	4.35	0.1	A	66	99
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	153	38	53	1220	0.125	152	109	0.0	0.1	3.371	A
Bar S	162	40	3	1310	0.124	161	202	0.0	0.1	3.131	A
Fleet	54	14	108	933	0.058	54	56	0.0	0.1	4.095	A
Site	0	0	162	1323	0.000	0	0	0.0	0.0	0.000	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	182	46	64	1212	0.151	182	130	0.1	0.2	3.495	A
Bar S	193	48	4	1310	0.148	193	243	0.1	0.2	3.223	A
Fleet	65	16	129	922	0.070	65	67	0.1	0.1	4.199	A
Site	0	0	194	1297	0.000	0	0	0.0	0.0	0.000	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	224	56	78	1202	0.186	223	160	0.2	0.2	3.677	A
Bar S	237	59	4	1309	0.181	237	297	0.2	0.2	3.355	A
Fleet	79	20	158	907	0.087	79	83	0.1	0.1	4.349	A
Site	0	0	238	1262	0.000	0	0	0.0	0.0	0.000	A

**17:00 - 17:15**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	224	56	78	1202	0.186	224	160	0.2	0.2	3.677	A
Bar S	237	59	4	1309	0.181	237	297	0.2	0.2	3.355	A
Fleet	79	20	159	907	0.087	79	83	0.1	0.1	4.350	A
Site	0	0	238	1261	0.000	0	0	0.0	0.0	0.000	A

**17:15 - 17:30**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	182	46	64	1212	0.151	183	130	0.2	0.2	3.499	A
Bar S	193	48	4	1310	0.148	193	243	0.2	0.2	3.224	A
Fleet	65	16	130	922	0.070	65	67	0.1	0.1	4.201	A
Site	0	0	194	1297	0.000	0	0	0.0	0.0	0.000	A

**17:30 - 17:45**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	153	38	54	1219	0.125	153	109	0.2	0.1	3.375	A
Bar S	162	40	3	1310	0.124	162	203	0.2	0.1	3.137	A
Fleet	54	14	108	933	0.058	54	57	0.1	0.1	4.098	A
Site	0	0	163	1323	0.000	0	0	0.0	0.0	0.000	A



# 2019 + Committed + Cumulative + Average Development, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.99	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2019 + Committed + Cumulative + Average Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	101	100.000
Bar S		ONE HOUR	✓	230	100.000
Fleet		ONE HOUR	✓	33	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		Bar E	Bar S	Fleet	Site
From	Bar E	0	99	2	0
	Bar S	177	0	53	0
	Fleet	1	32	0	0
	Site	0	0	0	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	Bar E	Bar S	Fleet	Site
Bar E	0	71	100	0
Bar S	41	0	51	0
Fleet	0	53	0	0
Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.12	4.32	0.1	A	93	139
Bar S	0.21	3.79	0.3	A	211	317
Fleet	0.04	4.18	0.0	A	30	45
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 07:15 - 07:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	76	19	24	950	0.080	76	133	0.0	0.1	4.116	A
Bar S	173	43	1	1204	0.144	172	98	0.0	0.2	3.489	A
Fleet	25	6	133	930	0.027	25	41	0.0	0.0	3.976	A
Site	0	0	157	1329	0.000	0	0	0.0	0.0	0.000	A

#### 07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	91	23	29	947	0.096	91	160	0.1	0.1	4.204	A
Bar S	207	52	2	1204	0.172	207	118	0.2	0.2	3.610	A
Fleet	30	7	159	916	0.032	30	49	0.0	0.0	4.059	A
Site	0	0	189	1304	0.000	0	0	0.0	0.0	0.000	A

#### 07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	111	28	35	944	0.118	111	196	0.1	0.1	4.324	A
Bar S	253	63	2	1203	0.210	253	144	0.2	0.3	3.788	A
Fleet	36	9	195	898	0.040	36	60	0.0	0.0	4.179	A
Site	0	0	231	1269	0.000	0	0	0.0	0.0	0.000	A

**08:00 - 08:15**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	111	28	35	944	0.118	111	196	0.1	0.1	4.324	A
Bar S	253	63	2	1203	0.210	253	144	0.3	0.3	3.788	A
Fleet	36	9	195	898	0.040	36	61	0.0	0.0	4.179	A
Site	0	0	231	1269	0.000	0	0	0.0	0.0	0.000	A

**08:15 - 08:30**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	91	23	29	947	0.096	91	160	0.1	0.1	4.205	A
Bar S	207	52	2	1204	0.172	207	118	0.3	0.2	3.615	A
Fleet	30	7	159	916	0.032	30	49	0.0	0.0	4.062	A
Site	0	0	189	1303	0.000	0	0	0.0	0.0	0.000	A

**08:30 - 08:45**

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	76	19	24	950	0.080	76	134	0.1	0.1	4.123	A
Bar S	173	43	2	1204	0.144	173	99	0.2	0.2	3.493	A
Fleet	25	6	133	930	0.027	25	41	0.0	0.0	3.977	A
Site	0	0	158	1328	0.000	0	0	0.0	0.0	0.000	A

# 2019 + Committed + Cumulative + Average Development, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	Bar E, Bar S, Fleet, Site	3.63	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2019 + Committed + Cumulative + Average Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
Bar E		ONE HOUR	✓	202	100.000
Bar S		ONE HOUR	✓	214	100.000
Fleet		ONE HOUR	✓	72	100.000
Site		ONE HOUR	✓	0	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To				
	Bar E	Bar S	Fleet	Site	
Bar E	1	198	3	0	
Bar S	140	2	72	0	
Fleet	3	69	0	0	
Site	0	0	0	0	

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	Bar E	Bar S	Fleet	Site
Bar E	0	30	67	0
Bar S	41	0	14	0
Fleet	33	54	0	0
Site	0	0	0	0

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
Bar E	0.18	3.64	0.2	A	185	278
Bar S	0.18	3.35	0.2	A	196	295
Fleet	0.09	4.35	0.1	A	66	99
Site	0.00	0.00	0.0	A	0	0

### Main Results for each time segment

#### 16:15 - 16:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	152	38	53	1229	0.124	152	108	0.0	0.1	3.340	A
Bar S	161	40	3	1311	0.123	161	202	0.0	0.1	3.128	A
Fleet	54	14	107	933	0.058	54	56	0.0	0.1	4.093	A
Site	0	0	161	1324	0.000	0	0	0.0	0.0	0.000	A

#### 16:30 - 16:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	182	45	64	1221	0.149	181	129	0.1	0.2	3.461	A
Bar S	192	48	4	1310	0.147	192	242	0.1	0.2	3.219	A
Fleet	65	16	128	922	0.070	65	67	0.1	0.1	4.197	A
Site	0	0	193	1298	0.000	0	0	0.0	0.0	0.000	A

#### 16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	222	56	78	1211	0.184	222	158	0.2	0.2	3.639	A
Bar S	236	59	4	1310	0.180	235	296	0.2	0.2	3.350	A
Fleet	79	20	157	907	0.087	79	83	0.1	0.1	4.346	A
Site	0	0	237	1263	0.000	0	0	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	222	56	78	1211	0.184	222	159	0.2	0.2	3.640	A
Bar S	236	59	4	1310	0.180	236	296	0.2	0.2	3.350	A
Fleet	79	20	157	907	0.087	79	83	0.1	0.1	4.347	A
Site	0	0	237	1262	0.000	0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	182	45	64	1221	0.149	182	130	0.2	0.2	3.463	A
Bar S	192	48	4	1310	0.147	193	242	0.2	0.2	3.222	A
Fleet	65	16	129	922	0.070	65	67	0.1	0.1	4.199	A
Site	0	0	193	1298	0.000	0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
Bar E	152	38	54	1229	0.124	152	108	0.2	0.1	3.346	A
Bar S	161	40	3	1311	0.123	161	203	0.2	0.1	3.133	A
Fleet	54	14	108	933	0.058	54	57	0.1	0.1	4.098	A
Site	0	0	162	1323	0.000	0	0	0.0	0.0	0.000	A

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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**Filename:** North and South Dumbbell Roundabouts\_Existing Geometry.j9

**Path:** \\eur-mpfs-02\tr\_projects\JNY9247 - Kemsley K4\Transport\Arcady\North and South Dumbell Roundabouts

**Report generation date:** 29/03/2018 15:05:32

- »2017, AM
- »2017, PM
- »2019, AM
- »2019, PM
- »2019 + Committed Development, AM
- »2019 + Committed Development, PM
- »2019 + Committed + Peak Development, AM
- »2019 + Committed + Peak Development, PM
- »2019 + Committed + Average Development, AM
- »2019 + Committed + Average Development, PM
- »2019 + Committed + Cumulative, AM
- »2019 + Committed + Cumulative, PM
- »2019 + Committed + Cumulative + Peak Development, AM
- »2019 + Committed + Cumulative + Peak Development, PM
- »2019 + Committed + Cumulative + Average Development, AM
- »2019 + Committed + Cumulative + Average Development, PM

### Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
<b>2017</b>						
1 - North - 1 - A249 offslip (NB)	6.5	33.77	0.88	43.4	176.66	1.09
1 - North - 2 - Grovehurst Road	6.5	57.68	0.90	0.8	12.71	0.46
1 - North - 4 - B2005 - link	0.4	3.33	0.30	0.6	3.65	0.38
2 - South - 2 - B2005 - link	1.5	4.97	0.60	0.8	3.54	0.44
2 - South - 3 - A249 offslip (SB)	23.4	138.98	1.06	1.5	11.60	0.61
2 - South - 4 - Swale Way	14.6	90.60	0.98	362.8	1810.92	1.74
2 - South - 5 - Grovehurst Road	17.8	101.37	1.01	4.4	28.52	0.83
<b>2019</b>						
1 - North - 1 - A249 offslip (NB)	7.7	39.25	0.90	53.8	213.23	1.12
1 - North - 2 - Grovehurst Road	8.8	74.76	0.94	0.9	13.01	0.47
1 - North - 4 - B2005 - link	0.4	3.33	0.31	0.6	3.67	0.38
2 - South - 2 - B2005 - link	1.6	5.11	0.61	0.8	3.55	0.44
2 - South - 3 - A249 offslip (SB)	33.8	190.20	1.11	1.6	12.13	0.62
2 - South - 4 - Swale Way	18.4	108.78	1.01	401.1	2031.57	1.79
2 - South - 5 - Grovehurst Road	23.7	127.76	1.04	4.8	30.90	0.84
<b>2019 + Committed Development</b>						
1 - North - 1 - A249 offslip (NB)	36.6	141.77	1.06	82.2	362.28	1.20

1 - North - 2 - Grovehurst Road	40.9	321.88	1.17	1.0	13.63	0.49
1 - North - 4 - B2005 - link	0.4	3.38	0.30	0.6	3.71	0.39
2 - South - 2 - B2005 - link	1.9	5.81	0.66	0.8	3.69	0.45
2 - South - 3 - A249 offslip (SB)	127.5	884.17	1.47	1.8	13.62	0.65
2 - South - 4 - Swale Way	53.6	290.94	1.14	733.4	3714.33	2.21
2 - South - 5 - Grovehurst Road	52.9	300.70	1.15	5.4	34.07	0.86
<b>2019 + Committed + Peak Development</b>						
1 - North - 1 - A249 offslip (NB)	40.7	155.70	1.07	84.6	375.36	1.21
1 - North - 2 - Grovehurst Road	41.7	332.62	1.18	1.0	13.66	0.49
1 - North - 4 - B2005 - link	0.4	3.37	0.30	0.6	3.71	0.39
2 - South - 2 - B2005 - link	1.9	5.87	0.66	0.8	3.71	0.45
2 - South - 3 - A249 offslip (SB)	129.4	975.39	1.48	1.8	13.66	0.65
2 - South - 4 - Swale Way	56.1	308.07	1.15	735.9	3719.44	2.21
2 - South - 5 - Grovehurst Road	53.5	305.64	1.16	5.4	34.30	0.86
<b>2019 + Committed + Average Development</b>						
1 - North - 1 - A249 offslip (NB)	40.2	154.23	1.07	83.8	371.03	1.20
1 - North - 2 - Grovehurst Road	41.7	331.53	1.18	1.0	13.65	0.49
1 - North - 4 - B2005 - link	0.4	3.37	0.30	0.6	3.71	0.39
2 - South - 2 - B2005 - link	1.9	5.83	0.66	0.8	3.69	0.45
2 - South - 3 - A249 offslip (SB)	129.3	916.90	1.48	1.8	13.66	0.65
2 - South - 4 - Swale Way	56.1	308.80	1.15	737.4	3733.48	2.21
2 - South - 5 - Grovehurst Road	53.4	304.63	1.16	5.4	34.15	0.86
<b>2019 + Committed + Cumulative</b>						
1 - North - 1 - A249 offslip (NB)	44.5	167.70	1.08	88.3	397.52	1.22
1 - North - 2 - Grovehurst Road	42.5	342.11	1.18	1.0	13.76	0.50
1 - North - 4 - B2005 - link	0.4	3.37	0.30	0.6	3.72	0.39
2 - South - 2 - B2005 - link	1.9	5.88	0.66	0.8	3.72	0.45
2 - South - 3 - A249 offslip (SB)	132.2	998.05	1.48	1.9	14.01	0.66
2 - South - 4 - Swale Way	57.8	318.91	1.15	753.5	3825.78	2.23
2 - South - 5 - Grovehurst Road	54.0	309.43	1.16	5.4	34.50	0.86
<b>2019 + Committed + Cumulative + Peak Development</b>						
1 - North - 1 - A249 offslip (NB)	48.1	180.49	1.09	90.8	411.17	1.22
1 - North - 2 - Grovehurst Road	43.1	350.88	1.18	1.0	13.79	0.50
1 - North - 4 - B2005 - link	0.4	3.36	0.30	0.6	3.72	0.39
2 - South - 2 - B2005 - link	1.9	5.90	0.66	0.8	3.75	0.45
2 - South - 3 - A249 offslip (SB)	134.2	1018.15	1.49	1.9	14.04	0.66
2 - South - 4 - Swale Way	61.6	346.19	1.16	755.6	3827.42	2.23
2 - South - 5 - Grovehurst Road	54.6	314.61	1.16	5.5	34.77	0.86
<b>2019 + Committed + Cumulative + Average Development</b>						
1 - North - 1 - A249 offslip (NB)	44.8	168.50	1.08	90.1	407.24	1.22
1 - North - 2 - Grovehurst Road	42.6	343.32	1.18	1.0	13.78	0.50
1 - North - 4 - B2005 - link	0.4	3.36	0.30	0.6	3.72	0.39
2 - South - 2 - B2005 - link	1.9	5.89	0.66	0.8	3.73	0.45
2 - South - 3 - A249 offslip (SB)	133.1	1006.31	1.49	1.9	14.04	0.66
2 - South - 4 - Swale Way	61.0	342.12	1.16	755.7	3834.12	2.23
2 - South - 5 - Grovehurst Road	54.5	313.54	1.16	5.4	34.60	0.86

*There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.*

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*

## File summary

### File Description

Title	(untitled)
Location	
Site number	
Date	26/01/2018



<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	EUR\Ben.Dance
<b>Description</b>	

## Units

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

## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓			0.85	36.00	20.00

## Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2017	AM	ONE HOUR	07:15	08:45	15	✓
D2	2017	PM	ONE HOUR	16:15	17:45	15	✓
D3	2019	AM	ONE HOUR	07:15	08:45	15	✓
D4	2019	PM	ONE HOUR	16:15	17:45	15	✓
D5	2019 + Committed Development	AM	ONE HOUR	07:15	08:45	15	✓
D6	2019 + Committed Development	PM	ONE HOUR	16:15	17:45	15	✓
D7	2019 + Committed + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓
D8	2019 + Committed + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓
D9	2019 + Committed + Average Development	AM	ONE HOUR	07:15	08:45	15	✓
D10	2019 + Committed + Average Development	PM	ONE HOUR	16:15	17:45	15	✓
D11	2019 + Committed + Cumulative	AM	ONE HOUR	07:15	08:45	15	✓
D12	2019 + Committed + Cumulative	PM	ONE HOUR	16:15	17:45	15	✓
D13	2019 + Committed + Cumulative + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓
D14	2019 + Committed + Cumulative + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓
D15	2019 + Committed + Cumulative + Average Development	AM	ONE HOUR	07:15	08:45	15	✓
D16	2019 + Committed + Cumulative + Average Development	PM	ONE HOUR	16:15	17:45	15	✓

## Analysis Set Details

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

# 2017, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	31.15	D
2	South	Standard Roundabout	1, 2, 3, 4, 5	69.23	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Junction	Arm	Name	Description
1 - North	1	A249 offslip (NB)	
	2	Grovehurst Road	
	3	A249 onslip (NB)	
	4	B2005 - link	
2 - South	1	A249 onslip (SB)	
	2	B2005 - link	
	3	A249 offslip (SB)	
	4	Swale Way	
	5	Grovehurst Road	

### Roundabout Geometry

Junction	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 - North	1 - A249 offslip (NB)	7.90	8.10	5.8	14.0	37.0	32.0	
	2 - Grovehurst Road	3.71	6.74	20.2	10.1	37.0	45.0	
	3 - A249 onslip (NB)							✓
	4 - B2005 - link	3.75	7.64	13.4	11.9	37.0	41.0	
2 - South	1 - A249 onslip (SB)							✓
	2 - B2005 - link	3.66	6.17	14.7	27.2	36.3	36.0	
	3 - A249 offslip (SB)	8.03	8.04	0.1	10.1	39.2	32.0	
	4 - Swale Way	3.50	7.96	21.2	12.1	39.2	55.0	
	5 - Grovehurst Road	3.73	7.17	15.3	19.5	44.6	39.0	

### Slope / Intercept / Capacity

#### Arm Intercept Adjustments

Junction	Arm	Type	Reason	Direct intercept adjustment (PCU/hr)
	1 - A249 offslip (NB)	Direct		-1050

1 - North	2 - Grovehurst Road	Direct		-400
	3 - A249 onslip (NB)			
	4 - B2005 - link	None		
2 - South	1 - A249 onslip (SB)			
	2 - B2005 - link	Direct		500
	3 - A249 offslip (SB)	Direct		-730
	4 - Swale Way	Direct		-575
	5 - Grovehurst Road	Direct		-550

### Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1 - North	1 - A249 offslip (NB)	0.777	1330
	2 - Grovehurst Road	0.591	1170
	3 - A249 onslip (NB)		
	4 - B2005 - link	0.611	1622
2 - South	1 - A249 onslip (SB)		
	2 - B2005 - link	0.624	2088
	3 - A249 offslip (SB)	0.748	1572
	4 - Swale Way	0.597	1071
	5 - Grovehurst Road	0.616	1130

*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	2017	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	669	100.000
	2 - Grovehurst Road		ONE HOUR	✓	398	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	518	100.000
	4 - Swale Way		ONE HOUR	✓	544	100.000
	5 - Grovehurst Road		ONE HOUR	✓	573	100.000

## Origin-Destination Data

Demand (Veh/hr)

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		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	42	0	627
		2 - Grovehurst Road	0	0	25	373
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	136	305	0

## Demand (Veh/hr)

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	141	0	0	674	183
		3 - A249 offslip (SB)	1	18	0	325	174
		4 - Swale Way	285	194	0	0	65
		5 - Grovehurst Road	206	233	0	134	0

## Vehicle Mix

## Heavy Vehicle Percentages

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	7	0	14
		2 - Grovehurst Road	0	0	8	3
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	3	5	0

## Heavy Vehicle Percentages

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	0	0	0	13	6
		3 - A249 offslip (SB)	0	6	0	5	4
		4 - Swale Way	32	7	0	0	6
		5 - Grovehurst Road	1	2	0	3	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	0.88	33.77	6.5	35.5	D	614	921
	2 - Grovehurst Road	0.90	57.68	6.5	33.7	F	365	548
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.30	3.33	0.4	1.8	A	407	611
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.60	4.97	1.5	2.0	A	917	1375
	3 - A249 offslip (SB)	1.06	138.98	23.4	62.7	F	475	713
	4 - Swale Way	0.98	90.60	14.6	55.6	F	499	749
	5 - Grovehurst Road	1.01	101.37	17.8	60.1	F	526	789

## Main Results for each time segment

## 07:15 - 07:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	504	126	330	936	0.538	499	0	0.0	1.1	8.161	A
	2 - Grovehurst Road	300	75	696	690	0.434	297	133	0.0	0.8	9.080	A
	3 - A249 onslip (NB)			746				247				
	4 - B2005 - link	331	83	0	1554	0.213	330	746	0.0	0.3	2.937	A
2 - South	1 - A249 onslip (SB)			431				471				
	2 - B2005 - link	746	186	100	1842	0.405	743	331	0.0	0.7	3.267	A
	3 - A249 offslip (SB)	390	97	843	845	0.462	387	0	0.0	0.8	7.800	A
	4 - Swale Way	410	102	385	694	0.590	404	844	0.0	1.4	12.182	B
	5 - Grovehurst Road	431	108	475	775	0.557	426	314	0.0	1.2	10.202	B

## 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	601	150	396	889	0.677	598	0	1.1	2.0	12.230	B
	2 - Grovehurst Road	358	89	834	602	0.594	355	160	0.8	1.4	14.410	B
	3 - A249 onslip (NB)			893				296				
	4 - B2005 - link	396	99	0	1554	0.255	396	893	0.3	0.3	3.106	A
2 - South	1 - A249 onslip (SB)			515				564				
	2 - B2005 - link	893	223	119	1831	0.488	892	396	0.7	0.9	3.833	A
	3 - A249 offslip (SB)	466	116	1012	713	0.653	462	0	0.8	1.8	14.096	B
	4 - Swale Way	489	122	462	655	0.747	484	1012	1.4	2.7	20.417	C
	5 - Grovehurst Road	515	129	569	709	0.727	510	377	1.2	2.5	17.694	C

## 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	737	184	462	841	0.875	722	0	2.0	5.7	27.311	D
	2 - Grovehurst Road	438	110	996	499	0.878	423	188	1.4	5.2	41.282	E
	3 - A249 onslip (NB)			1073				346				
	4 - B2005 - link	462	116	0	1554	0.297	462	1073	0.3	0.4	3.295	A
2 - South	1 - A249 onslip (SB)			601				664				
	2 - B2005 - link	1074	268	139	1819	0.590	1072	462	0.9	1.4	4.805	A
	3 - A249 offslip (SB)	570	143	1211	558	1.022	524	0	1.8	13.3	69.759	F
	4 - Swale Way	599	150	543	613	0.978	568	1192	2.7	10.5	57.631	F
	5 - Grovehurst Road	631	158	671	637	0.990	594	441	2.5	11.6	58.638	F

## 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	737	184	472	834	0.883	733	0	5.7	6.5	33.775	D
	2 - Grovehurst Road	438	110	1014	488	0.899	433	192	5.2	6.5	57.680	F
	3 - A249 onslip (NB)			1093				354				
	4 - B2005 - link	473	118	0	1554	0.304	472	1093	0.4	0.4	3.327	A
2 - South	1 - A249 onslip (SB)			614				679				
	2 - B2005 - link	1093	273	142	1817	0.602	1093	473	1.4	1.5	4.966	A
	3 - A249 offslip (SB)	570	143	1235	540	1.057	530	0	13.3	23.4	138.977	F
	4 - Swale Way	599	150	552	608	0.985	583	1212	10.5	14.6	90.596	F

	5 - Grovehurst Road	631	158	687	626	1.008	606	448	11.6	17.8	101.371	F
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## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	601	150	441	856	0.702	617	0	6.5	2.5	15.965	C
	2 - Grovehurst Road	358	89	884	572	0.626	377	175	6.5	1.8	20.107	C
	3 - A249 onslip (NB)			932				329				
	4 - B2005 - link	441	110	0	1554	0.284	441	932	0.4	0.4	3.235	A
2 - South	1 - A249 onslip (SB)			575				617				
	2 - B2005 - link	931	233	134	1822	0.511	933	441	1.5	1.1	4.057	A
	3 - A249 offslip (SB)	466	116	1067	671	0.694	550	0	23.4	2.5	46.022	E
	4 - Swale Way	489	122	508	631	0.775	532	1109	14.6	3.9	44.947	E
	5 - Grovehurst Road	515	129	620	672	0.767	571	419	17.8	3.7	47.063	E

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	504	126	343	926	0.544	509	0	2.5	1.2	8.722	A
	2 - Grovehurst Road	300	75	714	679	0.441	303	138	1.8	0.8	9.685	A
	3 - A249 onslip (NB)			761				256				
	4 - B2005 - link	342	86	0	1554	0.220	343	761	0.4	0.3	2.972	A
2 - South	1 - A249 onslip (SB)			446				487				
	2 - B2005 - link	761	190	103	1840	0.414	763	343	1.1	0.7	3.344	A
	3 - A249 offslip (SB)	390	97	866	827	0.471	396	0	2.5	0.9	8.474	A
	4 - Swale Way	410	102	395	689	0.594	419	867	3.9	1.5	13.777	B
	5 - Grovehurst Road	431	108	491	763	0.565	441	323	3.7	1.3	11.494	B

## Queue Variation Results for each time segment

## 07:15 - 07:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	1.14	0.55	1.03	1.19	1.19			N/A	N/A
	2 - Grovehurst Road	0.75	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.68	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.84	0.14	0.92	1.15	1.15			N/A	N/A
	4 - Swale Way	1.39	0.56	1.29	1.80	1.94			N/A	N/A
	5 - Grovehurst Road	1.22	0.51	1.16	1.66	1.87			N/A	N/A

## 07:30 - 07:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.01	0.06	0.93	5.02	7.46			N/A	N/A
	2 - Grovehurst Road	1.41	0.06	0.80	3.23	4.68			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.95	0.07	0.85	1.63	1.98			N/A	N/A
	3 - A249 offslip (SB)	1.80	0.05	0.47	4.78	7.69			N/A	N/A
	4 - Swale Way	2.72	0.08	1.32	6.82	9.83			N/A	N/A
	5 - Grovehurst Road	2.49	0.06	1.05	6.46	9.62			N/A	N/A

## 07:45 - 08:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	5.65	0.05	0.46	16.04	29.04			N/A	N/A
	2 - Grovehurst Road	5.18	0.06	1.03	14.81	23.94			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.42	0.03	0.26	1.42	1.42			N/A	N/A
	3 - A249 offslip (SB)	13.27	0.85	9.04	29.34	37.93			N/A	N/A
	4 - Swale Way	10.54	0.22	5.42	26.35	36.20			N/A	N/A
	5 - Grovehurst Road	11.63	0.31	6.58	28.19	38.04			N/A	N/A

## 08:00 - 08:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	6.47	0.04	0.37	14.81	35.52			N/A	N/A
	2 - Grovehurst Road	6.53	0.05	0.48	18.63	33.69			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.43	0.03	0.31	1.36	1.78			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.49	0.03	0.26	1.49	1.49			N/A	N/A
	3 - A249 offslip (SB)	23.45	1.82	17.53	49.58	62.70			N/A	N/A
	4 - Swale Way	14.62	0.17	6.14	39.00	55.56			N/A	N/A
	5 - Grovehurst Road	17.80	0.36	9.87	44.18	60.08			N/A	N/A

## 08:15 - 08:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.48	0.05	0.47	6.83	11.33			N/A	N/A
	2 - Grovehurst Road	1.76	0.04	0.42	4.72	8.06			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.40	0.00	0.00	0.40	0.40			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.06	0.52	1.05	1.08	1.55			N/A	N/A
	3 - A249 offslip (SB)	2.48	0.04	0.39	6.59	12.70			N/A	N/A
	4 - Swale Way	3.92	0.05	0.49	11.12	18.86			N/A	N/A
	5 - Grovehurst Road	3.73	0.05	0.49	10.58	17.85			N/A	N/A

## 08:30 - 08:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	1.22	0.03	0.32	2.37	6.22			N/A	N/A
	2 - Grovehurst Road	0.80	0.03	0.30	1.48	3.80			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.71	0.09	0.82	1.39	1.46			N/A	N/A
	3 - A249 offslip (SB)	0.91	0.03	0.27	0.91	2.18			N/A	N/A
	4 - Swale Way	1.52	0.03	0.30	1.77	7.10			N/A	N/A
	5 - Grovehurst Road	1.34	0.03	0.29	1.45	5.64			N/A	N/A

# 2017, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	91.44	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	672.02	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2017	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	749	100.000
	2 - Grovehurst Road		ONE HOUR	✓	222	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	431	100.000
	4 - Swale Way		ONE HOUR	✓	989	100.000
	5 - Grovehurst Road		ONE HOUR	✓	528	100.000

## Origin-Destination Data



## Demand (Veh/hr)

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	180	0	569
	2 - Grovehurst Road	0	0	27	195
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	234	470	0

## Demand (Veh/hr)

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	42	0	0	396	322
	3 - A249 offslip (SB)	1	27	0	187	216
	4 - Swale Way	509	351	0	0	129
	5 - Grovehurst Road	110	318	0	100	0

## Vehicle Mix

## Heavy Vehicle Percentages

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	1	0	16
	2 - Grovehurst Road	0	0	0	1
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	0	3	0

## Heavy Vehicle Percentages

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	2	0	0	22	1
	3 - A249 offslip (SB)	0	11	0	7	4
	4 - Swale Way	14	2	0	0	2
	5 - Grovehurst Road	0	2	0	3	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.09	176.66	43.4	91.6	F	687	1031
	2 - Grovehurst Road	0.46	12.71	0.8	3.7	B	204	306
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.38	3.65	0.6	2.0	A	554	832
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.44	3.54	0.8	1.7	A	701	1051
	3 - A249 offslip (SB)	0.61	11.60	1.5	4.0	B	395	593
	4 - Swale Way	1.74	1810.92	362.8	184.9	F	908	1361
	5 - Grovehurst Road	0.83	28.52	4.4	22.2	D	485	727

## Main Results for each time segment

## 16:15 - 16:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	564	141	500	831	0.679	556	0	0.0	2.0	12.739	B
	2 - Grovehurst Road	167	42	756	671	0.249	166	300	0.0	0.3	7.104	A
	3 - A249 onslip (NB)			568				354				
	4 - B2005 - link	502	125	0	1591	0.315	500	568	0.0	0.5	3.295	A
2 - South	1 - A249 onslip (SB)			574				467				
	2 - B2005 - link	569	142	74	1822	0.312	567	500	0.0	0.5	2.865	A
	3 - A249 offslip (SB)	324	81	641	984	0.330	323	0	0.0	0.5	5.431	A
	4 - Swale Way	745	186	454	733	1.015	686	510	0.0	14.6	53.461	F
	5 - Grovehurst Road	398	99	649	683	0.582	392	491	0.0	1.3	12.160	B

## 16:30 - 16:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	673	168	551	795	0.847	663	0	2.0	4.7	25.368	D
	2 - Grovehurst Road	200	50	871	595	0.335	199	343	0.3	0.5	9.067	A
	3 - A249 onslip (NB)			678				392				
	4 - B2005 - link	552	138	0	1591	0.347	551	678	0.5	0.5	3.464	A
2 - South	1 - A249 onslip (SB)			639				487				
	2 - B2005 - link	679	170	89	1813	0.374	678	550	0.5	0.6	3.170	A
	3 - A249 offslip (SB)	387	97	768	884	0.438	386	0	0.5	0.8	7.211	A
	4 - Swale Way	889	222	544	683	1.302	681	610	14.6	66.7	233.318	F
	5 - Grovehurst Road	475	119	654	680	0.698	471	570	1.3	2.2	16.976	C

## 16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	825	206	600	760	1.085	741	0	4.7	25.5	89.210	F
	2 - Grovehurst Road	244	61	964	535	0.457	243	378	0.5	0.8	12.288	B
	3 - A249 onslip (NB)			777				430				
	4 - B2005 - link	601	150	0	1591	0.378	600	777	0.5	0.6	3.635	A
2 - South	1 - A249 onslip (SB)			707				487				
	2 - B2005 - link	776	194	109	1802	0.431	775	598	0.6	0.8	3.504	A
	3 - A249 offslip (SB)	475	119	884	794	0.598	472	0	0.8	1.4	11.098	B
	4 - Swale Way	1089	272	638	629	1.732	629	717	66.7	181.8	722.148	F
	5 - Grovehurst Road	581	145	620	703	0.827	573	647	2.2	4.1	26.309	D

## 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	825	206	604	758	1.088	753	0	25.5	43.4	176.655	F
	2 - Grovehurst Road	244	61	975	527	0.463	244	382	0.8	0.8	12.706	B
	3 - A249 onslip (NB)			787				433				
	4 - B2005 - link	604	151	0	1591	0.380	604	787	0.6	0.6	3.647	A
2 - South	1 - A249 onslip (SB)			711				487				
	2 - B2005 - link	786	197	110	1801	0.436	786	601	0.8	0.8	3.544	A
	3 - A249 offslip (SB)	475	119	896	784	0.605	474	0	1.4	1.5	11.604	B
	4 - Swale Way	1089	272	645	625	1.742	625	725	181.8	297.7	1388.097	F

	5 - Grovehurst Road	581	145	618	704	0.826	580	652	4.1	4.4	28.517	D
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## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	673	168	551	795	0.847	777	0	43.4	17.5	146.187	F
	2 - Grovehurst Road	200	50	958	536	0.372	201	370	0.8	0.6	10.755	B
	3 - A249 onslip (NB)			767				392				
	4 - B2005 - link	551	138	0	1591	0.346	551	767	0.6	0.5	3.462	A
2 - South	1 - A249 onslip (SB)			640				482				
	2 - B2005 - link	770	193	91	1812	0.425	770	548	0.8	0.7	3.458	A
	3 - A249 offslip (SB)	387	97	862	810	0.478	390	0	1.5	0.9	8.613	A
	4 - Swale Way	889	222	590	657	1.353	657	662	297.7	355.7	1722.510	F
	5 - Grovehurst Road	475	119	639	690	0.688	483	607	4.4	2.3	18.004	C

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	564	141	518	818	0.689	624	0	17.5	2.4	24.011	C
	2 - Grovehurst Road	167	42	820	628	0.266	168	322	0.6	0.4	7.836	A
	3 - A249 onslip (NB)			622				366				
	4 - B2005 - link	518	129	0	1591	0.326	518	622	0.5	0.5	3.358	A
2 - South	1 - A249 onslip (SB)			592				488				
	2 - B2005 - link	625	156	76	1821	0.343	625	516	0.7	0.5	3.012	A
	3 - A249 offslip (SB)	324	81	701	936	0.347	326	0	0.9	0.5	5.916	A
	4 - Swale Way	745	186	484	717	1.039	716	543	355.7	362.8	1810.923	F
	5 - Grovehurst Road	398	99	679	664	0.599	401	522	2.3	1.5	13.846	B

## Queue Variation Results for each time segment

## 16:15 - 16:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.02	0.27	1.23	3.54	4.41			N/A	N/A
	2 - Grovehurst Road	0.33	0.00	0.00	0.33	0.33			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.45	0.00	0.00	0.45	0.45			N/A	N/A
	3 - A249 offslip (SB)	0.49	0.00	0.00	0.49	0.49			N/A	N/A
	4 - Swale Way	14.57	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.35	0.55	1.00	1.40	1.45			N/A	N/A

## 16:30 - 16:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	4.71	0.11	1.83	12.00	17.01			N/A	N/A
	2 - Grovehurst Road	0.50	0.00	0.00	0.50	0.50			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.53	0.53	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.60	0.12	0.87	1.37	1.44			N/A	N/A
	3 - A249 offslip (SB)	0.77	0.09	0.84	1.02	1.02			N/A	N/A
	4 - Swale Way	66.71	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.19	0.09	1.38	4.89	6.73			N/A	N/A

## 16:45 - 17:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	25.53	4.99	21.53	47.32	57.09			N/A	N/A
	2 - Grovehurst Road	0.82	0.03	0.26	0.82	0.82			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.60	0.03	0.25	0.60	0.60			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.75	0.03	0.25	0.75	0.75			N/A	N/A
	3 - A249 offslip (SB)	1.44	0.03	0.27	1.44	2.10			N/A	N/A
	4 - Swale Way	181.76	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	4.15	0.04	0.39	10.86	22.23			N/A	N/A

## 17:00 - 17:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	43.45	11.01	38.08	77.14	91.56			N/A	N/A
	2 - Grovehurst Road	0.85	0.03	0.29	1.24	3.67			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.61	0.03	0.28	0.61	2.00			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.77	0.03	0.27	0.77	1.69			N/A	N/A
	3 - A249 offslip (SB)	1.50	0.03	0.28	1.50	3.98			N/A	N/A
	4 - Swale Way	297.70	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	4.38	0.03	0.32	5.99	21.57			N/A	N/A

## 17:15 - 17:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	17.50	1.14	12.85	37.15	47.16			N/A	N/A
	2 - Grovehurst Road	0.60	0.10	0.82	1.36	1.43			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.53	0.53	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.74	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.93	0.13	0.95	1.25	1.66			N/A	N/A
	4 - Swale Way	355.73	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.32	0.04	0.42	6.36	11.31			N/A	N/A

## 17:30 - 17:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.35	0.03	0.30	2.35	10.64			N/A	N/A
	2 - Grovehurst Road	0.37	0.03	0.30	0.86	1.18			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.52	0.52	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.54	0.04	0.43	1.35	1.48			N/A	N/A
	4 - Swale Way	362.76	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.55	0.04	0.37	3.93	7.62			N/A	N/A

# 2019, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	38.05	E
2	South	Standard Roundabout	1, 2, 3, 4, 5	88.39	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2019	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	684	100.000
	2 - Grovehurst Road		ONE HOUR	✓	408	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	529	100.000
	4 - Swale Way		ONE HOUR	✓	556	100.000
	5 - Grovehurst Road		ONE HOUR	✓	586	100.000

## Origin-Destination Data

## Demand (Veh/hr)

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	43	0	641
	2 - Grovehurst Road	0	0	26	382
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	139	312	0

## Demand (Veh/hr)

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	144	0	0	689	187
	3 - A249 offslip (SB)	1	18	0	332	178
	4 - Swale Way	292	198	0	0	66
	5 - Grovehurst Road	211	238	0	137	0

## Vehicle Mix

## Heavy Vehicle Percentages

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	7	0	14
	2 - Grovehurst Road	0	0	8	3
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	3	5	0

## Heavy Vehicle Percentages

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	0	0	0	13	6
	3 - A249 offslip (SB)	0	6	0	5	4
	4 - Swale Way	32	7	0	0	6
	5 - Grovehurst Road	1	2	0	3	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	0.90	39.25	7.7	41.8	E	628	941
	2 - Grovehurst Road	0.94	74.76	8.8	40.5	F	374	562
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.31	3.33	0.4	1.8	A	416	623
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.61	5.11	1.6	2.3	A	937	1406
	3 - A249 offslip (SB)	1.11	190.20	33.8	72.8	F	485	728
	4 - Swale Way	1.01	108.78	18.4	60.3	F	510	765
	5 - Grovehurst Road	1.04	127.76	23.7	66.5	F	538	807

## Main Results for each time segment

## 07:15 - 07:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	515	129	336	931	0.553	510	0	0.0	1.2	8.456	A
	2 - Grovehurst Road	307	77	711	681	0.451	304	136	0.0	0.8	9.476	A
	3 - A249 onslip (NB)			763				252				
	4 - B2005 - link	337	84	0	1554	0.217	336	763	0.0	0.3	2.952	A
2 - South	1 - A249 onslip (SB)			439				482				
	2 - B2005 - link	763	191	102	1841	0.414	760	337	0.0	0.7	3.322	A
	3 - A249 offslip (SB)	398	100	862	830	0.480	395	0	0.0	0.9	8.199	A
	4 - Swale Way	419	105	394	690	0.607	413	863	0.0	1.5	12.732	B
	5 - Grovehurst Road	441	110	485	767	0.575	436	321	0.0	1.3	10.698	B

## 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	615	154	403	884	0.696	611	0	1.2	2.2	13.022	B
	2 - Grovehurst Road	367	92	851	591	0.620	364	163	0.8	1.6	15.613	C
	3 - A249 onslip (NB)			913				302				
	4 - B2005 - link	403	101	0	1554	0.259	403	913	0.3	0.3	3.126	A
2 - South	1 - A249 onslip (SB)			525				576				
	2 - B2005 - link	913	228	122	1829	0.499	912	403	0.7	1.0	3.921	A
	3 - A249 offslip (SB)	476	119	1034	696	0.683	471	0	0.9	2.0	15.685	C
	4 - Swale Way	500	125	471	650	0.769	494	1034	1.5	3.0	22.220	C
	5 - Grovehurst Road	527	132	581	700	0.752	521	384	1.3	2.8	19.453	C

## 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	753	188	465	839	0.897	736	0	2.2	6.5	30.570	D
	2 - Grovehurst Road	449	112	1011	489	0.918	429	189	1.6	6.5	49.227	E
	3 - A249 onslip (NB)			1091				349				
	4 - B2005 - link	465	116	0	1554	0.299	465	1091	0.3	0.4	3.304	A
2 - South	1 - A249 onslip (SB)			605				672				
	2 - B2005 - link	1092	273	140	1818	0.601	1090	465	1.0	1.5	4.928	A
	3 - A249 offslip (SB)	582	146	1230	543	1.073	520	0	2.0	17.7	87.403	F
	4 - Swale Way	612	153	547	611	1.003	574	1202	3.0	12.6	65.478	F
	5 - Grovehurst Road	645	161	678	632	1.021	599	443	2.8	14.5	68.750	F

## 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	753	188	474	833	0.905	749	0	6.5	7.7	39.249	E
	2 - Grovehurst Road	449	112	1030	477	0.941	440	193	6.5	8.8	74.760	F
	3 - A249 onslip (NB)			1113				356				
	4 - B2005 - link	474	119	0	1554	0.305	474	1113	0.4	0.4	3.332	A
2 - South	1 - A249 onslip (SB)			617				687				
	2 - B2005 - link	1114	278	142	1817	0.613	1114	474	1.5	1.6	5.114	A
	3 - A249 offslip (SB)	582	146	1256	523	1.114	518	0	17.7	33.8	190.195	F
	4 - Swale Way	612	153	554	607	1.009	589	1220	12.6	18.4	108.777	F

	5 - Grovehurst Road	645	161	695	620	1.041	608	449	14.5	23.7	127.756	F
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## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	615	154	461	842	0.730	634	0	7.7	2.9	18.671	C
	2 - Grovehurst Road	367	92	913	553	0.663	394	182	8.8	2.1	25.829	D
	3 - A249 onslip (NB)			963				344				
	4 - B2005 - link	461	115	0	1554	0.297	461	963	0.4	0.4	3.294	A
2 - South	1 - A249 onslip (SB)			602				644				
	2 - B2005 - link	962	241	141	1818	0.529	964	461	1.6	1.1	4.221	A
	3 - A249 offslip (SB)	476	119	1104	642	0.741	596	0	33.8	3.5	102.888	F
	4 - Swale Way	500	125	535	617	0.810	552	1166	18.4	5.2	66.875	F
	5 - Grovehurst Road	527	132	644	655	0.805	601	443	23.7	5.1	79.247	F

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	515	129	354	919	0.560	521	0	2.9	1.3	9.195	A
	2 - Grovehurst Road	307	77	733	667	0.461	312	142	2.1	0.9	10.286	B
	3 - A249 onslip (NB)			781				264				
	4 - B2005 - link	353	88	0	1554	0.227	354	781	0.4	0.3	3.001	A
2 - South	1 - A249 onslip (SB)			460				503				
	2 - B2005 - link	781	195	107	1838	0.425	782	353	1.1	0.7	3.416	A
	3 - A249 offslip (SB)	398	100	889	809	0.492	408	0	3.5	1.0	9.206	A
	4 - Swale Way	419	105	406	683	0.612	433	891	5.2	1.6	15.113	C
	5 - Grovehurst Road	441	110	507	752	0.587	456	332	5.1	1.5	12.718	B

## Queue Variation Results for each time segment

## 07:15 - 07:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	1.21	0.56	1.09	1.36	1.68			N/A	N/A
	2 - Grovehurst Road	0.81	0.54	0.99	1.40	1.45			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.70	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.91	0.10	0.90	1.31	1.72			N/A	N/A
	4 - Swale Way	1.49	0.55	1.38	1.93	2.38			N/A	N/A
	5 - Grovehurst Road	1.31	0.36	1.22	1.84	2.12			N/A	N/A

## 07:30 - 07:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.19	0.06	0.97	5.59	8.28			N/A	N/A
	2 - Grovehurst Road	1.56	0.06	0.80	3.75	5.50			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.35	0.00	0.00	0.35	0.35			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.99	0.07	0.85	1.75	2.29			N/A	N/A
	3 - A249 offslip (SB)	2.05	0.05	0.47	5.54	8.97			N/A	N/A
	4 - Swale Way	3.03	0.08	1.45	7.63	10.92			N/A	N/A
	5 - Grovehurst Road	2.80	0.07	1.17	7.32	10.85			N/A	N/A



## 07:45 - 08:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	6.55	0.05	0.86	18.95	31.95			N/A	N/A
	2 - Grovehurst Road	6.51	0.09	1.74	17.99	26.91			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.48	0.03	0.26	1.48	1.48			N/A	N/A
	3 - A249 offslip (SB)	17.74	2.29	14.14	34.74	42.81			N/A	N/A
	4 - Swale Way	12.57	0.47	7.79	29.34	38.85			N/A	N/A
	5 - Grovehurst Road	14.45	0.92	9.88	32.03	41.42			N/A	N/A

## 08:00 - 08:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	7.67	0.04	0.41	20.15	41.80			N/A	N/A
	2 - Grovehurst Road	8.83	0.07	1.37	25.55	40.51			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.44	0.03	0.31	1.35	1.82			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.57	0.03	0.26	1.57	1.57			N/A	N/A
	3 - A249 offslip (SB)	33.75	7.77	29.16	60.95	72.82			N/A	N/A
	4 - Swale Way	18.36	0.44	10.68	44.76	60.30			N/A	N/A
	5 - Grovehurst Road	23.71	1.30	17.00	51.88	66.49			N/A	N/A

## 08:15 - 08:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.88	0.05	0.49	7.99	13.16			N/A	N/A
	2 - Grovehurst Road	2.10	0.04	0.43	5.73	9.86			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.13	0.53	1.09	1.44	1.73			N/A	N/A
	3 - A249 offslip (SB)	3.55	0.05	0.46	9.97	17.32			N/A	N/A
	4 - Swale Way	5.19	0.06	1.25	14.73	23.19			N/A	N/A
	5 - Grovehurst Road	5.14	0.07	1.32	14.49	22.58			N/A	N/A

## 08:30 - 08:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	1.30	0.03	0.31	2.34	6.67			N/A	N/A
	2 - Grovehurst Road	0.87	0.03	0.29	1.30	3.81			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.30	0.00	0.00	0.30	0.30			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.74	0.09	0.82	1.41	1.48			N/A	N/A
	3 - A249 offslip (SB)	0.99	0.03	0.27	0.99	1.61			N/A	N/A
	4 - Swale Way	1.64	0.03	0.30	1.76	7.55			N/A	N/A
	5 - Grovehurst Road	1.46	0.03	0.29	1.46	5.85			N/A	N/A

# 2019, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	110.21	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	753.81	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2019	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	765	100.000
	2 - Grovehurst Road		ONE HOUR	✓	227	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	441	100.000
	4 - Swale Way		ONE HOUR	✓	1011	100.000
	5 - Grovehurst Road		ONE HOUR	✓	539	100.000

## Origin-Destination Data

## Demand (Veh/hr)

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	184	0	581
	2 - Grovehurst Road	0	0	28	199
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	239	480	0

## Demand (Veh/hr)

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	43	0	0	405	329
	3 - A249 offslip (SB)	1	28	0	191	221
	4 - Swale Way	520	359	0	0	132
	5 - Grovehurst Road	112	325	0	102	0

## Vehicle Mix

## Heavy Vehicle Percentages

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	1	0	16
	2 - Grovehurst Road	0	0	0	1
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	0	3	0

## Heavy Vehicle Percentages

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	2	0	0	22	1
	3 - A249 offslip (SB)	0	11	0	7	4
	4 - Swale Way	14	2	0	0	2
	5 - Grovehurst Road	0	2	0	3	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.12	213.23	53.8	101.9	F	702	1053
	2 - Grovehurst Road	0.47	13.01	0.9	3.7	B	208	312
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.38	3.67	0.6	2.0	A	560	840
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.44	3.55	0.8	1.5	A	715	1073
	3 - A249 offslip (SB)	0.62	12.13	1.6	4.1	B	405	607
	4 - Swale Way	1.79	2031.57	401.1	184.9	F	928	1392
	5 - Grovehurst Road	0.84	30.90	4.8	25.1	D	495	742

## Main Results for each time segment

## 16:15 - 16:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	576	144	507	826	0.697	567	0	0.0	2.2	13.494	B
	2 - Grovehurst Road	171	43	769	663	0.258	170	305	0.0	0.3	7.281	A
	3 - A249 onslip (NB)			579				359				
	4 - B2005 - link	509	127	0	1591	0.320	507	579	0.0	0.5	3.316	A
2 - South	1 - A249 onslip (SB)			583				470				
	2 - B2005 - link	580	145	76	1821	0.319	578	507	0.0	0.5	2.893	A
	3 - A249 offslip (SB)	332	83	654	973	0.341	330	0	0.0	0.5	5.576	A
	4 - Swale Way	761	190	464	728	1.046	689	520	0.0	17.9	61.967	F
	5 - Grovehurst Road	406	101	653	680	0.596	400	500	0.0	1.4	12.596	B

## 16:30 - 16:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	688	172	557	791	0.870	675	0	2.2	5.4	28.270	D
	2 - Grovehurst Road	204	51	884	587	0.348	203	347	0.3	0.5	9.368	A
	3 - A249 onslip (NB)			691				397				
	4 - B2005 - link	557	139	0	1591	0.350	557	691	0.5	0.5	3.482	A
2 - South	1 - A249 onslip (SB)			646				486				
	2 - B2005 - link	692	173	91	1812	0.382	691	555	0.5	0.6	3.209	A
	3 - A249 offslip (SB)	396	99	782	873	0.454	395	0	0.5	0.8	7.514	A
	4 - Swale Way	909	227	555	676	1.344	675	622	17.9	76.4	270.581	F
	5 - Grovehurst Road	485	121	651	682	0.710	481	579	1.4	2.3	17.577	C

## 16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	842	211	607	755	1.115	741	0	5.4	30.6	103.133	F
	2 - Grovehurst Road	250	62	968	532	0.470	249	380	0.5	0.9	12.631	B
	3 - A249 onslip (NB)			781				436				
	4 - B2005 - link	607	152	0	1591	0.382	607	781	0.5	0.6	3.660	A
2 - South	1 - A249 onslip (SB)			715				487				
	2 - B2005 - link	780	195	111	1801	0.433	779	605	0.6	0.8	3.521	A
	3 - A249 offslip (SB)	486	121	890	789	0.615	483	0	0.8	1.5	11.640	B
	4 - Swale Way	1113	278	647	624	1.783	624	726	76.4	198.7	803.437	F
	5 - Grovehurst Road	593	148	617	704	0.842	585	653	2.3	4.5	28.041	D

## 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	842	211	611	753	1.119	750	0	30.6	53.8	213.234	F
	2 - Grovehurst Road	250	62	977	526	0.475	250	383	0.9	0.9	13.012	B
	3 - A249 onslip (NB)			788				439				
	4 - B2005 - link	611	153	0	1591	0.384	611	788	0.6	0.6	3.674	A
2 - South	1 - A249 onslip (SB)			721				487				
	2 - B2005 - link	787	197	112	1800	0.437	787	608	0.8	0.8	3.553	A
	3 - A249 offslip (SB)	486	121	899	782	0.621	485	0	1.5	1.6	12.132	B
	4 - Swale Way	1113	278	652	621	1.792	621	733	198.7	321.7	1515.698	F

	5 - Grovehurst Road	593	148	615	706	0.841	592	658	4.5	4.8	30.895	D
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## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	688	172	558	790	0.870	776	0	53.8	31.8	200.913	F
	2 - Grovehurst Road	204	51	961	534	0.382	205	372	0.9	0.6	10.970	B
	3 - A249 onslip (NB)			769				398				
	4 - B2005 - link	557	139	0	1591	0.350	558	769	0.6	0.5	3.488	A
2 - South	1 - A249 onslip (SB)			649				482				
	2 - B2005 - link	772	193	93	1811	0.427	772	555	0.8	0.7	3.469	A
	3 - A249 offslip (SB)	396	99	866	807	0.491	399	0	1.6	1.0	8.881	A
	4 - Swale Way	909	227	596	653	1.391	653	669	321.7	385.6	1886.304	F
	5 - Grovehurst Road	485	121	637	692	0.701	494	612	4.8	2.5	18.993	C

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	576	144	518	818	0.704	693	0	31.8	2.6	50.381	F
	2 - Grovehurst Road	171	43	872	593	0.288	172	339	0.6	0.4	8.561	A
	3 - A249 onslip (NB)			677				367				
	4 - B2005 - link	518	130	0	1591	0.326	518	677	0.5	0.5	3.360	A
2 - South	1 - A249 onslip (SB)			594				483				
	2 - B2005 - link	681	170	77	1820	0.374	681	516	0.7	0.6	3.164	A
	3 - A249 offslip (SB)	332	83	759	891	0.373	334	0	1.0	0.6	6.480	A
	4 - Swale Way	761	190	515	699	1.089	699	577	385.6	401.1	2031.567	F
	5 - Grovehurst Road	406	101	667	671	0.605	409	547	2.5	1.6	13.931	B

## Queue Variation Results for each time segment

## 16:15 - 16:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.19	0.22	1.29	4.01	5.14			N/A	N/A
	2 - Grovehurst Road	0.34	0.00	0.00	0.34	0.34			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.47	0.00	0.00	0.47	0.47			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.47	0.00	0.00	0.47	0.47			N/A	N/A
	3 - A249 offslip (SB)	0.51	0.51	1.00	1.40	1.45			N/A	N/A
	4 - Swale Way	17.93	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.43	0.55	1.00	1.43	1.45			N/A	N/A

## 16:30 - 16:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	5.40	0.13	2.37	13.54	18.89			N/A	N/A
	2 - Grovehurst Road	0.52	0.52	1.00	1.40	1.45			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.61	0.14	0.89	1.38	1.44			N/A	N/A
	3 - A249 offslip (SB)	0.82	0.09	0.85	1.46	1.46			N/A	N/A
	4 - Swale Way	76.44	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.31	0.10	1.41	5.25	7.23			N/A	N/A

## 16:45 - 17:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	30.62	8.29	26.99	53.13	62.69			N/A	N/A
	2 - Grovehurst Road	0.86	0.03	0.26	0.86	0.86			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.61	0.03	0.25	0.61	0.61			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.76	0.03	0.25	0.76	0.76			N/A	N/A
	3 - A249 offslip (SB)	1.55	0.03	0.27	1.55	3.07			N/A	N/A
	4 - Swale Way	198.71	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	4.52	0.04	0.41	12.32	23.86			N/A	N/A

## 17:00 - 17:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	53.78	18.77	49.17	88.08	101.88			N/A	N/A
	2 - Grovehurst Road	0.89	0.03	0.29	1.15	3.69			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.62	0.03	0.28	0.62	1.98			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.77	0.03	0.27	0.77	1.42			N/A	N/A
	3 - A249 offslip (SB)	1.60	0.03	0.28	1.60	4.08			N/A	N/A
	4 - Swale Way	321.72	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	4.82	0.03	0.33	8.05	25.06			N/A	N/A

## 17:15 - 17:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	31.76	9.27	28.29	54.14	63.53			N/A	N/A
	2 - Grovehurst Road	0.63	0.10	0.83	1.37	1.43			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.75	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.98	0.11	0.96	1.52	1.84			N/A	N/A
	4 - Swale Way	385.60	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.48	0.04	0.42	6.80	12.20			N/A	N/A

## 17:30 - 17:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.60	0.03	0.30	2.62	11.83			N/A	N/A
	2 - Grovehurst Road	0.41	0.03	0.34	1.11	1.31			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.60	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.60	0.05	0.46	1.35	1.35			N/A	N/A
	4 - Swale Way	401.10	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.58	0.04	0.36	3.95	8.00			N/A	N/A

# 2019 + Committed Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	149.64	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	291.85	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2019 + Committed Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	798	100.000
	2 - Grovehurst Road		ONE HOUR	✓	451	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	580	100.000
	4 - Swale Way		ONE HOUR	✓	649	100.000
	5 - Grovehurst Road		ONE HOUR	✓	623	100.000

## Origin-Destination Data

## Demand (Veh/hr)

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	43	0	755
	2 - Grovehurst Road	0	0	26	425
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	151	333	0

## Demand (Veh/hr)

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	144	0	0	846	187
	3 - A249 offslip (SB)	1	18	0	383	178
	4 - Swale Way	341	230	0	0	78
	5 - Grovehurst Road	211	238	0	174	0

## Vehicle Mix

## Heavy Vehicle Percentages

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	7	0	15
	2 - Grovehurst Road	0	0	8	4
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	5	7	0

## Heavy Vehicle Percentages

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	0	0	0	11	6
	3 - A249 offslip (SB)	0	6	0	9	4
	4 - Swale Way	35	10	0	0	9
	5 - Grovehurst Road	1	2	0	4	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.06	141.77	36.6	87.5	F	732	1098
	2 - Grovehurst Road	1.17	321.88	40.9	76.5	F	414	621
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.30	3.38	0.4	1.9	A	435	653
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.66	5.81	1.9	4.1	A	1101	1652
	3 - A249 offslip (SB)	1.47	884.17	127.5	186.4	F	532	798
	4 - Swale Way	1.14	290.94	53.6	98.4	F	596	893
	5 - Grovehurst Road	1.15	300.70	52.9	96.6	F	572	858



## Main Results for each time segment

## 07:15 - 07:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	601	150	357	904	0.665	593	0	0.0	1.9	11.334	B
	2 - Grovehurst Road	340	85	807	607	0.559	335	143	0.0	1.2	12.979	B
	3 - A249 onslip (NB)			877				265				
	4 - B2005 - link	358	89	0	1525	0.235	357	877	0.0	0.3	3.078	A
2 - South	1 - A249 onslip (SB)			488				518				
	2 - B2005 - link	894	224	129	1841	0.486	890	359	0.0	0.9	3.772	A
	3 - A249 offslip (SB)	437	109	1019	696	0.628	430	0	0.0	1.6	13.255	B
	4 - Swale Way	489	122	396	671	0.728	479	1053	0.0	2.5	17.862	C
	5 - Grovehurst Road	469	117	544	714	0.657	462	331	0.0	1.8	13.898	B

## 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	717	179	422	856	0.838	707	0	1.9	4.5	22.667	C
	2 - Grovehurst Road	405	101	959	510	0.796	397	170	1.2	3.4	29.926	D
	3 - A249 onslip (NB)			1043				313				
	4 - B2005 - link	423	106	0	1525	0.277	422	1043	0.3	0.4	3.264	A
2 - South	1 - A249 onslip (SB)			577				613				
	2 - B2005 - link	1064	266	153	1827	0.582	1062	424	0.9	1.4	4.696	A
	3 - A249 offslip (SB)	521	130	1215	548	0.951	495	0	1.6	8.3	51.983	F
	4 - Swale Way	583	146	467	636	0.917	565	1243	2.5	7.1	42.431	E
	5 - Grovehurst Road	560	140	643	643	0.871	546	389	1.8	5.3	33.402	D

## 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	879	220	456	832	1.056	807	0	4.5	22.4	74.888	F
	2 - Grovehurst Road	497	124	1077	434	1.144	422	186	3.4	22.0	130.299	F
	3 - A249 onslip (NB)			1161				338				
	4 - B2005 - link	456	114	0	1525	0.299	456	1161	0.4	0.4	3.366	A
2 - South	1 - A249 onslip (SB)			622				670				
	2 - B2005 - link	1186	297	164	1820	0.652	1184	458	1.4	1.8	5.646	A
	3 - A249 offslip (SB)	639	160	1349	447	1.428	445	0	8.3	56.7	283.134	F
	4 - Swale Way	715	179	484	627	1.139	618	1310	7.1	31.2	128.759	F
	5 - Grovehurst Road	686	171	703	600	1.144	589	399	5.3	29.5	124.102	F

## 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	879	220	459	830	1.059	822	0	22.4	36.6	141.770	F
	2 - Grovehurst Road	497	124	1093	423	1.173	421	188	22.0	40.9	285.845	F
	3 - A249 onslip (NB)			1174				340				
	4 - B2005 - link	459	115	0	1525	0.301	459	1174	0.4	0.4	3.376	A
2 - South	1 - A249 onslip (SB)			627				677				
	2 - B2005 - link	1201	300	165	1820	0.660	1200	461	1.8	1.9	5.807	A
	3 - A249 offslip (SB)	639	160	1366	434	1.470	434	0	56.7	107.8	689.207	F
	4 - Swale Way	715	179	485	627	1.140	625	1315	31.2	53.6	257.694	F

	5 - Grovehurst Road	686	171	711	594	1.154	592	399	29.5	52.9	263.832	F
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## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	717	179	455	832	0.862	810	0	36.6	13.4	117.059	F
	2 - Grovehurst Road	405	101	1080	432	0.938	422	186	40.9	36.8	321.882	F
	3 - A249 onslip (NB)			1164				338				
	4 - B2005 - link	455	114	0	1525	0.299	455	1164	0.4	0.4	3.364	A
2 - South	1 - A249 onslip (SB)			622				670				
	2 - B2005 - link	1190	297	165	1820	0.654	1190	457	1.9	1.9	5.714	A
	3 - A249 offslip (SB)	521	130	1354	443	1.177	443	0	107.8	127.5	884.174	F
	4 - Swale Way	583	146	485	627	0.930	616	1312	53.6	45.6	290.941	F
	5 - Grovehurst Road	560	140	702	601	0.932	590	399	52.9	45.5	300.698	F

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	601	150	460	829	0.724	643	0	13.4	2.8	23.065	C
	2 - Grovehurst Road	340	85	925	534	0.636	479	178	36.8	2.0	117.307	F
	3 - A249 onslip (NB)			1059				344				
	4 - B2005 - link	460	115	0	1525	0.301	460	1059	0.4	0.4	3.377	A
2 - South	1 - A249 onslip (SB)			628				657				
	2 - B2005 - link	1074	268	166	1819	0.590	1075	462	1.9	1.5	4.851	A
	3 - A249 offslip (SB)	437	109	1241	529	0.826	525	0	127.5	105.5	800.449	F
	4 - Swale Way	489	122	481	629	0.777	616	1285	45.6	13.8	180.192	F
	5 - Grovehurst Road	469	117	690	608	0.772	595	406	45.5	14.0	186.751	F

## Queue Variation Results for each time segment

## 07:15 - 07:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	1.91	0.25	1.12	3.31	4.09			N/A	N/A
	2 - Grovehurst Road	1.23	0.08	1.00	2.30	2.99			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.94	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.62	0.03	0.27	1.62	1.62			N/A	N/A
	4 - Swale Way	2.48	0.11	1.11	5.51	7.46			N/A	N/A
	5 - Grovehurst Road	1.83	0.07	1.03	4.33	6.18			N/A	N/A

## 07:30 - 07:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	4.49	0.10	1.58	11.62	16.67			N/A	N/A
	2 - Grovehurst Road	3.35	0.08	1.45	8.68	12.64			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.38	0.07	0.93	2.93	4.10			N/A	N/A
	3 - A249 offslip (SB)	8.30	0.05	0.69	24.04	42.25			N/A	N/A
	4 - Swale Way	7.06	0.24	3.93	16.66	22.39			N/A	N/A
	5 - Grovehurst Road	5.26	0.11	1.94	13.66	19.53			N/A	N/A

## 07:45 - 08:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	22.38	2.75	17.75	44.60	55.20			N/A	N/A
	2 - Grovehurst Road	22.05	5.59	19.21	38.49	45.59			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.84	0.03	0.26	1.84	1.84			N/A	N/A
	3 - A249 offslip (SB)	56.73	22.61	52.71	89.21	101.89			N/A	N/A
	4 - Swale Way	31.21	9.42	27.90	52.70	61.65			N/A	N/A
	5 - Grovehurst Road	29.50	8.60	26.24	50.20	58.87			N/A	N/A

## 08:00 - 08:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	36.60	5.69	30.01	71.37	87.46			N/A	N/A
	2 - Grovehurst Road	40.89	14.57	37.40	66.26	76.46			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.43	0.03	0.30	1.27	1.87			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.91	0.03	0.26	1.91	1.91			N/A	N/A
	3 - A249 offslip (SB)	107.81	63.87	104.66	146.39	159.95			N/A	N/A
	4 - Swale Way	53.62	20.28	49.50	85.70	98.40			N/A	N/A
	5 - Grovehurst Road	52.92	20.29	48.93	84.21	96.56			N/A	N/A

## 08:15 - 08:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	13.37	0.31	7.39	32.93	44.74			N/A	N/A
	2 - Grovehurst Road	36.80	17.93	34.81	53.56	59.86			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.90	0.53	1.25	2.89	3.55			N/A	N/A
	3 - A249 offslip (SB)	127.47	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	45.57	13.25	40.68	78.30	91.97			N/A	N/A
	5 - Grovehurst Road	45.45	13.98	40.87	76.97	90.01			N/A	N/A

## 08:30 - 08:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.81	0.03	0.33	5.23	14.83			N/A	N/A
	2 - Grovehurst Road	2.04	0.03	0.30	2.04	9.06			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.46	0.27	1.31	2.20	2.76			N/A	N/A
	3 - A249 offslip (SB)	105.51	53.68	100.97	152.83	170.16			N/A	N/A
	4 - Swale Way	13.80	0.63	8.89	31.67	41.57			N/A	N/A
	5 - Grovehurst Road	14.05	0.94	9.67	31.01	40.06			N/A	N/A

# 2019 + Committed Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	189.69	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	1536.52	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2019 + Committed Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	798	100.000
	2 - Grovehurst Road		ONE HOUR	✓	233	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	452	100.000
	4 - Swale Way		ONE HOUR	✓	1255	100.000
	5 - Grovehurst Road		ONE HOUR	✓	545	100.000

## Origin-Destination Data

## Demand (Veh/hr)

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	184	0	614
	2 - Grovehurst Road	0	0	28	205
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	271	537	0

## Demand (Veh/hr)

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	43	0	0	444	329
	3 - A249 offslip (SB)	1	28	0	202	221
	4 - Swale Way	639	449	0	0	167
	5 - Grovehurst Road	112	325	0	108	0

## Vehicle Mix

## Heavy Vehicle Percentages

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	1	0	19
	2 - Grovehurst Road	0	0	0	1
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	1	3	0

## Heavy Vehicle Percentages

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	2	0	0	25	1
	3 - A249 offslip (SB)	0	11	0	8	4
	4 - Swale Way	15	3	0	0	2
	5 - Grovehurst Road	0	2	0	4	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.20	362.28	82.2	131.6	F	732	1098
	2 - Grovehurst Road	0.49	13.63	1.0	3.6	B	214	321
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.39	3.71	0.6	2.0	A	563	845
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.45	3.69	0.8	1.5	A	741	1111
	3 - A249 offslip (SB)	0.65	13.62	1.8	5.6	B	415	622
	4 - Swale Way	2.21	3714.33	733.4	183.5	F	1152	1727
	5 - Grovehurst Road	0.86	34.07	5.4	28.9	D	500	750

## Main Results for each time segment

## 16:15 - 16:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	601	150	517	800	0.751	590	0	0.0	2.8	16.322	C
	2 - Grovehurst Road	175	44	797	636	0.276	174	309	0.0	0.4	7.768	A
	3 - A249 onslip (NB)			607				364				
	4 - B2005 - link	519	130	0	1586	0.327	517	607	0.0	0.5	3.363	A
2 - South	1 - A249 onslip (SB)			596				478				
	2 - B2005 - link	609	152	80	1784	0.341	606	516	0.0	0.5	3.051	A
	3 - A249 offslip (SB)	340	85	687	934	0.364	338	0	0.0	0.6	6.016	A
	4 - Swale Way	945	236	463	723	1.307	711	561	0.0	58.6	160.202	F
	5 - Grovehurst Road	410	103	670	665	0.617	404	504	0.0	1.6	13.519	B

## 16:30 - 16:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	717	179	558	772	0.930	696	0	2.8	8.1	39.396	E
	2 - Grovehurst Road	209	52	907	562	0.373	209	348	0.4	0.6	10.159	B
	3 - A249 onslip (NB)			719				396				
	4 - B2005 - link	559	140	0	1586	0.352	558	719	0.5	0.5	3.504	A
2 - South	1 - A249 onslip (SB)			652				481				
	2 - B2005 - link	721	180	96	1775	0.406	720	556	0.5	0.7	3.411	A
	3 - A249 offslip (SB)	406	102	817	831	0.489	405	0	0.6	0.9	8.422	A
	4 - Swale Way	1128	282	552	673	1.677	673	669	58.6	172.5	647.401	F
	5 - Grovehurst Road	490	122	647	680	0.721	486	578	1.6	2.4	18.260	C

## 16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	879	220	610	736	1.194	730	0	8.1	45.4	147.001	F
	2 - Grovehurst Road	257	64	967	523	0.490	255	373	0.6	0.9	13.342	B
	3 - A249 onslip (NB)			786				436				
	4 - B2005 - link	610	153	0	1586	0.385	610	786	0.5	0.6	3.690	A
2 - South	1 - A249 onslip (SB)			724				484				
	2 - B2005 - link	784	196	117	1763	0.445	784	607	0.7	0.8	3.672	A
	3 - A249 offslip (SB)	498	124	900	765	0.651	494	0	0.9	1.8	13.136	B
	4 - Swale Way	1382	345	631	628	2.199	628	764	172.5	360.8	1534.409	F
	5 - Grovehurst Road	600	150	618	700	0.858	590	641	2.4	4.9	30.227	D

## 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	879	220	615	733	1.199	732	0	45.4	82.2	320.812	F
	2 - Grovehurst Road	257	64	971	520	0.493	256	375	0.9	1.0	13.628	B
	3 - A249 onslip (NB)			789				439				
	4 - B2005 - link	615	154	0	1586	0.388	615	789	0.6	0.6	3.707	A
2 - South	1 - A249 onslip (SB)			730				485				
	2 - B2005 - link	787	197	119	1762	0.446	787	612	0.8	0.8	3.688	A
	3 - A249 offslip (SB)	498	124	905	761	0.654	497	0	1.8	1.8	13.623	B
	4 - Swale Way	1382	345	634	627	2.205	627	769	360.8	549.6	2516.192	F

	5 - Grovehurst Road	600	150	617	700	0.857	598	644	4.9	5.4	34.068	D
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## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	717	179	562	769	0.933	760	0	82.2	71.6	362.282	F
	2 - Grovehurst Road	209	52	958	526	0.398	211	364	1.0	0.7	11.441	B
	3 - A249 onslip (NB)			770				399				
	4 - B2005 - link	562	141	0	1586	0.355	562	770	0.6	0.6	3.521	A
2 - South	1 - A249 onslip (SB)			659				480				
	2 - B2005 - link	773	193	99	1773	0.436	774	559	0.8	0.8	3.602	A
	3 - A249 offslip (SB)	406	102	873	786	0.517	409	0	1.8	1.1	9.634	A
	4 - Swale Way	1128	282	579	658	1.715	658	703	549.6	667.2	3256.722	F
	5 - Grovehurst Road	490	122	637	686	0.714	501	600	5.4	2.7	20.361	C

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	601	150	514	802	0.749	791	0	71.6	24.1	222.137	F
	2 - Grovehurst Road	175	44	950	529	0.332	176	355	0.7	0.5	10.228	B
	3 - A249 onslip (NB)			764				363				
	4 - B2005 - link	514	129	0	1586	0.324	514	764	0.6	0.5	3.363	A
2 - South	1 - A249 onslip (SB)			594				473				
	2 - B2005 - link	772	193	82	1783	0.433	772	512	0.8	0.8	3.561	A
	3 - A249 offslip (SB)	340	85	854	800	0.425	342	0	1.1	0.8	7.882	A
	4 - Swale Way	945	236	541	680	1.390	680	655	667.2	733.4	3714.334	F
	5 - Grovehurst Road	410	103	652	677	0.606	415	569	2.7	1.6	13.939	B

## Queue Variation Results for each time segment

## 16:15 - 16:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.80	0.10	1.07	6.67	9.28			N/A	N/A
	2 - Grovehurst Road	0.38	0.00	0.00	0.38	0.38			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.51	0.51	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.57	0.55	1.00	1.40	1.45			N/A	N/A
	4 - Swale Way	58.56	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.55	1.05	1.50	1.90	1.95			N/A	N/A

## 16:30 - 16:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	8.13	0.23	4.41	19.67	26.67			N/A	N/A
	2 - Grovehurst Road	0.58	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.68	0.18	0.92	1.38	1.44			N/A	N/A
	3 - A249 offslip (SB)	0.94	0.09	0.90	1.50	1.86			N/A	N/A
	4 - Swale Way	172.45	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.42	0.10	1.44	5.58	7.70			N/A	N/A

## 16:45 - 17:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	45.40	18.92	42.32	70.13	79.72			N/A	N/A
	2 - Grovehurst Road	0.93	0.03	0.26	0.93	0.93			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.62	0.03	0.25	0.62	0.62			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.79	0.03	0.25	0.79	0.79			N/A	N/A
	3 - A249 offslip (SB)	1.79	0.03	0.28	1.79	5.63			N/A	N/A
	4 - Swale Way	360.80	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	4.95	0.04	0.45	13.89	25.48			N/A	N/A

## 17:00 - 17:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	82.16	42.23	78.62	118.31	131.56			N/A	N/A
	2 - Grovehurst Road	0.96	0.03	0.28	0.96	3.59			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.63	0.03	0.28	0.63	1.96			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.80	0.03	0.27	0.80	1.25			N/A	N/A
	3 - A249 offslip (SB)	1.84	0.03	0.28	1.84	4.62			N/A	N/A
	4 - Swale Way	549.59	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	5.35	0.03	0.34	10.71	28.89			N/A	N/A

## 17:15 - 17:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	71.61	31.85	67.46	108.79	122.93			N/A	N/A
	2 - Grovehurst Road	0.67	0.09	0.81	1.37	1.44			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.55	0.55	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.78	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.09	0.08	0.92	1.92	2.63			N/A	N/A
	4 - Swale Way	667.17	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.65	0.04	0.42	7.32	13.09			N/A	N/A

## 17:30 - 17:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	24.07	4.15	19.95	45.59	55.42			N/A	N/A
	2 - Grovehurst Road	0.50	0.05	0.45	1.28	1.39			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.77	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.75	0.05	0.49	1.44	1.94			N/A	N/A
	4 - Swale Way	733.43	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.59	0.03	0.35	3.84	8.21			N/A	N/A



# 2019 + Committed + Peak Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	159.18	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	312.67	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2019 + Committed + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	802	100.000
	2 - Grovehurst Road		ONE HOUR	✓	451	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	580	100.000
	4 - Swale Way		ONE HOUR	✓	652	100.000
	5 - Grovehurst Road		ONE HOUR	✓	623	100.000

## Origin-Destination Data

## Demand (Veh/hr)

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	43	0	759
	2 - Grovehurst Road	0	0	26	425
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	151	333	0

## Demand (Veh/hr)

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	144	0	0	850	187
	3 - A249 offslip (SB)	1	18	0	383	178
	4 - Swale Way	344	230	0	0	78
	5 - Grovehurst Road	211	238	0	174	0

## Vehicle Mix

## Heavy Vehicle Percentages

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	7	0	16
	2 - Grovehurst Road	0	0	8	4
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	5	7	0

## Heavy Vehicle Percentages

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	0	0	0	12	6
	3 - A249 offslip (SB)	0	6	0	9	4
	4 - Swale Way	36	10	0	0	9
	5 - Grovehurst Road	1	2	0	4	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.07	155.70	40.7	91.3	F	736	1104
	2 - Grovehurst Road	1.18	332.62	41.7	77.3	F	414	621
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.30	3.37	0.4	1.9	A	434	650
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.66	5.87	1.9	4.2	A	1104	1656
	3 - A249 offslip (SB)	1.48	975.39	129.4	195.3	F	532	798
	4 - Swale Way	1.15	308.07	56.1	101.2	F	598	897
	5 - Grovehurst Road	1.16	305.64	53.5	97.3	F	572	858

## Main Results for each time segment

## 07:15 - 07:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	604	151	356	896	0.674	596	0	0.0	2.0	11.694	B
	2 - Grovehurst Road	340	85	809	602	0.564	335	143	0.0	1.2	13.206	B
	3 - A249 onslip (NB)			879				265				
	4 - B2005 - link	358	89	0	1525	0.235	356	879	0.0	0.3	3.078	A
2 - South	1 - A249 onslip (SB)			488				519				
	2 - B2005 - link	896	224	129	1829	0.490	892	359	0.0	1.0	3.828	A
	3 - A249 offslip (SB)	437	109	1021	690	0.633	430	0	0.0	1.7	13.540	B
	4 - Swale Way	491	123	396	669	0.734	481	1055	0.0	2.6	18.291	C
	5 - Grovehurst Road	469	117	546	711	0.660	462	331	0.0	1.9	14.061	B

## 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	721	180	422	850	0.848	710	0	2.0	4.8	23.971	C
	2 - Grovehurst Road	405	101	962	504	0.804	396	170	1.2	3.5	31.105	D
	3 - A249 onslip (NB)			1045				313				
	4 - B2005 - link	422	105	0	1525	0.277	422	1045	0.3	0.4	3.262	A
2 - South	1 - A249 onslip (SB)			576				614				
	2 - B2005 - link	1066	266	152	1815	0.587	1064	424	1.0	1.4	4.779	A
	3 - A249 offslip (SB)	521	130	1216	542	0.962	492	0	1.7	8.9	55.015	F
	4 - Swale Way	586	147	465	634	0.925	567	1243	2.6	7.4	44.187	E
	5 - Grovehurst Road	560	140	645	640	0.875	546	387	1.9	5.4	34.145	D

## 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	883	221	454	827	1.068	805	0	4.8	24.4	80.363	F
	2 - Grovehurst Road	497	124	1074	432	1.150	420	185	3.5	22.6	133.685	F
	3 - A249 onslip (NB)			1157				337				
	4 - B2005 - link	454	114	0	1525	0.298	454	1157	0.4	0.4	3.360	A
2 - South	1 - A249 onslip (SB)			620				669				
	2 - B2005 - link	1182	295	164	1808	0.654	1180	456	1.4	1.9	5.712	A
	3 - A249 offslip (SB)	639	160	1344	445	1.436	443	0	8.9	57.9	291.312	F
	4 - Swale Way	718	179	481	626	1.147	617	1306	7.4	32.5	133.772	F
	5 - Grovehurst Road	686	171	702	599	1.146	588	397	5.4	29.9	125.824	F

## 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	883	221	458	824	1.072	818	0	24.4	40.7	155.703	F
	2 - Grovehurst Road	497	124	1089	422	1.177	420	187	22.6	41.7	292.567	F
	3 - A249 onslip (NB)			1170				339				
	4 - B2005 - link	458	114	0	1525	0.300	458	1170	0.4	0.4	3.371	A
2 - South	1 - A249 onslip (SB)			625				676				
	2 - B2005 - link	1195	299	165	1808	0.661	1195	459	1.9	1.9	5.867	A
	3 - A249 offslip (SB)	639	160	1360	433	1.475	433	0	57.9	109.3	702.619	F
	4 - Swale Way	718	179	482	626	1.147	624	1311	32.5	56.1	268.888	F

	5 - Grovehurst Road	686	171	709	593	1.156	591	397	29.9	53.5	267.122	F
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## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	721	180	454	827	0.872	807	0	40.7	19.2	138.110	F
	2 - Grovehurst Road	405	101	1076	430	0.942	420	185	41.7	38.0	332.623	F
	3 - A249 onslip (NB)			1160				336				
	4 - B2005 - link	454	113	0	1525	0.297	454	1160	0.4	0.4	3.361	A
2 - South	1 - A249 onslip (SB)			620				669				
	2 - B2005 - link	1184	296	164	1808	0.655	1184	456	1.9	1.9	5.775	A
	3 - A249 offslip (SB)	521	130	1349	441	1.182	441	0	109.3	129.4	975.386	F
	4 - Swale Way	586	147	482	626	0.937	615	1308	56.1	48.9	308.073	F
	5 - Grovehurst Road	560	140	700	600	0.934	589	396	53.5	46.3	305.642	F

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	604	151	457	825	0.732	669	0	19.2	3.0	30.964	D
	2 - Grovehurst Road	340	85	947	515	0.659	482	178	38.0	2.4	141.394	F
	3 - A249 onslip (NB)			1087				342				
	4 - B2005 - link	457	114	0	1525	0.299	457	1087	0.4	0.4	3.367	A
2 - South	1 - A249 onslip (SB)			624				660				
	2 - B2005 - link	1101	275	165	1808	0.609	1102	459	1.9	1.6	5.113	A
	3 - A249 offslip (SB)	437	109	1268	503	0.868	499	0	129.4	113.8	877.320	F
	4 - Swale Way	491	123	479	627	0.783	615	1288	48.9	17.9	201.330	F
	5 - Grovehurst Road	469	117	692	605	0.775	592	401	46.3	15.5	194.255	F

## Queue Variation Results for each time segment

## 07:15 - 07:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	1.98	0.22	1.15	3.56	4.49			N/A	N/A
	2 - Grovehurst Road	1.25	0.08	0.98	2.44	3.24			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.95	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.66	0.03	0.26	1.66	1.66			N/A	N/A
	4 - Swale Way	2.56	0.10	1.49	5.92	8.21			N/A	N/A
	5 - Grovehurst Road	1.85	0.07	0.98	4.48	6.47			N/A	N/A

## 07:30 - 07:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	4.78	0.10	1.80	12.31	17.54			N/A	N/A
	2 - Grovehurst Road	3.49	0.08	1.03	9.00	13.07			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.40	0.07	0.94	2.99	4.23			N/A	N/A
	3 - A249 offslip (SB)	8.89	0.04	0.44	24.31	48.15			N/A	N/A
	4 - Swale Way	7.42	0.24	4.15	17.59	23.64			N/A	N/A
	5 - Grovehurst Road	5.39	0.11	1.99	13.98	19.98			N/A	N/A

## 07:45 - 08:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	24.40	3.85	20.00	46.95	57.39			N/A	N/A
	2 - Grovehurst Road	22.59	5.97	19.78	39.13	46.23			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.85	0.03	0.26	1.85	1.85			N/A	N/A
	3 - A249 offslip (SB)	57.85	18.83	52.47	96.80	112.69			N/A	N/A
	4 - Swale Way	32.55	10.24	29.26	54.42	63.45			N/A	N/A
	5 - Grovehurst Road	29.87	8.82	26.62	50.70	59.42			N/A	N/A

## 08:00 - 08:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	40.69	8.24	34.60	75.73	91.30			N/A	N/A
	2 - Grovehurst Road	41.74	15.24	38.30	67.18	77.33			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.43	0.03	0.30	1.27	1.86			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.92	0.03	0.26	1.92	1.92			N/A	N/A
	3 - A249 offslip (SB)	109.33	60.22	105.45	153.32	169.09			N/A	N/A
	4 - Swale Way	56.06	22.15	52.04	88.47	101.17			N/A	N/A
	5 - Grovehurst Road	53.51	20.74	49.55	84.92	97.30			N/A	N/A

## 08:15 - 08:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	19.18	1.26	14.08	40.87	51.90			N/A	N/A
	2 - Grovehurst Road	38.03	18.04	35.89	55.93	62.71			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.91	0.50	1.24	2.96	3.69			N/A	N/A
	3 - A249 offslip (SB)	129.44	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	48.90	14.69	43.86	83.41	97.74			N/A	N/A
	5 - Grovehurst Road	46.29	14.10	41.58	78.62	92.00			N/A	N/A

## 08:30 - 08:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.96	0.03	0.33	5.58	15.68			N/A	N/A
	2 - Grovehurst Road	2.43	0.03	0.31	3.70	12.25			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.58	0.36	1.41	2.44	2.90			N/A	N/A
	3 - A249 offslip (SB)	113.77	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	17.94	1.52	13.59	37.07	46.58			N/A	N/A
	5 - Grovehurst Road	15.54	1.45	11.35	32.97	41.88			N/A	N/A

# 2019 + Committed + Peak Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	196.93	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	1539.95	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2019 + Committed + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	802	100.000
	2 - Grovehurst Road		ONE HOUR	✓	233	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	452	100.000
	4 - Swale Way		ONE HOUR	✓	1258	100.000
	5 - Grovehurst Road		ONE HOUR	✓	545	100.000

## Origin-Destination Data

## Demand (Veh/hr)

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	184	0	618
	2 - Grovehurst Road	0	0	28	205
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	271	537	0

## Demand (Veh/hr)

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	43	0	0	447	329
	3 - A249 offslip (SB)	1	28	0	202	221
	4 - Swale Way	642	449	0	0	167
	5 - Grovehurst Road	112	325	0	108	0

## Vehicle Mix

## Heavy Vehicle Percentages

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	1	0	19
	2 - Grovehurst Road	0	0	0	1
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	1	3	0

## Heavy Vehicle Percentages

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	2	0	0	26	1
	3 - A249 offslip (SB)	0	11	0	8	4
	4 - Swale Way	15	3	0	0	2
	5 - Grovehurst Road	0	2	0	4	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.21	375.36	84.6	134.3	F	736	1104
	2 - Grovehurst Road	0.49	13.66	1.0	3.6	B	214	321
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.39	3.71	0.6	2.0	A	563	844
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.45	3.71	0.8	1.5	A	739	1108
	3 - A249 offslip (SB)	0.65	13.66	1.8	5.7	B	415	622
	4 - Swale Way	2.21	3719.44	735.9	183.5	F	1154	1732
	5 - Grovehurst Road	0.86	34.30	5.4	29.1	D	500	750

## Main Results for each time segment

## 16:15 - 16:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	604	151	516	800	0.754	592	0	0.0	2.8	16.512	C
	2 - Grovehurst Road	175	44	800	634	0.277	174	309	0.0	0.4	7.797	A
	3 - A249 onslip (NB)			609				364				
	4 - B2005 - link	518	130	0	1586	0.327	516	609	0.0	0.5	3.362	A
2 - South	1 - A249 onslip (SB)			596				479				
	2 - B2005 - link	608	152	80	1775	0.343	606	516	0.0	0.5	3.074	A
	3 - A249 offslip (SB)	340	85	686	932	0.365	338	0	0.0	0.6	6.040	A
	4 - Swale Way	947	237	462	723	1.309	711	562	0.0	59.0	161.110	F
	5 - Grovehurst Road	410	103	670	664	0.618	404	503	0.0	1.6	13.543	B

## 16:30 - 16:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	721	180	558	772	0.934	699	0	2.8	8.4	40.378	E
	2 - Grovehurst Road	209	52	909	560	0.374	209	347	0.4	0.6	10.213	B
	3 - A249 onslip (NB)			722				396				
	4 - B2005 - link	558	140	0	1586	0.352	558	722	0.5	0.5	3.503	A
2 - South	1 - A249 onslip (SB)			652				482				
	2 - B2005 - link	720	180	96	1766	0.408	720	556	0.5	0.7	3.438	A
	3 - A249 offslip (SB)	406	102	816	828	0.491	405	0	0.6	0.9	8.470	A
	4 - Swale Way	1131	283	551	674	1.679	673	670	59.0	173.4	650.016	F
	5 - Grovehurst Road	490	122	648	679	0.721	486	576	1.6	2.4	18.304	C

## 16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	883	221	610	736	1.200	730	0	8.4	46.7	150.748	F
	2 - Grovehurst Road	257	64	968	523	0.491	255	372	0.6	0.9	13.378	B
	3 - A249 onslip (NB)			787				436				
	4 - B2005 - link	610	153	0	1586	0.385	610	787	0.5	0.6	3.689	A
2 - South	1 - A249 onslip (SB)			724				485				
	2 - B2005 - link	781	195	117	1754	0.445	781	607	0.7	0.8	3.695	A
	3 - A249 offslip (SB)	498	124	898	764	0.651	494	0	0.9	1.8	13.180	B
	4 - Swale Way	1385	346	628	630	2.199	630	764	173.4	362.2	1537.604	F
	5 - Grovehurst Road	600	150	619	699	0.859	590	639	2.4	5.0	30.386	D

## 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	883	221	615	732	1.206	732	0	46.7	84.6	329.652	F
	2 - Grovehurst Road	257	64	972	520	0.493	256	374	0.9	1.0	13.657	B
	3 - A249 onslip (NB)			789				439				
	4 - B2005 - link	615	154	0	1586	0.388	615	789	0.6	0.6	3.707	A
2 - South	1 - A249 onslip (SB)			730				486				
	2 - B2005 - link	784	196	119	1753	0.447	784	612	0.8	0.8	3.710	A
	3 - A249 offslip (SB)	498	124	902	760	0.654	497	0	1.8	1.8	13.657	B
	4 - Swale Way	1385	346	631	628	2.205	628	769	362.2	551.4	2519.674	F



	5 - Grovehurst Road	600	150	618	699	0.858	598	641	5.0	5.4	34.303	D
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## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	721	180	562	769	0.938	760	0	84.6	74.9	375.365	F
	2 - Grovehurst Road	209	52	959	526	0.398	211	363	1.0	0.7	11.464	B
	3 - A249 onslip (NB)			771				399				
	4 - B2005 - link	562	141	0	1586	0.354	562	771	0.6	0.6	3.518	A
2 - South	1 - A249 onslip (SB)			659				481				
	2 - B2005 - link	771	193	99	1764	0.437	771	559	0.8	0.8	3.624	A
	3 - A249 offslip (SB)	406	102	870	785	0.518	409	0	1.8	1.1	9.656	A
	4 - Swale Way	1131	283	576	659	1.715	659	703	551.4	669.4	3261.095	F
	5 - Grovehurst Road	490	122	638	686	0.715	501	597	5.4	2.7	20.471	C

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	604	151	514	802	0.753	791	0	74.9	28.0	237.996	F
	2 - Grovehurst Road	175	44	952	528	0.332	176	354	0.7	0.5	10.249	B
	3 - A249 onslip (NB)			765				363				
	4 - B2005 - link	514	129	0	1586	0.324	514	765	0.6	0.5	3.363	A
2 - South	1 - A249 onslip (SB)			594				474				
	2 - B2005 - link	769	192	82	1774	0.434	769	511	0.8	0.8	3.581	A
	3 - A249 offslip (SB)	340	85	851	799	0.426	342	0	1.1	0.8	7.900	A
	4 - Swale Way	947	237	538	681	1.390	681	655	669.4	735.9	3719.443	F
	5 - Grovehurst Road	410	103	653	676	0.607	415	566	2.7	1.6	13.983	B

## Queue Variation Results for each time segment

## 16:15 - 16:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.85	0.09	1.47	6.96	9.87			N/A	N/A
	2 - Grovehurst Road	0.38	0.00	0.00	0.38	0.38			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.52	0.52	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.57	0.55	1.00	1.40	1.45			N/A	N/A
	4 - Swale Way	58.97	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.55	1.05	1.50	1.90	1.95			N/A	N/A

## 16:30 - 16:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	8.41	0.23	4.57	20.38	27.63			N/A	N/A
	2 - Grovehurst Road	0.59	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.68	0.19	0.92	1.39	1.44			N/A	N/A
	3 - A249 offslip (SB)	0.95	0.09	0.90	1.52	1.87			N/A	N/A
	4 - Swale Way	173.36	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.42	0.10	1.45	5.59	7.72			N/A	N/A

## 16:45 - 17:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	46.70	19.80	43.64	71.76	81.45			N/A	N/A
	2 - Grovehurst Road	0.94	0.03	0.26	0.94	0.94			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.62	0.03	0.25	0.62	0.62			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.80	0.03	0.25	0.80	0.80			N/A	N/A
	3 - A249 offslip (SB)	1.80	0.03	0.28	1.80	5.69			N/A	N/A
	4 - Swale Way	362.19	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	4.98	0.04	0.45	13.99	25.59			N/A	N/A

## 17:00 - 17:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	84.57	44.22	81.08	120.99	134.29			N/A	N/A
	2 - Grovehurst Road	0.96	0.03	0.28	0.96	3.58			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.63	0.03	0.28	0.63	1.97			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.80	0.03	0.27	0.80	1.22			N/A	N/A
	3 - A249 offslip (SB)	1.85	0.03	0.28	1.85	4.62			N/A	N/A
	4 - Swale Way	551.45	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	5.39	0.03	0.34	10.88	29.13			N/A	N/A

## 17:15 - 17:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	74.89	33.65	70.64	113.42	128.04			N/A	N/A
	2 - Grovehurst Road	0.68	0.09	0.80	1.37	1.44			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.55	0.55	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.78	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.10	0.08	0.92	1.93	2.66			N/A	N/A
	4 - Swale Way	669.36	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.67	0.04	0.42	7.35	13.16			N/A	N/A

## 17:30 - 17:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	28.00	6.53	24.19	50.13	59.77			N/A	N/A
	2 - Grovehurst Road	0.51	0.05	0.45	1.28	1.39			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.77	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.75	0.05	0.49	1.45	1.95			N/A	N/A
	4 - Swale Way	735.85	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.60	0.03	0.35	3.85	8.24			N/A	N/A

# 2019 + Committed + Average Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	158.19	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	301.97	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2019 + Committed + Average Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	801	100.000
	2 - Grovehurst Road		ONE HOUR	✓	451	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	580	100.000
	4 - Swale Way		ONE HOUR	✓	651	100.000
	5 - Grovehurst Road		ONE HOUR	✓	623	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	43	0	758
		2 - Grovehurst Road	0	0	26	425
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	151	333	0

### Demand (Veh/hr)

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	144	0	0	849	187
		3 - A249 offslip (SB)	1	18	0	383	178
		4 - Swale Way	343	230	0	0	78
		5 - Grovehurst Road	211	238	0	174	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	7	0	16
		2 - Grovehurst Road	0	0	8	4
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	5	7	0

### Heavy Vehicle Percentages

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	0	0	0	11	6
		3 - A249 offslip (SB)	0	6	0	9	4
		4 - Swale Way	36	10	0	0	9
		5 - Grovehurst Road	1	2	0	4	0

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.07	154.23	40.2	90.9	F	735	1103
	2 - Grovehurst Road	1.18	331.53	41.7	77.3	F	414	621
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.30	3.37	0.4	1.9	A	434	650
	1 - A249 onslip (SB)							

2 - South	2 - B2005 - link	0.66	5.83	1.9	4.2	A	1110	1665
	3 - A249 offslip (SB)	1.48	916.90	129.3	194.2	F	532	798
	4 - Swale Way	1.15	308.80	56.1	101.1	F	597	896
	5 - Grovehurst Road	1.16	304.63	53.4	97.1	F	572	858

## Main Results for each time segment

### 07:15 - 07:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	603	151	356	896	0.673	595	0	0.0	2.0	11.669	B
	2 - Grovehurst Road	340	85	808	603	0.563	335	143	0.0	1.2	13.182	B
	3 - A249 onslip (NB)			878				265				
	4 - B2005 - link	358	89	0	1525	0.235	356	878	0.0	0.3	3.078	A
2 - South	1 - A249 onslip (SB)			488				519				
	2 - B2005 - link	901	225	129	1841	0.489	897	359	0.0	1.0	3.799	A
	3 - A249 offslip (SB)	437	109	1026	690	0.633	430	0	0.0	1.7	13.513	B
	4 - Swale Way	490	123	398	668	0.734	480	1059	0.0	2.6	18.287	C
	5 - Grovehurst Road	469	117	546	711	0.660	462	332	0.0	1.9	14.047	B

### 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	720	180	422	850	0.847	709	0	2.0	4.8	23.854	C
	2 - Grovehurst Road	405	101	961	505	0.803	397	170	1.2	3.5	30.985	D
	3 - A249 onslip (NB)			1045				313				
	4 - B2005 - link	422	105	0	1525	0.277	422	1045	0.3	0.4	3.262	A
2 - South	1 - A249 onslip (SB)			576				614				
	2 - B2005 - link	1072	268	152	1827	0.587	1070	424	1.0	1.4	4.743	A
	3 - A249 offslip (SB)	521	130	1223	542	0.961	493	0	1.7	8.8	54.720	F
	4 - Swale Way	585	146	467	633	0.925	566	1248	2.6	7.4	44.218	E
	5 - Grovehurst Road	560	140	645	640	0.875	546	389	1.9	5.4	34.096	D

### 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	882	220	454	827	1.067	804	0	4.8	24.2	79.806	F
	2 - Grovehurst Road	497	124	1074	432	1.150	420	185	3.5	22.5	133.341	F
	3 - A249 onslip (NB)			1157				337				
	4 - B2005 - link	454	114	0	1525	0.298	454	1157	0.4	0.4	3.360	A
2 - South	1 - A249 onslip (SB)			620				670				
	2 - B2005 - link	1189	297	164	1820	0.653	1188	456	1.4	1.9	5.672	A
	3 - A249 offslip (SB)	639	160	1352	445	1.436	443	0	8.8	57.8	290.677	F
	4 - Swale Way	717	179	484	625	1.147	616	1311	7.4	32.5	133.971	F
	5 - Grovehurst Road	686	171	702	599	1.146	588	398	5.4	29.8	125.574	F

### 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	882	220	458	824	1.070	818	0	24.2	40.2	154.235	F
	2 - Grovehurst Road	497	124	1089	422	1.176	420	187	22.5	41.7	291.902	F
	3 - A249 onslip (NB)			1170				339				
	4 - B2005 - link	458	114	0	1525	0.300	458	1170	0.4	0.4	3.371	A

2 - South	1 - A249 onslip (SB)			625				676				
	2 - B2005 - link	1203	301	165	1820	0.661	1202	459	1.9	1.9	5.827	A
	3 - A249 offslip (SB)	639	160	1368	433	1.475	433	0	57.8	109.2	701.793	F
	4 - Swale Way	717	179	484	625	1.148	623	1316	32.5	56.1	269.372	F
	5 - Grovehurst Road	686	171	709	594	1.156	592	398	29.8	53.4	266.474	F

## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	720	180	454	827	0.871	807	0	40.2	18.6	135.851	F
	2 - Grovehurst Road	405	101	1076	431	0.942	420	185	41.7	37.9	331.532	F
	3 - A249 onslip (NB)			1160				336				
	4 - B2005 - link	454	113	0	1525	0.297	454	1160	0.4	0.4	3.358	A
2 - South	1 - A249 onslip (SB)			620				669				
	2 - B2005 - link	1192	298	165	1820	0.655	1192	456	1.9	1.9	5.733	A
	3 - A249 offslip (SB)	521	130	1357	441	1.182	441	0	109.2	129.3	916.895	F
	4 - Swale Way	585	146	484	625	0.937	614	1313	56.1	49.0	308.804	F
	5 - Grovehurst Road	560	140	700	600	0.933	589	398	53.4	46.1	304.628	F

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	603	151	457	825	0.731	665	0	18.6	2.9	29.976	D
	2 - Grovehurst Road	340	85	944	517	0.656	482	178	37.9	2.4	138.750	F
	3 - A249 onslip (NB)			1084				342				
	4 - B2005 - link	457	114	0	1525	0.299	457	1084	0.4	0.4	3.368	A
2 - South	1 - A249 onslip (SB)			624				660				
	2 - B2005 - link	1105	276	165	1819	0.607	1106	459	1.9	1.6	5.056	A
	3 - A249 offslip (SB)	437	109	1271	506	0.863	502	0	129.3	113.0	869.794	F
	4 - Swale Way	490	123	481	626	0.783	614	1293	49.0	18.0	202.126	F
	5 - Grovehurst Road	469	117	692	605	0.775	592	403	46.1	15.3	192.897	F

## Queue Variation Results for each time segment

## 07:15 - 07:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	1.98	0.23	1.15	3.54	4.46			N/A	N/A
	2 - Grovehurst Road	1.25	0.08	0.98	2.43	3.22			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.95	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.65	0.03	0.26	1.65	1.65			N/A	N/A
	4 - Swale Way	2.55	0.10	1.49	5.93	8.23			N/A	N/A
	5 - Grovehurst Road	1.85	0.07	0.99	4.46	6.43			N/A	N/A

## 07:30 - 07:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	4.75	0.10	1.78	12.23	17.45			N/A	N/A
	2 - Grovehurst Road	3.48	0.08	1.02	8.97	13.02			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.40	0.07	0.93	2.98	4.24			N/A	N/A

2 - South	3 - A249 offslip (SB)	8.83	0.04	0.45	24.42	47.54			N/A	N/A
	4 - Swale Way	7.42	0.24	4.14	17.59	23.65			N/A	N/A
	5 - Grovehurst Road	5.38	0.11	2.00	13.95	19.93			N/A	N/A

## 07:45 - 08:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	24.17	3.72	19.75	46.66	57.09			N/A	N/A
	2 - Grovehurst Road	22.54	5.93	19.72	39.06	46.16			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.85	0.03	0.26	1.85	1.85			N/A	N/A
	3 - A249 offslip (SB)	57.77	19.35	52.59	95.91	111.41			N/A	N/A
	4 - Swale Way	32.55	10.25	29.26	54.41	63.44			N/A	N/A
	5 - Grovehurst Road	29.81	8.78	26.56	50.63	59.35			N/A	N/A

## 08:00 - 08:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	40.23	7.95	34.09	75.23	90.85			N/A	N/A
	2 - Grovehurst Road	41.66	15.18	38.21	67.10	77.28			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.43	0.03	0.30	1.27	1.86			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.92	0.03	0.26	1.92	1.92			N/A	N/A
	3 - A249 offslip (SB)	109.24	60.81	105.48	152.58	168.12			N/A	N/A
	4 - Swale Way	56.07	22.17	52.05	88.44	101.14			N/A	N/A
	5 - Grovehurst Road	53.39	20.64	49.41	84.73	97.06			N/A	N/A

## 08:15 - 08:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	18.56	1.03	13.38	40.07	51.18			N/A	N/A
	2 - Grovehurst Road	37.91	18.04	35.78	55.67	62.39			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.91	0.51	1.24	2.95	3.67			N/A	N/A
	3 - A249 offslip (SB)	129.33	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	48.96	14.73	43.92	83.49	97.82			N/A	N/A
	5 - Grovehurst Road	46.12	14.04	41.42	78.32	91.66			N/A	N/A

## 08:30 - 08:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.94	0.03	0.33	5.54	15.58			N/A	N/A
	2 - Grovehurst Road	2.38	0.03	0.31	3.43	11.82			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.57	0.35	1.40	2.41	2.88			N/A	N/A
	3 - A249 offslip (SB)	113.01	56.63	108.03	164.82	183.89			N/A	N/A
	4 - Swale Way	18.05	1.58	13.72	37.19	46.67			N/A	N/A
	5 - Grovehurst Road	15.28	1.34	11.05	32.65	41.59			N/A	N/A

# 2019 + Committed + Average Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	194.62	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	1545.85	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2019 + Committed + Average Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	801	100.000
	2 - Grovehurst Road		ONE HOUR	✓	233	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	452	100.000
	4 - Swale Way		ONE HOUR	✓	1258	100.000
	5 - Grovehurst Road		ONE HOUR	✓	545	100.000



## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	184	0	617
		2 - Grovehurst Road	0	0	28	205
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	271	537	0

### Demand (Veh/hr)

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	43	0	0	446	329
		3 - A249 offslip (SB)	1	28	0	202	221
		4 - Swale Way	642	449	0	0	167
		5 - Grovehurst Road	112	325	0	108	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	1	0	19
		2 - Grovehurst Road	0	0	0	1
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	1	3	0

### Heavy Vehicle Percentages

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	2	0	0	25	1
		3 - A249 offslip (SB)	0	11	0	8	4
		4 - Swale Way	15	3	0	0	2
		5 - Grovehurst Road	0	2	0	4	0

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.20	371.03	83.8	133.3	F	735	1103
	2 - Grovehurst Road	0.49	13.65	1.0	3.6	B	214	321
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.39	3.71	0.6	2.0	A	563	844
	1 - A249 onslip (SB)							

2 - South	2 - B2005 - link	0.45	3.69	0.8	1.5	A	742	1113
	3 - A249 offslip (SB)	0.65	13.66	1.8	5.7	B	415	622
	4 - Swale Way	2.21	3733.48	737.4	183.5	F	1154	1732
	5 - Grovehurst Road	0.86	34.15	5.4	29.0	D	500	750

## Main Results for each time segment

### 16:15 - 16:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	603	151	516	801	0.753	592	0	0.0	2.8	16.448	C
	2 - Grovehurst Road	175	44	799	635	0.276	174	309	0.0	0.4	7.787	A
	3 - A249 onslip (NB)			609				364				
	4 - B2005 - link	518	130	0	1586	0.327	516	609	0.0	0.5	3.361	A
2 - South	1 - A249 onslip (SB)			596				478				
	2 - B2005 - link	611	153	80	1784	0.342	609	516	0.0	0.5	3.057	A
	3 - A249 offslip (SB)	340	85	689	932	0.365	338	0	0.0	0.6	6.034	A
	4 - Swale Way	947	237	464	723	1.311	710	563	0.0	59.1	161.727	F
	5 - Grovehurst Road	410	103	670	664	0.618	404	504	0.0	1.6	13.527	B

### 16:30 - 16:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	720	180	558	772	0.933	698	0	2.8	8.3	40.047	E
	2 - Grovehurst Road	209	52	908	561	0.373	209	347	0.4	0.6	10.196	B
	3 - A249 onslip (NB)			721				396				
	4 - B2005 - link	558	139	0	1586	0.352	558	721	0.5	0.5	3.502	A
2 - South	1 - A249 onslip (SB)			652				482				
	2 - B2005 - link	723	181	96	1775	0.407	722	555	0.5	0.7	3.419	A
	3 - A249 offslip (SB)	406	102	819	829	0.490	405	0	0.6	0.9	8.459	A
	4 - Swale Way	1131	283	552	673	1.681	672	671	59.1	173.8	652.727	F
	5 - Grovehurst Road	490	122	647	680	0.721	486	578	1.6	2.4	18.268	C

### 16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	882	220	609	736	1.198	730	0	8.3	46.3	149.500	F
	2 - Grovehurst Road	257	64	967	523	0.491	255	372	0.6	0.9	13.368	B
	3 - A249 onslip (NB)			787				436				
	4 - B2005 - link	610	152	0	1586	0.385	609	787	0.5	0.6	3.688	A
2 - South	1 - A249 onslip (SB)			724				484				
	2 - B2005 - link	785	196	117	1763	0.445	784	607	0.7	0.8	3.676	A
	3 - A249 offslip (SB)	498	124	901	764	0.651	494	0	0.9	1.8	13.178	B
	4 - Swale Way	1385	346	630	629	2.203	629	766	173.8	362.9	1543.664	F
	5 - Grovehurst Road	600	150	618	699	0.858	590	641	2.4	5.0	30.276	D

### 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	882	220	614	733	1.204	732	0	46.3	83.8	326.727	F
	2 - Grovehurst Road	257	64	972	520	0.493	256	374	0.9	1.0	13.649	B
	3 - A249 onslip (NB)			789				439				
	4 - B2005 - link	614	154	0	1586	0.387	614	789	0.6	0.6	3.705	A

2 - South	1 - A249 onslip (SB)			730				485				
	2 - B2005 - link	787	197	119	1762	0.447	787	611	0.8	0.8	3.692	A
	3 - A249 offslip (SB)	498	124	906	760	0.654	497	0	1.8	1.8	13.659	B
	4 - Swale Way	1385	346	633	627	2.210	627	770	362.9	552.5	2528.621	F
	5 - Grovehurst Road	600	150	617	700	0.857	598	643	5.0	5.4	34.145	D

## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	720	180	562	769	0.936	760	0	83.8	73.8	371.032	F
	2 - Grovehurst Road	209	52	959	526	0.398	211	363	1.0	0.7	11.459	B
	3 - A249 onslip (NB)			771				399				
	4 - B2005 - link	562	140	0	1586	0.354	562	771	0.6	0.6	3.519	A
2 - South	1 - A249 onslip (SB)			658				480				
	2 - B2005 - link	774	194	99	1773	0.437	774	559	0.8	0.8	3.604	A
	3 - A249 offslip (SB)	406	102	874	785	0.518	409	0	1.8	1.1	9.658	A
	4 - Swale Way	1131	283	579	658	1.719	658	704	552.5	670.7	3272.829	F
	5 - Grovehurst Road	490	122	638	686	0.714	501	599	5.4	2.7	20.396	C

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	603	151	514	802	0.752	792	0	73.8	26.7	232.744	F
	2 - Grovehurst Road	175	44	951	528	0.332	176	354	0.7	0.5	10.242	B
	3 - A249 onslip (NB)			765				363				
	4 - B2005 - link	514	128	0	1586	0.324	514	765	0.6	0.5	3.362	A
2 - South	1 - A249 onslip (SB)			593				474				
	2 - B2005 - link	773	193	82	1783	0.433	773	511	0.8	0.8	3.563	A
	3 - A249 offslip (SB)	340	85	855	799	0.426	342	0	1.1	0.8	7.899	A
	4 - Swale Way	947	237	540	680	1.393	680	656	670.7	737.4	3733.484	F
	5 - Grovehurst Road	410	103	652	677	0.606	415	568	2.7	1.6	13.955	B

## Queue Variation Results for each time segment

## 16:15 - 16:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.83	0.09	1.50	6.86	9.68			N/A	N/A
	2 - Grovehurst Road	0.38	0.00	0.00	0.38	0.38			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.52	0.52	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.57	0.55	1.00	1.40	1.45			N/A	N/A
	4 - Swale Way	59.15	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.55	1.05	1.50	1.90	1.95			N/A	N/A

## 16:30 - 16:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	8.32	0.23	4.52	20.14	27.32			N/A	N/A
	2 - Grovehurst Road	0.59	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.68	0.19	0.92	1.39	1.44			N/A	N/A

2 - South	3 - A249 offslip (SB)	0.94	0.09	0.90	1.52	1.87			N/A	N/A
	4 - Swale Way	173.77	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.42	0.10	1.44	5.58	7.70			N/A	N/A

## 16:45 - 17:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	46.29	19.52	43.22	71.26	80.92			N/A	N/A
	2 - Grovehurst Road	0.94	0.03	0.26	0.94	0.94			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.62	0.03	0.25	0.62	0.62			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.80	0.03	0.25	0.80	0.80			N/A	N/A
	3 - A249 offslip (SB)	1.80	0.03	0.28	1.80	5.69			N/A	N/A
	4 - Swale Way	362.90	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	4.96	0.04	0.45	13.92	25.52			N/A	N/A

## 17:00 - 17:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	83.81	43.58	80.29	120.10	133.33			N/A	N/A
	2 - Grovehurst Road	0.96	0.03	0.28	0.96	3.58			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.63	0.03	0.28	0.63	1.97			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.80	0.03	0.27	0.80	1.22			N/A	N/A
	3 - A249 offslip (SB)	1.85	0.03	0.28	1.85	4.62			N/A	N/A
	4 - Swale Way	552.46	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	5.36	0.03	0.34	10.77	28.97			N/A	N/A

## 17:15 - 17:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	73.83	33.06	69.61	111.95	126.42			N/A	N/A
	2 - Grovehurst Road	0.68	0.09	0.81	1.37	1.44			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.55	0.55	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.78	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.10	0.08	0.92	1.93	2.65			N/A	N/A
	4 - Swale Way	670.67	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.66	0.04	0.42	7.33	13.11			N/A	N/A

## 17:30 - 17:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	26.71	5.72	22.81	48.65	58.33			N/A	N/A
	2 - Grovehurst Road	0.51	0.05	0.45	1.28	1.39			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.77	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.75	0.05	0.49	1.45	1.95			N/A	N/A
	4 - Swale Way	737.45	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.60	0.03	0.35	3.84	8.22			N/A	N/A

# 2019 + Committed + Cumulative, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	167.39	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	319.77	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2019 + Committed + Cumulative	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	810	100.000
	2 - Grovehurst Road		ONE HOUR	✓	451	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	582	100.000
	4 - Swale Way		ONE HOUR	✓	656	100.000
	5 - Grovehurst Road		ONE HOUR	✓	623	100.000

## Origin-Destination Data

## Demand (Veh/hr)

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	43	0	767
	2 - Grovehurst Road	0	0	26	425
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	151	334	0

## Demand (Veh/hr)

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	144	0	0	858	187
	3 - A249 offslip (SB)	1	18	0	385	178
	4 - Swale Way	347	231	0	0	78
	5 - Grovehurst Road	211	238	0	174	0

## Vehicle Mix

## Heavy Vehicle Percentages

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	7	0	16
	2 - Grovehurst Road	0	0	8	4
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	5	7	0

## Heavy Vehicle Percentages

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	0	0	0	12	6
	3 - A249 offslip (SB)	0	6	0	9	4
	4 - Swale Way	36	10	0	0	9
	5 - Grovehurst Road	1	2	0	4	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.08	167.70	44.5	95.1	F	743	1115
	2 - Grovehurst Road	1.18	342.11	42.5	78.2	F	414	621
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.30	3.37	0.4	1.9	A	433	650
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.66	5.88	1.9	4.3	A	1111	1666
	3 - A249 offslip (SB)	1.48	998.05	132.2	200.0	F	534	801
	4 - Swale Way	1.15	318.91	57.8	103.1	F	602	903
	5 - Grovehurst Road	1.16	309.43	54.0	97.8	F	572	858

## Main Results for each time segment

## 07:15 - 07:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	610	152	357	896	0.681	602	0	0.0	2.0	11.930	B
	2 - Grovehurst Road	340	85	816	598	0.568	334	143	0.0	1.3	13.405	B
	3 - A249 onslip (NB)			885				265				
	4 - B2005 - link	358	90	0	1525	0.235	357	885	0.0	0.3	3.079	A
2 - South	1 - A249 onslip (SB)			489				522				
	2 - B2005 - link	902	226	129	1829	0.493	898	360	0.0	1.0	3.853	A
	3 - A249 offslip (SB)	438	110	1027	685	0.639	431	0	0.0	1.7	13.841	B
	4 - Swale Way	494	123	396	668	0.739	483	1062	0.0	2.6	18.553	C
	5 - Grovehurst Road	469	117	549	709	0.662	462	331	0.0	1.9	14.170	B

## 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	728	182	422	849	0.857	716	0	2.0	5.0	24.993	C
	2 - Grovehurst Road	405	101	969	500	0.811	396	169	1.3	3.6	32.175	D
	3 - A249 onslip (NB)			1051				313				
	4 - B2005 - link	422	106	0	1525	0.277	422	1051	0.3	0.4	3.263	A
2 - South	1 - A249 onslip (SB)			577				616				
	2 - B2005 - link	1072	268	152	1815	0.591	1070	424	1.0	1.4	4.821	A
	3 - A249 offslip (SB)	523	131	1222	537	0.974	492	0	1.7	9.6	58.279	F
	4 - Swale Way	590	147	464	634	0.930	569	1250	2.6	7.7	45.319	E
	5 - Grovehurst Road	560	140	647	638	0.878	546	386	1.9	5.5	34.681	D

## 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	892	223	454	827	1.079	807	0	5.0	26.3	84.955	F
	2 - Grovehurst Road	497	124	1077	430	1.155	419	184	3.6	23.1	136.647	F
	3 - A249 onslip (NB)			1159				337				
	4 - B2005 - link	454	114	0	1525	0.298	454	1159	0.4	0.4	3.360	A
2 - South	1 - A249 onslip (SB)			620				670				
	2 - B2005 - link	1183	296	164	1808	0.654	1181	456	1.4	1.9	5.728	A
	3 - A249 offslip (SB)	641	160	1345	444	1.445	442	0	9.6	59.3	300.576	F
	4 - Swale Way	722	181	478	627	1.152	619	1309	7.7	33.5	136.948	F
	5 - Grovehurst Road	686	171	703	598	1.148	587	395	5.5	30.2	127.105	F

## 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	892	223	457	824	1.082	819	0	26.3	44.5	167.701	F
	2 - Grovehurst Road	497	124	1090	421	1.180	419	186	23.1	42.5	298.320	F
	3 - A249 onslip (NB)			1170				339				
	4 - B2005 - link	457	114	0	1525	0.300	457	1170	0.4	0.4	3.370	A
2 - South	1 - A249 onslip (SB)			624				676				
	2 - B2005 - link	1195	299	165	1807	0.661	1195	459	1.9	1.9	5.876	A
	3 - A249 offslip (SB)	641	160	1360	432	1.482	432	0	59.3	111.5	718.248	F
	4 - Swale Way	722	181	479	627	1.152	625	1313	33.5	57.8	275.968	F

	5 - Grovehurst Road	686	171	710	593	1.157	591	394	30.2	54.0	269.615	F
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## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	728	182	453	827	0.881	809	0	44.5	24.3	156.696	F
	2 - Grovehurst Road	405	101	1078	429	0.945	419	184	42.5	39.1	342.106	F
	3 - A249 onslip (NB)			1161				336				
	4 - B2005 - link	453	113	0	1525	0.297	453	1161	0.4	0.4	3.358	A
2 - South	1 - A249 onslip (SB)			620				670				
	2 - B2005 - link	1185	296	164	1808	0.656	1185	455	1.9	1.9	5.782	A
	3 - A249 offslip (SB)	523	131	1350	440	1.188	440	0	111.5	132.2	998.046	F
	4 - Swale Way	590	147	479	627	0.941	616	1311	57.8	51.2	318.914	F
	5 - Grovehurst Road	560	140	701	599	0.935	588	394	54.0	46.9	309.433	F

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	610	152	455	826	0.739	695	0	24.3	3.1	40.808	E
	2 - Grovehurst Road	340	85	971	499	0.680	483	179	39.1	3.2	164.678	F
	3 - A249 onslip (NB)			1113				341				
	4 - B2005 - link	455	114	0	1525	0.298	455	1113	0.4	0.4	3.363	A
2 - South	1 - A249 onslip (SB)			622				663				
	2 - B2005 - link	1128	282	165	1808	0.624	1129	457	1.9	1.7	5.316	A
	3 - A249 offslip (SB)	438	110	1294	483	0.907	479	0	132.2	121.9	954.754	F
	4 - Swale Way	494	123	477	628	0.786	616	1297	51.2	20.6	214.796	F
	5 - Grovehurst Road	469	117	695	603	0.778	590	397	46.9	16.7	200.121	F

## Queue Variation Results for each time segment

## 07:15 - 07:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.05	0.20	1.17	3.76	4.78			N/A	N/A
	2 - Grovehurst Road	1.27	0.07	0.95	2.57	3.50			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.97	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.70	0.03	0.25	1.70	1.70			N/A	N/A
	4 - Swale Way	2.61	0.09	1.44	6.25	8.77			N/A	N/A
	5 - Grovehurst Road	1.87	0.06	0.94	4.58	6.67			N/A	N/A

## 07:30 - 07:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	5.05	0.11	1.97	12.90	18.27			N/A	N/A
	2 - Grovehurst Road	3.62	0.08	1.12	9.35	13.52			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.42	0.07	0.95	3.05	4.33			N/A	N/A
	3 - A249 offslip (SB)	9.58	0.04	0.37	20.77	52.66			N/A	N/A
	4 - Swale Way	7.69	0.25	4.32	18.25	24.53			N/A	N/A
	5 - Grovehurst Road	5.48	0.11	2.04	14.25	20.36			N/A	N/A



## 07:45 - 08:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	26.27	4.93	22.05	49.15	59.49			N/A	N/A
	2 - Grovehurst Road	23.06	6.26	20.27	39.69	46.79			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.86	0.03	0.26	1.86	1.86			N/A	N/A
	3 - A249 offslip (SB)	59.33	12.75	50.96	109.74	131.91			N/A	N/A
	4 - Swale Way	33.51	10.81	30.23	55.68	64.78			N/A	N/A
	5 - Grovehurst Road	30.16	8.98	26.90	51.09	59.84			N/A	N/A

## 08:00 - 08:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	44.47	10.75	38.75	79.86	95.14			N/A	N/A
	2 - Grovehurst Road	42.47	15.79	39.06	68.01	78.19			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.43	0.03	0.30	1.27	1.86			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.93	0.03	0.26	1.93	1.93			N/A	N/A
	3 - A249 offslip (SB)	111.47	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	57.80	23.45	53.82	90.42	103.12			N/A	N/A
	5 - Grovehurst Road	53.96	21.08	50.02	85.44	97.82			N/A	N/A

## 08:15 - 08:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	24.32	3.54	19.73	47.36	58.11			N/A	N/A
	2 - Grovehurst Road	39.07	17.80	36.73	58.35	65.71			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.92	0.41	1.22	3.02	3.79			N/A	N/A
	3 - A249 offslip (SB)	132.20	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	51.16	15.82	46.07	86.64	101.26			N/A	N/A
	5 - Grovehurst Road	46.93	14.21	42.12	79.82	93.45			N/A	N/A

## 08:30 - 08:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	3.11	0.03	0.33	5.94	16.51			N/A	N/A
	2 - Grovehurst Road	3.17	0.04	0.35	7.35	17.02			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.68	0.47	1.02	2.58	2.98			N/A	N/A
	3 - A249 offslip (SB)	121.92	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	20.61	2.74	16.51	40.48	49.87			N/A	N/A
	5 - Grovehurst Road	16.70	1.39	12.63	34.48	43.32			N/A	N/A

# 2019 + Committed + Cumulative, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	209.74	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	1591.08	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2019 + Committed + Cumulative	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	805	100.000
	2 - Grovehurst Road		ONE HOUR	✓	233	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	453	100.000
	4 - Swale Way		ONE HOUR	✓	1267	100.000
	5 - Grovehurst Road		ONE HOUR	✓	545	100.000

## Origin-Destination Data

## Demand (Veh/hr)

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	184	0	621
	2 - Grovehurst Road	0	0	28	205
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	271	538	0

## Demand (Veh/hr)

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	43	0	0	450	329
	3 - A249 offslip (SB)	1	28	0	203	221
	4 - Swale Way	650	450	0	0	167
	5 - Grovehurst Road	112	325	0	108	0

## Vehicle Mix

## Heavy Vehicle Percentages

1 - North

		To			
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link
From	1 - A249 offslip (NB)	0	1	0	20
	2 - Grovehurst Road	0	0	0	1
	3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
	4 - B2005 - link	0	1	4	0

## Heavy Vehicle Percentages

2 - South

		To				
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road
From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	Exit-only
	2 - B2005 - link	2	0	0	26	1
	3 - A249 offslip (SB)	0	11	0	9	4
	4 - Swale Way	16	3	0	0	2
	5 - Grovehurst Road	0	2	0	4	0

## Results

## Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.22	397.52	88.3	138.3	F	739	1108
	2 - Grovehurst Road	0.50	13.76	1.0	3.6	B	214	321
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.39	3.72	0.6	2.0	A	557	835
2 - South	1 - A249 onslip (SB)							
	2 - B2005 - link	0.45	3.72	0.8	1.5	A	743	1114
	3 - A249 offslip (SB)	0.66	14.01	1.9	6.2	B	416	624
	4 - Swale Way	2.23	3825.78	753.5	182.6	F	1163	1744
	5 - Grovehurst Road	0.86	34.50	5.4	29.3	D	500	750

## Main Results for each time segment

## 16:15 - 16:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	606	152	511	797	0.761	594	0	0.0	2.9	16.922	C
	2 - Grovehurst Road	175	44	798	630	0.278	174	307	0.0	0.4	7.862	A
	3 - A249 onslip (NB)			611				360				
	4 - B2005 - link	512	128	0	1575	0.325	511	611	0.0	0.5	3.375	A
2 - South	1 - A249 onslip (SB)			593				479				
	2 - B2005 - link	614	154	80	1775	0.346	612	513	0.0	0.5	3.091	A
	3 - A249 offslip (SB)	341	85	692	923	0.369	339	0	0.0	0.6	6.133	A
	4 - Swale Way	954	238	464	719	1.327	707	567	0.0	61.6	168.762	F
	5 - Grovehurst Road	410	103	668	664	0.618	404	503	0.0	1.6	13.573	B

## 16:30 - 16:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	724	181	552	768	0.942	700	0	2.9	8.9	42.242	E
	2 - Grovehurst Road	209	52	907	556	0.377	209	345	0.4	0.6	10.328	B
	3 - A249 onslip (NB)			723				392				
	4 - B2005 - link	552	138	0	1575	0.350	552	723	0.5	0.5	3.517	A
2 - South	1 - A249 onslip (SB)			649				482				
	2 - B2005 - link	726	182	96	1765	0.411	726	553	0.5	0.7	3.460	A
	3 - A249 offslip (SB)	407	102	822	820	0.497	406	0	0.6	1.0	8.659	A
	4 - Swale Way	1139	285	552	669	1.702	669	675	61.6	179.1	677.297	F
	5 - Grovehurst Road	490	122	645	679	0.721	486	577	1.6	2.4	18.334	C

## 16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	886	222	604	732	1.210	727	0	8.9	48.7	157.377	F
	2 - Grovehurst Road	257	64	962	521	0.493	255	368	0.6	0.9	13.489	B
	3 - A249 onslip (NB)			785				432				
	4 - B2005 - link	604	151	0	1575	0.383	604	785	0.5	0.6	3.705	A
2 - South	1 - A249 onslip (SB)			722				485				
	2 - B2005 - link	784	196	117	1754	0.447	784	605	0.7	0.8	3.708	A
	3 - A249 offslip (SB)	499	125	901	758	0.658	495	0	1.0	1.8	13.515	B
	4 - Swale Way	1395	349	628	627	2.226	627	768	179.1	371.2	1587.299	F
	5 - Grovehurst Road	600	150	617	698	0.860	590	638	2.4	5.0	30.514	D

## 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	886	222	609	729	1.216	728	0	48.7	88.3	344.777	F
	2 - Grovehurst Road	257	64	966	518	0.495	256	370	0.9	1.0	13.759	B
	3 - A249 onslip (NB)			787				436				
	4 - B2005 - link	609	152	0	1575	0.386	609	787	0.6	0.6	3.723	A
2 - South	1 - A249 onslip (SB)			728				486				
	2 - B2005 - link	786	197	119	1753	0.448	786	610	0.8	0.8	3.723	A
	3 - A249 offslip (SB)	499	125	905	755	0.661	499	0	1.8	1.9	14.011	B
	4 - Swale Way	1395	349	631	625	2.232	625	772	371.2	563.7	2588.265	F

	5 - Grovehurst Road	600	150	616	699	0.859	598	640	5.0	5.4	34.496	D
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## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	724	181	556	765	0.946	756	0	88.3	80.1	397.520	F
	2 - Grovehurst Road	209	52	954	524	0.400	211	359	1.0	0.7	11.542	B
	3 - A249 onslip (NB)			769				395				
	4 - B2005 - link	556	139	0	1575	0.353	556	769	0.6	0.5	3.533	A
2 - South	1 - A249 onslip (SB)			656				481				
	2 - B2005 - link	773	193	99	1764	0.439	774	557	0.8	0.8	3.637	A
	3 - A249 offslip (SB)	407	102	873	779	0.523	410	0	1.9	1.1	9.841	A
	4 - Swale Way	1139	285	577	656	1.736	656	707	563.7	684.5	3350.369	F
	5 - Grovehurst Road	490	122	636	685	0.715	501	596	5.4	2.7	20.557	C

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	606	152	509	798	0.759	788	0	80.1	34.5	265.002	F
	2 - Grovehurst Road	175	44	946	526	0.334	176	351	0.7	0.5	10.316	B
	3 - A249 onslip (NB)			763				359				
	4 - B2005 - link	508	127	0	1575	0.323	509	763	0.5	0.5	3.377	A
2 - South	1 - A249 onslip (SB)			591				474				
	2 - B2005 - link	772	193	82	1773	0.436	772	509	0.8	0.8	3.598	A
	3 - A249 offslip (SB)	341	85	855	793	0.430	342	0	1.1	0.8	8.023	A
	4 - Swale Way	954	238	539	678	1.408	678	658	684.5	753.5	3825.779	F
	5 - Grovehurst Road	410	103	651	675	0.607	415	566	2.7	1.6	14.021	B

## Queue Variation Results for each time segment

## 16:15 - 16:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.93	0.08	1.35	7.50	10.86			N/A	N/A
	2 - Grovehurst Road	0.38	0.00	0.00	0.38	0.38			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.53	0.53	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.58	0.55	1.00	1.40	1.45			N/A	N/A
	4 - Swale Way	61.64	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.56	1.05	1.50	1.90	1.95			N/A	N/A

## 16:30 - 16:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	8.90	0.24	4.85	21.59	29.26			N/A	N/A
	2 - Grovehurst Road	0.59	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.69	0.19	0.93	1.39	1.44			N/A	N/A
	3 - A249 offslip (SB)	0.97	0.09	0.91	1.59	1.92			N/A	N/A
	4 - Swale Way	179.09	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.43	0.10	1.45	5.61	7.74			N/A	N/A

## 16:45 - 17:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	48.73	21.18	45.67	74.29	84.12			N/A	N/A
	2 - Grovehurst Road	0.94	0.03	0.26	0.94	0.94			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.62	0.03	0.25	0.62	0.62			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.80	0.03	0.25	0.80	0.80			N/A	N/A
	3 - A249 offslip (SB)	1.84	0.03	0.28	1.84	6.21			N/A	N/A
	4 - Swale Way	371.18	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	5.00	0.05	0.45	14.08	25.68			N/A	N/A

## 17:00 - 17:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	88.26	47.31	84.83	124.99	138.29			N/A	N/A
	2 - Grovehurst Road	0.97	0.03	0.28	0.97	3.58			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.63	0.03	0.28	0.63	1.99			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.81	0.03	0.27	0.81	1.15			N/A	N/A
	3 - A249 offslip (SB)	1.90	0.03	0.28	1.90	4.81			N/A	N/A
	4 - Swale Way	563.68	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	5.41	0.03	0.35	11.03	29.33			N/A	N/A

## 17:15 - 17:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	80.06	36.80	75.73	120.32	135.48			N/A	N/A
	2 - Grovehurst Road	0.68	0.09	0.80	1.37	1.44			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.55	0.55	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.79	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.12	0.08	0.91	1.99	2.79			N/A	N/A
	4 - Swale Way	684.45	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.67	0.04	0.42	7.38	13.21			N/A	N/A

## 17:30 - 17:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	34.50	10.92	31.06	57.68	67.24			N/A	N/A
	2 - Grovehurst Road	0.51	0.05	0.46	1.28	1.39			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.78	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.77	0.05	0.48	1.52	2.06			N/A	N/A
	4 - Swale Way	753.52	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.60	0.03	0.35	3.86	8.26			N/A	N/A

# 2019 + Committed + Cumulative + Peak Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	176.05	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	330.22	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2019 + Committed + Cumulative + Peak Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	813	100.000
	2 - Grovehurst Road		ONE HOUR	✓	451	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	582	100.000
	4 - Swale Way		ONE HOUR	✓	660	100.000
	5 - Grovehurst Road		ONE HOUR	✓	623	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	43	0	770
		2 - Grovehurst Road	0	0	26	425
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	151	334	0

### Demand (Veh/hr)

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	144	0	0	861	187
		3 - A249 offslip (SB)	1	18	0	385	178
		4 - Swale Way	351	231	0	0	78
		5 - Grovehurst Road	211	238	0	174	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	7	0	17
		2 - Grovehurst Road	0	0	8	4
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	5	7	0

### Heavy Vehicle Percentages

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	0	0	0	12	6
		3 - A249 offslip (SB)	0	6	0	9	4
		4 - Swale Way	37	10	0	0	9
		5 - Grovehurst Road	1	2	0	4	0

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.09	180.49	48.1	98.7	F	746	1119
	2 - Grovehurst Road	1.18	350.88	43.1	79.0	F	414	621
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.30	3.36	0.4	1.8	A	432	647
	1 - A249 onslip (SB)							



2 - South	2 - B2005 - link	0.66	5.90	1.9	4.4	A	1118	1677
	3 - A249 offslip (SB)	1.49	1018.15	134.2	200.0	F	534	801
	4 - Swale Way	1.16	346.19	61.6	108.8	F	606	908
	5 - Grovehurst Road	1.16	314.61	54.6	98.5	F	572	858

## Main Results for each time segment

### 07:15 - 07:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	612	153	357	889	0.689	604	0	0.0	2.1	12.293	B
	2 - Grovehurst Road	340	85	818	594	0.572	334	143	0.0	1.3	13.625	B
	3 - A249 onslip (NB)			887				265				
	4 - B2005 - link	358	90	0	1525	0.235	357	887	0.0	0.3	3.079	A
2 - South	1 - A249 onslip (SB)			489				525				
	2 - B2005 - link	909	227	129	1829	0.497	905	360	0.0	1.0	3.882	A
	3 - A249 offslip (SB)	438	110	1034	680	0.645	431	0	0.0	1.7	14.124	B
	4 - Swale Way	497	124	397	664	0.748	486	1068	0.0	2.7	19.162	C
	5 - Grovehurst Road	469	117	552	705	0.666	461	331	0.0	1.9	14.388	B

### 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	731	183	421	843	0.867	718	0	2.1	5.4	26.339	D
	2 - Grovehurst Road	405	101	970	495	0.819	396	169	1.3	3.8	33.333	D
	3 - A249 onslip (NB)			1053				313				
	4 - B2005 - link	421	105	0	1525	0.276	421	1053	0.3	0.4	3.260	A
2 - South	1 - A249 onslip (SB)			575				619				
	2 - B2005 - link	1079	270	152	1815	0.595	1078	423	1.0	1.4	4.869	A
	3 - A249 offslip (SB)	523	131	1230	531	0.985	489	0	1.7	10.2	61.975	F
	4 - Swale Way	593	148	465	631	0.941	571	1254	2.7	8.3	47.997	E
	5 - Grovehurst Road	560	140	650	634	0.884	545	386	1.9	5.7	35.687	E

### 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	895	224	452	822	1.090	804	0	5.4	28.1	90.071	F
	2 - Grovehurst Road	497	124	1072	428	1.160	418	183	3.8	23.5	139.449	F
	3 - A249 onslip (NB)			1155				335				
	4 - B2005 - link	452	113	0	1525	0.296	452	1155	0.4	0.4	3.352	A
2 - South	1 - A249 onslip (SB)			617				671				
	2 - B2005 - link	1186	297	164	1808	0.656	1185	454	1.4	1.9	5.756	A
	3 - A249 offslip (SB)	641	160	1348	441	1.452	440	0	10.2	60.5	309.139	F
	4 - Swale Way	727	182	478	624	1.164	617	1310	8.3	35.6	144.965	F
	5 - Grovehurst Road	686	171	702	596	1.151	586	393	5.7	30.6	129.134	F

### 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	895	224	455	819	1.093	815	0	28.1	48.1	180.488	F
	2 - Grovehurst Road	497	124	1085	420	1.182	418	185	23.5	43.1	303.421	F
	3 - A249 onslip (NB)			1166				337				
	4 - B2005 - link	455	114	0	1525	0.298	455	1166	0.4	0.4	3.362	A

2 - South	1 - A249 onslip (SB)			621				676				
	2 - B2005 - link	1198	299	165	1808	0.663	1198	457	1.9	1.9	5.899	A
	3 - A249 offslip (SB)	641	160	1362	431	1.488	430	0	60.5	113.1	732.345	F
	4 - Swale Way	727	182	478	624	1.164	623	1315	35.6	61.6	293.864	F
	5 - Grovehurst Road	686	171	708	592	1.159	590	393	30.6	54.6	273.166	F

## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	731	183	451	822	0.889	805	0	48.1	29.5	176.532	F
	2 - Grovehurst Road	405	101	1073	428	0.948	418	183	43.1	40.0	350.882	F
	3 - A249 onslip (NB)			1157				335				
	4 - B2005 - link	451	113	0	1525	0.296	451	1157	0.4	0.4	3.350	A
2 - South	1 - A249 onslip (SB)			617				670				
	2 - B2005 - link	1188	297	164	1808	0.657	1188	453	1.9	1.9	5.808	A
	3 - A249 offslip (SB)	523	131	1352	439	1.193	438	0	113.1	134.2	1018.151	F
	4 - Swale Way	593	148	478	624	0.950	614	1312	61.6	56.4	346.191	F
	5 - Grovehurst Road	560	140	699	598	0.937	587	393	54.6	47.8	314.612	F

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	612	153	452	821	0.745	717	0	29.5	3.3	55.122	F
	2 - Grovehurst Road	340	85	991	483	0.703	471	179	40.0	7.1	189.853	F
	3 - A249 onslip (NB)			1123				338				
	4 - B2005 - link	452	113	0	1525	0.296	452	1123	0.4	0.4	3.354	A
2 - South	1 - A249 onslip (SB)			618				665				
	2 - B2005 - link	1146	286	164	1808	0.634	1147	454	1.9	1.8	5.453	A
	3 - A249 offslip (SB)	438	110	1311	470	0.932	466	0	134.2	127.2	1009.197	F
	4 - Swale Way	497	124	476	625	0.795	614	1301	56.4	27.0	248.456	F
	5 - Grovehurst Road	469	117	695	600	0.781	588	395	47.8	18.1	207.270	F

## Queue Variation Results for each time segment

## 07:15 - 07:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.12	0.19	1.19	3.95	5.08			N/A	N/A
	2 - Grovehurst Road	1.29	0.06	0.85	2.78	3.89			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.98	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.74	0.03	0.25	1.74	1.74			N/A	N/A
	4 - Swale Way	2.72	0.07	1.26	6.91	10.06			N/A	N/A
	5 - Grovehurst Road	1.90	0.06	0.90	4.72	6.94			N/A	N/A

## 07:30 - 07:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	5.36	0.12	2.25	13.59	19.09			N/A	N/A
	2 - Grovehurst Road	3.76	0.08	1.12	9.79	14.23			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.45	0.07	0.95	3.14	4.45			N/A	N/A

2 - South	3 - A249 offslip (SB)	10.20	0.03	0.33	14.03	50.39			N/A	N/A
	4 - Swale Way	8.27	0.25	4.63	19.77	26.64			N/A	N/A
	5 - Grovehurst Road	5.65	0.11	2.17	14.67	20.90			N/A	N/A

## 07:45 - 08:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	28.13	6.09	24.06	51.22	61.40			N/A	N/A
	2 - Grovehurst Road	23.49	6.48	20.70	40.28	47.41			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.87	0.03	0.26	1.87	1.87			N/A	N/A
	3 - A249 offslip (SB)	60.48	7.04	47.65	124.45	155.21			N/A	N/A
	4 - Swale Way	35.62	12.07	32.34	58.46	67.74			N/A	N/A
	5 - Grovehurst Road	30.58	9.22	27.33	51.66	60.44			N/A	N/A

## 08:00 - 08:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	48.15	13.40	42.76	83.73	98.72			N/A	N/A
	2 - Grovehurst Road	43.11	16.18	39.69	68.83	79.03			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.30	1.27	1.84			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.94	0.03	0.26	1.94	1.94			N/A	N/A
	3 - A249 offslip (SB)	113.06	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	61.61	26.40	57.76	94.73	107.48			N/A	N/A
	5 - Grovehurst Road	54.60	21.56	50.67	86.13	98.51			N/A	N/A

## 08:15 - 08:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	29.55	6.38	25.29	53.88	64.60			N/A	N/A
	2 - Grovehurst Road	39.97	16.11	37.08	62.30	71.03			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.93	0.35	1.20	3.15	3.89			N/A	N/A
	3 - A249 offslip (SB)	134.25	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	56.37	18.85	51.30	93.65	108.81			N/A	N/A
	5 - Grovehurst Road	47.81	14.50	42.93	81.32	95.20			N/A	N/A

## 08:30 - 08:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	3.29	0.03	0.33	6.53	17.61			N/A	N/A
	2 - Grovehurst Road	7.14	0.10	2.37	19.30	28.18			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.76	0.51	1.11	2.69	3.17			N/A	N/A
	3 - A249 offslip (SB)	127.18	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	27.02	3.82	21.84	53.06	65.25			N/A	N/A
	5 - Grovehurst Road	18.05	1.97	14.08	36.24	45.03			N/A	N/A

# 2019 + Committed + Cumulative + Peak Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	217.36	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	1593.18	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2019 + Committed + Cumulative + Peak Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	809	100.000
	2 - Grovehurst Road		ONE HOUR	✓	233	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	453	100.000
	4 - Swale Way		ONE HOUR	✓	1270	100.000
	5 - Grovehurst Road		ONE HOUR	✓	545	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	184	0	625
		2 - Grovehurst Road	0	0	28	205
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	271	538	0

### Demand (Veh/hr)

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	43	0	0	454	329
		3 - A249 offslip (SB)	1	28	0	203	221
		4 - Swale Way	653	450	0	0	167
		5 - Grovehurst Road	112	325	0	108	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	1	0	20
		2 - Grovehurst Road	0	0	0	1
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	1	4	0

### Heavy Vehicle Percentages

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	2	0	0	27	1
		3 - A249 offslip (SB)	0	11	0	9	4
		4 - Swale Way	16	3	0	0	2
		5 - Grovehurst Road	0	2	0	4	0

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.22	411.17	90.8	141.2	F	742	1114
	2 - Grovehurst Road	0.50	13.79	1.0	3.6	B	214	321
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.39	3.72	0.6	2.0	A	557	835
	1 - A249 onslip (SB)							

2 - South	2 - B2005 - link	0.45	3.75	0.8	1.5	A	740	1111
	3 - A249 offslip (SB)	0.66	14.04	1.9	6.3	B	416	624
	4 - Swale Way	2.23	3827.42	755.6	182.6	F	1165	1748
	5 - Grovehurst Road	0.86	34.77	5.5	29.6	D	500	750

## Main Results for each time segment

### 16:15 - 16:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	609	152	510	797	0.764	597	0	0.0	3.0	17.128	C
	2 - Grovehurst Road	175	44	801	628	0.279	174	307	0.0	0.4	7.895	A
	3 - A249 onslip (NB)			614				360				
	4 - B2005 - link	512	128	0	1575	0.325	510	614	0.0	0.5	3.374	A
2 - South	1 - A249 onslip (SB)			593				480				
	2 - B2005 - link	614	153	80	1765	0.348	612	513	0.0	0.5	3.116	A
	3 - A249 offslip (SB)	341	85	692	921	0.370	339	0	0.0	0.6	6.161	A
	4 - Swale Way	956	239	462	719	1.329	708	568	0.0	62.0	169.504	F
	5 - Grovehurst Road	410	103	668	663	0.619	404	502	0.0	1.6	13.600	B

### 16:30 - 16:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	727	182	552	768	0.947	702	0	3.0	9.2	43.338	E
	2 - Grovehurst Road	209	52	909	554	0.378	209	345	0.4	0.6	10.383	B
	3 - A249 onslip (NB)			726				392				
	4 - B2005 - link	552	138	0	1575	0.350	552	726	0.5	0.5	3.516	A
2 - South	1 - A249 onslip (SB)			649				483				
	2 - B2005 - link	725	181	96	1756	0.413	725	553	0.5	0.7	3.488	A
	3 - A249 offslip (SB)	407	102	821	818	0.498	406	0	0.6	1.0	8.706	A
	4 - Swale Way	1142	285	550	670	1.703	670	676	62.0	179.9	679.157	F
	5 - Grovehurst Road	490	122	646	678	0.722	486	575	1.6	2.4	18.391	C

### 16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	891	223	604	732	1.216	727	0	9.2	50.1	161.421	F
	2 - Grovehurst Road	257	64	963	520	0.493	255	368	0.6	0.9	13.524	B
	3 - A249 onslip (NB)			786				432				
	4 - B2005 - link	604	151	0	1575	0.383	604	786	0.5	0.6	3.705	A
2 - South	1 - A249 onslip (SB)			722				486				
	2 - B2005 - link	781	195	117	1745	0.448	781	605	0.7	0.8	3.732	A
	3 - A249 offslip (SB)	499	125	897	757	0.659	495	0	1.0	1.8	13.554	B
	4 - Swale Way	1398	350	625	628	2.226	628	768	179.9	372.4	1588.922	F
	5 - Grovehurst Road	600	150	618	697	0.861	590	635	2.4	5.0	30.702	D

### 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	891	223	609	729	1.222	728	0	50.1	90.8	354.077	F
	2 - Grovehurst Road	257	64	967	517	0.496	256	369	0.9	1.0	13.788	B
	3 - A249 onslip (NB)			788				436				
	4 - B2005 - link	609	152	0	1575	0.386	609	788	0.6	0.6	3.723	A

2 - South	1 - A249 onslip (SB)			728				487				
	2 - B2005 - link	783	196	119	1744	0.449	783	610	0.8	0.8	3.745	A
	3 - A249 offslip (SB)	499	125	901	754	0.661	499	0	1.8	1.9	14.045	B
	4 - Swale Way	1398	350	628	627	2.231	627	772	372.4	565.3	2589.545	F
	5 - Grovehurst Road	600	150	617	698	0.860	598	637	5.0	5.5	34.774	D

## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	727	182	557	765	0.951	757	0	90.8	83.5	411.171	F
	2 - Grovehurst Road	209	52	955	523	0.400	211	358	1.0	0.7	11.567	B
	3 - A249 onslip (NB)			770				395				
	4 - B2005 - link	556	139	0	1575	0.353	557	770	0.6	0.5	3.536	A
2 - South	1 - A249 onslip (SB)			656				482				
	2 - B2005 - link	770	193	99	1755	0.439	770	557	0.8	0.8	3.657	A
	3 - A249 offslip (SB)	407	102	870	778	0.523	410	0	1.9	1.1	9.864	A
	4 - Swale Way	1142	285	573	658	1.736	658	707	565.3	686.3	3351.852	F
	5 - Grovehurst Road	490	122	637	684	0.716	501	594	5.5	2.7	20.687	C

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	609	152	509	798	0.763	789	0	83.5	38.6	281.685	F
	2 - Grovehurst Road	175	44	947	525	0.334	176	350	0.7	0.5	10.337	B
	3 - A249 onslip (NB)			764				359				
	4 - B2005 - link	508	127	0	1575	0.323	509	764	0.5	0.5	3.375	A
2 - South	1 - A249 onslip (SB)			591				475				
	2 - B2005 - link	769	192	82	1764	0.436	769	509	0.8	0.8	3.621	A
	3 - A249 offslip (SB)	341	85	852	792	0.431	342	0	1.1	0.8	8.039	A
	4 - Swale Way	956	239	536	679	1.408	679	659	686.3	755.6	3827.416	F
	5 - Grovehurst Road	410	103	652	675	0.608	415	563	2.7	1.6	14.070	B

## Queue Variation Results for each time segment

## 16:15 - 16:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.99	0.07	1.25	7.80	11.52			N/A	N/A
	2 - Grovehurst Road	0.38	0.00	0.00	0.38	0.38			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.53	0.53	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.58	0.55	1.00	1.40	1.45			N/A	N/A
	4 - Swale Way	62.01	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.56	1.05	1.50	1.90	1.95			N/A	N/A

## 16:30 - 16:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	9.22	0.25	5.03	22.39	30.35			N/A	N/A
	2 - Grovehurst Road	0.60	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.70	0.20	0.93	1.39	1.44			N/A	N/A

2 - South	3 - A249 offslip (SB)	0.97	0.09	0.91	1.60	1.93			N/A	N/A
	4 - Swale Way	179.87	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.43	0.10	1.45	5.63	7.76			N/A	N/A

## 16:45 - 17:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	50.10	22.10	47.04	76.01	85.93			N/A	N/A
	2 - Grovehurst Road	0.95	0.03	0.26	0.95	0.95			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.62	0.03	0.25	0.62	0.62			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.80	0.03	0.25	0.80	0.80			N/A	N/A
	3 - A249 offslip (SB)	1.85	0.03	0.28	1.85	6.28			N/A	N/A
	4 - Swale Way	372.39	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	5.03	0.05	0.45	14.21	25.80			N/A	N/A

## 17:00 - 17:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	90.76	49.37	87.37	127.80	141.16			N/A	N/A
	2 - Grovehurst Road	0.97	0.03	0.28	0.97	3.57			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.63	0.03	0.28	0.63	2.00			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.81	0.03	0.27	0.81	1.12			N/A	N/A
	3 - A249 offslip (SB)	1.90	0.03	0.28	1.90	4.81			N/A	N/A
	4 - Swale Way	565.29	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	5.46	0.03	0.35	11.25	29.60			N/A	N/A

## 17:15 - 17:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	83.46	39.09	79.12	124.65	140.12			N/A	N/A
	2 - Grovehurst Road	0.68	0.09	0.80	1.37	1.44			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.55	0.55	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.79	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.12	0.07	0.91	2.01	2.81			N/A	N/A
	4 - Swale Way	686.33	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.69	0.04	0.42	7.42	13.29			N/A	N/A

## 17:30 - 17:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	38.59	12.74	34.96	63.92	74.30			N/A	N/A
	2 - Grovehurst Road	0.51	0.05	0.46	1.28	1.39			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.78	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.77	0.05	0.48	1.54	2.10			N/A	N/A
	4 - Swale Way	755.57	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.61	0.03	0.35	3.86	8.30			N/A	N/A



# 2019 + Committed + Cumulative + Average Development, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	168.24	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	327.42	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2019 + Committed + Cumulative + Average Development	AM	ONE HOUR	07:15	08:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	812	100.000
	2 - Grovehurst Road		ONE HOUR	✓	451	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	582	100.000
	4 - Swale Way		ONE HOUR	✓	659	100.000
	5 - Grovehurst Road		ONE HOUR	✓	623	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	43	0	769
		2 - Grovehurst Road	0	0	26	425
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	151	334	0

### Demand (Veh/hr)

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	144	0	0	860	187
		3 - A249 offslip (SB)	1	18	0	385	178
		4 - Swale Way	350	231	0	0	78
		5 - Grovehurst Road	211	238	0	174	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	7	0	16
		2 - Grovehurst Road	0	0	8	4
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	5	7	0

### Heavy Vehicle Percentages

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	0	0	0	12	6
		3 - A249 offslip (SB)	0	6	0	9	4
		4 - Swale Way	37	10	0	0	9
		5 - Grovehurst Road	1	2	0	4	0

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.08	168.50	44.8	95.4	F	745	1118
	2 - Grovehurst Road	1.18	343.32	42.6	78.3	F	414	621
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.30	3.36	0.4	1.8	A	432	648
	1 - A249 onslip (SB)							

2 - South	2 - B2005 - link	0.66	5.89	1.9	4.4	A	1113	1669
	3 - A249 offslip (SB)	1.49	1006.31	133.1	200.0	F	534	801
	4 - Swale Way	1.16	342.12	61.0	107.6	F	605	907
	5 - Grovehurst Road	1.16	313.54	54.5	98.3	F	572	858

## Main Results for each time segment

### 07:15 - 07:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	611	153	357	896	0.682	603	0	0.0	2.1	11.982	B
	2 - Grovehurst Road	340	85	817	597	0.568	334	143	0.0	1.3	13.449	B
	3 - A249 onslip (NB)			886				265				
	4 - B2005 - link	358	90	0	1525	0.235	357	886	0.0	0.3	3.079	A
2 - South	1 - A249 onslip (SB)			489				524				
	2 - B2005 - link	903	226	129	1829	0.494	900	360	0.0	1.0	3.858	A
	3 - A249 offslip (SB)	438	110	1029	684	0.641	431	0	0.0	1.7	13.899	B
	4 - Swale Way	496	124	396	665	0.746	485	1064	0.0	2.7	19.026	C
	5 - Grovehurst Road	469	117	551	706	0.665	461	331	0.0	1.9	14.339	B

### 07:30 - 07:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	730	182	421	850	0.859	718	0	2.1	5.1	25.177	D
	2 - Grovehurst Road	405	101	970	499	0.813	396	169	1.3	3.6	32.370	D
	3 - A249 onslip (NB)			1053				313				
	4 - B2005 - link	422	105	0	1525	0.276	421	1053	0.3	0.4	3.261	A
2 - South	1 - A249 onslip (SB)			576				618				
	2 - B2005 - link	1073	268	152	1815	0.591	1072	423	1.0	1.4	4.832	A
	3 - A249 offslip (SB)	523	131	1224	536	0.976	491	0	1.7	9.7	58.902	F
	4 - Swale Way	592	148	464	631	0.938	571	1251	2.7	8.1	47.451	E
	5 - Grovehurst Road	560	140	649	635	0.882	545	386	1.9	5.6	35.469	E

### 07:45 - 08:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	894	224	452	828	1.080	809	0	5.1	26.5	85.339	F
	2 - Grovehurst Road	497	124	1077	430	1.156	419	184	3.6	23.1	137.085	F
	3 - A249 onslip (NB)			1160				335				
	4 - B2005 - link	452	113	0	1525	0.296	452	1160	0.4	0.4	3.353	A
2 - South	1 - A249 onslip (SB)			618				670				
	2 - B2005 - link	1185	296	164	1808	0.655	1183	454	1.4	1.9	5.742	A
	3 - A249 offslip (SB)	641	160	1347	443	1.448	441	0	9.7	59.7	303.324	F
	4 - Swale Way	726	181	478	624	1.162	617	1310	8.1	35.3	143.647	F
	5 - Grovehurst Road	686	171	701	596	1.150	586	394	5.6	30.5	128.710	F

### 08:00 - 08:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	894	224	455	826	1.083	821	0	26.5	44.8	168.503	F
	2 - Grovehurst Road	497	124	1091	421	1.180	419	185	23.1	42.6	299.149	F
	3 - A249 onslip (NB)			1172				338				
	4 - B2005 - link	455	114	0	1525	0.298	455	1172	0.4	0.4	3.363	A

2 - South	1 - A249 onslip (SB)			622				676				
	2 - B2005 - link	1197	299	165	1808	0.662	1197	457	1.9	1.9	5.889	A
	3 - A249 offslip (SB)	641	160	1362	431	1.486	431	0	59.7	112.1	724.213	F
	4 - Swale Way	726	181	479	624	1.162	623	1314	35.3	61.0	291.142	F
	5 - Grovehurst Road	686	171	708	592	1.159	590	393	30.5	54.5	272.448	F

## 08:15 - 08:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	730	182	451	828	0.881	810	0	44.8	24.7	157.913	F
	2 - Grovehurst Road	405	101	1078	429	0.946	419	183	42.6	39.2	343.320	F
	3 - A249 onslip (NB)			1162				335				
	4 - B2005 - link	451	113	0	1525	0.296	451	1162	0.4	0.4	3.351	A
2 - South	1 - A249 onslip (SB)			617				669				
	2 - B2005 - link	1187	297	164	1808	0.656	1187	453	1.9	1.9	5.798	A
	3 - A249 offslip (SB)	523	131	1351	439	1.191	439	0	112.1	133.1	1006.306	F
	4 - Swale Way	592	148	479	624	0.949	614	1312	61.0	55.6	342.117	F
	5 - Grovehurst Road	560	140	699	598	0.936	587	393	54.5	47.6	313.541	F

## 08:30 - 08:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	611	153	453	827	0.739	698	0	24.7	3.1	41.539	E
	2 - Grovehurst Road	340	85	973	498	0.681	483	178	39.2	3.3	166.748	F
	3 - A249 onslip (NB)			1116				340				
	4 - B2005 - link	453	113	0	1525	0.297	453	1116	0.4	0.4	3.357	A
2 - South	1 - A249 onslip (SB)			620				663				
	2 - B2005 - link	1131	283	164	1808	0.626	1132	455	1.9	1.7	5.339	A
	3 - A249 offslip (SB)	438	110	1297	481	0.912	477	0	133.1	123.4	968.075	F
	4 - Swale Way	496	124	476	625	0.793	614	1298	55.6	26.0	243.337	F
	5 - Grovehurst Road	469	117	694	601	0.780	589	396	47.6	17.7	205.349	F

## Queue Variation Results for each time segment

## 07:15 - 07:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.06	0.20	1.18	3.79	4.81			N/A	N/A
	2 - Grovehurst Road	1.27	0.07	0.95	2.59	3.53			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.97	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.71	0.03	0.25	1.71	1.71			N/A	N/A
	4 - Swale Way	2.70	0.07	1.29	6.79	9.82			N/A	N/A
	5 - Grovehurst Road	1.89	0.06	0.91	4.69	6.87			N/A	N/A

## 07:30 - 07:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	5.10	0.11	2.02	12.99	18.39			N/A	N/A
	2 - Grovehurst Road	3.64	0.08	1.14	9.40	13.58			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.43	0.07	0.95	3.07	4.36			N/A	N/A

2 - South	3 - A249 offslip (SB)	9.70	0.04	0.36	20.04	53.01			N/A	N/A
	4 - Swale Way	8.15	0.25	4.55	19.49	26.26			N/A	N/A
	5 - Grovehurst Road	5.62	0.11	2.15	14.57	20.77			N/A	N/A

## 07:45 - 08:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	26.47	5.04	22.24	49.36	59.66			N/A	N/A
	2 - Grovehurst Road	23.13	6.30	20.34	39.76	46.84			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.87	0.03	0.26	1.87	1.87			N/A	N/A
	3 - A249 offslip (SB)	59.71	11.96	50.79	112.09	135.40			N/A	N/A
	4 - Swale Way	35.27	11.86	31.99	57.98	67.23			N/A	N/A
	5 - Grovehurst Road	30.49	9.18	27.24	51.53	60.29			N/A	N/A

## 08:00 - 08:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	44.80	10.96	39.09	80.21	95.45			N/A	N/A
	2 - Grovehurst Road	42.58	15.87	39.16	68.10	78.25			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.03	0.30	1.27	1.84			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.93	0.03	0.26	1.93	1.93			N/A	N/A
	3 - A249 offslip (SB)	112.13	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	61.00	25.94	57.12	93.95	106.63			N/A	N/A
	5 - Grovehurst Road	54.47	21.47	50.54	85.95	98.30			N/A	N/A

## 08:15 - 08:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	24.70	3.72	20.12	47.86	58.62			N/A	N/A
	2 - Grovehurst Road	39.22	17.81	36.85	58.64	66.05			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.92	0.40	1.22	3.06	3.82			N/A	N/A
	3 - A249 offslip (SB)	133.12	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	55.57	18.35	50.48	92.53	107.56			N/A	N/A
	5 - Grovehurst Road	47.64	14.48	42.79	80.97	94.78			N/A	N/A

## 08:30 - 08:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	3.12	0.03	0.33	5.94	16.56			N/A	N/A
	2 - Grovehurst Road	3.27	0.04	0.36	7.81	17.53			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	1.70	0.48	1.03	2.61	3.00			N/A	N/A
	3 - A249 offslip (SB)	123.38	>199	>199	>199	>199			N/A	N/A
	4 - Swale Way	26.03	3.64	21.01	51.15	62.93			N/A	N/A
	5 - Grovehurst Road	17.67	1.79	13.67	35.73	44.53			N/A	N/A

# 2019 + Committed + Cumulative + Average Development, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

## Junction Network

### Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	North	Standard Roundabout	1, 2, 3, 4	215.21	F
2	South	Standard Roundabout	1, 2, 3, 4, 5	1595.34	F

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2019 + Committed + Cumulative + Average Development	PM	ONE HOUR	16:15	17:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Linked Arm Data

Junction	Arm	Feeding Junction	Feeding Arm	Link Type	Flow source	Uniform flow (Veh/hr)	Flow multiplier (%)	Internal storage space (PCU)
1 - North	4 - B2005 - link	2	2	Queue limited	Normal	0	100.00	20.00
2 - South	2 - B2005 - link	1	4	Queue limited	Normal	0	100.00	20.00

### Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - North	1 - A249 offslip (NB)		ONE HOUR	✓	808	100.000
	2 - Grovehurst Road		ONE HOUR	✓	233	100.000
	3 - A249 onslip (NB)					
	4 - B2005 - link	✓				
2 - South	1 - A249 onslip (SB)					
	2 - B2005 - link	✓				
	3 - A249 offslip (SB)		ONE HOUR	✓	453	100.000
	4 - Swale Way		ONE HOUR	✓	1269	100.000
	5 - Grovehurst Road		ONE HOUR	✓	545	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	184	0	624
		2 - Grovehurst Road	0	0	28	205
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	271	538	0

### Demand (Veh/hr)

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	43	0	0	453	329
		3 - A249 offslip (SB)	1	28	0	203	221
		4 - Swale Way	652	450	0	0	167
		5 - Grovehurst Road	112	325	0	108	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To				
		1 - A249 offslip (NB)	2 - Grovehurst Road	3 - A249 onslip (NB)	4 - B2005 - link	
1 - North	From	1 - A249 offslip (NB)	0	1	0	20
		2 - Grovehurst Road	0	0	0	1
		3 - A249 onslip (NB)	Exit-only	Exit-only	Exit-only	Exit-only
		4 - B2005 - link	0	1	4	0

### Heavy Vehicle Percentages

		To					
		1 - A249 onslip (SB)	2 - B2005 - link	3 - A249 offslip (SB)	4 - Swale Way	5 - Grovehurst Road	
2 - South	From	1 - A249 onslip (SB)	Exit-only	Exit-only	Exit-only	Exit-only	
		2 - B2005 - link	2	0	0	26	1
		3 - A249 offslip (SB)	0	11	0	9	4
		4 - Swale Way	16	3	0	0	2
		5 - Grovehurst Road	0	2	0	4	0

## Results

### Results Summary for whole modelled period

Junction	Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - North	1 - A249 offslip (NB)	1.22	407.24	90.1	140.3	F	741	1112
	2 - Grovehurst Road	0.50	13.78	1.0	3.6	B	214	321
	3 - A249 onslip (NB)							
	4 - B2005 - link	0.39	3.72	0.6	2.0	A	557	835
	1 - A249 onslip (SB)							

2 - South	2 - B2005 - link	0.45	3.73	0.8	1.5	A	744	1116
	3 - A249 offslip (SB)	0.66	14.04	1.9	6.3	B	416	624
	4 - Swale Way	2.23	3834.12	755.7	182.6	F	1164	1747
	5 - Grovehurst Road	0.86	34.60	5.4	29.4	D	500	750

## Main Results for each time segment

### 16:15 - 16:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	608	152	510	797	0.763	596	0	0.0	3.0	17.070	C
	2 - Grovehurst Road	175	44	800	629	0.279	174	307	0.0	0.4	7.885	A
	3 - A249 onslip (NB)			614				360				
	4 - B2005 - link	512	128	0	1575	0.325	510	614	0.0	0.5	3.374	A
2 - South	1 - A249 onslip (SB)			593				479				
	2 - B2005 - link	616	154	80	1774	0.347	614	513	0.0	0.5	3.098	A
	3 - A249 offslip (SB)	341	85	694	921	0.370	339	0	0.0	0.6	6.155	A
	4 - Swale Way	955	239	464	719	1.329	707	569	0.0	62.0	169.658	F
	5 - Grovehurst Road	410	103	668	663	0.619	404	503	0.0	1.6	13.579	B

### 16:30 - 16:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	726	182	551	768	0.945	702	0	3.0	9.1	43.022	E
	2 - Grovehurst Road	209	52	909	555	0.377	209	345	0.4	0.6	10.367	B
	3 - A249 onslip (NB)			725				392				
	4 - B2005 - link	552	138	0	1575	0.350	551	725	0.5	0.5	3.516	A
2 - South	1 - A249 onslip (SB)			649				483				
	2 - B2005 - link	728	182	96	1765	0.413	727	553	0.5	0.7	3.469	A
	3 - A249 offslip (SB)	407	102	824	818	0.498	406	0	0.6	1.0	8.694	A
	4 - Swale Way	1141	285	552	669	1.704	669	678	62.0	179.9	680.168	F
	5 - Grovehurst Road	490	122	645	679	0.722	486	576	1.6	2.4	18.349	C

### 16:45 - 17:00

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	890	222	603	733	1.214	727	0	9.1	49.7	160.257	F
	2 - Grovehurst Road	257	64	963	520	0.493	255	368	0.6	0.9	13.515	B
	3 - A249 onslip (NB)			786				432				
	4 - B2005 - link	604	151	0	1575	0.383	603	786	0.5	0.6	3.704	A
2 - South	1 - A249 onslip (SB)			722				485				
	2 - B2005 - link	785	196	117	1753	0.448	784	605	0.7	0.8	3.713	A
	3 - A249 offslip (SB)	499	125	901	757	0.658	495	0	1.0	1.8	13.548	B
	4 - Swale Way	1397	349	627	627	2.228	627	769	179.9	372.4	1591.686	F
	5 - Grovehurst Road	600	150	617	698	0.860	590	637	2.4	5.0	30.584	D

### 17:00 - 17:15

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	890	222	608	729	1.220	728	0	49.7	90.1	351.405	F
	2 - Grovehurst Road	257	64	967	517	0.496	256	370	0.9	1.0	13.780	B
	3 - A249 onslip (NB)			788				435				
	4 - B2005 - link	608	152	0	1575	0.386	608	788	0.6	0.6	3.722	A



2 - South	1 - A249 onslip (SB)			728				486				
	2 - B2005 - link	787	197	119	1752	0.449	787	609	0.8	0.8	3.726	A
	3 - A249 offslip (SB)	499	125	905	754	0.661	499	0	1.8	1.9	14.041	B
	4 - Swale Way	1397	349	630	626	2.234	626	774	372.4	565.3	2593.803	F
	5 - Grovehurst Road	600	150	616	698	0.859	598	639	5.0	5.4	34.603	D

## 17:15 - 17:30

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	726	182	556	765	0.949	757	0	90.1	82.5	407.240	F
	2 - Grovehurst Road	209	52	954	523	0.400	211	359	1.0	0.7	11.560	B
	3 - A249 onslip (NB)			770				395				
	4 - B2005 - link	556	139	0	1575	0.353	556	770	0.6	0.5	3.533	A
2 - South	1 - A249 onslip (SB)			656				481				
	2 - B2005 - link	774	193	99	1763	0.439	774	557	0.8	0.8	3.639	A
	3 - A249 offslip (SB)	407	102	873	779	0.523	410	0	1.9	1.1	9.861	A
	4 - Swale Way	1141	285	576	656	1.738	656	708	565.3	686.4	3357.448	F
	5 - Grovehurst Road	490	122	637	685	0.716	501	595	5.4	2.7	20.605	C

## 17:30 - 17:45

Junction	Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1 - North	1 - A249 offslip (NB)	608	152	508	798	0.762	789	0	82.5	37.4	276.880	F
	2 - Grovehurst Road	175	44	947	525	0.334	176	350	0.7	0.5	10.331	B
	3 - A249 onslip (NB)			764				359				
	4 - B2005 - link	508	127	0	1575	0.323	508	764	0.5	0.5	3.377	A
2 - South	1 - A249 onslip (SB)			591				475				
	2 - B2005 - link	773	193	82	1773	0.436	773	509	0.8	0.8	3.600	A
	3 - A249 offslip (SB)	341	85	855	792	0.431	342	0	1.1	0.8	8.038	A
	4 - Swale Way	955	239	538	678	1.409	678	660	686.4	755.7	3834.123	F
	5 - Grovehurst Road	410	103	651	675	0.608	415	565	2.7	1.6	14.038	B

## Queue Variation Results for each time segment

## 16:15 - 16:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	2.97	0.07	1.28	7.71	11.31			N/A	N/A
	2 - Grovehurst Road	0.38	0.00	0.00	0.38	0.38			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.53	0.53	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.58	0.55	1.00	1.40	1.45			N/A	N/A
	4 - Swale Way	62.00	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.56	1.05	1.50	1.90	1.95			N/A	N/A

## 16:30 - 16:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	9.13	0.25	4.98	22.15	30.03			N/A	N/A
	2 - Grovehurst Road	0.60	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.54	0.54	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.70	0.19	0.93	1.39	1.44			N/A	N/A

2 - South	3 - A249 offslip (SB)	0.97	0.09	0.91	1.60	1.93			N/A	N/A
	4 - Swale Way	179.86	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.43	0.10	1.45	5.61	7.75			N/A	N/A

## 16:45 - 17:00

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	49.72	21.84	46.65	75.53	85.41			N/A	N/A
	2 - Grovehurst Road	0.95	0.03	0.26	0.95	0.95			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.62	0.03	0.25	0.62	0.62			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.80	0.03	0.25	0.80	0.80			N/A	N/A
	3 - A249 offslip (SB)	1.85	0.03	0.28	1.85	6.27			N/A	N/A
	4 - Swale Way	372.38	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	5.01	0.05	0.45	14.13	25.72			N/A	N/A

## 17:00 - 17:15

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	90.06	48.79	86.66	126.98	140.29			N/A	N/A
	2 - Grovehurst Road	0.97	0.03	0.28	0.97	3.57			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.63	0.03	0.28	0.63	2.00			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.81	0.03	0.27	0.81	1.13			N/A	N/A
	3 - A249 offslip (SB)	1.90	0.03	0.28	1.90	4.82			N/A	N/A
	4 - Swale Way	565.29	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	5.43	0.03	0.35	11.11	29.44			N/A	N/A

## 17:15 - 17:30

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	82.49	38.42	78.16	123.48	138.89			N/A	N/A
	2 - Grovehurst Road	0.68	0.09	0.80	1.37	1.44			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.55	0.55	1.00	1.40	1.45			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.79	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	1.12	0.07	0.91	2.01	2.81			N/A	N/A
	4 - Swale Way	686.39	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	2.68	0.04	0.42	7.40	13.24			N/A	N/A

## 17:30 - 17:45

Junction	Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - North	1 - A249 offslip (NB)	37.42	12.43	33.92	61.85	71.84			N/A	N/A
	2 - Grovehurst Road	0.51	0.05	0.46	1.28	1.39			N/A	N/A
	3 - A249 onslip (NB)									
	4 - B2005 - link	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - South	1 - A249 onslip (SB)									
	2 - B2005 - link	0.78	0.55	1.00	1.40	1.45			N/A	N/A
	3 - A249 offslip (SB)	0.77	0.05	0.48	1.53	2.09			N/A	N/A
	4 - Swale Way	755.71	>199	>199	>199	>199			N/A	N/A
	5 - Grovehurst Road	1.61	0.03	0.35	3.86	8.28			N/A	N/A