



Cumulative Effects Assessment Addendum

Thurrock Flexible Generation Plant

Revision 0, October 2020



1 INTRODUCTION

1.1 Purpose of this document

- 1.1.1 This document is an addendum to the Cumulative Effects Assessment (CEA) that formed part of the Environmental Statement (ES) submitted with the Thurrock Flexible Generation Plant Development Consent Order (DCO) application in May 2020. The CEA comprised Volume 4 of the ES (application document A6).
- 1.1.2 The purpose of this CEA Addendum is to provide supplementary information about the potential for cumulative environmental effects with the proposed Lower Thames Crossing (LTC) nationally significant infrastructure project (NSIP).
- 1.1.3 At the time of completing most parts of the submitted ES, in February 2020, the Applicant was notified by Highways England of further consultation and publication of additional environmental information concerning the LTC. Consultation and publication of a Preliminary Environmental Information Report (PEIR) for the Lower Thames Crossing had previously occurred in 2018. Due to the timing of the publication of further information, it was not possible for this to be considered in the assessment of cumulative effects in the submitted ES for Thurrock Flexible Generation Plant, which remained based on information in the Lower Thames Crossing PEIR with respect to cumulative effects that may arise.
- 1.1.4 The Applicant has now reviewed the further information published by the LTC and this document provides an update to the CEA based on that information.

1.2 Approach to Cumulative Effects Assessment Update

- 1.2.1 All information concerning the LTC design and environmental information changes since the publication of the LTC's PEIR has been taken from documents published on the LTC's dedicated consultation website in February 2020¹, including the Environmental Impacts Update.
- 1.2.2 The main LTC changes that are considered relevant to the Thurrock Flexible Generation Plant CEA are as follows.
- The Tilbury Services area and large junction to serve it, immediately north of the tunnel (i.e. in the area of Thurrock Flexible Generation Plant gas connection) has been removed. This reduces overall the operational land-take of the LTC in that area, shortens the viaduct length over the railway and Station Road, and reduces the runoff basin size formerly proposed.
 - A new construction access route is proposed for the LTC, largely following the same construction access route proposed for Thurrock Flexible Generation Plant from the A1089, through the Tilbury2 port development and then across the north edge of the former Tilbury B Power Station site.
 - The estimate of construction HGV numbers for LTC working area 'B North' (northern tunnel exit and section of road closest to Thurrock Flexible Generation Plant) has been increased.
 - The location of a possible jetty for material delivery/export is now shown in the LTC plans, in the general vicinity of the causeway proposed for Thurrock Flexible Generation Plant.
- 1.2.3 In this document, for each environmental topic area a brief recap of the conclusions of the submitted CEA regarding significant effects is given. LTC February 2020 design changes and additional information about impacts and effects from the LTC are then summarised, and finally the CEA conclusions are updated with any changes to significant effects predicted.

¹ <https://highwaysengland.citizenspace.com/ltc/consultation-2020>, accessed February 2020

1.2.4 Due to the change to the LTC area B North proposed primary construction access route and the increase in number of construction HGV predicted, an addendum to the Transport Assessment (the existing TA, ES Volume 6, Appendix 10.1) to assess these changes in greater detail has also been prepared. The TA Addendum is provided at Appendix A to this CEA Addendum and a summary of the findings is given in the transport section below.

1.3 LTC ‘Design Refinements’ Consultation, July 2020

1.3.1 At the time of completing this CEA Addendum in July 2020, the LTC has opened further consultation about design refinements, running from 14 July 2020 to 12 August 2020². The design refinements are divided into LTC route sections, with the relevant section for potential cumulative effects with Thurrock Flexible Generation Plant being ‘Tilbury Area’. The LTC has published a further Environmental Impacts Update document.

1.3.2 For the Tilbury Area, the July 2020 Environmental Impacts Update document³ describes the impacts of seven design refinements:

- landscaping at the northern tunnel entrance;
- shorter culvert under maintenance tracks at northern tunnel entrance;
- adjustments to the proposed realignment of footpaths 61 and 200;
- widening of Muckingford Road to allow space for a shared cycle/pedestrian path;
- re-establishing a dried watercourse (which is stated to have no new environmental impacts);
- providing a water supply for the tunnel boring machine from Linford (including potentially upgrading water network); and
- providing utilities connections to the northern tunnel entrance.

1.3.3 The Environmental Impacts Update document does not identify any new likely significant effects from these changes, nor increases in the significance of effects predicted in the PEIR. On this basis it is understood that the design refinements constitute minor updates or further detail of existing proposals that have been considered in the Thurrock Flexible Generation Plant CEA and this CEA Addendum, so new or materially different cumulative effects from the design refinements, should LTC decide to incorporate these in the final proposals after consultation, are considered unlikely to arise.

Note: throughout the remainder of this CEA Addendum, references to ‘the Environmental Impacts Update’ refer to the LTC’s February 2020 document of that title, not to the July 2020 document.

² <https://highwaysengland.co.uk/lower-thames-crossing-design-consultation>, accessed July 2020

³ https://highwaysengland.citizenspace.com/ltc/design-consultation/supporting_documents/LTC%20Design%20Consultation%202020%20Environmental%20Impacts%20Update.pdf, accessed July 2020

2 NOISE AND VIBRATION

Existing Cumulative Effects Assessment

- 2.1.1 The existing Thurrock Flexible Generation Plant CEA noted that very little information was available from the LTC PEIR with regard to noise and vibration during the construction or operational phases. It went on to conclude that although no quantitative assessment could be undertaken, it could be predicted that a road scheme of the size proposed in the LTC PEIR has the potential to significantly impact all nearby NSRs, including those also adversely impacted by Thurrock Flexible Generation Plant during any overlap between construction or operational phases of either project. The CEA chapter concluded that if the construction phase of Thurrock Flexible Generation Plant were to overlap with any phase of the LTC, the cumulative impact was anticipated to be at least moderate or major at the most affected receptors, which are of medium sensitivity, giving rise to a moderate to major adverse cumulative effects; however, Thurrock Flexible Generation Plant would not contribute meaningfully to this adverse effect.
- 2.1.2 It was likewise concluded that during the daytime, when the operation of Thurrock Flexible Generation Plant coincided with either the construction or operational phase of the LTC, the predicted sound environment would be dominated by the LTC. As such, if there were to be a significant adverse effect from the LTC, the cumulative contribution from Thurrock Flexible Generation Plant was not predicted to materially increase the significant of effect. During the night-time, the predicted rating levels resulted in Thurrock Flexible Generation Plant being on the threshold of having a significant adverse effect. It was therefore considered that there was a high potential for a magnitude of cumulative impact that would cause a significant adverse effect on the medium sensitivity receptors. It was further predicted, however, that with a road scheme of this size, a significant effect is highly likely even in the absence of the contribution from Thurrock Flexible Generation Plant.

LTC design changes and Environmental Impacts Update document

- 2.1.3 The LTC Environmental Impacts Update document states that there will be changes to the assessment of noise and vibration relating to the construction and operation of the LTC due to the removal of the Thurrock rest and service area from the scheme, subsequent removal of the junction serving this and the reduction in viaduct height this removal allows, adjustments to the carriageway separation, and the use of the same private roads through RWE's Tilbury Power Station site and the Tilbury2 port site to Fort Road and the A1089 (that would also be used for construction access by Thurrock Flexible Generation Plant).
- 2.1.4 As with the PEIR, the Environmental Impacts Update continues to state that effects of noise and vibration will be assessed fully in the ES, so no further information to inform a quantitative assessment of cumulative effects is available at this stage. Both documents state that there is a potential for adverse impacts from construction during both day and night-time periods, and both short- and long-term adverse impacts due to the operation of the scheme.
- 2.1.5 The LTC Environmental Impacts Update states that the changes to the construction noise and vibration assessment due to reduction in length and height of the Tilbury Viaduct (over the Tilbury Loop railway and Station Road) would not change the predicted temporary significant adverse effect. Impacts from operational road traffic noise in this section are expected to be in the order of the impacts described in the PEIR, as described above.
- 2.1.6 With regard to construction traffic flows, the LTC Guide to Consultation indicates that the construction HGVs in the vicinity, referred at as construction area 'B North', would be increased from an average of 4,500 HGVs per month, as predicted in the PEIR, to 5,300 HGVs per month. In the latest information regarding the construction of the LTC, this construction traffic has been redirected along the same access routes as the Thurrock Flexible Generation Plant construction traffic. As a result, the calculations of the noise change associated with construction traffic from

Thurrock Flexible Generation Plant during the peak construction year, in combination with all cumulative schemes including the updated LTC construction traffic flows and routes (as described in section 7 Traffic and Transport) compared to the base year has been recalculated using the methodology described in the Calculation of Road Traffic Noise (CRTN)⁴. The calculation showed that the noise change across all but one of the relevant road links resulted in a minor impact at medium sensitivity receptors, resulting in a minor adverse effect, which is not significant.

- 2.1.7 The only exception to this is Link 11 (Coopers Shaw Road/Church Road/Station Road, between Gun Hill Road and EMR East Tilbury junction) where an impact at the lower threshold of moderate adverse is predicted. This route is intended to be used by Thurrock Flexible Generation Plant only in the exceptional circumstance that the primary access route via the Tilbury2 port is temporarily unavailable. It is understood that Link 11 is also not the primary access route for the LTC construction traffic, which will likewise use the route via Tilbury2 port. In the unlikely event that the Tilbury2 port route is unavailable to Thurrock Flexible Generation Plant traffic during a time which the construction of Thurrock Flexible Generation Plant and the LTC coincides, a moderate impact at medium sensitivity receptors could result in a temporary effect of moderate adverse significance.

Update to Cumulative Effects Assessment

- 2.1.8 The LTC updated environmental impacts information indicates that, through the changes presented, the impacts of the scheme on nearby receptors will be lower for both the construction activities and operation of the project, except the construction traffic which is expected to increase. At this stage, the updated environmental impacts information does not present any quantitative assessment of the significance of the effects presented. The changes proposed are not expected to reduce the magnitude of the impact such that the effect is brought below the thresholds for significance, therefore the cumulative effects assessment remains unchanged at the majority of receptors, with the exception of those along traffic link 11, at which a temporary moderate adverse effect could occur during exceptional circumstances.

⁴ Department of Transport (1988) Calculation of Road Traffic Noise. London, HMSO.

3 LANDSCAPE AND VISUAL RESOURCES

Existing Cumulative Effects Assessment

- 3.1.1 The existing Thurrock Flexible Generation Plant CEA concluded that the host landscape character area 'LCA C5 Tilbury Marshes' would potentially be the most adversely affected LCA from Thurrock Flexible Generation Plant and the LTC development. The combined construction and operational phases of both developments would be moderate to major adverse and significant on this LCA. On its own the effects of Thurrock Flexible Generation Plant are judged to be moderate and not significant.
- 3.1.2 Visually, pedestrian receptors along the northern shore of the Thames using the Thames Estuary Path between and including viewpoints 15 and 16, and those using the Saxon Shore footpath and at viewpoints 18, 19, 20 and 23 on the south side of the Thames between Thurrock Flexible Generation Plant and LTC, and recreational receptors using Gordon Gardens and New Tavern Fort, would experience a moderate to major adverse effect from the LTC and Thurrock Flexible Generation Plant combined, which is significant.
- 3.1.3 Residential groups on the east side of Tilbury and at Gravesend waterfront and pedestrian receptors using access land at Parsonage Common (at both construction and operational phases) and at viewpoints 6, 7, 9 and 10 would experience a moderate to major adverse effect from the LTC and Thurrock Flexible Generation Plant combined, which is significant. The visual effect of Thurrock Flexible Generation Plant on its own is expected to vary from moderate adverse and not significant for most of the visual receptors mentioned above to major adverse at visually most exposed locations at viewpoints 6 and 9.

LTC design changes and Environmental Impacts Update document

- 3.1.4 The LTC Environmental Impacts Update states that the level of impacts on the landscape and visual resources would be similar to those predicted in the PEIR. Construction traffic for the LTC is now proposed to be routed via a new haul road to the east and south of Thurrock Flexible Generation Plant and then along the same private roads through RWE's Tilbury Power Station site and the Tilbury2 port site to Fort Road and the A1089 that would also be used for construction access by Thurrock Flexible Generation Plant. The removal of Tilbury junction, the rest service area and maintenance depot and the reduced length of the Tilbury viaduct are the changes nearest to the Thurrock FGP.
- 3.1.5 At the construction phase for both these parts of the LTC development there would be a major negative landscape change and major negative change in the view for a range of visual receptors. However, at the operational phase the impacts would be slightly improved compared to the predictions in the PEIR, i.e. a major negative landscape change and a moderate to major negative change in the view from a range of visual receptors. The reasons given for this change in the LTC Environmental Impacts Update are due to less extensive landscape and visual impacts from a reduced footprint of the Tilbury junction and reduced length of the Tilbury viaduct.

Update to Cumulative Effects Assessment

- 3.1.6 The LTC updated Environmental Impacts Update has indicated that the level of impact of the construction phase would remain largely the same as predicted in the PEIR. The design changes particularly in relation to the reduced footprint of the Tilbury junction and service area and reduced length of the viaduct may slightly reduce the operational phase impacts. However these modifications would not change the significance of the adverse effects predicted in the LTC PEIR. The combined effect of the Thurrock Flexible Generation Plant and LTC in the CEA is therefore unchanged.

4 HISTORIC ENVIRONMENT

Existing Cumulative Effects Assessment

- 4.1.1 With regard to direct physical impacts to buried archaeological remains, the Thurrock Flexible Generation Plant CEA concluded that the potential magnitude of impact from the construction of Thurrock Flexible Generation Plant alone could be major (prior to mitigation) if sensitive archaeological remains are present, leading to a minor to moderate/major adverse effect on receptors of low to high sensitivity. However, this would be mitigated via a scheme of archaeological investigation. The potential for cumulative impacts on these receptors was considered to be minor, resulting in a negligible to minor adverse cumulative effect, as other cumulative developments with significant effects would be subject to similar mitigation requirements.
- 4.1.2 In the case of impacts to the settings of designated heritage assets, the CEA concluded that the potential magnitude of impact from the construction, operation and maintenance of Thurrock Flexible Generation Plant alone would be negligible to minor, leading to a minor adverse effect on receptors of low to high sensitivity. Moderate adverse cumulative impacts with adverse effects were considered possible, but it was considered that the contribution of Thurrock Flexible Generation Plant to the significance of effect would not be material.
- 4.1.3 In respect of impacts to historic landscape character, the CEA concluded that the potential magnitude of impact from the construction, operation and maintenance of Thurrock Flexible Generation Plant alone would be minor, leading to a minor adverse effect on receptors of low to medium sensitivity. The potential for cumulative impacts on these receptors was also considered to be minor, resulting in a negligible to minor adverse cumulative effect.

LTC design changes and Environmental Impacts Update document

- 4.1.4 The LTC Environmental Impacts Update states that the level of impacts on cultural heritage resources would generally be similar to those predicted in the PEIR. The removal of the Tilbury junction, also the rest and service area and the maintenance depot would not reduce the potential impact on buried archaeological remains as the land would still be used during construction. There would be a '*marginal reduction*' in any adverse effect on the East Tilbury conservation area as the scheme would be further away from this designated heritage asset.
- 4.1.5 The reduction in the length and height of the viaduct over the railway would not result in any change to the potential impact on buried archaeological remains. This change would, however, '*marginally reduce*' the adverse effects reported in the LTC PEIR with regard to impacts on the settings of the East Tilbury and West Tilbury conservation areas.

Update to Cumulative Effects Assessment

- 4.1.6 The LTC Environmental Impacts Update has indicated that the level of impact of the construction phase would remain largely the same as predicted in the PEIR. The design changes particularly in relation to the reduced footprint of the Tilbury junction and service area and reduced length and height of the viaduct may marginally reduce the operational and maintenance phase impacts. However these modifications would not change the significance of the adverse effects predicted in the LTC PEIR. The combined effect of the Thurrock Flexible Generation Plant and LTC in the CEA is therefore unchanged.

5 LAND USE, AGRICULTURE AND SOCIO-ECONOMICS

Existing Cumulative Effects Assessment

- 5.1.1 During construction there would be no significant adverse cumulative effects on Agricultural Land Classification or farm holdings arising from Thurrock Flexible Generation Plant in combination with the LTC. The permanent loss of land associated with Thurrock Flexible Generation Plant affects lower quality grade 3b land, while the LTC would affect higher quality Grade 2 and Grade 3a land (i.e. best and most versatile land). Therefore, Thurrock Flexible Generation Plant would make no material contribution to the cumulative loss of best and most versatile land and the significance of effect reported for Thurrock Flexible Generation Plant in Volume 3, Chapter 8 of the ES would remain the same.
- 5.1.2 The effect on the two large farm holdings associated with Thurrock Flexible Generation Plant is negligible and any potential cumulative effects on the farms would be likely to be associated with the other development proposals in the vicinity. Thurrock Flexible Generation Plant would make no material contribution to the potential cumulative effects and the significance of effect reported for Thurrock Flexible Generation Plant alone in Volume 3, Chapter 8 would remain unchanged.
- 5.1.3 There would be no adverse cumulative effects on common land (Access Land). The loss of common land as a result of the Thurrock Flexible Generation Plant will be mitigated by the provision of replacement land of an equivalent size and quality. The loss of common land as a result of the LTC would also require replacement land to be provided under Section 16 of the Commons Act 2006, so no net loss of common land is likely to occur.
- 5.1.4 There would be no significant adverse cumulative effects on Public Rights of Way (PRoW) and other linear recreational routes. The proposed development boundary and temporary areas required during the construction of the LTC also impact on PRoW and cycle routes (i.e. Thames Estuary Path, National Cycle Route 13 and public footpath FP200). However, with the implementation of measures in the LTC PEIR, it is anticipated that the significance of effect reported for Thurrock Flexible Generation Plant alone in Volume 3, Chapter 8 would remain unchanged.
- 5.1.5 There would be no adverse cumulative effects on construction employment. Construction demand for Thurrock Flexible Generation Plant is likely to be lower than the LTC. If the construction timeframes overlap, the relatively lower construction demands, the pool of local and regional construction labour and the mobility of the construction workforce are such that the effect on availability of labour would be negligible.
- 5.1.6 There would be no adverse cumulative effects on land use, agricultural and socio-economic resources or receptors during operation.

LTC design changes and Environmental Impacts Update document

- 5.1.7 The LTC design changes which affect land use resources (common land and public rights of way) comprise the removal of the proposed Tilbury Junction, the rest and service area, and the maintenance depot. This would result in an overall reduction in land take but the main highway and the associated private maintenance and access roads from the LTC and Station Road to provide access to the tunnel control building would still impact on part of Tilbury Green (Common Land Parcel CL411) and FP200.

Update to Cumulative Effects Assessment

- 5.1.8 The LTC design changes would not result in any amendments to the Land Use, Agriculture and Socio-Economic cumulative assessments. The loss of common land would, as before, require

replacement land to be provided under Section 16 of the Commons Act 2006 to ensure that there is no net loss of common land and measures are included on the revised plans for the permanent diversion of that section of FP200 affected by the LTC scheme.

6 ONSHORE ECOLOGY

Existing Cumulative Effects Assessment

- 6.1.1 No significant cumulative effects from construction, operation or decommissioning of Thurrock Flexible Generation Plant have been identified, with the exception of a potential effect on invertebrates during construction. The potentially significant cumulative adverse effect on invertebrates would arise because of the proximity of other developments resulting in the loss of invertebrate habitat, including impacts from the LTC, and the potential time-lag between habitat losses and the maturation of habitat creation measures intended to mitigate losses for these other developments.
- 6.1.2 For this reason, additional mitigation for invertebrates has been proposed to address risks of temporary habitat losses occurring at the same time as construction effects from adjacent projects, all of which could impact on the invertebrate assemblage. The additional mitigation comprises provision of habitat at the pre-commencement and construction phase in addition to the mitigation proposed in Volume 3, Chapter 9: Onshore Ecology. With this mitigation, no significant residual cumulative effects on invertebrates are expected.
- 6.1.3 Based on analysis of wintering bird surveys carried out in 2019-20 (Volume 6, Appendix 9.4: Foreshore Wintering Bird Surveys 2019-2020) , and as set out in the HRA, no cumulative effects on wintering birds associated with the SPA utilising the foreshore for foraging are predicted, including effects from the temporary jetty construction or use of existing structure proposed in the LTC PEIR for a location close to the Thurrock Flexible Generation Plant causeway.
- 6.1.4 Construction of the Thurrock Flexible Generation Plant causeway would be undertaken outside of the November – March period when wintering Avocets were found to be most numerous in the vicinity of the causeway, and there would not therefore be any potential for in-combination effects on Avocet with the construction and use of the LTC jetty.
- 6.1.5 It is possible that the use of the Thurrock Flexible Generation Plant causeway for gas engine deliveries could overlap with the construction or use of the LTC jetty. If this occurs, given that the jetty and the causeway would be in close proximity, the result would be the displacement of the same number of birds as would result from the Thurrock Flexible Generation Plant causeway being in use on its own, and hence no additional cumulative effect would occur.
- 6.1.6 If the construction and use of the LTC jetty occurs after the Thurrock Flexible Generation Plant causeway has ceased being used, the result would be the same number of birds being displaced for a longer period. However, given the large amount of mudflat habitat available within and outside the SPA, and the relatively small area likely to be affected by disturbance even if the periods of use of the jetty and causeway are contiguous, it remains the case that the small number of displaced birds would be able to find alternative foraging habitat reasonably close by in other parts of the estuary.

LTC design changes and Environmental Impacts Update document

- 6.1.7 The LTC Environmental Impacts Update states that the level of impacts on terrestrial biodiversity would generally be similar to those in the PEIR stage. The proposed changes would remove some land from impacts but would also result in new areas of land being affected. However, the areas affected and the construction techniques proposed would not be considered likely to alter the assessment of effects for project construction, as reported in the PEIR. For example, the removal of the Tilbury junction, also the rest and service area and the maintenance depot would not reduce the potential impact as the land would still be used during construction.
- 6.1.8 The LTC Environmental Impacts Update states that the jetty location remains “as per Statutory Consultation”, albeit that the General Arrangement Plans narrow down the possible location of the proposed jetty within the wider potential area shown in the LTC PEIR drawings (appearing to

follow the outline of an existing jetty used for the Ingrebourne Valley / Goshem's Farm land raising operation). The effects would therefore be no worse than reported in the PEIR for construction of the temporary jetty.

Update to Cumulative Effects Assessment

- 6.1.9 The LTC updated Environmental Impacts Update has indicated that the level of impact of the construction phase would remain largely the same as predicted in the PEIR. The design changes particularly in relation to the reduced footprint of the Tilbury junction and service area may marginally reduce the operational and maintenance phase impacts. However, these modifications would not change the significance of the adverse effects predicted in the LTC PEIR.
- 6.1.10 The refinement of the potential jetty location provided in the LTC Environmental Impacts Update does not alter the conclusions of the original assessment of cumulative impacts or of in-combination impacts as reported in the HRA,
- 6.1.11 The combined effect of the Thurrock Flexible Generation Plant and LTC in the CEA is therefore unchanged.

7 TRAFFIC AND TRANSPORT

Existing Cumulative Effects Assessment

- 7.1.1 In relation to the LTC PEIR, the existing Traffic and Transport chapter of the Thurrock Flexible Generation Plant CEA recognised that the LTC would substantially change the surrounding highway network and would substantially change the number of vehicle movements on links assessed within the CEA. The construction traffic for the average and peak construction scenarios for the Thurrock Flexible Generation Plant were noted to be minimal compared to the significant changes in the patterns of traffic flows should the Lower Thames Crossing be brought forward during the operational phase of the Thurrock Flexible Generation Plant.
- 7.1.2 It was also considered that should the construction period of Thurrock Flexible Generation Plant overlap temporally with that of the LTC, then Thurrock Flexible Generation Plant would make no appreciable contribution to the significant effects of the Lower Thames Crossing as assessed in its PEIR and consequently no significantly greater cumulative effect was predicted.

LTC design changes and Environmental Impacts Update document

- 7.1.3 The LTC Environmental Impacts Update document states that the routes for construction traffic for the LTC have changed and one route is now to be via a new haul road to the east and south of Thurrock Flexible Generation Plant. It would utilise the same private roads through RWE's Tilbury Power Station site and the Tilbury2 port site to Fort Road as well as the A1089 that would be used for construction access by Thurrock Flexible Generation Plant. Therefore, this route largely follows the same construction access route as the Thurrock Flexible Generation Plant.
- 7.1.4 The LTC Guide to Consultation provides further information and details the construction HGV numbers for LTC working areas together with the construction routes for each area. It indicates that three areas, B-North, C and D would utilise routes which would largely follow the same route as Thurrock Flexible Generation Plant construction traffic. It also notes the predicted average monthly movements of HGVs for each area, with B-north and D increasing from 4,500 to 5,300 and 2,000 to 2,200 HGV movements respectively. Area C is shown to have its HGV movements decrease from 5,200 to 2,100.
- 7.1.5 The LTC Guide to Consultation also confirms that the LTC proposes to submit its application in 2020 with a decision in late 2021. It is stated that construction will begin within a few months of this, in 2022. As such construction will begin in the same year as previously assessed in the Traffic and Transport chapter of the CEA and thus the construction periods for the LTC and Thurrock Flexible Generation Plant will overlap.

Update to Cumulative Effects Assessment

- 7.1.6 The LTC Environmental Impacts Update has provided a number of updates from the PEIR for the LTC which, with regard to traffic and transport, impact upon the previous assessments undertaken. The revised proposals of the LTC, in particular the change of construction routes which will overlap with the Thurrock Flexible Generation Plant construction route and the confirmation of construction starting in 2022, has required an update to the cumulative assessments from the Traffic and Transport CEA and the Transport Assessment appendix of the submitted ES.
- 7.1.7 As such a Transport Addendum, including a Transport Assessment Addendum and a Traffic and Transport CEA Addendum, forms an appendix to this CEA Addendum to consider the potential for cumulative transport effects with the revised proposals for the LTC. The Transport Addendum thus supersedes the previous CEA undertaken in both the Transport Assessment appendix of the submitted ES and in the Traffic and Transport CEA chapter of the submitted ES.

- 7.1.8 The updated cumulative assessment within the Transport Assessment Addendum, which includes the temporary Thurrock Flexible Generation Plant construction traffic flows assessed with the cumulative developments against 2022 baseline traffic flows, demonstrates that there would not be noticeable changes to other drivers and would not add appreciably to any existing levels of congestion or road safety issues due to the revised LTC proposals, resulting in the same conclusion as the submitted TA. The construction traffic generated by both the Thurrock Flexible Generation Plant and LTC will operate under their respective CTMPs and each one will be developed to ensure all aspects of the highway network are managed accordingly.
- 7.1.9 It is thus concluded that the temporary Thurrock Flexible Generation plant construction traffic flows would not result in a severe residual cumulative impact on the road network or an unacceptable impact on highway safety along the local road network.
- 7.1.10 Thurrock Power Ltd is in ongoing discussion with Highways England concerning the LTC project and the management of construction traffic should the construction phases of these projects overlap. The CTMPs implemented for both projects are therefore expected to reflect a practical and co-operative approach to traffic management and sequencing to minimise impacts.
- 7.1.11 The environmental impact assessments undertaken in the 'Traffic and Transport CEA Addendum' section of the Transport Addendum conclude that the traffic and transport effects of the Thurrock Flexible Generation Plant plus cumulative developments would be negligible during the construction phase, short term and reversible.
- 7.1.12 In accordance with the IEMA (1993) Guidelines referenced in the TA Addendum, the sensitivity of receptors along all links are considered to be low / negligible and the magnitude of impact is considered to be range from negligible to moderate. The effect is therefore considered to be minor / negligible, which is not significant in EIA terms.
- 7.1.13 The assessment within the Traffic and Transport CEA Addendum has shown that with the revised Lower Thames Crossing construction traffic, no significantly greater cumulative effect is predicted than had been in the submitted CEA.

8 AIR QUALITY

Existing Cumulative Effects Assessment

- 8.1.1 During the construction phase, there is the potential for cumulative effects where there are other sources of dust located within 700 metres of the proposed development (the IAQM indicative maximum radius of effects for an individual construction site being 350 m). The Lower Thames Crossing would be within 700 m of the Thurrock Flexible Generation Plant development and so there is the potential for cumulative effects.
- 8.1.2 Large construction sites would typically be required to implement mitigation measures, such as those recommended in the IAQM (2014) dust guidance. With the effective implementation of appropriate mitigation measures at other construction sites within 700 metres of the proposed development, the residual cumulative dust effects are unlikely to be significant.
- 8.1.3 Paragraph 1.4.5 of Chapter 25 Air Quality Cumulative Environmental Assessment stated
- “The cumulative effects of traffic-related emissions during the construction phase have not been assessed further here as the results of dispersion modelling undertaken in Volume 6 Appendix 12.6: Assessment of Traffic-related Emissions indicated that the change in concentration of nitrogen dioxide (NO₂) and particulate matter (PM₁₀ and PM_{2.5}) were less than 0.5%. The EPUK&IAQM (2017) guidance states that for human-health receptors “Changes of 0%, i.e. less than 0.5%, will be described as Negligible”. On that basis, regardless of the concentrations with the addition of cumulative developments in the construction year, the impact descriptor for the contribution from Thurrock Flexible Generation Plant to effects on human-health receptors will be ‘Negligible’. Similarly, for ecological receptors if the PC is less than 1% of the critical level/load, the impacts can be screened out as insignificant (DEFRA and EA, 2016).”*
- 8.1.4 Therefore any changes to the traffic generated by the Lower Thames Crossing during the construction phase will not affect the results of the assessment.
- 8.1.5 The Lower Thames Crossing (LTC) Preliminary Environmental Information Report, Appendix D, Table D.1, shows the change in predicted nitrogen dioxide (NO₂) concentrations with the development when operational for a number of receptors. A number of the receptors modelled for Thurrock Flexible Generation Plant are within close proximity to receptors modelled for LTC. For these receptors, Process Contributions (PC) from the Lower Thames Crossing PEIR have been used as shown in Table 2.2 of Volume 4, Chapter 25: Air Quality CEA. In some locations the Lower Thames Crossing is expected to reduce NO₂ concentrations; however, to ensure the assessment is conservative, it was assumed that no reduction in concentrations would occur at these locations, i.e. there would be 0 µg.m⁻³ change in NO₂ concentrations. The CEA concluded that the overall significance of the long-term and short-term cumulative effect on human health receptors is considered to be minor adverse. Based on the results of detailed modelling and advice from the proposed development’s ecologist, no significant cumulative air quality effects on designated habitat sites are expected to arise. Overall, the CEA concluded that the cumulative effect is considered to be minor adverse, which is not significant in EIA terms.

LTC design changes and Environmental Impacts Update document

- 8.1.6 The LTC Environmental Impacts Update states that *“The updated traffic modelling has revealed some changes to the traffic flows on roads across the study area for air quality reported in the PEIR, the details of which can be found in the Traffic Modelling Update. Furthermore, the air quality modelling inputs, including scheme monitoring data and the vehicle emissions factors and pollution background maps provided by the Department for Environment, Food and Rural Affairs, have been updated since the PEIR was undertaken. We are working to understand the effects of these changes to ensure the project complies with the National Policy Statement for National Networks”*.

- 8.1.7 The LTC Traffic Modelling Update does not provide changes in Annual Average Daily Traffic (AADT) flows but does provide an indication in the change in operational traffic flows in the AM and PM peaks and the interpeak period. Figures 4.1 to 4.3 of the Traffic Modelling Update show that in the AM peak the changes to the scheme design will increase the amount of traffic on roads within 200 m of the modelled Thurrock Flexible Generation Plant receptors by less than 500 Passenger Count Units (PCUs where a car is 1 PCU and an HGV is equivalent to 2.5 PCUs). For the inter-peak period the increase is less than 1000 PCUs and for the PM peak the increase is less than 2000 PCUs.

Update to Cumulative Effects Assessment

- 8.1.8 Highways England Design Manual for Road and Bridges (DMRB) requires detailed air dispersion modelling for roads where the AADT increases by 1000 vehicles or where the number of HDVs increase by 200 AADT. For roads that do not meet these criteria, detailed modelling is not required as *“The 1,000 vehicles and 200 HDVs represent the lowest threshold above which the traffic model can represent change in traffic conditions to a reasonable level of confidence”*. It is not clear from the PCU data provided in the Traffic Modelling Update what percentage of the change in total traffic is HGVs.
- 8.1.9 Assuming that 2,000 PCUs is equivalent to 2000 vehicles in the PM peak, when averaged across 24 hours, the increase in AADT compared to the LTC PEIR is likely to be less than 1,000 AADT. On that basis the change in air quality concentrations is not expected to be significant.
- 8.1.10 As a sensitivity test, a scenario has been considered in which the LTC PC from the PEIR were to be doubled. However, even in this scenario, the overall conclusions of the air quality assessment would not change. The number of receptors with a ‘moderate’ adverse impact descriptor would stay the same and such a change would not cause any additional exceedances of the air quality objectives when compared to the Thurrock Flexible Generation Plant Air Quality CEA Chapter.
- 8.1.11 On that basis the conclusions in the Thurrock Flexible Generation Plant CEA are unchanged.

9 HUMAN HEALTH

Existing Cumulative Effects Assessment

- 9.1.1 The existing Thurrock Flexible Generation Plant CEA noted that during construction, there is potential for adverse cumulative human health effects on residential and community receptors associated with the LTC due to changes in environmental health determinants (air quality, noise and traffic generation) and adverse cumulative human health effects on recreational receptors due to the permanent loss of open space. However, it is also noted that there would also be positive cumulative human health effects on residential and community receptors associated with the LTC associated with construction-related employment opportunities.
- 9.1.2 During operation, the existing Thurrock Flexible Generation Plant CEA noted that the LTC is likely to generate cumulative human health effects on residential and community receptors from changes in transport nature and flow rate, with associated impacts on changes in air quality and noise exposure.

LTC design changes and Environmental Impacts Update document

- 9.1.3 The LTC Environmental Impacts Update states that removal of Tilbury junction, the rest and service area and maintenance depot from the proposed development and reduction in the height and length of the proposed viaduct that crosses over the railway line to the north of the tunnel entrance would not materially alter impacts from construction or operational air quality and noise health determinants from that reported in the PEIR. While land take would be reduced, the main highway and the associated private maintenance and access roads would still impact on part of Tilbury Green (Common Land Parcel CL411) and FP200.
- 9.1.4 Construction traffic for the LTC is now proposed to be routed via a new haul road to the east and south of Thurrock Flexible Generation Plant and then along the same private roads through RWE's Tilbury Power Station site and the Tilbury2 port site to Fort Road and the A1089 that would be used for construction access by Thurrock Flexible Generation Plant. The LTC Guide to Consultation indicates on page 106 that the construction HGVs in this area, referred at as 'B North' (the route section north of the tunnel exit), would be increased from 4,500/month on average as predicted in the PEIR to 5,300/month.
- 9.1.5 There are also changes to the LTC predicted operational traffic flows as has been discussed in the air quality section, above.

Update to Cumulative Effects Assessment

- 9.1.6 The LTC Environmental Impacts Update indicates that the design changes for route sections in the CEA study area for Thurrock Flexible Generation Plant will not materially alter air quality and noise environmental determinants with the potential to affect human health.
- 9.1.7 While construction HGVs would increase by 1,000/month on average, spread across the month, this increase would not materially alter the cumulative impacts associated with changes in transport nature and flow rate (which includes risk of accident and injury, increased severance and loss of amenity).
- 9.1.8 Operational increases in traffic would be less than 500 Passenger Count Units (PCUs) in the AM peak, where a car is 1 PCU and an HGV is equivalent to 2.5 PCUs, less than 1,000 PCUs in the inter-peak period and less than 2,000 PCUs in the PM peak. The associated cumulative impacts on risk of accident and injury, severance and pedestrian amenity would not materially change. In addition, this is not anticipated to materially alter air quality and noise environmental determinants with the potential to affect human health.

- 9.1.9 While the LTC Environmental Impacts Update indicates that land take would be reduced somewhat, there would still be impacts on part of Tilbury Green (Common Land Parcel CL411) and FP200. Therefore, there would be no material change to the human health CEA conclusions relating to impacts on recreational resources.

10 CLIMATE CHANGE

Existing Cumulative Effects Assessment

- 10.1.1 The significance of cumulative effects was assessed in Volume 3, Chapter 14: Climate Change by accounting for the cumulative contribution of all other global sources of GHG emissions in the defined 'high' sensitivity of the receptor (atmospheric GHG concentrations).
- 10.1.2 Construction phase effects were assessed to be negligible and therefore not significant in EIA terms.
- 10.1.3 For the operational phase, the assessment also considered changes to other GHG emission sources (i.e. in the future baseline of alternative electricity generation without the proposed development) and concluded that the net effect is beneficial, which is significant in EIA terms.

LTC design changes and Environmental Impacts Update document

- 10.1.4 The Environmental Impacts Update document generally indicates that the design changes would have negligible and non-significant effects on the assessment as reported in the PEIR. A reduction in GHG construction stage emissions due to the removal of the Tilbury junction and service area and an increase in GHG emissions due to construction of a ground preparation tunnel are described, but these changes are not characterised as negligible or significant in the document.

Update to Cumulative Effects Assessment

- 10.1.5 Given that climate change is a global effect, not an effect that is localised in the area around any one individual development or group of developments, the LTC design changes would not result in a change to the climate change CEA conclusions.

11 HYDROLOGY AND FLOOD RISK

Existing Cumulative Effects Assessment

- 11.1.1 The Thurrock Flexible Generation Plant CEA concluded there would be no significant adverse cumulative effects. It identified that other development applications would have to be in line with national and local planning policy, requiring that developments will not increase flood risk to the site or the surrounding areas. Furthermore, the adoption of good working practices and implementation of control measures during construction and embedded mitigation (including appropriate drainage systems) implemented during operation will minimise the impacts on surface water regimes.
- 11.1.2 Consequently, it is unlikely that developments would cause cumulative flood risk impacts with or to the construction or operation of the Thurrock Flexible Generation Plant and/or the surrounding area.

LTC design changes and Environmental Impacts Update document

- 11.1.3 In terms of construction, the LTC Environmental Impacts Update document indicates that there would be no significant design changes that would present a substantial change to the assessment and effects reported, which were assessed as unlikely to be significant. Similarly, for the operational phase, design changes would have a negligible effect on the assessment presented, which reported that it was unlikely there would be significant effects.

Update to Cumulative Effects Assessment

- 11.1.4 The conclusion of the Thurrock Flexible Generation Plant CEA therefore remains unchanged.

12 GEOLOGY, HYDROGEOLOGY AND GROUND CONDITIONS

Existing Cumulative Effects Assessment

- 12.1.1 The existing Thurrock Flexible Generation Plant CEA concluded there would be no significant adverse cumulative effects. It highlighted that all developments will be required to appropriately investigate, assess and remediate any contamination encountered. The adoption of good working practices and implementation of control measures during construction and embedded mitigation (including appropriate drainage systems) implemented during operation will minimise the risk of pollution.

LTC design changes and Environmental Impacts Update document

- 12.1.2 In terms of construction, the LTC Environmental Impacts Update document indicates that there would be no design changes that would present a significant change to the assessment and effects reported in the PEIR, which were assessed as unlikely to be significant. Similarly, for the operational phase, design changes would have a negligible effect on the assessment presented in the PEIR, which reported that it was unlikely there would be significant effects.

Update to Cumulative Effects Assessment

- 12.1.3 The conclusion of the Thurrock Flexible Generation Plant CEA therefore remains unchanged.

13 MARINE ENVIRONMENT

Existing Cumulative Effects Assessment

- 13.1.1 The Thurrock Flexible Generation Plant CEA noted that the LTC EIA Scoping Report and PEIR had identified the opportunity to transport material by water, which would require either the construction of a new jetty or the modification of an existing jetty. The LTC PEIR identified a possible jetty location, which appeared to approximately coincide with an existing jetty used for the Ingrebourne Valley / Goshem's Farm land raising operation, but did not provide a design or location for a new jetty or provide hydrodynamic modelling of its impacts.
- 13.1.2 Any prospective new LTC jetty therefore could not be considered in the Thurrock Flexible Generation Plant CEA.
- 13.1.3 No other relevant cumulative impacts with the LTC were identified in the Thurrock Flexible Generation Plant CEA.

LTC design changes and Environmental Impacts Update document

- 13.1.4 A more specific location and shape of the jetty has been provided in the February 2020 General Arrangement Plans for the LTC. Although described as a 'proposed temporary construction jetty' on the plan, its shape outline appears to closely follow the larger of the two existing land-raising operation jetties.
- 13.1.5 The Environmental Impacts Update does not discuss hydrodynamic impacts of a jetty; the only reference is to marine biodiversity impacts being no greater than reported in the PEIR, but it is unclear from the wording whether this refers to impacts from a temporary outfall being no greater than the jetty, or impacts from the jetty itself (as considered in February 2020) being no greater than impacts considered at the PEIR stage. The available information does not include design details of the jetty or matters such as required dredge volume or method which would be needed to determine any cumulative effects.

Update to Cumulative Effects Assessment

- 13.1.6 It appears that the LTC proposal is most likely to be for re-use of the larger of the two existing land-raising operation jetties, as its outline appears to match the existing jetty, in which case no additional cumulative effect from its construction would occur.

Appendix A

Transport Assessment Addendum

THURROCK FLEXIBLE GENERATION PLANT

Transport Addendum

JNY9639-04a
Transport Addendum
Version 04a
October 2020

Document Status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
-	Appendix to the Cumulative Effects Assessment Addendum	Charles Montgomerie	David Archibald	David Archibald	September 2020
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1 INTRODUCTION

- 1.1 This Transport Addendum includes a Transport Assessment (TA) Addendum and Transport Cumulative Effects Assessment (CEA) Addendum Assessments. It forms an appendix to the addendum to the CEA that formed part of the Environmental Statement (ES) submitted with the Thurrock Flexible Generation Plant (TFGP) Development Consent Order (DCO) application in May 2020. The CEA comprised Volume 4 of the ES (application document A6).
- 1.2 Highways England have consulted on revised traffic proposals for Lower Thames Crossing (LTC) since the submitted ES for TFGP. The purpose of this Transport Addendum is to cumulatively assess these revised traffic proposals. Consultation and publication of a Preliminary Environmental Information Report (PEIR) for the LTC was previously in 2018. Due to the timing of the publication of further information in 2020, it was not possible for this to be considered in the assessment of cumulative effects in the submitted ES for TFGP.
- 1.3 This document will therefore consider the potential for cumulative transport effects with the revised proposals for the LTC nationally significant infrastructure project.
- 1.4 The cumulative assessments from the Environmental Statement Volume 6 Appendix 10.1: Transport Assessment and the Environmental Statement Volume 4: Cumulative Environmental Assessment Chapter 23 Traffic and Transport are thus superseded by this document which updates the cumulative assessments following the revised traffic proposals of the LTC.
- 1.5 The further information published by the LTC in 2020 has been reviewed and this document provides an update to the cumulative assessments based on that information.
- 1.6 All information concerning the LTC design and environmental information changes since the publication of the LTC's PEIR has been taken from documents published on the LTC's dedicated consultation website in 2020, including the Environmental Impacts Update.
- 1.7 The main LTC changes that are considered relevant to the Traffic and Transport TFGP CEA and TA are as follows:
- New construction access routes are proposed for the LTC, one of which largely follows the same construction access route proposed for TFGP from the A1089, through the Tilbury2 port development and then across the north edge of the former Tilbury B Power Station site;
 - Estimates of construction HGV numbers for LTC working areas are provided together with construction routes for each area; and
 - LTC propose to submit their application in 2020 with a decision in late 2021. It is stated that construction will begin within a few months of this (in 2022), the same year as assessed in the submitted TFGP TA, Traffic and Transport CEA.
- 1.8 The submitted TFGP TA and Traffic and Transport CEA, in relation to the LTC, concluded that the LTC construction was not predicted to generate any traffic flows within the study area for the TFGP, except for the A13 and M25 Junction 25. The conclusions went on to say that the temporary construction traffic from the proposed TFGP is minimal when compared to the significant changes to be brought forward by the LTC.

- 1.9 This Transport Addendum will conclude that the previous conclusions from the submitted TA and Traffic and Transport CEA remain accurate and that there are no transport related reasons for not permitting development.

2 TRANSPORT ASSESSMENT ADDENDUM

Introduction

- 2.1 The submitted TFGP TA assessed the transport impact of the construction phase of the TFGP and included an assessment of both the temporary construction phase of the TFGP and relevant future development projects that were scoped into the cumulative assessment.
- 2.2 In relation to the LTC cumulative development, the submitted TA concluded that, from the information provided in its Preliminary Environmental Impact Report (PEIR), it was unlikely that the LTC would affect the links in the TA's assessment year of 2022. The cumulative assessment undertaken therefore did not include the LTC, which would be accompanied by its own independent and cumulative assessments.
- 2.3 Since the submission of the LTC PEIR, further documentation in relation to LTC has been submitted in 2020 for consultation and re-consultation. The additional documentation has therefore been reviewed and considered for reassessment.
- 2.4 This TA Addendum provides additional assessment of the transport impact of the TFGP and the cumulative developments, taking into account the updated LTC information. The TA Addendum supersedes the previous cumulative assessment from the submitted TA. No other changes are made with regards to the TA.

Cumulative Development Sites

- 2.5 The cumulative development sites assessed within the submitted TA at Table 5.6 remain the same, for ease the cumulative developments from the submitted TA that have been considered in the cumulative assessment in this TA Addendum are shown in **Table 2.1**.

Table 2.1: Cumulative Developments

Site Number	Site Name	Application Number	Description
58	The Lower Thames Crossing	TR010032	The Lower Thames Crossing will be a new road crossing connecting Essex and Kent. Located east of Gravesend and Tilbury, this new crossing will offer the improved journeys, new connections and network reliability, and economic benefits that only a new, alternative crossing, away from Dartford, can provide.
60	Northlake	18/01671/FUL	Proposed development of up to 2,500 dwellings on land for development including education, community and leisure facilities, publicly accessible woodland, a cycle park, and a lido at Northlake, Lakeside Basin, Thurrock
63	Thames Enterprise Park	18/01404/OUT	Proposed development of 480,000sq. m of commercial development and additional land for a rail freight terminal, car and lorry parking, road and access facilities at Thames Enterprise Park, The Manorway, Coryton, Essex
76	Land to The South of Stifford Road	16/01491/SCR	EIA screening opinion for proposed development of 600 dwellings at Land to the south of Stifford Road, Aveley, Essex
78	Churchill Green	19/01058/OUT	Proposed development of 161 new dwellings and 7,650sqm of flexible employment floorspace at land part of little Thurrock Marshes, Thurrock Park Way, Tilbury, Essex
81	Tilbury Green Power Phase 2	12.04.09.04/266C	Tilbury Green Power Phase 2, waste to energy generation station at Former Cargill Plant, Tilbury Freeport, Tilbury, Essex
82	Gateway Energy Centre	01.08.10.04/462C	Gateway Energy Centre, development of up to 1250 MW energy centre at The Manorway, Stanford-Le-Hope, Essex

Lower Thames Crossing

- 2.6 In 2020 further documentation in relation to LTC was submitted for consultation and re-consultation. The additional documentation has been reviewed and considered.
- 2.7 Whilst this documentation provided further details in terms of HGV movements and the LTC construction vehicle routes, where traffic flows have not been assigned or not been provided for the study area professional judgement has been used to assign them to the network and estimate traffic flows.
- 2.8 The steps to estimating the LTC traffic flows and their assignment onto the network, together with any assumptions made are detailed as follows:
- The LTC consultation and re-consultation documents from 2020 have been reviewed. The documentation presented the monthly HGV flows for three areas whose construction

vehicles routes overlapped with that of the TFGP construction vehicle route. These three areas are B-north, C and D, whose monthly flows are 5,300, 2,100 and 2,200 two-way HGV movements respectively, This Information from the LTC consultation documentation is attached at **Appendix A**;

- Also presented in the documentation are the construction hours, these state 7am to 7pm on a weekday and 7am to 4pm on a Saturday with construction workers arriving / departing in the hour before / after;
- Taking into account these construction hours, the 24hr AADT for the LTC HGVs was derived by taking the monthly data, dividing by 4 for weekly data then dividing by 7 for the AADT data. This resulted in 189, 75 and 79 two-way daily HGV movements for area B-north, C and D respectively;
- These two-way daily HGV movements were assigned onto the routes shown for the HGV construction traffic for areas B-north, C and D taken from the LTC 2020 documentation;
- The 2020 LTC documentation defines routes as secondary or main construction routes. For B-north, all HGVs were applied to the main construction links and 50% were assigned to each of the two secondary construction routes. For C, it is assumed 1all HGVs will use both the main construction route and the secondary construction route. For D, it is assumed that all HGVs will use the main construction route;
- It has also been assumed that HGV vehicle movements will be spread equally through the day during the construction hours;
- In terms of staff construction movements, the 2020 LTC consultation documents do not state the number of staff, staff vehicle movements or staff distribution onto the network;
- Information on construction staff is set out in the agenda and minutes for item 56 on Monday, 11th February, 2019 6.00 pm for the LTC Task Force meeting: <https://democracy.thurrock.gov.uk/ieListDocuments.aspx?MId=5398>. This details that Highways England (HE) had clarified that during the construction phase 900 construction workers would be needed at peak construction times in Thurrock. It is also understood that temporary accommodation will be provided for construction staff, which would be located off the trunk road network;
- Therefore, estimations for the construction workforce, which will use the links assessed by the TFGP, have been derived whilst taking this total peak construction figure into account. It is assumed that there will be 250 staff at the main tunnel construction compound with a further 200 staff at satellite compounds on the northern side of the River Thames. These staff will travel to and from the compounds to their respective accommodation, assumed to be located off the A13, via minibus. It has been assumed that there will be 15 construction staff per minibus and that these minibuses will not stay on site during the day;
- It is not known where the accommodation will be exactly therefore 100% of construction staff minibus movements will be applied to all links;
- It is also assumed that at the weekend staff will travel away from their accommodation, as such 900 two-way car movements are estimated to occur over the weekend, assuming that 100% of staff will be a single occupancy vehicle. With the construction staff accommodation off the A13, these vehicle movements have been applied only to the A13; and

- Therefore, on the A13 links it is estimated there will be an AADT of 362 car and minibus movements, on all other links there will be an AADT of 105 minibus movements.

2.9 These LTC construction traffic flows are included within the cumulative assessment in this TA Addendum.

Other Cumulative Developments

2.10 All other cumulative developments outlined in **Table 2.1** are included in the cumulative assessment.

2.11 The development traffic flows of other cumulative sites (excluding LTC) have been taken from their relevant Transport Assessment / planning application. Where these do not include relevant traffic flows or they have not been assigned to the whole of the network being assessed in this study area, professional judgement has been used to assign them to the network.

2.12 The cumulative development traffic flows, including LTC are attached at **Appendix B**.

2.13 It is understood that the London Resort NSIP may include a 'park and ferry' arrangement when it is operational for access by some visitors from north of the Thames, with parking at Tilbury Port. Any cumulative effect with TFGP traffic, should the London Resort become operational during the construction phase of TFGP (which is unlikely, as London Resort opening year is expected to be no earlier than 2025) would be the subject of assessment by the London Resort in its DCO application. At the time of writing, the London Resort has published a PEIR but this does not include a Transport Assessment or an assessment of traffic impacts in the PEIR chapter so information to further consider cumulative impacts at this stage is not available.

Cumulative Assessments

2.14 The cumulative developments identified have been assessed alongside the proposed TFGP to understand the cumulative impact of development on the highway network.

Impact Upon Highway Capacity

Highway Network

2.15 The cumulative development traffic flows with average and peak construction traffic flows have been assessed against the 2022 baseline traffic flows within **Table 2.2** and **Table 2.3**.

Table 2.2: Average Construction + Cumulative Development Flows

Link	Link Description	2022 Baseline		Average Construction + Cumulative				2022 Baseline + Average Construction + Cumulative	
		AADT	HV AADT	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
1	A13 between M25 junction 30 and A126	132736	17487	4124	3.11%	1275	7.29%	136860 (170)	18761 (83)
2	A13 between A126 and A1012	110772	16744	4124	3.72%	1275	7.61%	114896 (170)	18018 (83)
3	A13 between A1089 and A1012	114614	16382	4124	3.60%	1275	7.78%	118738 (170)	17656 (83)
4	A1089, between Marshfoot Road roundabout and A13	37249	11960	1353	3.63%	758	6.34%	38602 (170)	12718 (83)
11	Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction	1138	269	444	39.06%	253	93.88%	1582 (170)	522 (83)
15	A13, between Orsett Cock roundabout and A1089	102630	10220	4221	4.11%	1279	12.51%	106851 (170)	11499 (83)
16	A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	42502	12112	1353	3.18%	758	6.26%%	43855 (170)	12870 (83)
17	A1089 St Andrews Road, between ASDA roundabout and Port of Tilbury Gate 1	18521	9640	1078	5.82%	726	7.53%	19598 (170)	10366 (83)

Link	Link Description	2022 Baseline		Average Construction + Cumulative				2022 Baseline + Average Construction + Cumulative	
		AADT	HV AADT	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
18	A1089 St Andrews Road, between Port of Tilbury Gate 1 and Proposed Tilbury 2 Road	8953	3976	618	6.90%	426	10.71%	9571 (170)	4401 (83)
19	Proposed Tilbury 2 Road between A1089 St Andrews Road and Fort Road	4640	2673	539	11.61%	347	13.00%	5179 (170)	3020 (83)
20	Fort Road, between Proposed Tilbury 2 Road and Brennan Road	1786	307	444	24.88%	253	82.20%	2230 (170)	560 (83)
21	Fort Road, between Brennan Road and Coopers Shaw Road	2204	334	444	20.16%	253	75.71%	2648 (170)	587 (83)
22	Station Road East Tilbury	500	0	N/A	N/A	N/A	N/A	N/A	N/A

TFGP traffic flows are shown in brackets.

Table 2.3: Peak Construction + Cumulative Development Flows

Link	Link Description	2022 Baseline		Peak Construction + Cumulative			2022 Baseline + Peak Construction + Cumulative		
		AADT	AADT HVs	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
1	A13 between M25 junction 30 and A126	132736	17487	4240	3.19%	1356	7.75%	136976 (286)	18843 (164)
2	A13 between A126 and A1012	110772	16744	4240	3.83%	1356	8.10%	115012 (286)	18099 (164)
3	A13 between A1089 and A1012	114614	16382	4240	3.70%	1356	8.28%	118854 (286)	17737 (164)
4	A1089, between Marshfoot Road roundabout and A13	37249	11960	1469	3.94%	839	7.02%	38718 (286)	12800 (164)
11	Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction	1138	269	560	49.26%	334	124.05%	1698 (286)	603 (164)
15	A13, between Orsett Cock roundabout and A1089	102630	10220	4337	4.23%	1360	13.31%	106967 (286)	11580 (164)
16	A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	42502	12112	1469	3.46%	839	6.93%	43971 (286)	12951 (164)

Link	Link Description	2022 Baseline		Peak Construction + Cumulative				2022 Baseline + Peak Construction + Cumulative	
		AADT	AADT HVs	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
17	A1089 St Andrews Road, between ASDA roundabout and Port of Tilbury Gate 1	18521	9640	1194	6.44%	807	8.37%	19714 (286)	10447 (164)
18	A1089 St Andrews Road, between Port of Tilbury Gate 1 and Proposed Tilbury 2 Road	8953	3976	734	8.19%	507	12.76%	9687 (286)	4483 (164)
19	Proposed Tilbury 2 Road between A1089 St Andrews Road and Fort Road	4640	2673	655	14.12%	429	16.04%	5295 (286)	3101 (164)
20	Fort Road, between Proposed Tilbury 2 Road and Brennan Road	1786	307	560	31.38%	334	108.62%	2346 (286)	641 (164)
21	Fort Road, between Brennan Road and Coopers Shaw Road	2204	334	560	25.42%	334	100.05%	2764 (286)	668 (164)
22	Station Road East Tilbury	500	0	294	58.8%	180	N/A	794 (20)	180 (10)

TFGP traffic flows are shown in brackets.

- 2.16 As shown, the cumulative development increases in traffic flows along the highway links within the study area lead to higher increases along the links than for just the average and peak TFGP construction traffic flows alone.
- 2.17 Of particular note in this assessment is the minor change in the percentage increase from the average construction traffic flows with cumulative development to the peak construction traffic flows with cumulative development. This gives a perspective to the effect of the proposed development within the cumulative development traffic flows given that the peak construction traffic flows are almost double the average construction traffic flows. The exception to this is shown on the Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury links, where larger percentage increases are due to lower baseline traffic flows.
- 2.18 On the A13, the average construction traffic flows generated by the proposed development form only 4.1% of the total cumulative traffic flows whilst the proposed development peak construction traffic flows form only 6.8%. The majority of other cumulative traffic flows, including the LTC, are for construction of developments with long term operational traffic flows, whereas the construction traffic flows generated by the proposed development are temporary during the construction period only with minimal operational flows.
- 2.19 On the A13, the temporary daily increases in traffic flows are less than one-quarter of a percent as a result of the average construction traffic and the peak construction traffic generated by the proposed development alone. Under the cumulative development scenario as shown in **Tables 2.2 and 2.3**, the increases are 4.11% for the average construction traffic and 4.23% for the peak construction traffic.
- 2.20 The same is predicted on the A1089 north of the ASDA roundabout where the temporary daily increases are predicted at less than one percent as a result of the average construction traffic and the peak construction traffic generated by the proposed development alone. Under the cumulative development scenario, the increases are 3.63% for the average construction traffic and 3.94% for the peak construction traffic.
- 2.21 It is clear that the cumulative increase predicted on the trunk road is created by the cumulative developments in the surrounding areas, the majority of which generate construction traffic flows which lead to operational traffic flows far higher than the temporary traffic flows predicted by the proposed development.
- 2.22 The temporary increases in traffic along the trunk road network generated by the proposed TFGP are considered negligible and would not be noticeable to other drivers. In this context, if the cumulative developments create a material impact, then such an impact would not be worsened by any noticeable amount by the traffic generated by the proposed development.
- 2.23 This is confirmed by the change in the increase from the average to the peak construction flows. For example, on the A13 between the M25 junction 30 and A126, the effect of almost doubling the construction traffic flows generated by the proposed development (i.e. from the average to the peak construction traffic flows) is to change the cumulative increase from 3.11% to 3.19%.
- 2.24 It is evident that if the cumulative developments were to create a material impact along the trunk road, then such an impact would not be worsened by any noticeable amount by the traffic generated by the proposed development.

- 2.25 This is also the case for the cumulative traffic flows along the A1089 where similar low changes from the average construction traffic flows to peak construction traffic flows result. It is also evident that if the cumulative developments create a material impact along the A1089, then such an impact would not be worsened by any noticeable amount by the traffic generated by the proposed development.
- 2.26 Traffic flows on Station Road, Coopers Shaw Road and Fort Road are far lower than on the A1089. These roads would only be used for access in exceptional circumstances in the unlikely event that the main construction access via the Tilbury2 port and former RWE power station site was unavailable for a temporary period. If these roads were to be used under exceptional circumstances, then the maximum impact on these links is shown on Station Road whereby the temporary TFGP and cumulative development total daily increases are 39.06% for the average construction traffic and 49.26% for the peak construction traffic. The cumulative development traffic leads to a higher increase than TFGP traffic alone, which has a total daily increase of 14.95% for the average construction traffic and 25.15% for the peak construction traffic. However, it is to be noted that the scale of these increases are due to the low base traffic flows along the link.
- 2.27 It is important to note that the temporary increases of the TFGP would only take place at exceptional times should the main construction access route be unavailable.
- 2.28 Similarly to Station Road, temporary increases are expected along Coopers Shaw Road and Fort Road due to the low traffic flows along them. The only exception to this is on Station Road East Tilbury where there are no HV movements in the baseline scenario and a percentage increase caused by 180 additional HV movements per day cannot be calculated. It is important to note that of the 180 additional HV movements only 10 HV movements are in relation to the TFGP, occurring temporarily over a few months during the peak construction phase only.
- 2.29 As detailed in the submitted TA only in exceptional circumstances, should the main construction access be unavailable temporarily for any reason, would construction traffic route along Fort Road (north of Brennan Road), Coopers Shaw Road, Church Road and Station Road. Notwithstanding, for robustness, an analysis was carried out to consider the ability for two-way vehicular movement along them.
- 2.30 This showed that despite narrowings at six sections there is clear forward visibility from both sides of the narrowings, meaning that oncoming drivers can see one-another, and self-manage passing accordingly.
- 2.31 A further assessment of the longest section of road narrowing, on Church Street (between Coopers Shaw Road and Low Street Lane), was also undertaken to determine the capacity of the road. This was determined for the peak hour of traffic in the 2022 baseline scenario (including committed development), from 14:45 to 15:45. The capacity of the road in terms of total vehicles (based upon the observed mix of cars and HGVs) was derived at 184. The spare capacity over and above the 2022 baseline scenario was derived at 46 total vehicles, of which 7 were HGVs (based upon the observed mix of cars and HGVs). The 46 total vehicles added to the 2022 baseline form 184 total vehicles for the capacity of the road.
- 2.32 However, rather than using the observed mix of cars and HGVs, this spare capacity could be recalculated as only HGVs. In such a scenario this would equate to 27 HGVs (and zero car movements) before the section of road reached capacity.

- 2.33 In the 2022 baseline plus average construction plus cumulative development scenario there are 8 HGV movements associated with the average construction period of the TFGP and 18 HGV movements in relation to the cumulative development flows. Therefore, the capacity of this section of road would not be exceeded.
- 2.34 The section of road will thus remain in capacity throughout the average construction period of the proposed TFGP cumulatively with the LTC.
- 2.35 During the limited peak construction period of TFGP there would be up to an additional 16 HGVs movements through the section of road compared to the 8 during the average construction period (only during exceptional periods in the unlikely event that the main construction access was closed for any reason). As such during the 2022 baseline plus peak construction plus cumulative development scenario there would be an additional 34 HGV movements from the proposed TFGP and cumulative developments, over the remaining capacity for 27 HGVs.
- 2.36 Therefore, HGV movements will be monitored and managed during the peak construction period through the CTMP to ensure that in the unlikely event that the main construction access was closed for any reason and there was a need for TFGP HGVs to travel along Fort Road (north of Brennan Road), Coopers Shaw Road, Church Road and Station Road, these would be managed and minimised accordingly. The number of HGV movements will be monitored in conjunction with cumulative developments, including the LTC, who would also use this route.

ASDA Roundabout

- 2.37 Operational assessments have been undertaken using the Junctions 9 modelling suite at the ASDA roundabout for the 07:00 to 08:00 period, the 08:15 to 09:15 AM peak and the 17:00 to 18:00 PM Peak. The cumulative development flows, including the LTC construction traffic flows, have been added to the baseline and proposed TFGP average and peak construction traffic flows to create a number of scenarios.
- 2.38 The scenarios included for the 07:00 to 08:00 scenario are as follows:
- 2022 Baseline + Average Construction + Cumulative; and
 - 2022 Baseline + Peak Construction + Cumulative.
- 2.39 The scenarios included for the 08:15 to 09:15 AM and 17:00 to 18:00 PM scenario are as follows:
- 2022 Baseline + Average Construction + Cumulative;
 - 2022 Baseline + Peak Construction + Cumulative;
 - 2022 Baseline + Average Construction (HGV U-turn) + Cumulative; and
 - 2022 Baseline + Peak Construction (HGV U-turn) + Cumulative.
- 2.40 The traffic flows diagrams for these scenarios are included at **Appendix C**.
- 2.41 A summary of the results is presented in **Table 2.4 and Table 2.5** below. Full printouts of the model output files are attached at **Appendix D**.

Table 2.4: ASDA Roundabout 07:00 – 08:00

2022 Baseline + Average Construction + Cumulative			
	Queue	Delay	RFC
London Distribution Park	0.2	9.17	0.19
Dock Road	1.3	9.46	0.56
St Andrews Road	1.5	8.18	0.61
Thurrock Park Way	0.7	5.77	0.41
A1089 Dock Road	512.6	912.96	1.47
2022 Baseline + Peak Construction + Cumulative			
	Queue	Delay	RFC
London Distribution Park	0.2	9.17	0.19
Dock Road	1.3	9.46	0.56
St Andrews Road	1.5	8.17	0.61
Thurrock Park Way	0.7	5.78	0.41
A1089 Dock Road	518.0	920.10	1.47

- 2.42 **Table 2.4** shows that the addition of the cumulative development to the 2022 baseline scenario plus average construction leads to a maximum RFC of 1.47 on the A1089 Dock Road arm during the 07:00 to 08:00 period. In the 2022 baseline plus peak construction scenario the addition of the cumulative development leads to a maximum RFC of 1.47 on the A1089 Dock Road arm.
- 2.43 It should be noted that all other arms remain within capacity during the 07:00 to 08:00 period.
- 2.44 The submitted Transport Assessment explains that its assessments indicate that the capacity of the roundabout on the A1089 Dock Road arm is compromised by the existing and committed development traffic (i.e. not the temporary average and peak construction traffic flows, together with the cumulative development traffic, which includes the LTC construction traffic). This remains the case when LTC is considered within this cumulative assessment. Construction traffic generated by the LTC will be subject to a CTMP and it is expected that the LTC's CTMP will include measures relating to movement through the Asda Roundabout such that these movements would be acceptable.
- 2.45 Thurrock Power Ltd is in ongoing discussion with Highways England concerning the LTC project and the management of construction traffic should the construction phases of these projects overlap. The CTMPs implemented for both projects are therefore expected to reflect a practical and co-operative approach to traffic management and sequencing to minimise impacts.

Table 2.5: ASDA Roundabout 08:15 – 09:15 and 17:00 – 18:00

	2022 Baseline + Average Construction + Cumulative					
	08:15 – 09:15 AM			17:00 – 18:00 PM		
	Queue	Delay	RFC	Queue	Delay	RFC
London Distribution Park	0.3	11.48	0.26	0.6	7.73	0.40
Dock Road	4.0	21.01	0.82	1.1	7.19	0.53
St Andrews Road	1.5	8.62	0.60	7.3	17.90	0.90
Thurrock Park Way	1.0	7.26	0.51	44.0	130.65	1.20
A1089 Dock Road	126.4	257.45	1.18	3.9	10.58	0.80
	2022 Baseline + Peak Construction + Cumulative					
	08:15 – 09:15 AM			17:00 – 18:00 PM		
	Queue	Delay	RFC	Queue	Delay	RFC
London Distribution Park	0.3	11.48	0.26	0.7	7.77	0.40
Dock Road	4.0	21.12	0.82	1.1	7.23	0.53
St Andrews Road	1.5	8.71	0.60	7.5	18.18	0.90
Thurrock Park Way	1.0	7.30	0.51	44.5	133.53	1.20
A1089 Dock Road	130.1	264.01	1.18	3.9	10.74	0.81
	2022 Baseline + Average Construction (HGV U-turn) + Cumulative					
	08:15 – 09:15 AM			17:00 – 18:00 PM		
	Queue	Delay	RFC	Queue	Delay	RFC
London Distribution Park	0.3	11.51	0.26	0.6	7.74	0.40
Dock Road	4.0	21.13	0.82	1.1	7.20	0.53
St Andrews Road	1.5	8.63	0.60	7.0	17.36	0.90
Thurrock Park Way	1.0	7.23	0.51	43.3	128.48	1.19
A1089 Dock Road	125.6	256.61	1.18	3.8	10.51	0.80
	2022 Baseline + Peak Construction (HGV U-turn) + Cumulative					
	08:15 – 09:15 AM			17:00 – 18:00 PM		
	Queue	Delay	RFC	Queue	Delay	RFC
London Distribution Park	0.3	11.55	0.26	0.7	7.78	0.40
Dock Road	4.0	21.39	0.82	1.1	7.24	0.53
St Andrews Road	1.5	8.73	0.60	7.3	17.82	0.90
Thurrock Park Way	1.0	7.28	0.51	44.3	133.10	1.20
A1089 Dock Road	126.3	258.49	1.18	3.9	10.60	0.80

- 2.46 **Table 2.5** shows with the addition of the cumulative development flows to the baseline and average construction flow scenario that the maximum RFC in the AM peak is 1.18 on the A1089 Dock Road and in the PM 1.20 on Thurrock Park Way. In the 2022 baseline plus peak construction the addition of the cumulative development leads to a maximum RFC of 1.18 in the AM peak on the A1089 Dock Road arm and 1.20 in the PM peak on the Thurrock Park Way arm.
- 2.47 The addition of the cumulative development to the 2022 baseline plus average construction for the HGV U-turn scenario leads to a maximum RFC of 1.18 on the A1089 Dock Road in the AM peak and 1.19 in the PM peak on Thurrock Park Way. For the 2022 baseline plus peak construction HGV U-turn scenario the maximum RFC is 1.18 on the A1089 Dock Road arm and 1.20 in the PM on the Thurrock Park Way arm.
- 2.48 It should be noted that all other arms remain within capacity during the AM and PM peaks. In the same way as the 07:00 to 08:00 assessments show, the capacity of the roundabout is compromised by the existing and committed development traffic (i.e. not the temporary average and peak construction traffic flows, together with the cumulative development traffic, which includes the LTC construction traffic). This remains the case when LTC is considered within this cumulative assessment.

- 2.49 Construction traffic generated by the LTC will, like that of TFGP, be subject to a CTMP and it is expected that the LTC's CTMP will include measures relating to movement through the Asda Roundabout such that these movements would be acceptable.

Summary and Conclusions

- 2.50 This TA Addendum assesses the impact of the temporary construction phase of the TFGP together with the impact of cumulative developments, including the LTC construction traffic flows. The assessment within this TA Addendum for temporary TFGP construction traffic flows together with the cumulative development traffic flows supersedes the cumulative assessment within the submitted TA.
- 2.51 The cumulative assessment within this TA Addendum includes the most up to date published information on the construction traffic of LTC. The temporary TFGP construction traffic flows assessed with the cumulative developments against 2022 baseline traffic flows demonstrate that there would not be changes noticeable to other drivers and TFGP traffic in the cumulative scenario would not add appreciably to any existing levels of congestion or road safety issues, resulting in the same conclusion as the submitted TA. The construction traffic generated by both TFGP and LTC will operate under their respective CTMPs and each one will be developed to ensure all aspects of the highway network are managed accordingly.
- 2.52 It is thus concluded that the temporary TFGP construction traffic flows would not result in a severe residual cumulative impact on the road network or an unacceptable impact on highway safety along the local road network.
- 2.53 It is therefore considered that there are no transport or highways reasons for not permitting the development.

3 TRAFFIC AND TRANSPORT CEA ADDENDUM ASSESSMENTS

Purpose of this Addendum

- 3.1 The Traffic and Transport CEA conducted a cumulative assessment of the Traffic and Transport effects of the proposed TFGP together with other relevant future development projects that were scoped into the cumulative assessment.
- 3.2 In relation to the LTC, the CEA concluded that should the construction traffic generation of TFGP overlap temporally with that of the LTC, it is considered that TFGP would make no appreciable contribution to the significant effects of the LTC as assessed in its PEIR and consequently no significantly greater cumulative effect is predicted.
- 3.3 Since the submission of the DCO application, further documentation in relation to LTC has been submitted in 2020 for consultation and re-consultation. This documentation has been reviewed and considered for reassessment.
- 3.4 This Addendum of the CEA expands upon the previous cumulative assessment in order to take into account the further information provided in the 2020 LTC consultation and re-consultation. The reassessment of the cumulative developments in this CEA Addendum, now including the updated LTC information, supersedes the previous CEA.
- 3.5 In particular, this Addendum to the Traffic and Transport CEA topic chapter:
- identifies the potential impact interactions of the proposed development in combination with the other relevant future development projects listed in the CEA;
 - evaluates the likely significant cumulative effects on key receptors as a result of the proposed development together with the other development projects listed in the CEA;
 - identifies any additional mitigation measures that are proposed to prevent, minimise, reduce or offset these significant cumulative effects; and
 - taking into account any proposed mitigation measures, evaluates the significance of predicted residual cumulative effects.
- 3.6 There are other environmental topic areas that have relevance to aspects considered in this chapter, these are detailed in the CEA Addendum.

Approach to Cumulative Assessment

- 3.7 The assessment of Traffic and Transport cumulative effects within this Addendum follows the approach set out in Section 3 of Volume 2, Chapter 4: EIA Methodology.

Study Area

- 3.8 There are no changes to the study area as part of this CEA Addendum. As such the study area remains the same as set out in the Environmental Statement Volume 4: Cumulative Effects Assessment Traffic and Transport Chapter.

- 3.9 In summary, the study area comprises of the route from the M25 junction 30 to the Station Road access at East Tilbury via the A13, A1089, Fort Road and Coopers Shaw Road which covers all of the highway links that will be used along the access route.
- 3.10 The access route to the site for day to day vehicles from Junction 30 of the M25 is shown on Figure 1.1 in Volume 6, Appendix 10.1: Transport Assessment. These highway links form the study area of this addendum.

Screening of Cumulative Developments

- 3.11 Volume 4, Chapter 18: Cumulative Effects Assessment Introduction and Screening identifies a short-list of potential cumulative developments that have been screened as potentially relevant to the CEA overall (i.e. for one or more topic areas). From this shortlist of cumulative development projects, Table 1.1 of the Environmental Statement Volume 4: Cumulative Effects Assessment identifies those projects that fall within the zone of influence for Traffic and Transport and have potential for cumulative effects that require assessment in this topic area.
- 3.12 This CEA Addendum re-assesses the LTC cumulative development and as such no additional cumulative developments to those included within the CEA have been included within this CEA Addendum.
- 3.13 Therefore, the list of cumulative developments shortlisted in Table 1.1 of the Environmental Statement Volume 4: Cumulative Effects Assessment for Traffic and Transport remain the same.
- 3.14 For ease **Table 3.1** shows the cumulative developments where there is potential for a cumulative impact during the construction phase and lists the receptors affected by the development.
- 3.15 As previously noted in the CEA, there will be only low levels of traffic generated by the proposed development during the operational phase, as detailed in the assessment in Volume 4, Chapter 10: Traffic and Transport. No significant effects resulting from the operation of the proposed development alone are anticipated. The level of operational traffic generated by the proposed development is sufficiently negligible that, upon review of transport impacts of the relevant cumulative developments listed in **Table 3.1**, it is clear that no significant contribution by TFGP traffic in operation to any cumulative effect is possible. Therefore, the operational and maintenance phase has been scoped out from further assessment.
- 3.16 As was set out in the preceding section, any cumulative traffic and transport effects from the London Resort NSIP with TFGP traffic would be expected to be assessed by the London Resort in its DCO application. Insufficient published information is currently available to assess the London Resort in this document.

Table 3.1: Cumulative Developments

ID	Development	Receptor(s) Affected
58	<p>The Lower Thames Crossing will be a new road connecting Essex and Kent. Located east of Gravesend and Tilbury, this new crossing will offer the improved journeys, new connections and network reliability, and economic benefits that only a new, alternative crossing, away from Dartford, can provide.</p>	<ul style="list-style-type: none"> • A13 between M25 junction 30 and A126 • A13 between A126 and A1012 • A13 between A1089 and A1012 • A1089, between Marshfoot Road roundabout and A13 • Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction • A13, between Orsett Cock roundabout and A1089 • A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout • A1089 St Andrews Road, between ASDA Roundabout and Port of Tilbury Gate 1 • A1089 St Andrews Road, between Tilbury Gate 1 and Proposed Tilbury 2 Road • Proposed Tilbury 2 Road, between A1089 St Andrews Road and Fort Road • Fort Road between Proposed Tilbury 2 Road and Brennan Road • Fort Road between Brennan Road and Coopers Shaw Road • Station Road East Tilbury
60	<p>Outline approval (with all matters reserved, except for access) sought for: up to 2,158 dwellings comprising a mix of 1, 2, 3-bedroom units (Use Class C3); a serviced plot for a new primary / nursery school up to 1,850 sq.m; a health centre up to 1,000 sq.m (Use Class D1); community pavilion of up to 500 sq.m (Use Class D1); convenience retail store up to 400 sq.m (Use Class A1); public art together with associated vehicle parking, open space, landscape and public realm provision, ecological mitigation, highways,</p>	<ul style="list-style-type: none"> • A13 between M25 junction 30 and 126 • A13 between A126 and A1012 • A13 between A1089 and A1012 • A13 between Orsett Cock roundabout and A1089

ID	Development	Receptor(s) Affected
	<p>pedestrian and vehicular access routes, and other associated engineering, utilities and infrastructure works.</p> <p>Detailed approval sought for: 342 dwellings (Use Class C3) comprising a mix of 1, 2, 3-bedroom units; linear park; a lido facility with changing room facilities up to 340 sq.m (Use Class D1) and ancillary café up to 100 sq.m (Use Class A3); 3km of mountain bike routes and a pump track, a pedestrian / cycle link tunnel from Lakeside Shopping Centre underneath the A1306, and vehicular access from the A126, A1306 and MSA roundabout (bus / emergency).</p>	
63	<p>Outline planning permission with all matters (except for access) reserved for the demolition, phased remediation and redevelopment of 167 hectares of former Coryton Oil Refinery to provide up to 480,000 sq. m of commercial development including a Food Park (Use Class B2/B8); Energy & Waste related facilities (Use Class Sui Generis/B2/B8); A Central Hub incorporating a range of active uses (office, leisure, education, hotel and conferencing facilities) (Use Classes B1; D1; D2; C1) and ancillary retail/leisure/community facilities (Use Classes A1, A3, A4, A5, D2 & Sui Generis), as well as additional land set aside for a Rail Freight Terminal; 4.1 Hectares of Open Storage (Use Class B8); Lorry Parking Facilities;</p>	<ul style="list-style-type: none"> • A13 between M25 junction 30 and A126 • A13 between A126 and A1012 • A13 between A1089 and A1012 • A1089 between Marshfoot • Road roundabout and A13 • A13, between Orsett Cock roundabout and A1089 • A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout

ID	Development	Receptor(s) Affected
	structural landscaping; car parking, new road and access facilities; vehicular crossing over Shellhaven Creek; pedestrian crossing facilities to existing and proposed estate roads; retention of existing jetties; and associated infrastructure works.	
76	Request for Environmental Impact Assessment (EIA) Screening Opinion: Proposed development of c.600 dwellings and associated in infrastructure, including access and relief road.	<ul style="list-style-type: none"> • A13 between M25 junction 30 and 126 • A13 between A126 and A1012 • A13 between A1089 and A1012 • A13, between Orsett Cock roundabout and A1089
78	Request for Environmental Impact Assessment (EIA) Screening Opinion and Outline Application - Proposed construction of up to 161 new dwellings (C3) with vehicular access from Churchill Road; construction of 7,650 sqm (GEA) of flexible employment floorspace (B1c/B2/B8) with vehicular access from Thurrock Park Way; provision of open space including landscaping and drainage measures; new pedestrian/cycle links; and associated parking and access.	<ul style="list-style-type: none"> • A13 between M25 junction 30 and A126 • A13 between A126 and A1012 • A13 between A1089 and A1012 • A1089 between Marshfoot Road roundabout and A13 • A13, between Orsett Cock roundabout and A1089 • A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout
81	Tilbury Green Power Phase 2 S36C application. Biomass and energy from waste fuelled generation station at Tilbury Docks, Essex: variation application under section 36c of the electricity act 1989.	<ul style="list-style-type: none"> • A13 between M25 junction 30 and A126 • A13 between A126 and A1012 • A13 between A1089 and A1012 • A1089 between Marshfoot Road roundabout and A13 • A13 between Orsett Cock roundabout and A1089 • A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout • A1089 St Andrews Road, between ASDA Roundabout and Port of Tilbury Gate 1

ID	Development	Receptor(s) Affected
82	Gateway Energy Centre: Development up to 1250 MW capacity to comprise either: up to two CCGT units; or one CCGT unit and one or more OCGT units and/or battery energy storage	<ul style="list-style-type: none"> • A13 between M25 junction 30 and 126 • A13 between A126 and A1012 • A13 between A1089 and A1012 • A13 between Orsett Cock roundabout and A1089

Identifying Cumulative Developments affecting each Receptor

- 3.17 **Table 3.2** summarises the developments that have the potential to cause cumulative effects at each identified receptor, the sensitivity of the receptor to cumulative impacts, and the predicted residual effect of TFGP during construction (as established in ES Volume 3).
- 3.18 **Table 3.2** details the identified receptors at which the cumulative developments have the potential to cause cumulative effects, the sensitivity of the receptor to cumulative impacts and the predicted residual effect of TFGP during construction (as established in ES Volume 3).
- 3.19 All links have a standalone effect of negligible for the TFGP, with the exception of Station Road East Tilbury which has a minor effect (not significant in EIA terms).

Table 3.2: Summary of Cumulative Developments Affecting Each Receptor (Construction)

Receptor affected	Sensitivity of receptor to cumulative effects	Standalone effect of Thurrock Flexible Generation Plant on receptor	Cumulative development(s) with the potential to affect this receptor
A13 between M25 junction 30 and A126	Negligible	Negligible	All
A13 between A126 and A1012	Negligible	Negligible	All
A13 between A1089 and A1012	Negligible	Negligible	All

Receptor affected	Sensitivity of receptor to cumulative effects	Standalone effect of Thurrock Flexible Generation Plant on receptor	Cumulative development(s) with the potential to affect this receptor
A1089, between Marshfoot Road roundabout and A13	Negligible	Negligible	63, 78, 81, 58
Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction	Low	Negligible	58
A13, between Orsett Cock roundabout and A1089	Negligible	Negligible	All
A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	Low	Negligible	63, 78, 81, 58
A1089 St Andrews Road, between ASDA Roundabout and Port of Tilbury Gate 1	Low	Negligible	81, 58
A1089 St Andrews Road, between Tilbury Gate 1 and Proposed Tilbury 2 Road	Low	Negligible	58
Proposed Tilbury 2 Road, between A1089 St Andrews Road and Fort Road	Negligible	Negligible	58
Fort Road between Proposed Tilbury 2 Road and Brennan Road	Low	Negligible	58
Fort Road between Brennan Road and Coopers Shaw Road	Low / Negligible	Negligible	58
Station Road East Tilbury	Low	Minor	58

Assessment of Cumulative Effects

Construction Phase of Thurrock Flexible Generation Plant

Cumulative developments

- 3.20 Following review of the 2020 LTC consultation and re-consultation documentation the estimated traffic generation for the construction of the LTC has been derived as detailed in the Transport Assessment Addendum section above.
- 3.21 As detailed in the Traffic and Transport CEA the estimated traffic generation from the other cumulative developments have been taken from their respective transport document submissions, as set out in the Volume 6, Appendix 10.1: Transport Assessment.
- 3.22 The methodology for the cumulative development flows is set out in Section 5 of Volume 6, Appendix 10.1: Transport Assessment.

Thurrock Flexible Generation Plant Average Construction and Cumulative Developments Assessment

- 3.23 The estimated traffic generation from the LTC construction and the other cumulative developments have then been added to the TFGP construction traffic flows and assessed against the baseline traffic flows. The resultant cumulative plus average construction percentage impacts are calculated in **Table 3.3**.

Table 3.3: Average Construction + Cumulative Development Flows

Link	Link Description	2022 Baseline		Average Construction + Cumulative				2022 Baseline + Average Construction + Cumulative	
		AADT	HV AADT	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
1	A13 between M25 junction 30 and A126	132736	17487	4124	3.11%	1275	7.29%	136860 (170)	18761 (83)
2	A13 between A126 and A1012	110772	16744	4124	3.72%	1275	7.61%	114896 (170)	18018 (83)
3	A13 between A1089 and A1012	114614	16382	4124	3.60%	1275	7.78%	118738 (170)	17656 (83)
4	A1089, between Marshfoot Road roundabout and A13	37249	11960	1353	3.63%	758	6.34%	38602 (170)	12718 (83)
11	Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction	1138	269	444	39.06%	253	93.88%	1582 (170)	522 (83)
15	A13, between Orsett Cock roundabout and A1089	102630	10220	4221	4.11%	1279	12.51%	106851 (170)	11499 (83)

Link	Link Description	2022 Baseline		Average Construction + Cumulative				2022 Baseline + Average Construction + Cumulative	
		AADT	HV AADT	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
16	A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	42502	12112	1353	3.18%	758	6.26%%	43855 (170)	12870 (83)
17	A1089 St Andrews Road, between ASDA roundabout and Port of Tilbury Gate 1	18521	9640	1078	5.82%	726	7.53%	19598 (170)	10366 (83)
18	A1089 St Andrews Road, between Port of Tilbury Gate 1 and Proposed Tilbury 2 Road	8953	3976	618	6.90%	426	10.71%	9571 (170)	4401 (83)
19	Proposed Tilbury 2 Road between A1089 St Andrews Road and Fort Road	4640	2673	539	11.61%	347	13.00%	5179 (170)	3020 (83)
20	Fort Road, between Proposed Tilbury 2 Road and Brennan Road	1786	307	444	24.88%	253	82.20%	2230 (170)	560 (83)

Link	Link Description	2022 Baseline		Average Construction + Cumulative				2022 Baseline + Average Construction + Cumulative	
		AADT	HV AADT	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
21	Fort Road, between Brennan Road and Coopers Shaw Road	2204	334	444	20.16%	253	75.71%	2648 (170)	587 (83)
22	Station Road East Tilbury	500	0	N/A	N/A	N/A	N/A	N/A	N/A

TFGP traffic flows are shown in brackets.

- 3.24 In terms of total vehicle flows for the average construction period, only one link exceeds the Rule 1 threshold ((Institute of Environmental Assessment (IEA), 1993), located on the Coopers Shaw Road / Church Road / Station Road link, between Gun Hill Road and EMR East Tilbury junction. The daily percentage increase in traffic flows for this link is 39.06%, largely as a result of low baseline flows, for total vehicles and shows the maximum impact on any link.
- 3.25 As can be seen, the daily percentage increases in traffic flows in terms of total vehicle flows along all other links are no more than 24.88% for the average construction period along the Fort Road, between Proposed Tilbury 2 Road and Brennan Road link.
- 3.26 In terms of HV flows for the average construction period, three links exceed the Rule 1 threshold. Coopers Shaw Road / Church Road / Station Road has an HV increase of 93.88%, this link has the maximum impact. The two other links which exceed the Rule 1 threshold are Fort Road, between Proposed Tilbury 2 Road and Brennan Road and Fort Road, between Brennan Road and Coopers Shaw Road. These links have an HV increase of 82.20% and 75.71% respectively.
- 3.27 These three links will only be used by construction traffic in exceptional circumstances during an unlikely event when the Fort Road access is not available. In terms of the Fort Road, between Proposed Tilbury 2 Road and Brennan Road and Fort Road, between Brennan Road and Coopers Shaw Road links, which have an HV increase which exceeds the Rule 1 threshold, these are assessed for robustness.
- 3.28 All other links for the average construction do not exceed the Rule 1 threshold set out above and the impact is therefore negligible and can be screened out of the assessment. In accordance with the IEA (1993) Guidelines the sensitivity of receptors along all other links are considered to be low / negligible and the magnitude of impact is deemed to be negligible. The significance of effect is therefore considered to be negligible along all other links, which is not significant in EIA terms, with the exception of the three links mentioned.
- 3.29 On the basis of the above and in accordance with the IEA (1993) Guidelines, assessment will be undertaken of the effects of the proposed site and cumulative developments upon sensitive receptors along the Coopers Shaw Road / Church Road / Station Road and Fort Road links. Fort Road is formed of two links, but it has been assessed as one due to the similar traffic flows and road environment, with the greatest impact of each link assessed, unless there is a need to consider each individually, in which case this is done so.

The Temporary Impact of the Average Construction Works and Cumulative Development on Driver Delay

- 3.30 Driver delay can result from the following:
- an increase in traffic flows, particularly during peak hours resulting in increased queues on links and at junctions;
 - the passage of slower moving vehicles such as HGVs; and
 - reduction in link capacity resulting from changes in carriageway width or other highway characteristics.

Magnitude of Impact

- 3.31 Coopers Shaw Road / Church Road / Station Road and Fort Road are lightly trafficked with approximately 1,000 vehicle movements and 2,200 vehicle movements respectively per day along them. Site visits have confirmed that congestion does not occur.
- 3.32 The increases in traffic flow along Coopers Shaw Road / Church Road / Station Road and Fort Road are estimated to be 444 two-way vehicle movements per day which is low. Section 2 of this document set out that these traffic flows would not exceed capacity along these roads. It should also be borne in mind that these roads would only be used in exceptional circumstances in the unlikely event that the main construction access route for TFGP is temporarily unavailable. The impact of driver delay as a result of the TFGP and cumulative developments is therefore predicted to be negligible on Fort Road. Coopers Shaw Road / Church Road / Station Road has variable carriageway width and as such the impact of driver delay is predicted to be minor.
- 3.33 The delay on Coopers Shaw Road / Church Road / Station Road and Fort Road in relation to the TFGP average construction flows are predicted to be a direct effect of local spatial extent, short term duration, continuous and fully reversible. The magnitude for Fort Road is therefore considered to be **negligible** and for Coopers Shaw Road / Church Road / Station Road is considered to be **minor**.

Sensitivity of the Receptor

- 3.34 Coopers Shaw Road / Church Road / Station Road and Fort Road have few sensitive receptors and are deemed to be of low vulnerability, fully recoverable and low value. The sensitivity of the receptors is therefore, considered to be **low**.

Significance of Effect

- 3.35 Overall, it is predicted that the sensitivity of the receptors on Coopers Shaw Road / Church Road / Station Road and Fort Road are considered to be **low** and the magnitude on Coopers Shaw Road / Church Road / Station Road is deemed to be **minor** and on Fort Road, **negligible**. Therefore, this would result in a **minor** and **negligible** effect respectively, which is not significant in EIA terms.

Further Mitigation or Enhancement

- 3.36 No significant adverse effects have been predicted; however, the Construction Traffic Management Plan will monitor and manage HGVs to seek to minimise these in conjunction with LTC in the unlikely event that the main construction access was closed for any reason.

Residual Effect

- 3.37 The residual effect following further mitigation is predicted to be not significant in EIA terms.

The Temporary Impact of the Average Construction Works and Cumulative Development on Severance of Routes

- 3.38 Severance is only likely to occur on highly trafficked roads, resulting from the perceived division the road and traffic creates between communities on either side.

- 3.39 The IEA (1993) guidance identifies that increases in total traffic volumes of between 30% and 60% could result in a slight impact (the lowest category) upon severance.

Magnitude of Impact

- 3.40 The change in total traffic flow on the Coopers Shaw Road / Church Road / Station Road link as a result of the total average construction traffic and cumulative development traffic is greater than the 30% that the IEA (1993) guidance sets out is required for a slight effect (the lowest category) to occur at 39.06%. However, communities are not built up on both sides of these roads on which severance could occur.
- 3.41 The change in total traffic flow on Fort Road as a result of the total cumulative traffic is lower than the 30% that the IEA (1993) guidance sets out is required for a slight effect (the lowest category) to occur. Communities are not built up on both sides of Fort Road on which severance could occur.
- 3.42 The impact on Coopers Shaw Road / Church Road / Station Road and Fort Road of the TFGP average construction flows plus cumulative development is predicted to be of local spatial extent, short term duration, continuous and fully reversible. The magnitude of impact on the Coopers Shaw Road / Church Road / Station Road and Fort Road links is therefore, considered to be **negligible**.

Sensitivity of the Receptor

- 3.43 Coopers Shaw Road / Church Road / Station Road and Fort Road have few sensitive receptors and is deemed to be of low vulnerability, fully recoverable and low value. The sensitivity of the receptors is therefore considered to be **low**.

Significance of the Effect

- 3.44 Overall, it is predicted that the sensitivity of the receptors on Coopers Shaw Road / Church Road / Station Road and Fort Road is considered to be **low** and the magnitude is deemed to be **negligible**. Therefore, this would result in a **negligible** effect, which is not significant in EIA terms.

Further Mitigation or Enhancement

- 3.45 No significant adverse effects have been predicted and no further mitigation is considered to be required.

Residual Effect

- 3.46 The residual effect following further mitigation is predicted to be not significant in EIA terms.

The Temporary Impact of the Average Construction Works and Cumulative Development on Pedestrian Delay

- 3.47 Highly trafficked roads and changes to the volume or speed of traffic may affect the ability of people to cross roads. The IEA (1993) guidance set out above notes that studies have shown that pedestrian delay is perceptible or considered significant beyond a delay threshold of 10 seconds, for a link with no crossing facilities. It goes on to say that a 10 second pedestrian delay

in crossing a road broadly equates to a two-way link flow of approximately 1,400 vehicles per hour. This means that where two-way traffic flows on a road exceed 1,400 vehicle movements per hour, then a pedestrian seeking to cross that road would perceive a delay.

- 3.48 There is a footway along the western side of Fort Road, south of Brennan Road, but no Public Rights of Way.
- 3.49 Although there are Public Rights of Way adjoining Coopers Shaw Road / Church Road / Station Road, there are no footways along them.
- 3.50 There are no footways or Public Rights of Way along Fort Road, north of Brennan Road, although there is a narrow strip of adjoining Common Land with public access rights.

Magnitude of Impact

- 3.51 Traffic flows along Coopers Shaw Road / Church Road / Station Road and Fort Road for the 2022 baseline scenario are 1,138 and 2,204 vehicle movements respectively per day.
- 3.52 Site visits have confirmed that traffic flows are low and do not result in any pedestrian delay. The increases in traffic flow along Coopers Shaw Road / Church Road / Station Road and Fort Road are estimated at 444 two-way vehicle movements per day or below 20 every 60 minutes on average in each direction which will not cause or result in pedestrian delay.
- 3.53 The impact of pedestrian delay as a result of the TFGP average construction flows and cumulative development flows along Coopers Shaw Road / Church Road / Station Road and Fort Road is therefore predicted to be negligible.
- 3.54 The negligible impact on pedestrian delay is predicted to be a direct effect of local spatial extent, short term duration, continuous and fully reversible. The magnitude is therefore considered to be **negligible**.

Sensitivity of the Receptor

- 3.55 Coopers Shaw Road / Church Road / Station Road and Fort Road have few sensitive receptors and are deemed to be of low vulnerability, fully recoverable and low value. The sensitivity of the receptors is therefore considered to be **low**.

Significance of the Effect

- 3.56 Overall, it is predicted that the sensitivity of the receptors on Coopers Shaw Road / Church Road / Station Road and Fort Road are considered to be **low** and the magnitude is deemed to be **negligible**. Therefore, this would result in a **negligible** effect, which is not significant in EIA terms.

Further Mitigation or Enhancement

- 3.57 No significant adverse effects have been predicted and no further mitigation is considered to be required.

Residual Effect

- 3.58 The residual effect following further mitigation is predicted to be not significant in EIA terms.

The Temporary Impact of the Average Construction Works and Cumulative Development on Pedestrian Amenity

- 3.59 The term pedestrian amenity is broadly defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and footway width and separation from traffic.
- 3.60 The IEA (1993) guidance refers to a tentative threshold for judging the significance of changes in pedestrian amenity where the traffic flow (or its HV component) is halved or doubled.
- 3.61 HV flows on Coopers Shaw Road / Church Road / Station Road and Fort Road in the 2022 baseline scenario are 269 and 334 respectively.

Magnitude of Impact

- 3.62 The impact on Coopers Shaw Road / Church Road / Station Road and Fort Road in relation to the TFGP Average construction plus cumulative development traffic flows are predicted to be a direct effect of local spatial extent, short term duration, intermittent and fully reversible. The increases in HV movements for the average construction and cumulative development period are 93.88% and 82.20% respectively which is below the tentative threshold. Given that the baseline traffic levels remain low and pedestrian activity along the links are negligible, the magnitude is considered to be **negligible**.

Sensitivity of the Receptor

- 3.63 Coopers Shaw Road / Church Road / Station Road and Fort Road has few sensitive receptors and is deemed to be of low vulnerability, fully recoverable and low value. The sensitivity of the receptors is therefore, considered to be **low**.

Significance of the Effect

- 3.64 It is predicted that the sensitivity of the receptor on Coopers Shaw Road / Church Road / Station Road and Fort Road is considered to be **low** and the magnitude is deemed to be **negligible**. Therefore, this would result in a **negligible** effect, which is not significant in EIA terms.

Further Mitigation or Enhancement

- 3.65 No significant adverse effects have been predicted and no further mitigation is considered to be required.

Residual Effect

- 3.66 The residual effect following further mitigation is predicted to be not significant in EIA terms.

The Temporary Impact of the Average Construction Works and Cumulative Development on Accidents and Road Safety

Magnitude of Impact

- 3.67 The impact of the TFGP construction work with cumulative developments in terms of road safety affects receptors directly and would be short-term, continuous and fully reversible once

construction work is complete. The magnitude of increase in total vehicle movements on Coopers Shaw Road / Church Road / Station Road and Fort Road from the average construction flows and cumulative development flows is negligible.

- 3.68 An analysis of injury accidents has been undertaken and concluded that Coopers Shaw Road / Church Road / Station Road and Fort Road currently operates in a safe manner and there are no road safety concerns along them.
- 3.69 In relation to the TFGP, there would be a temporary addition of HVs to Coopers Shaw Road / Church Road / Station Road only when the Fort Road access is not available, in exceptional circumstances. HV movements would be under contract and would be under the construction traffic management conditions and measures. Similarly, the other cumulative development generating traffic on these links (LTC) would also be under its construction traffic management conditions and measures. There is no reason to suggest that these vehicles would travel in a manner that is unsafe or that the injury accident rate would change.
- 3.70 The impact from the TFGP and cumulative developments is predicted to be a direct effect of local spatial extent, short term duration, intermittent and fully reversible. The magnitude of impact from the TFGP and cumulative development is considered to be **negligible**.

Sensitivity of the Receptor

- 3.71 An analysis of injury accidents has been undertaken and concluded that Coopers Shaw Road / Church Road / Station Road and Fort Road currently operates in a safe manner and thus there are no road safety concerns along it. It is considered that the vulnerability and value of the receptor with regards to accidents and road safety is low and fully recoverable. The sensitivity of the receptor is therefore considered to be **low**.

Significance of the Effect

- 3.72 Overall, it is predicted that the sensitivity of the receptor on Coopers Shaw Road / Church Road / Station Road and Fort Road is considered to be **low** and the magnitude is deemed to be **negligible**. Therefore, this would result in a **negligible** effect, which is not significant in EIA terms.

Further Mitigation or Enhancement

- 3.73 On the basis of the above, no further mitigation is considered necessary in relation to the temporary impact in terms of accidents and road safety during construction.

Residual Effect

- 3.74 The residual effect following further mitigation is predicted to be not significant in EIA terms.

Future Monitoring

- 3.75 A Construction Traffic Management Plan (CTMP) and a Construction Worker Travel Plan (CWTP) have been prepared. The CTMP will include for monitoring the TFGP construction traffic and LTC construction traffic.

Thurrock Flexible Generation Plant Peak Construction and Cumulative Developments Assessment

- 3.76 The estimated traffic generation from the LTC construction and the other cumulative developments have then been added to the TFGP construction traffic flows and assessed against the baseline traffic flows. The resultant cumulative plus peak construction percentage impacts are calculated in **Table 3.4**.

Table 3.4: Peak Construction + Cumulative Development Flows

Link	Link Description	2022 Baseline		Peak Construction + Cumulative				2022 Baseline + Peak Construction + Cumulative	
		AADT	AADT HVs	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
1	A13 between M25 junction 30 and A126	132736	17487	4240	3.19%	1356	7.75%	136976 (286)	18843 (164)
2	A13 between A126 and A1012	110772	16744	4240	3.83%	1356	8.10%	115012 (286)	18099 (164)
3	A13 between A1089 and A1012	114614	16382	4240	3.70%	1356	8.28%	118854 (286)	17737 (164)
4	A1089, between Marshfoot Road roundabout and A13	37249	11960	1469	3.94%	839	7.02%	38718 (286)	12800 (164)
11	Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction	1138	269	560	49.26%	334	124.05%	1698 (286)	603 (164)
15	A13, between Orsett Cock roundabout and A1089	102630	10220	4337	4.23%	1360	13.31%	106967 (286)	11580 (164)
16	A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	42502	12112	1469	3.46%	839	6.93%	43971 (286)	12951 (164)
17	A1089 St Andrews Road, between ASDA roundabout and Port of Tilbury Gate 1	18521	9640	1194	6.44%	807	8.37%	19714 (286)	10447 (164)

Link	Link Description	2022 Baseline		Peak Construction + Cumulative				2022 Baseline + Peak Construction + Cumulative	
		AADT	AADT HVs	AADT	Percentage Impact AADT	AADT HVs	Percentage Impact AADT HVs	AADT	AADT HVs
18	A1089 St Andrews Road, between Port of Tilbury Gate 1 and Proposed Tilbury 2 Road	8953	3976	734	8.19%	507	12.76%	9687 (286)	4483 (164)
19	Proposed Tilbury 2 Road between A1089 St Andrews Road and Fort Road	4640	2673	655	14.12%	429	16.04%	5295 (286)	3101 (164)
20	Fort Road, between Proposed Tilbury 2 Road and Brennan Road	1786	307	560	31.38%	334	108.62%	2346 (286)	641 (164)
21	Fort Road, between Brennan Road and Coopers Shaw Road	2204	334	560	25.42%	334	100.05%	2764 (286)	668 (164)
22	Station Road East Tilbury	500	0	294	58.8%	180	N/A	794	180

TFGP traffic flows are shown in brackets.

- 3.77 In terms of total vehicle flows for the peak construction period, three links exceed the Rule 1 threshold ((Institute of Environmental Assessment (IEA), 1993), located on the Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction, Fort Road, between Proposed Tilbury 2 Road and Brennan Road and Station Road East Tilbury. The daily percentage increase in traffic flows for these links are 49.26%, 31.38% and 58.8% largely as a result of low baseline flows, for total vehicles. The maximum impact is shown on Station Road East Tilbury.
- 3.78 As can be seen, the daily percentage increases in traffic flows in terms of total vehicle flows along all other links are no more than 25.42% for the peak construction period along the Fort Road, between Brennan Road and Coopers Shaw Road.
- 3.79 In terms of HV flows for the peak construction period, four links exceed the Rule 1 threshold. Coopers Shaw Road / Church Road / Station Road has an HV increase of 124.05% and this link has the maximum impact. Two other links which exceed the Rule 1 threshold are Fort Road, between Proposed Tilbury 2 Road and Brennan Road and Fort Road, between Brennan Road and Coopers Shaw Road. These links have an HV increase of 108.62% and 100.05% respectively.
- 3.80 These three links will only be used by construction traffic in exceptional circumstances during an unlikely event when the Fort Road access is not available.
- 3.81 Station Road East Tilbury where there are no HV movements in the baseline scenario and a percentage increase caused by 180 additional HGV movements per day cannot be calculated, is also judged to exceed the Rule 1 threshold.
- 3.82 All other links do not exceed the Rule 1 threshold set out above and the impact is therefore negligible and can be screened out of the assessment. In accordance with the IEA (1993) Guidelines the sensitivity of receptors along all other links are considered to be low / negligible and the magnitude of impact is deemed to be negligible. The significance of effect is therefore considered to be negligible along all other links, which is not significant in EIA terms, with the exception of the four links mentioned.
- 3.83 On the basis of the above and in accordance with the IEA (1993) Guidelines, assessment will be undertaken of the effects of the proposed site and cumulative developments upon sensitive receptors along the Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury links. Fort Road is formed of two links, but it has been assessed as one due to the similar traffic flows and road environment, with the greatest impact of each link assessed, unless there is a need to consider each individually, in which case this is done so.

The Temporary Impact of the Peak Construction Works and Cumulative Development on Driver Delay

- 3.84 Driver delay can result from the following:
- an increase in traffic flows, particularly during peak hours resulting in increased queues on links and at junctions;
 - the passage of slower moving vehicles such as HGVs; and
 - reduction in link capacity resulting from changes in carriageway width or other highway characteristics.

Magnitude of Impact

- 3.85 Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury are lightly trafficked links with approximately 1,000, 2,200 and 500 vehicle movements respectively per day along them. Site visits have confirmed that congestion does not occur.
- 3.86 The increases in traffic flow along Coopers Shaw Road / Church Road / Station Road and Fort Road are estimated to be 560 two-way vehicle movements per day and along Station Road East Tilbury are estimated at 294 two-way vehicle movements per day which is low. Section 2 of this document set out that the cumulative traffic flows Coopers Shaw Road / Church Road / Station Road and Fort Road would reach the capacity of the passing places along these roads. It should be borne in mind that these roads would only be used in exceptional circumstances in the unlikely event that the main construction access is temporarily unavailable. Notwithstanding, the Construction Traffic Management Plan will monitor and manage HGVs to seek to minimise these in conjunction with LTC that circumstance.
- 3.87 The impact of driver delay as a result of the TFGP and cumulative developments is therefore predicted to be negligible on Fort Road. On Coopers Shaw Road / Church Road / Station Road and Station Road East Tilbury the carriageway is of variable width, as such the delay is predicted to be minor.
- 3.88 The delay on Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury in relation to the TFGP average construction flows are predicted to be a direct effect of local spatial extent, short term duration, continuous and fully reversible. The magnitude is therefore considered to be **negligible** on Fort Road and **moderate** on Coopers Shaw Road / Church Road / Station Road and Station Road East Tilbury.

Sensitivity of the Receptor

- 3.89 Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury have few sensitive receptors and are deemed to be of low vulnerability, fully recoverable and low value. The sensitivity of the receptors is therefore, considered to be **low**.

Significance of Effect

- 3.90 Overall, it is predicted that the sensitivity of the receptors on Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury are considered to be **low** and the magnitude is deemed to be minor on Coopers Shaw Road / Church Road / Station Road and Station Road East Tilbury and **negligible** on Fort Road. Therefore, this would result in a **minor** and **negligible** effect respectively, which is not significant in EIA terms.

Further Mitigation or Enhancement

- 3.91 A CTMP has been prepared for the TFGP which provides traffic monitoring on Coopers Shaw Road / Church Road / Station Road and Station Road East Tilbury to ensure that HGVs will be monitored, managed and minimised. Through the CTMP, in conjunction with cumulative development including the LTC, the capacity of these links will not be exceeded and any effects on driver delay would be mitigated.

Residual Effect

- 3.92 The residual effect following further mitigation is predicted to be not significant in EIA terms.

The Temporary Impact of the Peak Construction Works and Cumulative Development on Severance of Routes

- 3.93 Severance is only likely to occur on highly trafficked roads, resulting from the perceived division the road and traffic creates between communities on either side.
- 3.94 The IEA (1993) guidance identifies that increases in total traffic volumes of between 30% and 60% could result in a slight impact (the lowest category) upon severance.

Magnitude of Impact

- 3.95 The change in total traffic flow on the Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury links as a result of the total peak construction traffic and cumulative development traffic is greater than the 30% that the IEA (1993) guidance sets out is required for a slight effect (the lowest category) to occur at 49.26%, 31.38% and 58.8% respectively. However, communities are not built up on both sides of these roads on which severance could occur.
- 3.96 The impact on Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury of the TFGP peak construction flows plus cumulative development is predicted to be of local spatial extent, short term duration, continuous and fully reversible. The magnitude on for the Coopers Shaw Road / Church Road / Station Road and Fort Road links is therefore, considered to be **negligible**.

Sensitivity of the Receptor

- 3.97 Coopers Shaw Road / Church Road / Station Road and Fort Road have few sensitive receptors and is deemed to be of low vulnerability, fully recoverable and low value. The sensitivity of the receptors is therefore considered to be **low**.

Significance of the Effect

- 3.98 Overall, it is predicted that the sensitivity of the receptors on Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury is considered to be **low** and the magnitude is deemed to be **negligible**. Therefore, this would result in a **negligible** effect, which is not significant in EIA terms.

Further Mitigation or Enhancement

- 3.99 No significant adverse effects have been predicted and no further mitigation is considered to be required.

Residual Effect

- 3.100 The residual effect following further mitigation is predicted to be not significant in EIA terms.

The Temporary Impact of the Peak Construction Works and Cumulative Development on Pedestrian Delay

- 3.101 Highly trafficked roads and changes to the volume or speed of traffic may affect the ability of people to crossroads. The IEA (1993) guidance set out above notes that studies have shown that pedestrian delay is perceptible or considered significant beyond a delay threshold of 10 seconds, for a link with no crossing facilities. It goes on to say that a 10 second pedestrian delay in crossing a road broadly equates to a two-way link flow of approximately 1,400 vehicles per hour. This means that where two-way traffic flows on a road exceed 1,400 vehicle movements per hour, then a pedestrian seeking to cross that road would perceive a delay.
- 3.102 There is a footway along the western side of Fort Road, south of Brennan Road, but no Public Rights of Way.
- 3.103 Although there are Public Rights of Way adjoining Coopers Shaw Road / Church Road / Station Road, there are no footways along them.
- 3.104 There are no footways or Public Rights of Way along Fort Road, north of Brennan Road, although there is a narrow strip of adjoining Common Land with public access rights.

Magnitude of Impact

- 3.105 Traffic flows along Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury for the 2022 baseline scenario are 1,138, 2,204 and 500 vehicle movements respectively per day.
- 3.106 Site visits have confirmed that traffic flows are low and do not result in any pedestrian delay. The increases in traffic flow along Coopers Shaw Road / Church Road / Station Road and Fort Road are estimated at 560 two-way vehicle movements per day or below 25 every 60 minutes on average in each direction which will not cause or result in pedestrian delay. The increases in traffic flows along Station Road East Tilbury are estimated at 294 two-way vehicle movements per day or below 15 every 60 minutes on average in each direction which will not cause of result in pedestrian delay
- 3.107 The impact of pedestrian delay as a result of the TFGP average construction flows and cumulative development flows along Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury is therefore predicted to be negligible.
- 3.108 The negligible impact on pedestrian delay is predicted to be a direct effect of local spatial extent, short term duration, continuous and fully reversible. The magnitude is therefore considered to be **negligible**.

Sensitivity of the Receptor

- 3.109 Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury have few sensitive receptors and are deemed to be of low vulnerability, fully recoverable and low value. The sensitivity of the receptors is therefore considered to be **low**.

Significance of the Effect

- 3.110 Overall, it is predicted that the sensitivity of the receptors on Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury are considered to be **low** and the

magnitude is deemed to be **negligible**. Therefore, this would result in a **negligible** effect, which is not significant in EIA terms.

Further Mitigation or Enhancement

- 3.111 No significant adverse effects have been predicted and no further mitigation is considered to be required.

Residual Effect

- 3.112 The residual effect following further mitigation is predicted to be not significant in EIA terms.

The Temporary Impact of the Peak Construction Works and Cumulative Development on Pedestrian Amenity

- 3.113 The term pedestrian amenity is broadly defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and footway width and separation from traffic.
- 3.114 The IEA (1993) guidance refers to a tentative threshold for judging the significance of changes in pedestrian amenity where the traffic flow (or its HV component) is halved or doubled.
- 3.115 HV flows on Coopers Shaw Road / Church Road / Station Road and Fort Road in the 2022 baseline scenario are 269 and 334 respectively.
- 3.116 HV flows will be introduced to Station Road East Tilbury (construction HGVs only), where no HV flows have been currently observed. There are no footways along Station Road East Tilbury and pedestrian movements are observed to be low.

Magnitude of Impact

- 3.117 The impact on Coopers Shaw Road / Church Road / Station Road, Fort Road and East Tilbury in relation to the TFGP peak construction plus cumulative development traffic flows are predicted to be a direct effect of local spatial extent, short term duration, intermittent and fully reversible. The increases in HV movements for the average construction and cumulative development period are 124.05% and 108.62% respectively which exceeds the tentative threshold. Given that the baseline traffic levels remain low and pedestrian activity along the links are negligible, the magnitude is considered to be **moderate**.
- 3.118 The impact on Station Road East Tilbury is predicted to be a direct effect of local spatial extent, short term duration, intermittent and fully reversible. Given that there are no existing HV flows here, the magnitude is considered to be **moderate**.

Sensitivity of the Receptor

- 3.119 Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury has few sensitive receptors and is deemed to be of low vulnerability, fully recoverable and low value. The sensitivity of the receptors is therefore, considered to be **low**.

Significance of the Effect

- 3.120 It is predicted that the sensitivity of the receptor on Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury is considered to be **low** and the magnitude is deemed to be **moderate**. Therefore, this would result in a **minor** effect, which is not significant in EIA terms.

Further Mitigation or Enhancement

- 3.121 No significant adverse effects have been predicted and no further mitigation is considered to be required.

Residual Effect

- 3.122 The residual effect following further mitigation is predicted to be not significant in EIA terms.

The Temporary Impact of the Peak Construction Works and Cumulative Development on Accidents and Road Safety

Magnitude of Impact

- 3.123 The impact of the TFGP construction work with cumulative developments in terms of road safety affects receptors directly and would be short-term, continuous and fully reversible once construction work is complete. The magnitude of increase in total vehicle movements on Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury from the peak construction flows and cumulative development flows is negligible.
- 3.124 An analysis of injury accidents has been undertaken and concluded that Coopers Shaw Road / Church Road / Station Road and Fort Road currently operates in a safe manner and there are no road safety concerns along them. There have not been any along Station Road East Tilbury during the latest available five-year period. It is therefore considered that Station Road East Tilbury currently operate in a safe manner and there are no road safety concerns along them.
- 3.125 In relation to the TFGP, there would be a temporary addition of HVs to Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury only when the Fort Road access is not available, in exceptional circumstances. HV movements would be under contract and would be under the construction traffic management conditions and measures. Similarly, the other cumulative development generating traffic on these links (LTC) would also be under its construction traffic management conditions and measures. There is no reason to suggest that the HVs would travel in a manner that is unsafe or that the injury accident rate would change.
- 3.126 The impact from the TFGP and cumulative developments is predicted to be a direct effect of local spatial extent, short term duration, intermittent and fully reversible. The magnitude of impact from the TFGP and cumulative development is considered to be **negligible**.

Sensitivity of the Receptor

- 3.127 An analysis of injury accidents has been undertaken and concluded that Coopers Shaw Road / Church Road / Station Road, Fort Road and Station Road East Tilbury currently operates in a safe manner and thus there are no road safety concerns along it. It is considered that the

vulnerability and value of the receptor with regards to accidents and road safety is low and fully recoverable. The sensitivity of the receptor is therefore considered to be **low**.

Significance of the Effect

- 3.128 Overall, it is predicted that the sensitivity of the receptor on Coopers Shaw Road / Church Road / Station Road and Fort Road is considered to be **low** and the magnitude is deemed to be **negligible**. Therefore, this would result in a **negligible** effect, which is not significant in EIA terms.

Further Mitigation

- 3.129 On the basis of the above, no further mitigation is considered necessary in relation to the temporary impact in terms of accidents and road safety during construction.

Residual Effect

- 3.130 The residual effect following further mitigation is predicted to be not significant in EIA terms.

Future Monitoring

- 3.131 A Construction Traffic Management Plan (CTMP) and a Construction Worker Travel Plan (CWTP) has been prepared. The CTMP will include for monitoring the TFGP construction traffic in conjunction with the LTC construction Traffic.

Operation and Maintenance Phase of Thurrock Flexible Generation Plant

- 3.132 There will be only low levels of traffic generated by the proposed development during the operational phase and an assessment of this has been scoped out.

Decommissioning Phase of Thurrock Flexible Generation Plant

- 3.133 The traffic flows generated during the decommissioning of the proposed development will be lower than those generated during its construction phase, thus a specific assessment of decommissioning has been scoped out.

Conclusions

- 3.134 Environmental impact assessments have been undertaken and conclude that the traffic and transport effects of the TFGP plus cumulative developments would be negligible during the construction phase, short term and reversible.
- 3.135 In accordance with the IEA (1993) Guidelines the sensitivity of receptors along all links are considered to be low / negligible and the magnitude of impact is deemed to be moderate / minor / negligible. The effect is therefore considered to be minor / negligible, which is not significant in EIA terms. Therefore, the effect of the TFGP plus cumulative development on the links assessed is negligible.

- 3.136 The assessment within the CEA Addendum has shown that with the addition of the LTC no significantly greater cumulative effect is predicted.

References

Institute of Environmental Assessment (IEA) (1993) Guidelines for the Assessment of Road Traffic. Lincoln, IEMA.

Appendices

Appendix A – Pages from Lower Thames Crossing Consultation

Building the roads

As described during statutory consultation, we plan to build the new roads, junctions, bridges and underpasses at the same time as the tunnelling work.

The new road would connect the M2/A2 in Kent with the M25 south of junction 29 in Essex, crossing the A13 north of Chadwell St Mary. To connect the existing roads, as well as the A1089, we would construct new junctions and would have to carry out some work on these roads as well.

To facilitate the construction of the Lower Thames Crossing, where required, we would modify some of the existing side roads and infrastructure along the route.

How we would use other public roads

During construction, we would aim to keep road closures to a minimum. Where roads are affected by closures and diversions, temporary traffic lights or lane restrictions, we would ensure road users know in advance, so they can plan their journeys accordingly. Later in this chapter, we have outlined the routes our heavy goods vehicles (HGVs) are likely to take to transport material to and from our construction sites. Below we have detailed the average number of HGV journeys per month for each of our five construction areas, with each HGV journey comprising one trip to the site and another away from it.

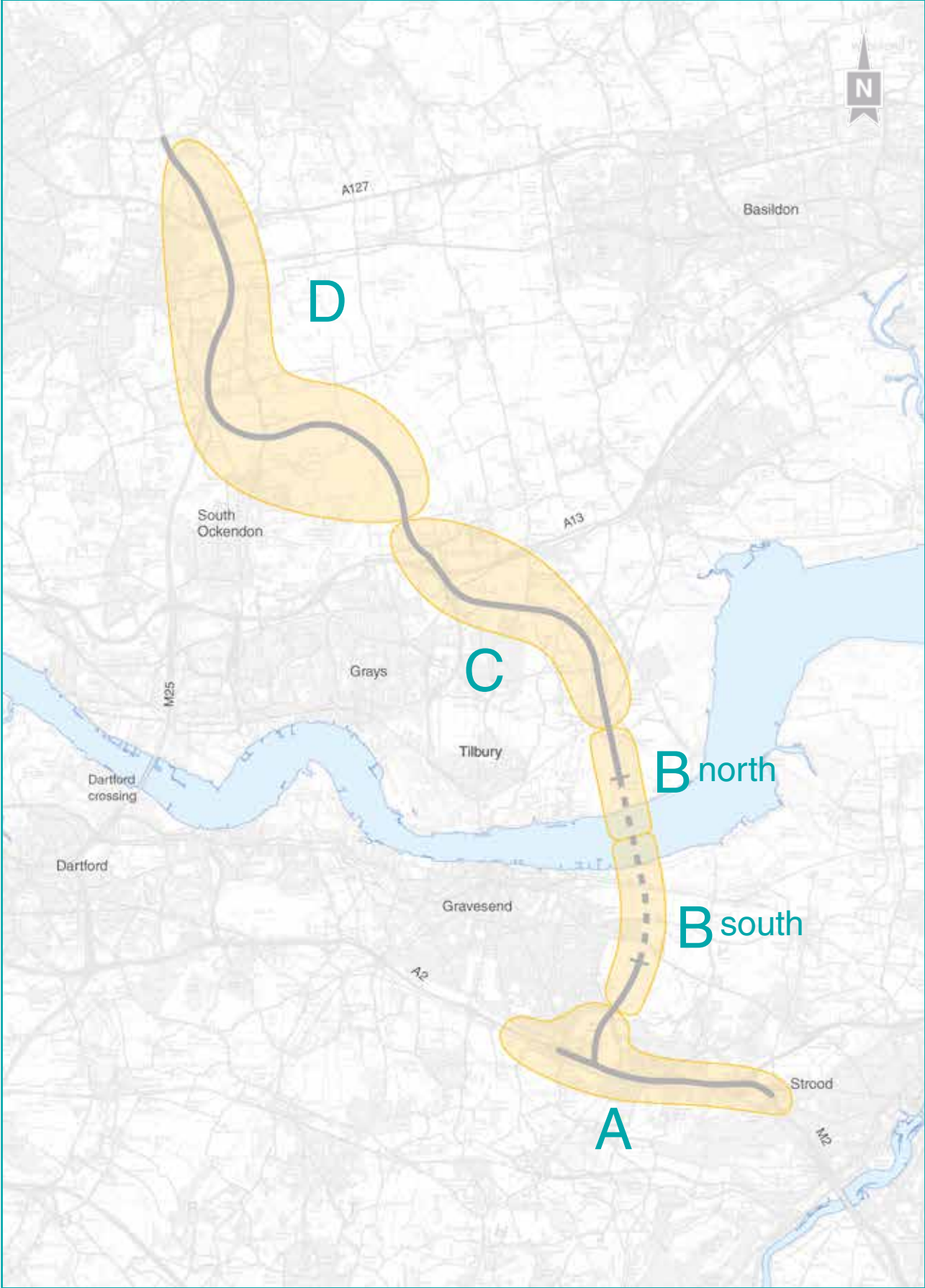
Following engagement with local highway authorities and our ongoing assessments, we have amended the routes that construction traffic would use to travel to the sites. We have aimed to identify those that are most practicable and that minimise the impact on local roads and communities. Where there are no roads to the construction site, we would build temporary access roads that connect to the existing network.

Roads to the construction sites

The Lower Thames Crossing is split into five construction areas labelled A-D. As we now have a greater understanding of our construction requirements and the potential routes construction vehicles will use to access the sites, we have been able to update the information available during our statutory consultation.

We also have more information on how we can use and reuse material on our construction sites more efficiently, which will

Location of our construction areas



reduce the need for material deliveries and vehicle movements. Where material has to be transported from elsewhere, we better understand the capabilities of the local supply chain and expect most of this to be supplied from nearby locations. We are also continuing to explore opportunities for alternative modes of transport, such as river barges, to transport materials and waste to and from our construction sites.

We have provided revised figures for the potential number of HGV movements in the table below, with a brief description of why this information has changed on the following pages.

Construction area	Average number of HGV journeys/month displayed during statutory consultation 2018	Average number of HGV journeys/month – based on updated information
Area A	4,700	2,900
Area B south	1,100	800
Area B north	4,500	5,300
Area C	5,200	2,100
Area D	2,000	2,200
Total	17,500	13,300

Area A: We have been able to significantly cut the number of potential HGV journeys by assessing how material can be reused on our construction site to create embankments and landscaping that would help mitigate the impacts of the road.

Area B South: Moving the tunnel entrance further south has enabled us to reduce the number of HGV journeys. The maps on the following pages show the routes that construction vehicles are likely to use. The map for Areas A and B South shows a construction area over the tunnel route; no part of this is an above ground structure and would not impact on the sensitive ecological area between the southern tunnel entrance and the river.

Area B North: The potential number of HGV journeys has increased as the design of the project in this area has been updated and more information has become available. We are exploring opportunities to reduce the number by transporting material via the river.



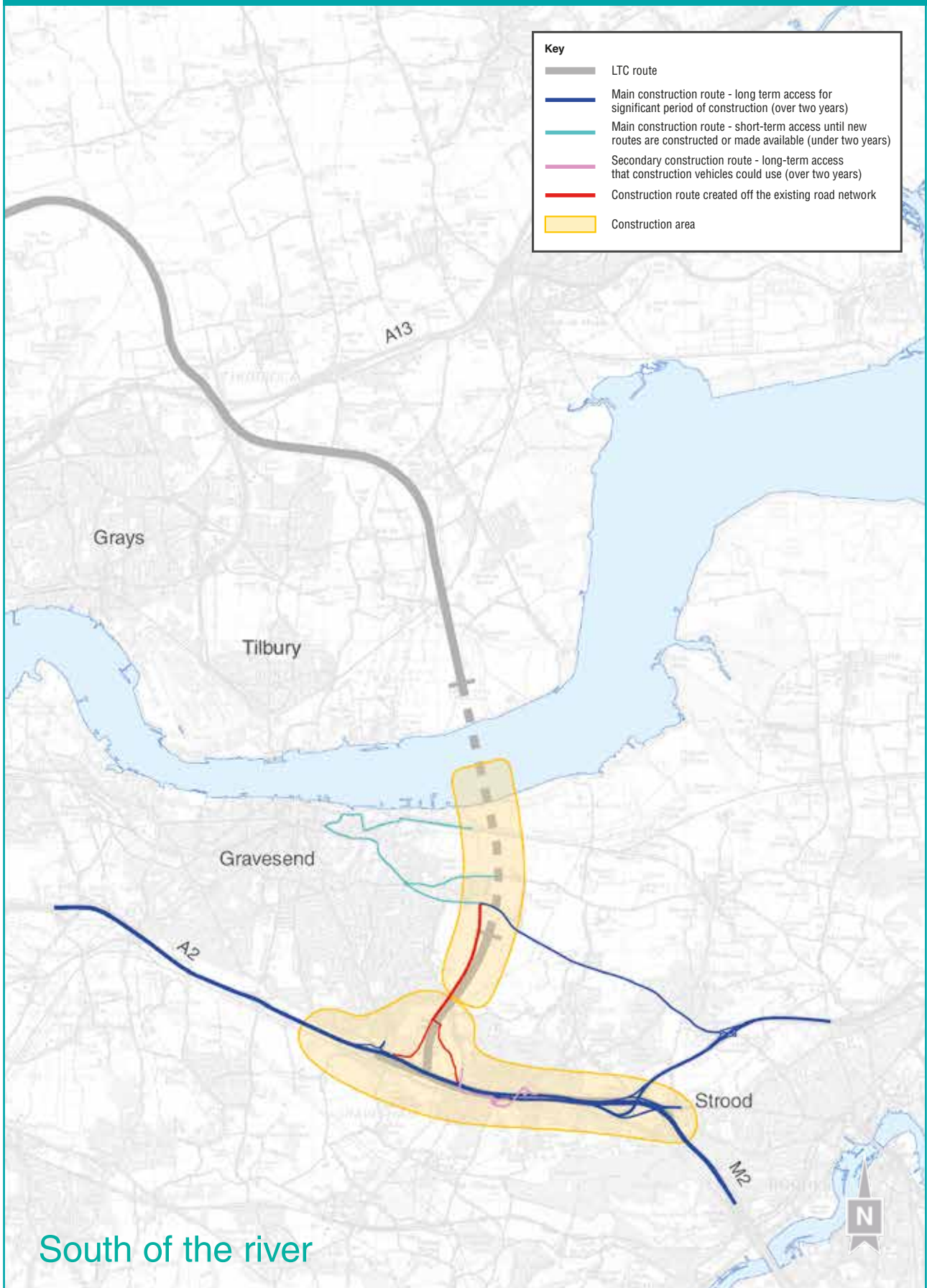
Area C: Following further design developments in this area, we have been able to make a better assessment on how material will be reused. This has enabled us to significantly reduce the number of HGV journeys on the road network.

Area D: Following further design developments in this area, we now have a better understanding of how material is required to be used for construction. There is an increase in material needed for this construction area, which has caused a slight increase in the potential number of HGV journeys on the road network.

The maps on the following pages show the construction areas and the routes that construction vehicles are likely to use.

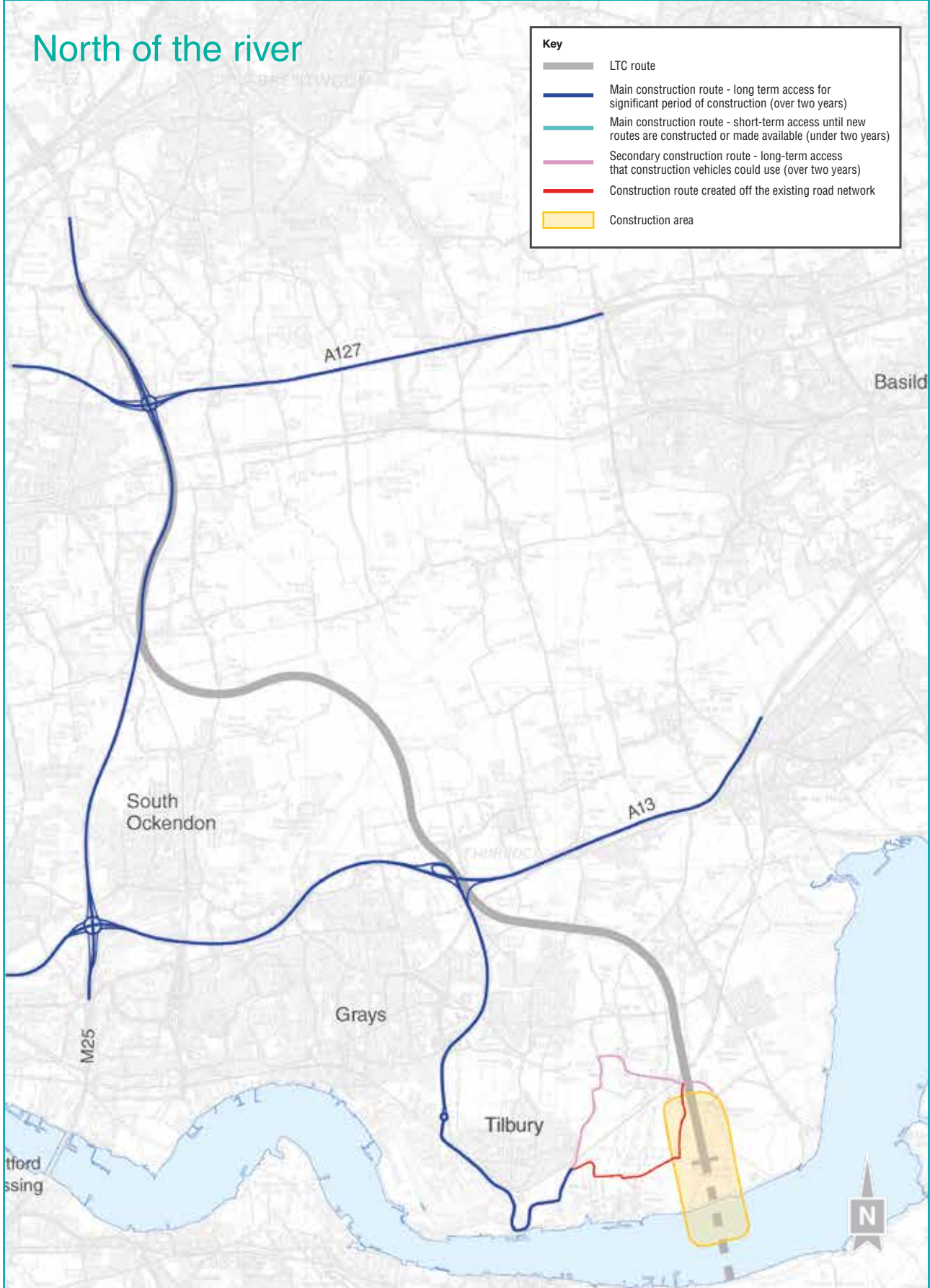
Each road has been marked in a different colour, depending on whether it is a main or secondary route, and the long or short-term access requirements. These are based on our current plans and are subject to change as a result of our ongoing dialogue with local highway authorities.

Routes to service construction Areas A and B South

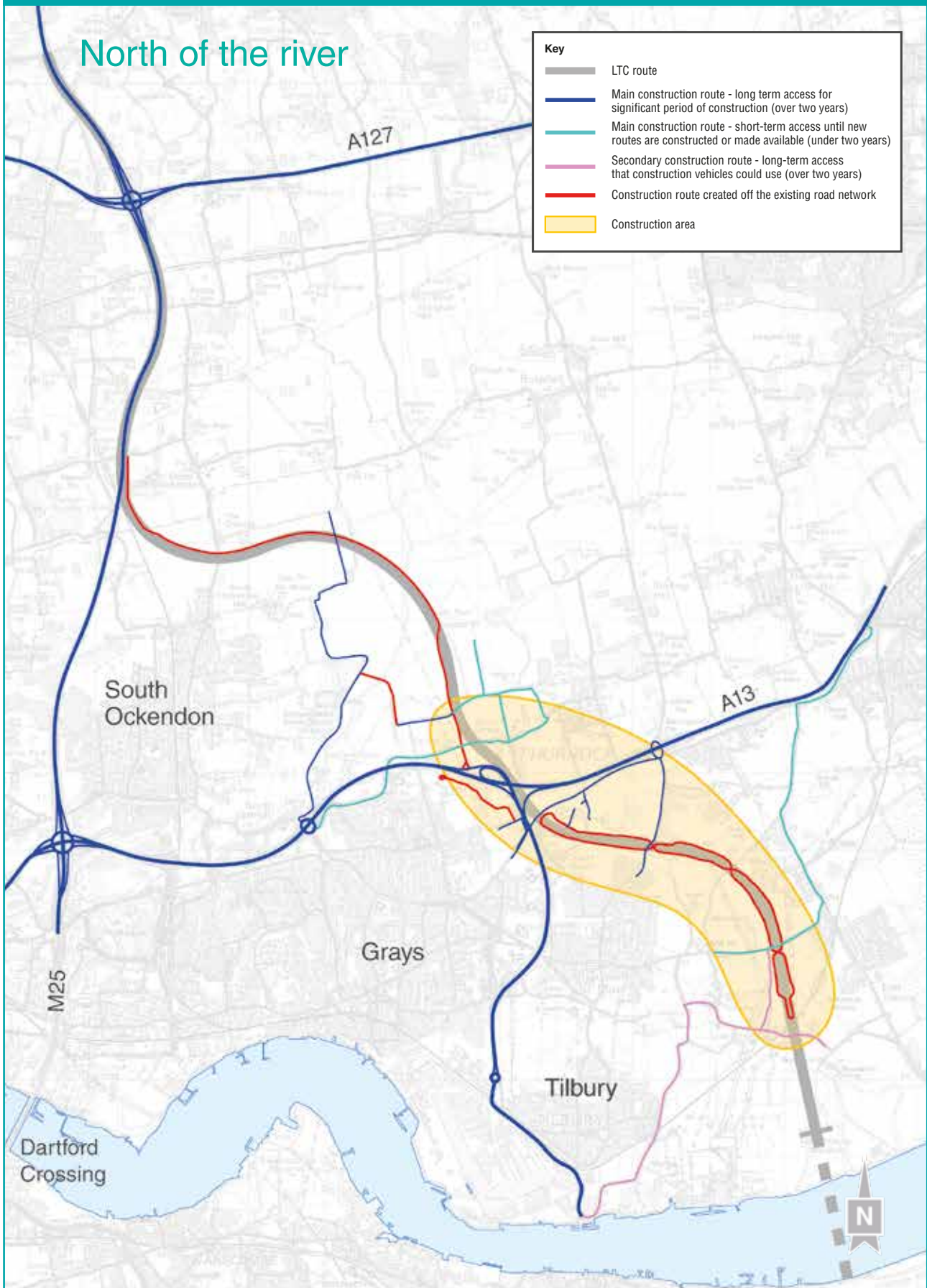


Routes to service construction Area B North

North of the river

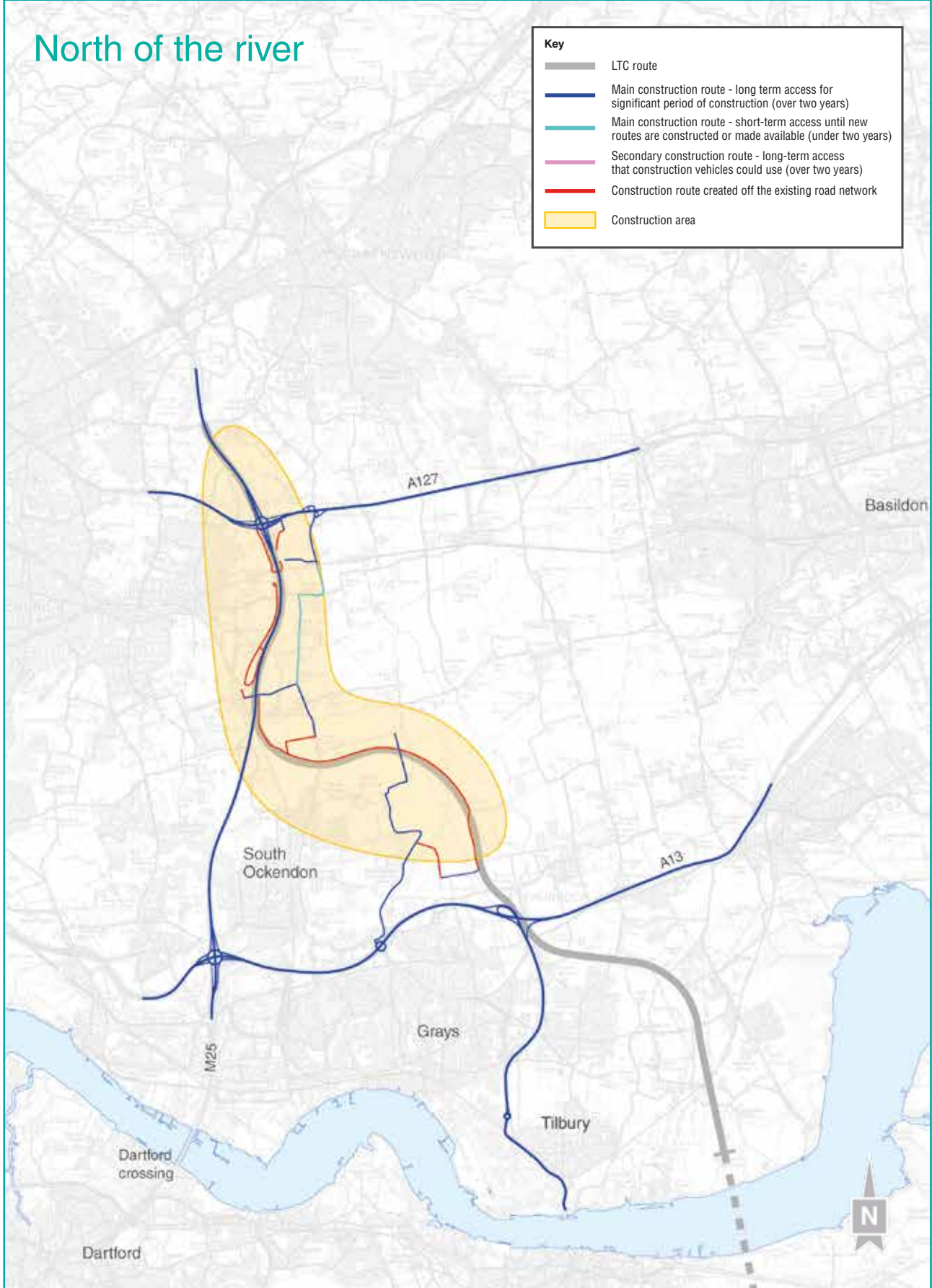


Routes to service construction Area C



Routes to service construction Area D

North of the river



Appendix B – Cumulative Development Traffic Flows

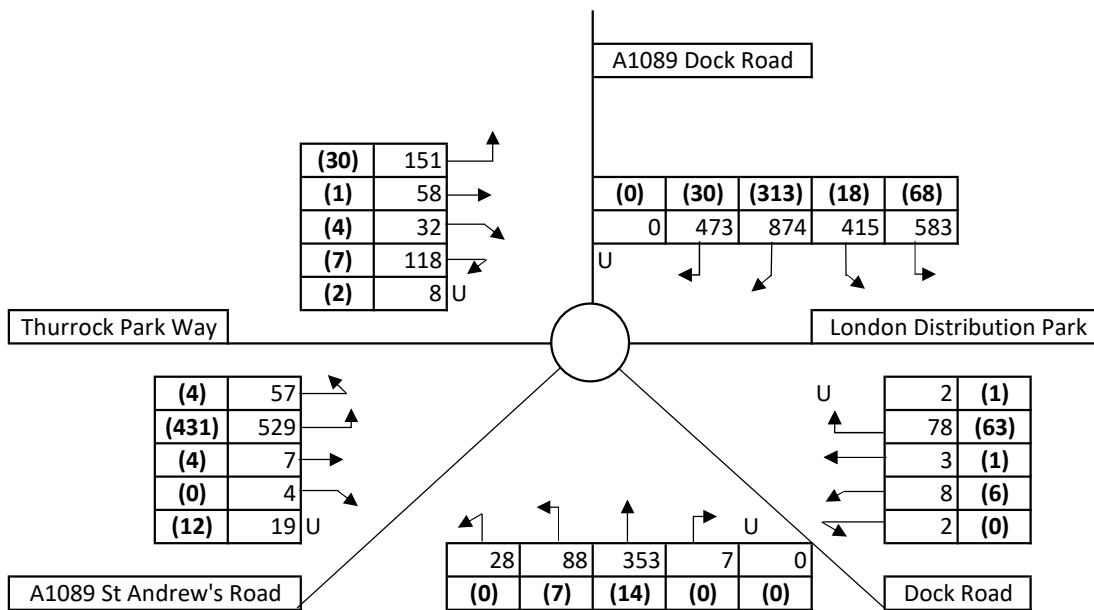
Road Link ID	Road Link / Description	Data	Committed Development Traffic Flow
			24 hr AADT
1	A13 between M25 junction 30 and A126	Total	3954
		HV	1191
2	A13 between A126 and A1012	Total	3954
		HV	1191
3	A13 between A1089 and A1012	Total	3954
		HV	1191
4	A1089, between Marshfoot Road roundabout and A13	Total	1183
		HV	675
11	Coopers Shaw Road / Church Road / Station Road, between Gun Hill Road and EMR East Tilbury junction	Total	274
		HV	170
15	A13, between Orsett Cock roundabout and A1089	Total	4051
		HV	1196
16	A1089 Dock Approach Road, between Marshfoot Road roundabout and ASDA roundabout	Total	1183
		HV	675
17	A1089 St Andrews Road, between ASDA Roundabout and Port of Tilbury Gate 1	Total	907
		HV	643
18	A1089 St Andrews Road, between Tilbury Gate 1 and RWE Road	Total	447
		HV	343
19	RWE Road, between A1089 St Andrews Road and Fort Road	Total	369
		HV	264
20	Fort Road between RWE Road and Brennan Road	Total	274
		HV	170
21	Fort Road between Brennan Road and Coopers Shaw Road	Total	274
		HV	170


Appendix C – Traffic Flow Diagrams

KEY

Hour: 07:00-08:00

10	Totals
(1)	HGVs

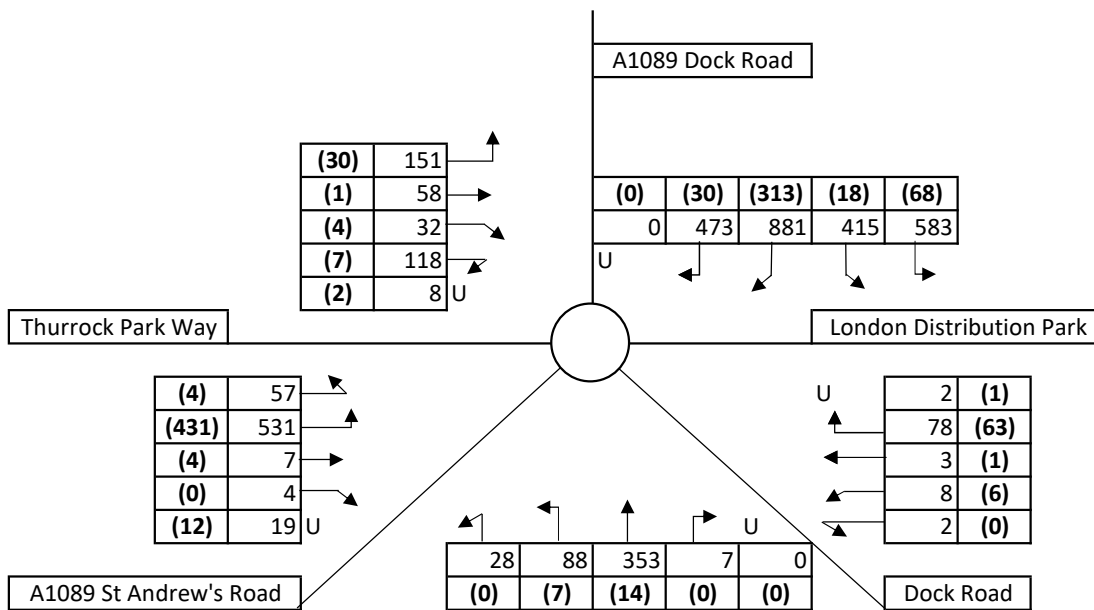



	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Average Construction + Cumulative 07:00 to 08:00 Hour Traffic Flows

KEY

Hour: 07:00-08:00

10	Totals
(1)	HGVs

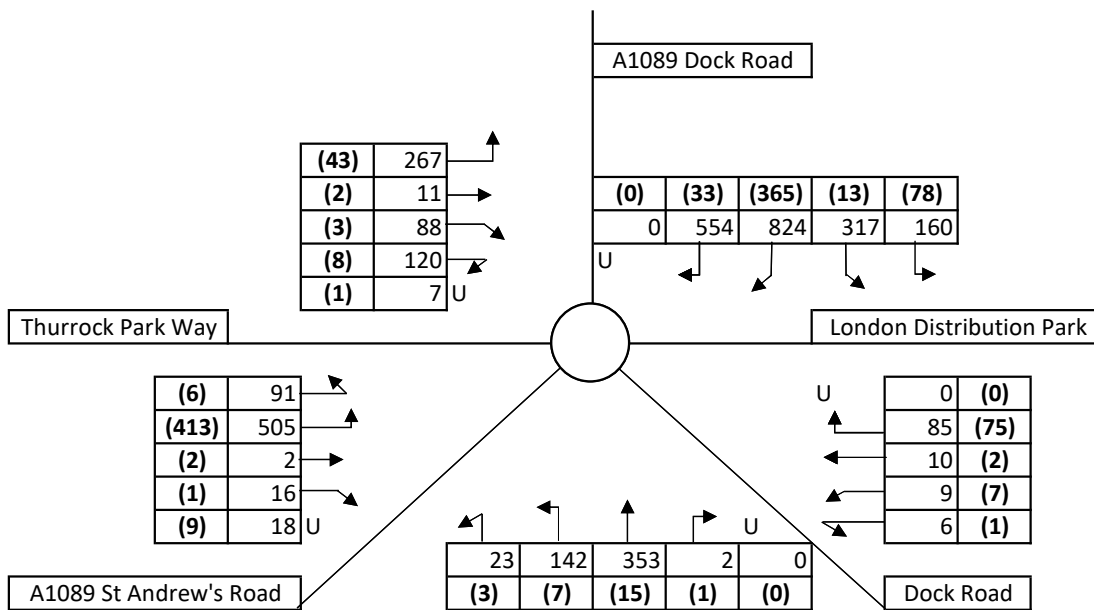



 MAKING COMPLEX EASY	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Peak Construction + Cumulative 07:00 to 08:00 Hour Traffic Flows

KEY

Hour: 08:15-09:15

10	Totals
(1)	HGVs

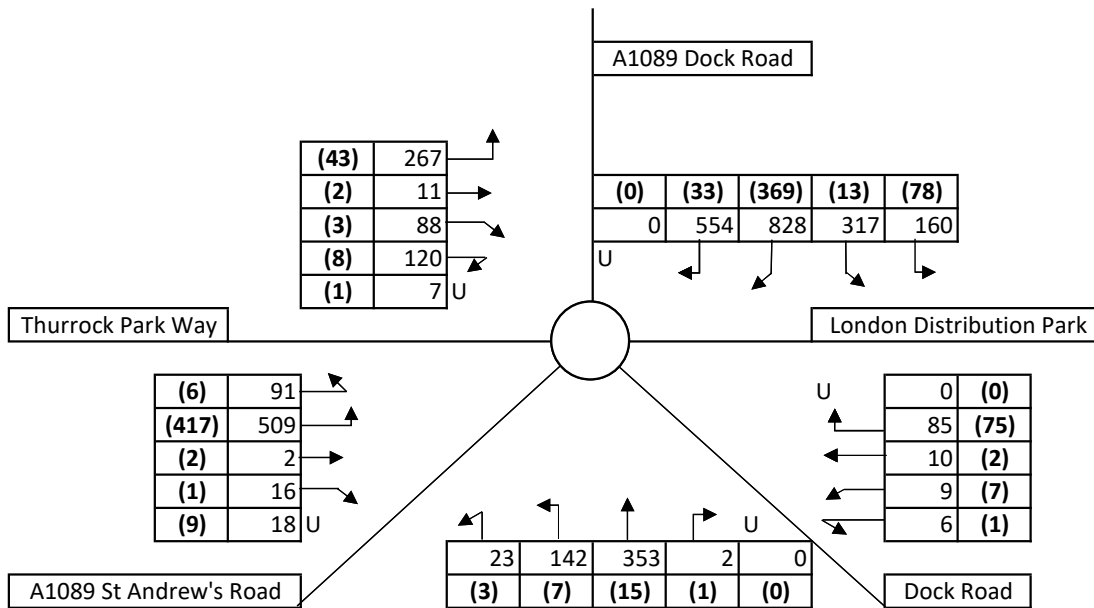



	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Average Construction + Cumulative 08:15 to 09:15 Hour Traffic Flows

KEY

Hour: 08:15-09:15

10	Totals
(1)	HGVs

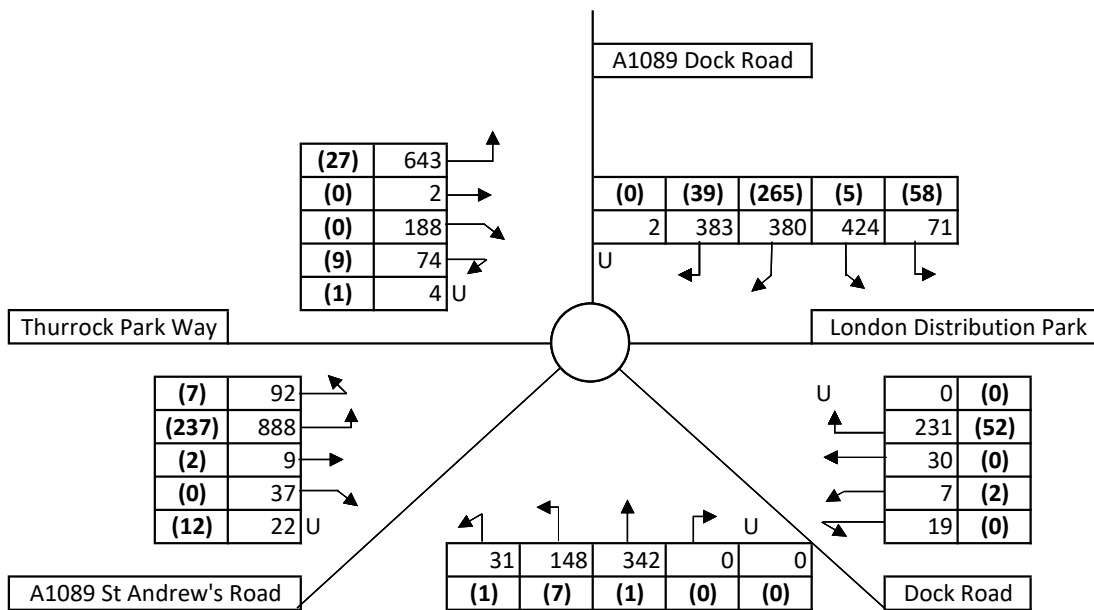



	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Peak Construction + Cumulative 08:15 to 09:15 Hour Traffic Flows

KEY

Hour: 17:00 - 18:00

10	Totals
(1)	HGVs

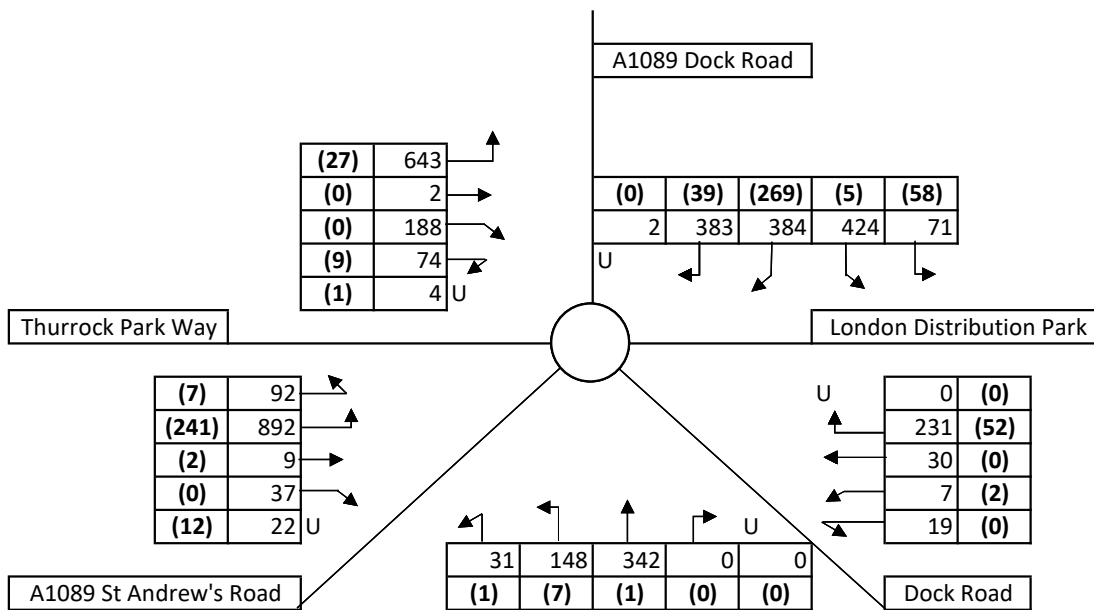



	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Average Construction + Cumulative 17:00 to 18:00 Hour Traffic Flows

KEY

Hour: 17:00 - 18:00

10	Totals
(1)	HGVs

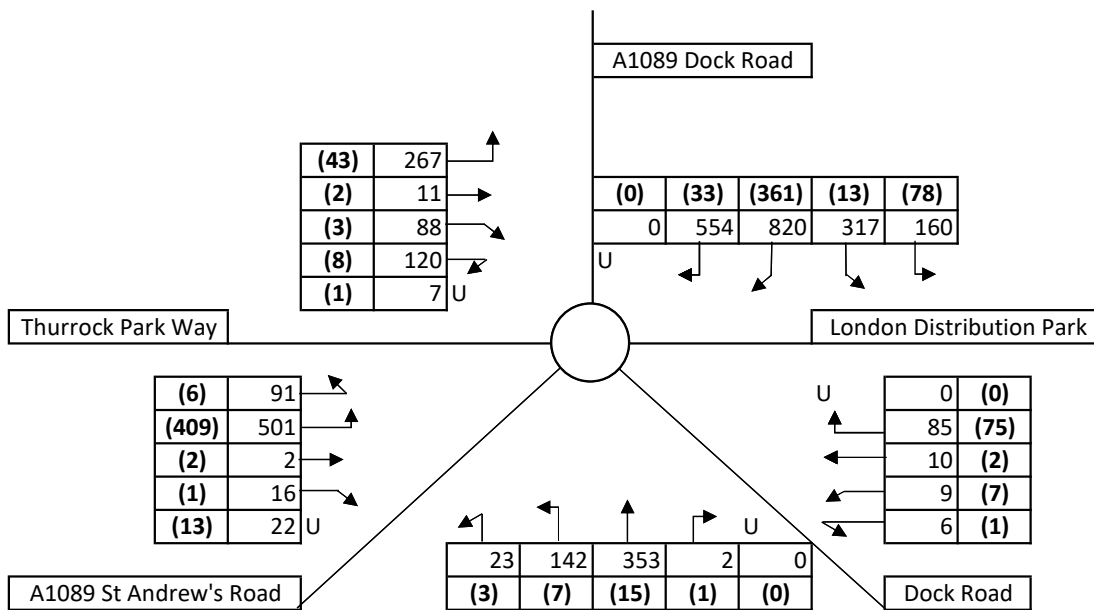



 MAKING COMPLEX EASY	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Peak Construction + Cumulative 17:00 to 18:00 Hour Traffic Flows

KEY

Hour: 08:15-09:15

10	Totals
(1)	HGVs

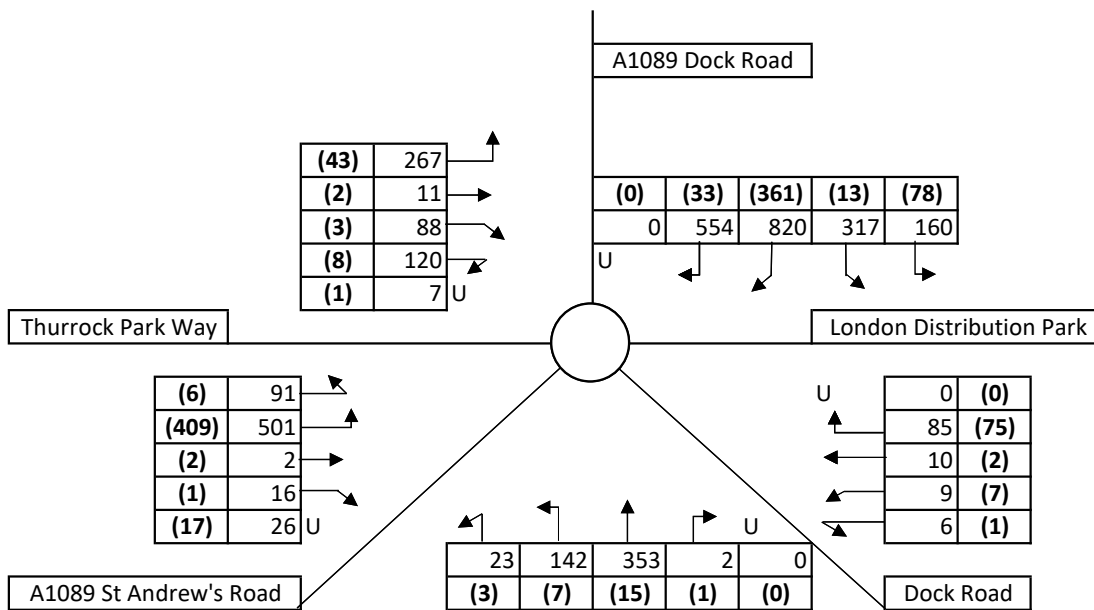



	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Average Construction (HGV U-turn) + Cumulative 08:15 to 09:15 Hour Traffic Flows

KEY

Hour: 08:15-09:15

10	Totals
(1)	HGVs

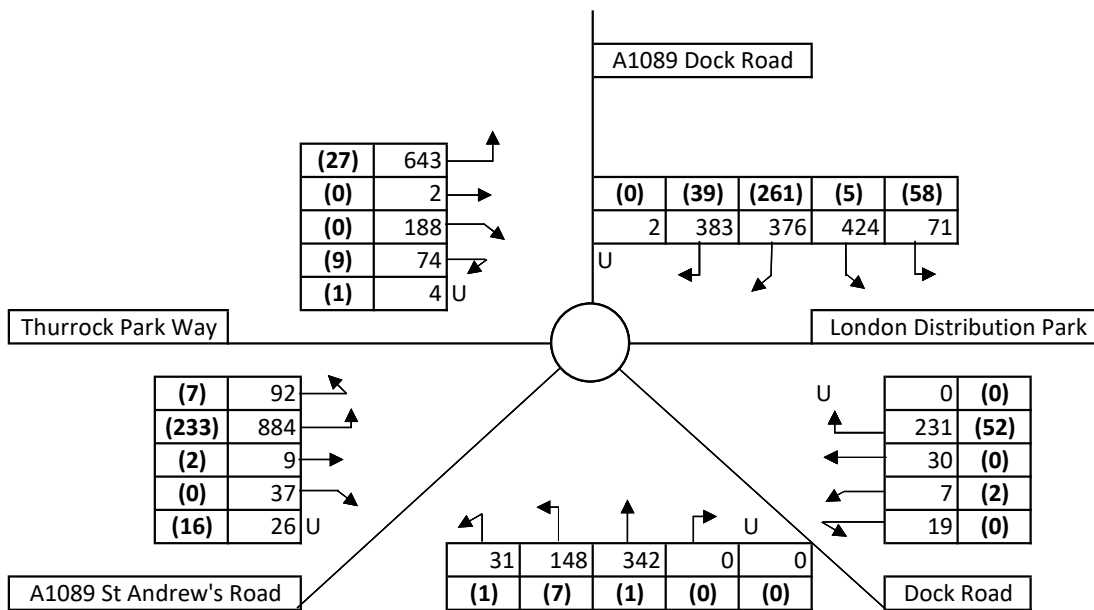



	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Peak Construction (HGV U-turn) + Cumulative 08:15 to 09:15 Hour Traffic Flows

KEY

Hour: 17:00 - 18:00

10	Totals
(1)	HGVs

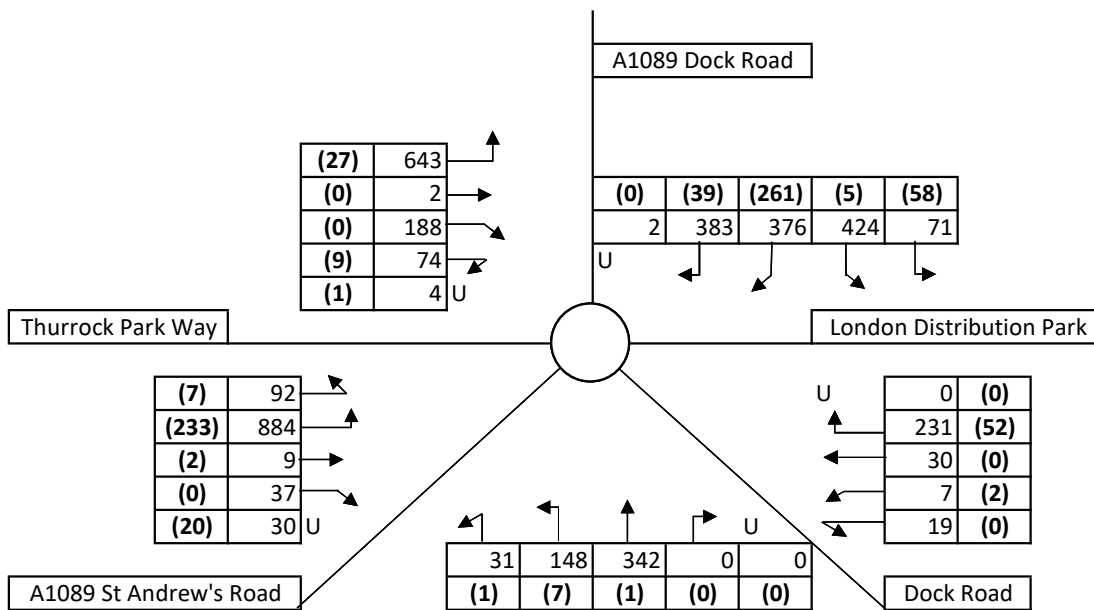



	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Average Construction (U-turn) + Cumulative 17:00 to 18:00 Hour Traffic Flows

KEY

Hour: 17:00 - 18:00

10	Totals
(1)	HGVs



	Project	JNY9639, Thurrock Generation Plant
	Appendix	C
	Title	2022 Baseline + Peak Construction (U-turn) + Cumulative 17:00 to 18:00 Hour Traffic Flows

Appendix D – Junction Assessments

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: Asda Rbt Mit + LTC test 0700-0800.j9
Path: P:\JNY9639 - Thurrock Generation Plant\Transport\Arcady
Report generation date: 12/09/2020 20:10:11

- »2022 + Comm, AM
- »2022 + Comm + Av Con 1, AM
- »2022 + Comm + Peak Con 1, AM
- »2022 + Comm + Av Con 1 + Cumu, AM
- »2022 + Comm + Peak Con 1 + Cumu, AM

Summary of junction performance

AM				
	Set ID	Queue (Veh)	Delay (s)	RFC
2022 + Comm				
1 - London Distribution Park	D1	0.2	9.01	0.18
2 - Dock Road		1.1	8.81	0.54
3 - St Andrews Road		1.3	7.23	0.56
4 - Thurrock Park Way		0.6	5.46	0.39
5 - A1089 Dock Road		310.8	581.82	1.36
2022 + Comm + Av Con 1				
1 - London Distribution Park	D2	0.2	9.02	0.19
2 - Dock Road		1.2	8.86	0.54
3 - St Andrews Road		1.3	7.26	0.57
4 - Thurrock Park Way		0.6	5.48	0.39
5 - A1089 Dock Road		329.0	611.75	1.37
2022 + Comm + Peak Con 1				
1 - London Distribution Park	D3	0.2	9.03	0.19
2 - Dock Road		1.2	8.88	0.54
3 - St Andrews Road		1.3	7.23	0.57
4 - Thurrock Park Way		0.6	5.48	0.39
5 - A1089 Dock Road		336.5	625.98	1.38
2022 + Comm + Av Con 1 + Cumu				
1 - London Distribution Park	D4	0.2	9.17	0.19
2 - Dock Road		1.3	9.46	0.56
3 - St Andrews Road		1.5	8.18	0.61
4 - Thurrock Park Way		0.7	5.77	0.41
5 - A1089 Dock Road		512.6	912.96	1.47
2022 + Comm + Peak Con 1 + Cumu				
1 - London Distribution Park	D5	0.2	9.17	0.19
2 - Dock Road		1.3	9.46	0.56
3 - St Andrews Road		1.5	8.17	0.61
4 - Thurrock Park Way		0.7	5.78	0.41
5 - A1089 Dock Road		518.0	920.10	1.47

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	26/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EUR\Joanna.gunn
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	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D1	2022 + Comm	AM	DIRECT	07:00	08:00	60	15	✓
D2	2022 + Comm + Av Con 1	AM	DIRECT	07:00	08:00	60	15	✓
D3	2022 + Comm + Peak Con 1	AM	DIRECT	07:00	08:00	60	15	✓
D4	2022 + Comm + Av Con 1 + Cumu	AM	DIRECT	07:00	08:00	60	15	✓
D5	2022 + Comm + Peak Con 1 + Cumu	AM	DIRECT	07:00	08:00	60	15	✓

Analysis Set Details

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

2022 + Comm, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	328.80	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	London Distribution Park	
2	Dock Road	
3	St Andrews Road	
4	Thurrock Park Way	
5	A1089 Dock 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 - London Distribution Park	3.50	8.60	15.0	45.0	116.0	38.0	
2 - Dock Road	3.70	7.30	22.5	21.0	116.0	32.0	
3 - St Andrews Road	7.42	8.11	37.0	36.0	116.0	27.0	
4 - Thurrock Park Way	3.70	9.00	13.5	45.0	116.0	34.0	
5 - A1089 Dock Road	7.45	7.45	0.0	60.0	116.0	25.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1 - London Distribution Park	0.460	449.879
2 - Dock Road	0.464	458.508
3 - St Andrews Road	0.568	631.041
4 - Thurrock Park Way	0.471	464.299
5 - A1089 Dock Road	0.550	592.526

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 period length (min)	Time segment length (min)	Run automatically
D1	2022 + Comm	AM	DIRECT	07:00	08:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
07:00 - 07:15	From					
	1 - London Distribution Park	0.00	1.00	4.00	0.00	22.00
	2 - Dock Road	1.00	0.00	6.00	21.00	80.00
	3 - St Andrews Road	2.00	2.00	6.00	17.00	135.00
	4 - Thurrock Park Way	26.00	7.00	24.00	1.00	30.00
	5 - A1089 Dock Road	227.00	146.00	185.00	84.00	0.00

Demand (Veh/TS)

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
07:15 - 07:30	From					
	1 - London Distribution Park	0.00	0.00	1.00	1.00	19.00
	2 - Dock Road	1.00	0.00	9.00	21.00	80.00
	3 - St Andrews Road	2.00	0.00	4.00	10.00	114.00
	4 - Thurrock Park Way	11.00	4.00	29.00	3.00	33.00
	5 - A1089 Dock Road	219.00	144.00	159.00	89.00	0.00

Demand (Veh/TS)

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
07:30 - 07:45	From					
	1 - London Distribution Park	1.00	0.00	1.00	0.00	20.00
	2 - Dock Road	3.00	0.00	9.00	24.00	93.00
	3 - St Andrews Road	1.00	1.00	6.00	12.00	110.00
	4 - Thurrock Park Way	14.00	12.00	36.00	1.00	43.00
	5 - A1089 Dock Road	70.00	64.00	185.00	112.00	0.00

Demand (Veh/TS)

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	1.00	1.00	1.00	2.00	17.00
	2 - Dock Road	1.00	0.00	4.00	21.00	93.00
	3 - St Andrews Road	1.00	1.00	3.00	18.00	136.00
	4 - Thurrock Park Way	7.00	9.00	29.00	2.00	43.00
	5 - A1089 Dock Road	69.00	62.00	217.00	112.00	0.00

Vehicle Mix
Heavy Vehicle Percentages

 07:00 -
07:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	80
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	75
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	42	13	0

Heavy Vehicle Percentages

 07:15 -
07:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	82
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	76
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	42	13	0

Heavy Vehicle Percentages

 07:30 -
07:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	87
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	75
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	18	9	41	13	0

Heavy Vehicle Percentages

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	87
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	75
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	19	9	41	13	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.18	9.01	0.2	A	23.00	91.99
2 - Dock Road	0.54	8.81	1.1	A	116.75	467.00
3 - St Andrews Road	0.56	7.23	1.3	A	145.25	580.99
4 - Thurrock Park Way	0.39	5.46	0.6	A	91.00	364.01
5 - A1089 Dock Road	1.36	581.82	310.8	F	539.55	2158.18

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	342.85	146.13	0.185	26.78	194.62	0.0	0.2	7.527	A
2 - Dock Road	108.00	108.00	253.06	280.84	0.385	107.38	116.57	0.0	0.6	5.170	A
3 - St Andrews Road	162.00	162.00	185.58	306.79	0.528	160.90	174.87	0.0	1.1	6.125	A
4 - Thurrock Park Way	88.00	88.00	246.37	263.97	0.333	87.50	100.11	0.0	0.5	5.085	A
5 - A1089 Dock Road	642.00	642.00	68.60	471.58	1.361	468.88	265.27	0.0	173.1	168.669	F

07:15 - 07:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	21.00	21.00	349.75	143.80	0.146	21.05	185.82	0.2	0.2	7.337	A
2 - Dock Road	111.00	111.00	254.72	283.31	0.392	110.98	116.08	0.6	0.6	5.222	A
3 - St Andrews Road	130.00	130.00	192.57	297.73	0.437	130.32	173.13	1.1	0.8	5.385	A
4 - Thurrock Park Way	80.00	80.00	220.29	279.13	0.287	80.09	102.60	0.5	0.4	4.525	A
5 - A1089 Dock Road	611.00	611.00	54.12	481.48	1.265	481.44	246.26	173.1	302.7	456.166	F

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	377.03	130.37	0.169	21.97	149.76	0.2	0.2	8.301	A
2 - Dock Road	129.00	129.00	292.60	262.20	0.492	128.68	106.40	0.6	1.0	6.724	A
3 - St Andrews Road	130.00	130.00	225.35	289.52	0.449	129.98	195.94	0.8	0.8	5.639	A
4 - Thurrock Park Way	106.00	106.00	234.71	271.39	0.391	105.77	120.61	0.4	0.6	5.426	A
5 - A1089 Dock Road	431.00	431.00	74.82	456.49	0.987	451.98	265.66	302.7	278.7	579.632	F

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	418.95	121.88	0.180	21.98	80.26	0.2	0.2	9.009	A
2 - Dock Road	119.00	119.00	366.11	220.72	0.539	118.81	74.82	1.0	1.1	8.813	A
3 - St Andrews Road	159.00	159.00	249.71	282.65	0.563	158.54	235.21	0.8	1.3	7.226	A
4 - Thurrock Park Way	90.00	90.00	252.43	255.19	0.353	90.09	155.82	0.6	0.5	5.455	A
5 - A1089 Dock Road	460.00	460.00	54.11	445.25	1.040	445.10	288.40	278.7	293.6	581.823	F

2022 + Comm + Av Con 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	346.36	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 period length (min)	Time segment length (min)	Run automatically
D2	2022 + Comm + Av Con 1	AM	DIRECT	07:00	08:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
07:00 - 07:15	From	1 - London Distribution Park	0.00	1.00	4.00	0.00	22.00
	2 - Dock Road	1.00	0.00	6.00	21.00	80.00	
	3 - St Andrews Road	2.00	2.00	6.00	17.00	136.00	
	4 - Thurrock Park Way	26.00	7.00	24.00	1.00	30.00	
	5 - A1089 Dock Road	227.00	146.00	190.00	84.00	0.00	

Demand (Veh/TS)

 07:15 -
07:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	0.00	1.00	1.00	19.00
	2 - Dock Road	1.00	0.00	9.00	21.00	80.00
	3 - St Andrews Road	2.00	0.00	4.00	10.00	115.00
	4 - Thurrock Park Way	11.00	4.00	29.00	3.00	33.00
	5 - A1089 Dock Road	219.00	144.00	163.00	89.00	0.00

Demand (Veh/TS)

 07:30 -
07:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	1.00	0.00	1.00	0.00	20.00
	2 - Dock Road	3.00	0.00	9.00	24.00	93.00
	3 - St Andrews Road	1.00	1.00	6.00	12.00	111.00
	4 - Thurrock Park Way	14.00	12.00	36.00	1.00	43.00
	5 - A1089 Dock Road	70.00	64.00	190.00	112.00	0.00

Demand (Veh/TS)

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	1.00	1.00	1.00	2.00	17.00
	2 - Dock Road	1.00	0.00	4.00	21.00	93.00
	3 - St Andrews Road	1.00	1.00	3.00	18.00	137.00
	4 - Thurrock Park Way	7.00	9.00	29.00	2.00	43.00
	5 - A1089 Dock Road	69.00	62.00	221.00	112.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 07:00 -
07:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	80
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	75
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	41	13	0

Heavy Vehicle Percentages

 07:15 -
07:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	84
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	75
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	41	13	0

Heavy Vehicle Percentages

 07:30 -
07:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	82
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	76
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	18	9	41	13	0

Heavy Vehicle Percentages

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	87
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	75
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	19	9	41	13	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.19	9.02	0.2	A	23.00	91.99
2 - Dock Road	0.54	8.86	1.2	A	116.75	467.00
3 - St Andrews Road	0.57	7.26	1.3	A	146.25	584.99
4 - Thurrock Park Way	0.39	5.48	0.6	A	91.00	364.01
5 - A1089 Dock Road	1.37	611.75	329.0	F	544.47	2177.86

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	344.44	145.80	0.185	26.78	193.50	0.0	0.2	7.547	A
2 - Dock Road	108.00	108.00	255.36	279.96	0.386	107.38	115.85	0.0	0.6	5.196	A
3 - St Andrews Road	163.00	163.00	185.16	306.84	0.531	161.88	177.58	0.0	1.1	6.163	A
4 - Thurrock Park Way	88.00	88.00	247.35	263.23	0.334	87.50	99.69	0.0	0.5	5.107	A
5 - A1089 Dock Road	647.00	647.00	68.60	471.98	1.371	469.34	266.25	0.0	177.7	172.754	F

07:15 - 07:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	21.00	21.00	351.20	142.07	0.148	21.05	184.73	0.2	0.2	7.438	A
2 - Dock Road	111.00	111.00	256.90	282.32	0.393	110.98	115.35	0.6	0.6	5.252	A
3 - St Andrews Road	131.00	131.00	192.09	299.24	0.438	131.33	175.80	1.1	0.8	5.370	A
4 - Thurrock Park Way	80.00	80.00	221.30	278.70	0.287	80.09	102.12	0.5	0.4	4.535	A
5 - A1089 Dock Road	615.00	615.00	54.12	481.85	1.273	481.81	247.27	177.7	310.8	467.845	F

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	377.23	133.76	0.164	21.98	150.55	0.2	0.2	8.051	A
2 - Dock Road	129.00	129.00	292.70	262.80	0.491	128.69	106.52	0.6	1.0	6.696	A
3 - St Andrews Road	131.00	131.00	223.92	288.84	0.454	130.96	197.47	0.8	0.8	5.699	A
4 - Thurrock Park Way	106.00	106.00	235.71	270.60	0.392	105.77	119.17	0.4	0.6	5.452	A
5 - A1089 Dock Road	436.00	436.00	74.82	457.29	1.000	452.97	266.66	310.8	291.0	599.659	F

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	419.19	121.69	0.181	21.98	79.62	0.2	0.2	9.024	A
2 - Dock Road	119.00	119.00	366.91	220.10	0.541	118.80	74.26	1.0	1.2	8.865	A
3 - St Andrews Road	160.00	160.00	248.61	282.97	0.565	159.54	237.10	0.8	1.3	7.263	A
4 - Thurrock Park Way	90.00	90.00	253.42	254.47	0.354	90.09	154.73	0.6	0.6	5.477	A
5 - A1089 Dock Road	464.00	464.00	54.11	444.81	1.050	444.70	289.39	291.0	310.3	611.754	F

2022 + Comm + Peak Con 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	354.76	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2022 + Comm + Peak Con 1	AM	DIRECT	07:00	08:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
07:00 - 07:15	From					
	1 - London Distribution Park	0.00	1.00	4.00	0.00	22.00
	2 - Dock Road	1.00	0.00	6.00	21.00	80.00
	3 - St Andrews Road	2.00	2.00	6.00	17.00	137.00
	4 - Thurrock Park Way	26.00	7.00	24.00	1.00	30.00
	5 - A1089 Dock Road	227.00	146.00	192.00	84.00	0.00

Demand (Veh/TS)

 07:15 -
07:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	0.00	1.00	1.00	19.00
	2 - Dock Road	1.00	0.00	9.00	21.00	80.00
	3 - St Andrews Road	2.00	0.00	4.00	10.00	116.00
	4 - Thurrock Park Way	11.00	4.00	29.00	3.00	33.00
	5 - A1089 Dock Road	219.00	144.00	165.00	89.00	0.00

Demand (Veh/TS)

 07:30 -
07:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	1.00	0.00	1.00	0.00	20.00
	2 - Dock Road	3.00	0.00	9.00	24.00	93.00
	3 - St Andrews Road	1.00	1.00	6.00	12.00	111.00
	4 - Thurrock Park Way	14.00	12.00	36.00	1.00	43.00
	5 - A1089 Dock Road	70.00	64.00	192.00	112.00	0.00

Demand (Veh/TS)

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	1.00	1.00	1.00	2.00	17.00
	2 - Dock Road	1.00	0.00	4.00	21.00	93.00
	3 - St Andrews Road	1.00	1.00	3.00	18.00	138.00
	4 - Thurrock Park Way	7.00	9.00	29.00	2.00	43.00
	5 - A1089 Dock Road	69.00	62.00	223.00	112.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 07:00 -
07:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	80
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	74
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	41	13	0

Heavy Vehicle Percentages

 07:15 -
07:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	84
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	75
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	41	13	0

Heavy Vehicle Percentages

 07:30 -
07:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	82
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	75
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	18	9	41	13	0

Heavy Vehicle Percentages

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	87
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	74
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	19	9	40	13	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.19	9.03	0.2	A	23.00	91.99
2 - Dock Road	0.54	8.88	1.2	A	116.75	467.00
3 - St Andrews Road	0.57	7.23	1.3	A	147.00	587.99
4 - Thurrock Park Way	0.39	5.48	0.6	A	91.00	364.01
5 - A1089 Dock Road	1.38	625.98	336.5	F	546.30	2185.21

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	344.77	145.63	0.185	26.77	192.90	0.0	0.2	7.559	A
2 - Dock Road	108.00	108.00	256.08	279.49	0.386	107.38	115.46	0.0	0.6	5.210	A
3 - St Andrews Road	164.00	164.00	184.93	308.38	0.532	162.88	178.53	0.0	1.1	6.140	A
4 - Thurrock Park Way	88.00	88.00	248.34	263.07	0.335	87.50	99.47	0.0	0.5	5.112	A
5 - A1089 Dock Road	649.00	649.00	68.60	471.69	1.376	469.08	267.25	0.0	179.9	174.979	F

07:15 - 07:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	21.00	21.00	351.53	141.89	0.148	21.05	184.06	0.2	0.2	7.450	A
2 - Dock Road	111.00	111.00	257.69	281.80	0.394	110.98	114.89	0.6	0.6	5.268	A
3 - St Andrews Road	132.00	132.00	191.79	299.28	0.441	132.32	176.88	1.1	0.8	5.402	A
4 - Thurrock Park Way	80.00	80.00	222.29	277.96	0.288	80.09	101.82	0.5	0.4	4.552	A
5 - A1089 Dock Road	617.00	617.00	54.12	481.50	1.278	481.47	248.26	179.9	315.5	474.638	F

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	376.92	133.84	0.164	21.98	151.05	0.2	0.2	8.046	A
2 - Dock Road	129.00	129.00	292.29	262.96	0.491	128.70	106.62	0.6	0.9	6.688	A
3 - St Andrews Road	131.00	131.00	223.13	290.60	0.451	130.98	197.85	0.8	0.8	5.638	A
4 - Thurrock Park Way	106.00	106.00	235.73	271.05	0.391	105.77	118.38	0.4	0.6	5.437	A
5 - A1089 Dock Road	438.00	438.00	74.82	457.40	1.005	453.16	266.68	315.5	297.5	610.515	F

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	419.72	121.63	0.181	21.98	79.44	0.2	0.2	9.029	A
2 - Dock Road	119.00	119.00	367.58	219.94	0.541	118.79	74.11	0.9	1.2	8.877	A
3 - St Andrews Road	161.00	161.00	248.29	284.47	0.566	160.53	238.09	0.8	1.3	7.234	A
4 - Thurrock Park Way	90.00	90.00	254.40	254.32	0.354	90.08	154.42	0.6	0.6	5.484	A
5 - A1089 Dock Road	466.00	466.00	54.11	445.18	1.051	445.05	290.38	297.5	318.4	625.979	F

2022 + Comm + Av Con 1 + Cumu, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	525.79	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 period length (min)	Time segment length (min)	Run automatically
D4	2022 + Comm + Av Con 1 + Cumu	AM	DIRECT	07:00	08:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
07:00 - 07:15	From	1 - London Distribution Park	0.00	1.00	4.00	0.00	22.00
	2 - Dock Road	1.00	0.00	6.00	21.00	82.00	
	3 - St Andrews Road	2.00	2.00	6.00	17.00	144.00	
	4 - Thurrock Park Way	26.00	7.00	24.00	1.00	30.00	
	5 - A1089 Dock Road	227.00	146.00	217.00	103.00	0.00	

Demand (Veh/TS)

 07:15 -
07:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	0.00	1.00	1.00	19.00
	2 - Dock Road	1.00	0.00	9.00	21.00	82.00
	3 - St Andrews Road	2.00	0.00	4.00	10.00	123.00
	4 - Thurrock Park Way	11.00	4.00	29.00	3.00	34.00
	5 - A1089 Dock Road	219.00	145.00	191.00	108.00	0.00

Demand (Veh/TS)

 07:30 -
07:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	1.00	0.00	1.00	0.00	20.00
	2 - Dock Road	3.00	0.00	9.00	24.00	95.00
	3 - St Andrews Road	1.00	1.00	6.00	12.00	118.00
	4 - Thurrock Park Way	14.00	12.00	36.00	1.00	44.00
	5 - A1089 Dock Road	70.00	64.00	217.00	131.00	0.00

Demand (Veh/TS)

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	1.00	1.00	1.00	2.00	17.00
	2 - Dock Road	1.00	0.00	4.00	21.00	95.00
	3 - St Andrews Road	1.00	1.00	3.00	18.00	145.00
	4 - Thurrock Park Way	7.00	9.00	29.00	2.00	44.00
	5 - A1089 Dock Road	69.00	62.00	249.00	131.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 07:00 -
07:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	80
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	76
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	39	11	0

Heavy Vehicle Percentages

 07:15 -
07:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	84
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	77
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	39	11	0

Heavy Vehicle Percentages

 07:30 -
07:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	82
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	77
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	18	9	40	12	0

Heavy Vehicle Percentages

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	87
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	76
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	19	9	39	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.19	9.17	0.2	A	23.00	91.99
2 - Dock Road	0.56	9.46	1.3	A	118.75	475.00
3 - St Andrews Road	0.61	8.18	1.5	A	154.00	615.99
4 - Thurrock Park Way	0.41	5.77	0.7	A	91.75	367.01
5 - A1089 Dock Road	1.47	912.96	512.6	F	593.99	2375.95

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	355.94	142.70	0.189	26.77	182.85	0.0	0.2	7.748	A
2 - Dock Road	110.00	110.00	273.71	271.71	0.405	109.33	109.00	0.0	0.7	5.521	A
3 - St Andrews Road	171.00	171.00	196.06	300.79	0.568	169.71	186.98	0.0	1.3	6.800	A
4 - Thurrock Park Way	88.00	88.00	257.14	255.81	0.344	87.48	108.62	0.0	0.5	5.331	A
5 - A1089 Dock Road	693.00	693.00	68.58	472.32	1.467	470.21	276.04	0.0	222.8	214.815	F

07:15 - 07:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	21.00	21.00	363.09	138.75	0.151	21.05	172.53	0.2	0.2	7.652	A
2 - Dock Road	113.00	113.00	276.58	273.14	0.414	112.97	107.56	0.7	0.7	5.617	A
3 - St Andrews Road	139.00	139.00	202.25	292.21	0.476	139.38	187.30	1.3	0.9	5.902	A
4 - Thurrock Park Way	81.00	81.00	231.33	270.50	0.299	81.09	110.30	0.5	0.4	4.755	A
5 - A1089 Dock Road	663.00	663.00	54.13	481.50	1.373	481.48	258.29	222.8	404.3	597.192	F

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	378.91	134.76	0.163	21.99	160.17	0.2	0.2	7.980	A
2 - Dock Road	131.00	131.00	291.65	265.34	0.494	130.74	109.25	0.7	1.0	6.672	A
3 - St Andrews Road	138.00	138.00	226.33	286.28	0.482	137.99	196.06	0.9	0.9	6.069	A
4 - Thurrock Park Way	107.00	107.00	244.78	263.77	0.406	106.75	119.54	0.4	0.7	5.714	A
5 - A1089 Dock Road	482.00	482.00	74.81	465.75	1.102	464.27	276.72	404.3	420.6	814.578	F

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	426.78	120.06	0.183	21.97	74.76	0.2	0.2	9.172	A
2 - Dock Road	121.00	121.00	378.65	215.52	0.561	120.71	70.11	1.0	1.3	9.462	A
3 - St Andrews Road	168.00	168.00	259.85	276.89	0.607	167.42	239.50	0.9	1.5	8.177	A
4 - Thurrock Park Way	91.00	91.00	263.23	247.06	0.368	91.09	164.04	0.7	0.6	5.775	A
5 - A1089 Dock Road	511.00	511.00	54.11	447.45	1.148	447.42	300.20	420.6	484.2	912.961	F

2022 + Comm + Peak Con 1 + Cumu, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	530.17	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 period length (min)	Time segment length (min)	Run automatically
D5	2022 + Comm + Peak Con 1 + Cumu	AM	DIRECT	07:00	08:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
07:00 - 07:15	From	1 - London Distribution Park	0.00	1.00	4.00	0.00	22.00
	2 - Dock Road	1.00	0.00	6.00	21.00	82.00	
	3 - St Andrews Road	2.00	2.00	6.00	17.00	144.00	
	4 - Thurrock Park Way	26.00	7.00	24.00	1.00	30.00	
	5 - A1089 Dock Road	227.00	146.00	219.00	103.00	0.00	

Demand (Veh/TS)

 07:15 -
07:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	0.00	1.00	1.00	19.00
	2 - Dock Road	1.00	0.00	9.00	21.00	82.00
	3 - St Andrews Road	2.00	0.00	4.00	10.00	123.00
	4 - Thurrock Park Way	11.00	4.00	29.00	3.00	34.00
	5 - A1089 Dock Road	219.00	145.00	192.00	108.00	0.00

Demand (Veh/TS)

 07:30 -
07:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	1.00	0.00	1.00	0.00	20.00
	2 - Dock Road	3.00	0.00	9.00	24.00	95.00
	3 - St Andrews Road	1.00	1.00	6.00	12.00	119.00
	4 - Thurrock Park Way	14.00	12.00	36.00	1.00	44.00
	5 - A1089 Dock Road	70.00	64.00	219.00	131.00	0.00

Demand (Veh/TS)

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	1.00	1.00	1.00	2.00	17.00
	2 - Dock Road	1.00	0.00	4.00	21.00	95.00
	3 - St Andrews Road	1.00	1.00	3.00	18.00	145.00
	4 - Thurrock Park Way	7.00	9.00	29.00	2.00	44.00
	5 - A1089 Dock Road	69.00	62.00	250.00	131.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 07:00 -
07:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	80
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	76
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	39	11	0

Heavy Vehicle Percentages

 07:15 -
07:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	84
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	77
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	6	4	39	11	0

Heavy Vehicle Percentages

 07:30 -
07:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	82
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	77
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	18	9	39	12	0

Heavy Vehicle Percentages

 07:45 -
08:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	75	0	87
	2 - Dock Road	0	0	0	11	6
	3 - St Andrews Road	50	0	60	0	76
	4 - Thurrock Park Way	0	17	5	0	19
	5 - A1089 Dock Road	19	9	39	12	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.19	9.17	0.2	A	23.00	91.99
2 - Dock Road	0.56	9.46	1.3	A	118.75	475.00
3 - St Andrews Road	0.61	8.17	1.5	A	154.25	616.99
4 - Thurrock Park Way	0.41	5.78	0.7	A	91.75	367.01
5 - A1089 Dock Road	1.47	920.10	518.0	F	595.68	2382.71

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	356.22	142.55	0.189	26.77	182.33	0.0	0.2	7.758	A
2 - Dock Road	110.00	110.00	274.33	271.31	0.405	109.32	108.66	0.0	0.7	5.533	A
3 - St Andrews Road	171.00	171.00	195.82	300.88	0.568	169.71	187.83	0.0	1.3	6.795	A
4 - Thurrock Park Way	88.00	88.00	257.14	255.81	0.344	87.48	108.39	0.0	0.5	5.331	A
5 - A1089 Dock Road	695.00	695.00	68.58	472.07	1.472	469.98	276.04	0.0	225.0	217.019	F

07:15 - 07:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	21.00	21.00	363.29	138.64	0.152	21.05	172.11	0.2	0.2	7.659	A
2 - Dock Road	113.00	113.00	277.07	272.82	0.414	112.97	107.27	0.7	0.7	5.628	A
3 - St Andrews Road	139.00	139.00	202.03	292.29	0.476	139.38	188.02	1.3	0.9	5.899	A
4 - Thurrock Park Way	81.00	81.00	231.33	270.50	0.299	81.09	110.07	0.5	0.4	4.753	A
5 - A1089 Dock Road	664.00	664.00	54.13	481.29	1.375	481.27	258.29	225.0	407.8	602.607	F

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	378.76	134.86	0.163	21.99	160.68	0.2	0.2	7.972	A
2 - Dock Road	131.00	131.00	291.31	265.58	0.493	130.74	109.44	0.7	1.0	6.660	A
3 - St Andrews Road	139.00	139.00	225.88	286.35	0.485	138.98	196.17	0.9	0.9	6.107	A
4 - Thurrock Park Way	107.00	107.00	245.77	263.03	0.407	106.75	119.09	0.4	0.7	5.749	A
5 - A1089 Dock Road	484.00	484.00	74.81	466.08	1.103	464.63	277.71	407.8	425.7	821.678	F

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	22.00	22.00	428.17	120.04	0.183	21.97	74.73	0.2	0.2	9.173	A
2 - Dock Road	121.00	121.00	380.05	215.49	0.562	120.71	70.09	1.0	1.3	9.464	A
3 - St Andrews Road	168.00	168.00	259.79	276.92	0.607	167.43	240.97	0.9	1.5	8.174	A
4 - Thurrock Park Way	91.00	91.00	263.23	247.06	0.368	91.09	163.98	0.7	0.6	5.775	A
5 - A1089 Dock Road	512.00	512.00	54.11	448.80	1.150	448.78	300.21	425.7	488.9	920.098	F

<h1>Junctions 9</h1>
<h2>ARCADY 9 - Roundabout Module</h2>
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Filename: Asda Rbt Mit + LTC test 0800-0900.j9
Path: P:\JNY9639 - Thurrock Generation Plant\Transport\Arcady
Report generation date: 12/09/2020 20:25:31

- »2022 + Comm, AM
- »2022 + Comm + Av Con 1, AM
- »2022 + Comm + Peak Con 1, AM
- »2022 + Comm + Av Con 2, AM
- »2022 + Comm + P Con 2, AM
- »2022 + Comm + Av Con 1 + Cumu, AM
- »2022 + Comm + P Con 1 + Cumu, AM
- »2022 + Comm + Av Con 2 + Cumu, AM
- »2022 + Comm + P Con 2 + Cumu, AM

Summary of junction performance

AM				
	Set ID	Queue (Veh)	Delay (s)	RFC
2022 + Comm				
1 - London Distribution Park	D1	0.3	11.18	0.24
2 - Dock Road		2.8	15.47	0.75
3 - St Andrews Road		1.2	7.57	0.55
4 - Thurrock Park Way		0.9	6.68	0.48
5 - A1089 Dock Road		54.0	88.77	1.09
2022 + Comm + Av Con 1				
1 - London Distribution Park	D2	0.3	11.19	0.24
2 - Dock Road		2.9	15.64	0.75
3 - St Andrews Road		1.3	7.64	0.56
4 - Thurrock Park Way		0.9	6.74	0.49
5 - A1089 Dock Road		55.3	93.86	1.09
2022 + Comm + Peak Con 1				
1 - London Distribution Park	D3	0.3	11.22	0.24
2 - Dock Road		2.9	15.96	0.76
3 - St Andrews Road		1.3	7.71	0.56
4 - Thurrock Park Way		0.9	6.78	0.49
5 - A1089 Dock Road		58.4	100.90	1.10
2022 + Comm + Av Con 2				
1 - London Distribution Park	D4	0.3	11.23	0.24
2 - Dock Road		2.9	15.68	0.75
3 - St Andrews Road		1.3	7.65	0.56
4 - Thurrock Park Way		0.9	6.75	0.49
5 - A1089 Dock Road		55.0	91.59	1.09
2022 + Comm + P Con 2				

1 - London Distribution Park	D5	0.3	11.27	0.24
2 - Dock Road		2.9	15.89	0.76
3 - St Andrews Road		1.3	7.74	0.56
4 - Thurrock Park Way		0.9	6.77	0.49
5 - A1089 Dock Road		56.0	94.41	1.09
2022 + Comm + Av Con 1 + Cumu				
1 - London Distribution Park	D6	0.3	11.48	0.26
2 - Dock Road		4.0	21.01	0.82
3 - St Andrews Road		1.5	8.62	0.60
4 - Thurrock Park Way		1.0	7.26	0.51
5 - A1089 Dock Road		126.4	257.45	1.18
2022 + Comm + P Con 1 + Cumu				
1 - London Distribution Park	D7	0.3	11.48	0.26
2 - Dock Road		4.0	21.12	0.82
3 - St Andrews Road		1.5	8.71	0.60
4 - Thurrock Park Way		1.0	7.30	0.51
5 - A1089 Dock Road		130.1	264.01	1.18
2022 + Comm + Av Con 2 + Cumu				
1 - London Distribution Park	D8	0.3	11.51	0.26
2 - Dock Road		4.0	21.13	0.82
3 - St Andrews Road		1.5	8.63	0.60
4 - Thurrock Park Way		1.0	7.23	0.51
5 - A1089 Dock Road		125.6	256.61	1.18
2022 + Comm + P Con 2 + Cumu				
1 - London Distribution Park	D9	0.3	11.55	0.26
2 - Dock Road		4.0	21.39	0.82
3 - St Andrews Road		1.5	8.73	0.60
4 - Thurrock Park Way		1.0	7.28	0.51
5 - A1089 Dock Road		126.3	258.49	1.18

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	26/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EUR\Joanna.gunn
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	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D1	2022 + Comm	AM	DIRECT	08:15	09:15	60	15	✓
D2	2022 + Comm + Av Con 1	AM	DIRECT	08:15	09:15	60	15	✓
D3	2022 + Comm + Peak Con 1	AM	DIRECT	08:15	09:15	60	15	✓
D4	2022 + Comm + Av Con 2	AM	DIRECT	08:15	09:15	60	15	✓
D5	2022 + Comm + P Con 2	AM	DIRECT	08:15	09:15	60	15	✓
D6	2022 + Comm + Av Con 1 + Cumu	AM	DIRECT	08:15	09:15	60	15	✓
D7	2022 + Comm + P Con 1 + Cumu	AM	DIRECT	08:15	09:15	60	15	✓
D8	2022 + Comm + Av Con 2 + Cumu	AM	DIRECT	08:15	09:15	60	15	✓
D9	2022 + Comm + P Con 2 + Cumu	AM	DIRECT	08:15	09:15	60	15	✓

Analysis Set Details

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

2022 + Comm, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	48.25	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	London Distribution Park	
2	Dock Road	
3	St Andrews Road	
4	Thurrock Park Way	
5	A1089 Dock 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 - London Distribution Park	3.50	8.60	15.0	45.0	116.0	38.0	
2 - Dock Road	3.70	7.30	22.5	21.0	116.0	32.0	
3 - St Andrews Road	7.42	8.11	37.0	36.0	116.0	27.0	
4 - Thurrock Park Way	3.70	9.00	13.5	45.0	116.0	34.0	
5 - A1089 Dock Road	7.45	7.45	0.0	60.0	116.0	25.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1 - London Distribution Park	0.460	449.879
2 - Dock Road	0.464	458.508
3 - St Andrews Road	0.568	631.041
4 - Thurrock Park Way	0.471	464.299
5 - A1089 Dock Road	0.550	592.526

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 period length (min)	Time segment length (min)	Run automatically
D1	2022 + Comm	AM	DIRECT	08:15	09:15	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:15 - 08:30	From	1 - London Distribution Park	0.00	1.00	3.00	1.00	21.00
		2 - Dock Road	0.00	0.00	7.00	22.00	99.00
		3 - St Andrews Road	0.00	4.00	7.00	19.00	122.00
		4 - Thurrock Park Way	6.00	18.00	32.00	2.00	67.00
		5 - A1089 Dock Road	43.00	78.00	158.00	128.00	0.00

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:30 - 08:45	From	1 - London Distribution Park	0.00	1.00	3.00	4.00	21.00
		2 - Dock Road	1.00	0.00	7.00	42.00	116.00
		3 - St Andrews Road	1.00	3.00	2.00	23.00	117.00
		4 - Thurrock Park Way	0.00	12.00	29.00	1.00	68.00
		5 - A1089 Dock Road	37.00	63.00	196.00	114.00	0.00

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:45 - 09:00	From	1 - London Distribution Park	0.00	1.00	1.00	1.00	21.00
		2 - Dock Road	1.00	0.00	7.00	46.00	75.00
		3 - St Andrews Road	1.00	0.00	6.00	17.00	113.00
		4 - Thurrock Park Way	2.00	29.00	30.00	2.00	60.00
		5 - A1089 Dock Road	40.00	82.00	199.00	153.00	0.00

Demand (Veh/TS)

09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	2.00	1.00	3.00	21.00
	2 - Dock Road	0.00	0.00	3.00	30.00	57.00
	3 - St Andrews Road	0.00	8.00	3.00	29.00	119.00
	4 - Thurrock Park Way	3.00	27.00	24.00	1.00	63.00
	5 - A1089 Dock Road	40.00	83.00	158.00	125.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

08:15 -
08:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	80
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	48	4	47	6	0

Heavy Vehicle Percentages

08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	4	50	7	81
	4 - Thurrock Park Way	0	4	7	8	16
	5 - A1089 Dock Road	50	4	46	6	0

Heavy Vehicle Percentages

08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	0	50	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	46	6	0

Heavy Vehicle Percentages

09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	47	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.24	11.18	0.3	B	26.50	105.99
2 - Dock Road	0.75	15.47	2.8	C	128.25	513.01
3 - St Andrews Road	0.55	7.57	1.2	A	148.50	593.99
4 - Thurrock Park Way	0.48	6.68	0.9	A	119.00	476.01
5 - A1089 Dock Road	1.09	88.77	54.0	F	424.20	1696.79

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	26.00	26.00	417.66	118.83	0.219	25.72	47.91	0.0	0.3	9.639	A
2 - Dock Road	128.00	128.00	344.46	237.99	0.538	126.86	98.92	0.0	1.1	8.019	A
3 - St Andrews Road	152.00	152.00	268.55	275.12	0.552	150.79	202.76	0.0	1.2	7.172	A
4 - Thurrock Park Way	125.00	125.00	250.83	257.85	0.485	124.07	168.51	0.0	0.9	6.683	A
5 - A1089 Dock Road	407.00	407.00	68.48	437.14	0.931	397.08	306.42	0.0	9.9	19.224	C

08:30 - 08:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	29.00	29.00	418.18	119.87	0.242	28.96	39.00	0.3	0.3	9.895	A
2 - Dock Road	166.00	166.00	368.01	220.87	0.752	164.31	79.13	1.1	2.8	15.471	C
3 - St Andrews Road	146.00	146.00	297.15	264.93	0.551	146.00	235.17	1.2	1.2	7.566	A
4 - Thurrock Park Way	110.00	110.00	259.92	254.04	0.433	110.16	183.23	0.9	0.8	6.263	A
5 - A1089 Dock Road	410.00	410.00	49.17	437.19	0.938	408.01	320.92	9.9	11.9	27.802	D

08:45 - 09:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	24.00	24.00	462.08	104.51	0.230	24.01	40.49	0.3	0.3	11.182	B
2 - Dock Road	129.00	129.00	381.72	216.07	0.597	130.31	104.37	2.8	1.5	10.649	B
3 - St Andrews Road	137.00	137.00	286.07	263.89	0.519	137.12	225.96	1.2	1.1	7.109	A
4 - Thurrock Park Way	123.00	123.00	218.13	276.23	0.445	122.98	205.06	0.8	0.8	5.872	A
5 - A1089 Dock Road	474.00	474.00	70.89	435.32	1.088	431.68	270.22	11.9	54.2	78.420	F

09:00 - 09:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	453.09	112.64	0.240	26.99	44.80	0.3	0.3	10.505	B
2 - Dock Road	90.00	90.00	356.55	230.88	0.390	90.88	123.53	1.5	0.6	6.469	A
3 - St Andrews Road	159.00	159.00	246.59	290.27	0.548	158.91	200.84	1.1	1.2	6.844	A
4 - Thurrock Park Way	118.00	118.00	208.51	278.37	0.424	118.05	196.99	0.8	0.7	5.617	A
5 - A1089 Dock Road	406.00	406.00	66.06	439.80	0.923	431.83	260.50	54.2	28.4	88.767	F

2022 + Comm + Av Con 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	50.79	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 period length (min)	Time segment length (min)	Run automatically
D2	2022 + Comm + Av Con 1	AM	DIRECT	08:15	09:15	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:15 - 08:30	From	1 - London Distribution Park	0.00	1.00	3.00	1.00	21.00
	2 - Dock Road	0.00	0.00	7.00	22.00	99.00	
	3 - St Andrews Road	0.00	4.00	7.00	19.00	123.00	
	4 - Thurrock Park Way	6.00	18.00	32.00	2.00	67.00	
	5 - A1089 Dock Road	43.00	78.00	159.00	128.00	0.00	

Demand (Veh/TS)

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	3.00	4.00	21.00
	2 - Dock Road	1.00	0.00	7.00	42.00	116.00
	3 - St Andrews Road	1.00	3.00	2.00	23.00	118.00
	4 - Thurrock Park Way	0.00	12.00	29.00	1.00	68.00
	5 - A1089 Dock Road	37.00	63.00	197.00	114.00	0.00

Demand (Veh/TS)

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	1.00	21.00
	2 - Dock Road	1.00	0.00	7.00	46.00	75.00
	3 - St Andrews Road	1.00	0.00	6.00	17.00	114.00
	4 - Thurrock Park Way	2.00	29.00	30.00	2.00	60.00
	5 - A1089 Dock Road	40.00	82.00	200.00	153.00	0.00

Demand (Veh/TS)

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	2.00	1.00	3.00	21.00
	2 - Dock Road	0.00	0.00	3.00	30.00	57.00
	3 - St Andrews Road	0.00	8.00	3.00	29.00	120.00
	4 - Thurrock Park Way	3.00	27.00	24.00	1.00	63.00
	5 - A1089 Dock Road	40.00	83.00	159.00	125.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 08:15 -
08:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	48	4	48	6	0

Heavy Vehicle Percentages

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	4	50	7	81
	4 - Thurrock Park Way	0	4	7	8	16
	5 - A1089 Dock Road	50	4	46	6	0

Heavy Vehicle Percentages

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	0	50	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	46	6	0

Heavy Vehicle Percentages

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	48	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.24	11.19	0.3	B	26.50	105.99
2 - Dock Road	0.75	15.64	2.9	C	128.25	513.01
3 - St Andrews Road	0.56	7.64	1.3	A	149.50	597.98
4 - Thurrock Park Way	0.49	6.74	0.9	A	119.00	476.01
5 - A1089 Dock Road	1.09	93.86	55.3	F	425.20	1700.80

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	26.00	26.00	418.18	118.22	0.220	25.72	47.85	0.0	0.3	9.701	A
2 - Dock Road	128.00	128.00	345.07	236.87	0.540	126.85	98.83	0.0	1.2	8.098	A
3 - St Andrews Road	153.00	153.00	268.38	273.73	0.559	151.76	203.54	0.0	1.2	7.307	A
4 - Thurrock Park Way	125.00	125.00	251.79	256.60	0.487	124.06	168.34	0.0	0.9	6.744	A
5 - A1089 Dock Road	408.00	408.00	68.48	435.62	0.937	397.55	307.38	0.0	10.4	20.008	C

08:30 - 08:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	29.00	29.00	419.21	119.47	0.243	28.96	39.02	0.3	0.3	9.939	A
2 - Dock Road	166.00	166.00	369.02	220.20	0.754	164.29	79.16	1.2	2.9	15.640	C
3 - St Andrews Road	147.00	147.00	297.16	264.77	0.555	147.00	236.14	1.2	1.2	7.640	A
4 - Thurrock Park Way	110.00	110.00	260.92	253.28	0.434	110.17	183.25	0.9	0.8	6.295	A
5 - A1089 Dock Road	411.00	411.00	49.17	437.01	0.941	409.06	321.91	10.4	12.4	28.877	D

08:45 - 09:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	24.00	24.00	462.20	104.42	0.230	24.01	40.42	0.3	0.3	11.195	B
2 - Dock Road	129.00	129.00	382.00	215.84	0.598	130.34	104.21	2.9	1.5	10.683	B
3 - St Andrews Road	138.00	138.00	285.80	263.87	0.523	138.13	226.54	1.2	1.1	7.165	A
4 - Thurrock Park Way	123.00	123.00	219.16	275.45	0.447	122.98	204.77	0.8	0.8	5.902	A
5 - A1089 Dock Road	475.00	475.00	70.89	435.17	1.091	431.73	271.25	12.4	55.6	80.370	F

09:00 - 09:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	452.16	112.49	0.240	26.99	44.57	0.3	0.3	10.524	B
2 - Dock Road	90.00	90.00	356.11	230.39	0.391	90.88	123.04	1.5	0.6	6.492	A
3 - St Andrews Road	160.00	160.00	245.94	290.30	0.551	159.91	201.06	1.1	1.2	6.895	A
4 - Thurrock Park Way	118.00	118.00	209.51	277.60	0.425	118.05	196.34	0.8	0.7	5.642	A
5 - A1089 Dock Road	407.00	407.00	66.06	438.43	0.928	430.67	261.50	55.6	32.0	93.862	F

2022 + Comm + Peak Con 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	54.32	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 period length (min)	Time segment length (min)	Run automatically
D3	2022 + Comm + Peak Con 1	AM	DIRECT	08:15	09:15	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:15 - 08:30	From	1 - London Distribution Park	0.00	1.00	3.00	1.00	21.00
		2 - Dock Road	0.00	0.00	7.00	22.00	99.00
		3 - St Andrews Road	0.00	4.00	7.00	19.00	124.00
		4 - Thurrock Park Way	6.00	18.00	32.00	2.00	67.00
		5 - A1089 Dock Road	43.00	78.00	160.00	128.00	0.00

Demand (Veh/TS)

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	3.00	4.00	21.00
	2 - Dock Road	1.00	0.00	7.00	42.00	116.00
	3 - St Andrews Road	1.00	3.00	2.00	23.00	119.00
	4 - Thurrock Park Way	0.00	12.00	29.00	1.00	68.00
	5 - A1089 Dock Road	37.00	63.00	198.00	114.00	0.00

Demand (Veh/TS)

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	1.00	21.00
	2 - Dock Road	1.00	0.00	7.00	46.00	75.00
	3 - St Andrews Road	1.00	0.00	6.00	17.00	115.00
	4 - Thurrock Park Way	2.00	29.00	30.00	2.00	60.00
	5 - A1089 Dock Road	40.00	82.00	201.00	153.00	0.00

Demand (Veh/TS)

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	2.00	1.00	3.00	21.00
	2 - Dock Road	0.00	0.00	3.00	30.00	57.00
	3 - St Andrews Road	0.00	8.00	3.00	29.00	121.00
	4 - Thurrock Park Way	3.00	27.00	24.00	1.00	63.00
	5 - A1089 Dock Road	40.00	83.00	160.00	125.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 08:15 -
08:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	48	4	48	6	0

Heavy Vehicle Percentages

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	4	50	7	81
	4 - Thurrock Park Way	0	4	7	8	16
	5 - A1089 Dock Road	50	4	47	6	0

Heavy Vehicle Percentages

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	0	50	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	47	6	0

Heavy Vehicle Percentages

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	48	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.24	11.22	0.3	B	26.50	105.99
2 - Dock Road	0.76	15.96	2.9	C	128.25	513.01
3 - St Andrews Road	0.56	7.71	1.3	A	150.50	601.98
4 - Thurrock Park Way	0.49	6.78	0.9	A	119.00	476.01
5 - A1089 Dock Road	1.10	100.90	58.4	F	426.18	1704.73

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	26.00	26.00	418.93	117.92	0.220	25.72	47.83	0.0	0.3	9.732	A
2 - Dock Road	128.00	128.00	345.87	236.33	0.542	126.84	98.78	0.0	1.2	8.137	A
3 - St Andrews Road	154.00	154.00	268.30	273.63	0.563	152.74	204.41	0.0	1.3	7.369	A
4 - Thurrock Park Way	125.00	125.00	252.77	255.85	0.489	124.06	168.26	0.0	0.9	6.783	A
5 - A1089 Dock Road	409.00	409.00	68.47	435.44	0.939	398.28	308.36	0.0	10.7	20.381	C

08:30 - 08:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	29.00	29.00	419.74	118.74	0.244	28.96	38.97	0.3	0.3	10.020	B
2 - Dock Road	166.00	166.00	369.61	218.94	0.758	164.24	79.09	1.2	2.9	15.959	C
3 - St Andrews Road	148.00	148.00	296.98	264.69	0.559	148.00	236.87	1.3	1.3	7.712	A
4 - Thurrock Park Way	110.00	110.00	261.88	252.54	0.436	110.17	183.10	0.9	0.8	6.330	A
5 - A1089 Dock Road	412.00	412.00	49.17	435.30	0.947	409.54	322.87	10.7	13.2	30.574	D

08:45 - 09:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	24.00	24.00	461.13	104.24	0.230	24.02	40.25	0.3	0.3	11.221	B
2 - Dock Road	129.00	129.00	381.32	215.34	0.599	130.39	103.83	2.9	1.5	10.759	B
3 - St Andrews Road	139.00	139.00	285.12	263.99	0.527	139.14	226.59	1.3	1.1	7.219	A
4 - Thurrock Park Way	123.00	123.00	220.20	274.66	0.448	122.98	204.06	0.8	0.8	5.933	A
5 - A1089 Dock Road	476.00	476.00	70.89	433.55	1.097	430.49	272.29	13.2	58.7	84.442	F

09:00 - 09:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	452.34	112.30	0.240	26.99	44.43	0.3	0.3	10.548	B
2 - Dock Road	90.00	90.00	356.59	229.94	0.391	90.89	122.74	1.5	0.7	6.511	A
3 - St Andrews Road	161.00	161.00	245.68	290.20	0.555	160.91	201.80	1.1	1.2	6.954	A
4 - Thurrock Park Way	118.00	118.00	210.51	276.84	0.426	118.05	196.08	0.8	0.8	5.672	A
5 - A1089 Dock Road	408.00	408.00	66.06	438.06	0.931	430.71	262.51	58.7	36.0	100.899	F

2022 + Comm + Av Con 2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	49.60	E

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 period length (min)	Time segment length (min)	Run automatically
D4	2022 + Comm + Av Con 2	AM	DIRECT	08:15	09:15	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:15 - 08:30	From	1 - London Distribution Park	0.00	1.00	3.00	1.00	21.00
	2 - Dock Road	0.00	0.00	7.00	22.00	99.00	
	3 - St Andrews Road	0.00	4.00	8.00	19.00	122.00	
	4 - Thurrock Park Way	6.00	18.00	32.00	2.00	67.00	
	5 - A1089 Dock Road	43.00	78.00	158.00	128.00	0.00	

Demand (Veh/TS)

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	3.00	4.00	21.00
	2 - Dock Road	1.00	0.00	7.00	42.00	116.00
	3 - St Andrews Road	1.00	3.00	3.00	23.00	117.00
	4 - Thurrock Park Way	0.00	12.00	29.00	1.00	68.00
	5 - A1089 Dock Road	37.00	63.00	196.00	114.00	0.00

Demand (Veh/TS)

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	1.00	21.00
	2 - Dock Road	1.00	0.00	7.00	46.00	75.00
	3 - St Andrews Road	1.00	0.00	7.00	17.00	113.00
	4 - Thurrock Park Way	2.00	29.00	30.00	2.00	60.00
	5 - A1089 Dock Road	40.00	82.00	199.00	153.00	0.00

Demand (Veh/TS)

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	2.00	1.00	3.00	21.00
	2 - Dock Road	0.00	0.00	3.00	30.00	57.00
	3 - St Andrews Road	0.00	8.00	4.00	29.00	119.00
	4 - Thurrock Park Way	3.00	27.00	24.00	1.00	63.00
	5 - A1089 Dock Road	40.00	83.00	158.00	125.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 08:15 -
08:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	57	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	48	4	47	6	0

Heavy Vehicle Percentages

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	4	66	7	81
	4 - Thurrock Park Way	0	4	7	8	16
	5 - A1089 Dock Road	50	4	46	6	0

Heavy Vehicle Percentages

08:45 - 09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	0	58	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	46	6	0

Heavy Vehicle Percentages

09:00 - 09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	62	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	47	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.24	11.23	0.3	B	26.50	105.99
2 - Dock Road	0.75	15.68	2.9	C	128.25	513.01
3 - St Andrews Road	0.56	7.65	1.3	A	149.50	597.98
4 - Thurrock Park Way	0.49	6.75	0.9	A	119.00	476.01
5 - A1089 Dock Road	1.09	91.59	55.0	F	424.19	1696.78

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	26.00	26.00	418.49	118.36	0.220	25.72	47.89	0.0	0.3	9.686	A
2 - Dock Road	128.00	128.00	345.32	237.15	0.540	126.85	98.89	0.0	1.2	8.079	A
3 - St Andrews Road	153.00	153.00	268.49	273.43	0.560	151.75	203.68	0.0	1.2	7.323	A
4 - Thurrock Park Way	125.00	125.00	251.79	256.50	0.487	124.06	168.45	0.0	0.9	6.749	A
5 - A1089 Dock Road	407.00	407.00	69.47	436.25	0.933	396.91	306.39	0.0	10.1	19.500	C

08:30 - 08:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	29.00	29.00	419.10	119.38	0.243	28.96	39.00	0.3	0.3	9.949	A
2 - Dock Road	166.00	166.00	368.94	220.03	0.754	164.28	79.12	1.2	2.9	15.681	C
3 - St Andrews Road	147.00	147.00	297.10	264.60	0.556	147.00	236.12	1.2	1.2	7.651	A
4 - Thurrock Park Way	110.00	110.00	260.90	253.21	0.434	110.17	183.20	0.9	0.8	6.298	A
5 - A1089 Dock Road	410.00	410.00	50.17	436.34	0.940	407.93	320.90	10.1	12.1	28.394	D

08:45 - 09:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	24.00	24.00	462.38	104.21	0.230	24.01	40.43	0.3	0.3	11.227	B
2 - Dock Road	129.00	129.00	382.16	215.48	0.599	130.34	104.23	2.9	1.5	10.731	B
3 - St Andrews Road	138.00	138.00	285.84	263.57	0.524	138.13	226.66	1.2	1.1	7.182	A
4 - Thurrock Park Way	123.00	123.00	219.16	275.34	0.447	122.98	204.81	0.8	0.8	5.907	A
5 - A1089 Dock Road	474.00	474.00	71.89	434.42	1.090	430.92	270.25	12.1	55.2	79.834	F

09:00 - 09:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	453.46	112.32	0.240	26.99	44.72	0.3	0.3	10.545	B
2 - Dock Road	90.00	90.00	357.10	230.26	0.391	90.89	123.35	1.5	0.6	6.499	A
3 - St Andrews Road	160.00	160.00	246.39	289.95	0.552	159.91	201.59	1.1	1.2	6.914	A
4 - Thurrock Park Way	118.00	118.00	209.51	277.53	0.425	118.05	196.79	0.8	0.7	5.645	A
5 - A1089 Dock Road	406.00	406.00	67.06	438.93	0.925	431.12	260.50	55.2	30.1	91.594	F

2022 + Comm + P Con 2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	50.95	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 period length (min)	Time segment length (min)	Run automatically
D5	2022 + Comm + P Con 2	AM	DIRECT	08:15	09:15	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:15 - 08:30	From	1 - London Distribution Park	0.00	1.00	3.00	1.00	21.00
	2 - Dock Road	0.00	0.00	7.00	22.00	99.00	
	3 - St Andrews Road	0.00	4.00	9.00	19.00	122.00	
	4 - Thurrock Park Way	6.00	18.00	32.00	2.00	67.00	
	5 - A1089 Dock Road	43.00	78.00	158.00	128.00	0.00	

Demand (Veh/TS)

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	3.00	4.00	21.00
	2 - Dock Road	1.00	0.00	7.00	42.00	116.00
	3 - St Andrews Road	1.00	3.00	4.00	23.00	117.00
	4 - Thurrock Park Way	0.00	12.00	29.00	1.00	68.00
	5 - A1089 Dock Road	37.00	63.00	196.00	114.00	0.00

Demand (Veh/TS)

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	1.00	21.00
	2 - Dock Road	1.00	0.00	7.00	46.00	75.00
	3 - St Andrews Road	1.00	0.00	8.00	17.00	113.00
	4 - Thurrock Park Way	2.00	29.00	30.00	2.00	60.00
	5 - A1089 Dock Road	40.00	82.00	199.00	153.00	0.00

Demand (Veh/TS)

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	2.00	1.00	3.00	21.00
	2 - Dock Road	0.00	0.00	3.00	30.00	57.00
	3 - St Andrews Road	0.00	8.00	5.00	29.00	119.00
	4 - Thurrock Park Way	3.00	27.00	24.00	1.00	63.00
	5 - A1089 Dock Road	40.00	83.00	158.00	125.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 08:15 -
08:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	62	7	80
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	48	4	47	6	0

Heavy Vehicle Percentages

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	4	74	7	81
	4 - Thurrock Park Way	0	4	7	8	16
	5 - A1089 Dock Road	50	4	46	6	0

Heavy Vehicle Percentages

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	0	63	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	46	6	0

Heavy Vehicle Percentages

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	69	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	47	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.24	11.27	0.3	B	26.50	105.99
2 - Dock Road	0.76	15.89	2.9	C	128.25	513.01
3 - St Andrews Road	0.56	7.74	1.3	A	150.49	601.98
4 - Thurrock Park Way	0.49	6.77	0.9	A	119.00	476.01
5 - A1089 Dock Road	1.09	94.41	56.0	F	424.19	1696.76

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	26.00	26.00	419.32	117.91	0.221	25.72	47.87	0.0	0.3	9.734	A
2 - Dock Road	128.00	128.00	346.19	236.34	0.542	126.84	98.85	0.0	1.2	8.136	A
3 - St Andrews Road	154.00	154.00	268.42	274.39	0.561	152.74	204.61	0.0	1.3	7.325	A
4 - Thurrock Park Way	125.00	125.00	252.78	256.17	0.488	124.06	168.39	0.0	0.9	6.766	A
5 - A1089 Dock Road	407.00	407.00	70.46	435.37	0.935	396.73	306.38	0.0	10.3	19.775	C

08:30 - 08:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	29.00	29.00	420.02	118.89	0.244	28.96	38.99	0.3	0.3	10.004	B
2 - Dock Road	166.00	166.00	369.86	219.20	0.757	164.25	79.12	1.2	2.9	15.894	C
3 - St Andrews Road	148.00	148.00	297.06	264.31	0.560	147.99	237.06	1.3	1.3	7.736	A
4 - Thurrock Park Way	110.00	110.00	261.88	252.40	0.436	110.16	183.17	0.9	0.8	6.336	A
5 - A1089 Dock Road	410.00	410.00	51.17	435.50	0.942	407.85	320.87	10.3	12.4	29.000	D

08:45 - 09:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	24.00	24.00	462.71	103.92	0.231	24.01	40.37	0.3	0.3	11.268	B
2 - Dock Road	129.00	129.00	382.62	214.91	0.600	130.37	104.10	2.9	1.5	10.812	B
3 - St Andrews Road	139.00	139.00	285.62	263.34	0.528	139.13	227.37	1.3	1.1	7.256	A
4 - Thurrock Park Way	123.00	123.00	220.18	274.49	0.448	122.98	204.57	0.8	0.8	5.937	A
5 - A1089 Dock Road	474.00	474.00	72.89	433.55	1.093	430.19	270.27	12.4	56.2	81.236	F

09:00 - 09:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	453.83	112.01	0.241	26.99	44.64	0.3	0.3	10.584	B
2 - Dock Road	90.00	90.00	357.65	229.64	0.392	90.90	123.17	1.5	0.7	6.526	A
3 - St Andrews Road	161.00	161.00	246.19	289.65	0.556	160.91	202.35	1.1	1.2	6.984	A
4 - Thurrock Park Way	118.00	118.00	210.52	276.69	0.426	118.05	196.59	0.8	0.8	5.677	A
5 - A1089 Dock Road	406.00	406.00	68.06	438.07	0.926	430.41	260.51	56.2	31.8	94.408	F

2022 + Comm + Av Con 1 + Cumu, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	134.41	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 period length (min)	Time segment length (min)	Run automatically
D6	2022 + Comm + Av Con 1 + Cumu	AM	DIRECT	08:15	09:15	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:15 - 08:30	From	1 - London Distribution Park	0.00	1.00	3.00	1.00	21.00
		2 - Dock Road	0.00	0.00	7.00	23.00	101.00
		3 - St Andrews Road	0.00	4.00	7.00	20.00	130.00
		4 - Thurrock Park Way	6.00	18.00	33.00	2.00	69.00
		5 - A1089 Dock Road	43.00	80.00	186.00	136.00	0.00

Demand (Veh/TS)

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	3.00	4.00	21.00
	2 - Dock Road	1.00	0.00	7.00	43.00	118.00
	3 - St Andrews Road	1.00	3.00	2.00	24.00	126.00
	4 - Thurrock Park Way	0.00	13.00	30.00	1.00	70.00
	5 - A1089 Dock Road	37.00	66.00	224.00	123.00	0.00

Demand (Veh/TS)

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	1.00	21.00
	2 - Dock Road	1.00	0.00	7.00	46.00	76.00
	3 - St Andrews Road	1.00	0.00	6.00	17.00	121.00
	4 - Thurrock Park Way	2.00	29.00	31.00	2.00	62.00
	5 - A1089 Dock Road	40.00	85.00	227.00	161.00	0.00

Demand (Veh/TS)

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	2.00	1.00	3.00	21.00
	2 - Dock Road	0.00	0.00	3.00	31.00	59.00
	3 - St Andrews Road	0.00	8.00	3.00	30.00	127.00
	4 - Thurrock Park Way	3.00	27.00	25.00	1.00	66.00
	5 - A1089 Dock Road	40.00	86.00	186.00	134.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 08:15 -
08:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	48	4	45	6	0

Heavy Vehicle Percentages

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	4	50	7	82
	4 - Thurrock Park Way	0	4	7	8	16
	5 - A1089 Dock Road	50	4	44	6	0

Heavy Vehicle Percentages

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	0	50	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	44	6	0

Heavy Vehicle Percentages

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	45	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.26	11.48	0.3	B	26.50	105.99
2 - Dock Road	0.82	21.01	4.0	C	130.75	523.01
3 - St Andrews Road	0.60	8.62	1.5	A	157.50	629.98
4 - Thurrock Park Way	0.51	7.26	1.0	A	122.50	490.01
5 - A1089 Dock Road	1.18	257.45	126.4	F	463.30	1853.20

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	26.00	26.00	442.78	110.77	0.235	25.70	46.52	0.0	0.3	10.543	B
2 - Dock Road	131.00	131.00	370.19	223.59	0.586	129.62	98.29	0.0	1.4	9.446	A
3 - St Andrews Road	161.00	161.00	274.75	269.92	0.596	159.55	225.06	0.0	1.4	8.054	A
4 - Thurrock Park Way	128.00	128.00	260.43	250.00	0.512	126.97	173.87	0.0	1.0	7.257	A
5 - A1089 Dock Road	445.00	445.00	69.43	436.60	1.019	419.88	317.97	0.0	25.1	36.280	E

08:30 - 08:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	29.00	29.00	446.81	110.95	0.261	28.95	38.05	0.3	0.3	10.968	B
2 - Dock Road	169.00	169.00	394.27	206.93	0.817	166.43	81.49	1.4	4.0	21.013	C
3 - St Andrews Road	156.00	156.00	304.84	260.30	0.599	155.98	255.86	1.4	1.5	8.622	A
4 - Thurrock Park Way	114.00	114.00	270.30	246.19	0.463	114.17	190.52	1.0	0.9	6.824	A
5 - A1089 Dock Road	450.00	450.00	51.17	438.34	1.028	433.69	333.29	25.1	41.4	77.547	F

08:45 - 09:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	24.00	24.00	468.50	102.48	0.234	24.04	38.07	0.3	0.3	11.479	B
2 - Dock Road	130.00	130.00	391.38	211.04	0.616	132.30	101.16	4.0	1.7	11.742	B
3 - St Andrews Road	145.00	145.00	283.97	262.47	0.553	145.22	239.71	1.5	1.3	7.693	A
4 - Thurrock Park Way	126.00	126.00	227.93	268.62	0.469	126.00	201.27	0.9	0.9	6.309	A
5 - A1089 Dock Road	513.00	513.00	71.90	435.14	1.177	434.67	282.02	41.4	119.7	173.300	F

09:00 - 09:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	464.68	108.69	0.248	26.98	40.96	0.3	0.3	11.012	B
2 - Dock Road	93.00	93.00	373.40	221.80	0.419	93.93	118.27	1.7	0.7	7.086	A
3 - St Andrews Road	168.00	168.00	249.24	287.05	0.585	167.88	218.08	1.3	1.4	7.541	A
4 - Thurrock Park Way	122.00	122.00	218.52	270.63	0.451	122.05	198.60	0.9	0.8	6.061	A
5 - A1089 Dock Road	446.00	446.00	67.06	439.53	1.014	438.58	273.50	119.7	127.2	257.454	F

2022 + Comm + P Con 1 + Cumu, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	137.69	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 period length (min)	Time segment length (min)	Run automatically
D7	2022 + Comm + P Con 1 + Cumu	AM	DIRECT	08:15	09:15	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:15 - 08:30	From	1 - London Distribution Park	0.00	1.00	3.00	1.00	21.00
	2 - Dock Road	0.00	0.00	7.00	23.00	101.00	
	3 - St Andrews Road	0.00	4.00	7.00	20.00	131.00	
	4 - Thurrock Park Way	6.00	18.00	33.00	2.00	69.00	
	5 - A1089 Dock Road	43.00	80.00	187.00	136.00	0.00	

Demand (Veh/TS)

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	3.00	4.00	21.00
	2 - Dock Road	1.00	0.00	7.00	43.00	118.00
	3 - St Andrews Road	1.00	3.00	2.00	24.00	127.00
	4 - Thurrock Park Way	0.00	13.00	30.00	1.00	70.00
	5 - A1089 Dock Road	37.00	66.00	225.00	123.00	0.00

Demand (Veh/TS)

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	1.00	21.00
	2 - Dock Road	1.00	0.00	7.00	46.00	76.00
	3 - St Andrews Road	1.00	0.00	6.00	17.00	122.00
	4 - Thurrock Park Way	2.00	29.00	31.00	2.00	62.00
	5 - A1089 Dock Road	40.00	85.00	228.00	161.00	0.00

Demand (Veh/TS)

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	2.00	1.00	3.00	21.00
	2 - Dock Road	0.00	0.00	3.00	31.00	59.00
	3 - St Andrews Road	0.00	8.00	3.00	30.00	128.00
	4 - Thurrock Park Way	3.00	27.00	25.00	1.00	66.00
	5 - A1089 Dock Road	40.00	86.00	187.00	134.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 08:15 -
08:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	48	4	45	6	0

Heavy Vehicle Percentages

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	4	50	7	82
	4 - Thurrock Park Way	0	4	7	8	16
	5 - A1089 Dock Road	50	4	44	6	0

Heavy Vehicle Percentages

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	0	50	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	44	6	0

Heavy Vehicle Percentages

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	50	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	45	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.26	11.48	0.3	B	26.50	105.99
2 - Dock Road	0.82	21.12	4.0	C	130.75	523.01
3 - St Andrews Road	0.60	8.71	1.5	A	158.50	633.98
4 - Thurrock Park Way	0.51	7.30	1.0	A	122.50	490.01
5 - A1089 Dock Road	1.18	264.01	130.1	F	464.30	1857.19

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	26.00	26.00	443.14	110.61	0.235	25.70	46.46	0.0	0.3	10.564	B
2 - Dock Road	131.00	131.00	370.66	223.25	0.587	129.62	98.17	0.0	1.4	9.479	A
3 - St Andrews Road	162.00	162.00	274.54	269.86	0.600	160.53	225.73	0.0	1.5	8.128	A
4 - Thurrock Park Way	128.00	128.00	261.40	249.25	0.514	126.96	173.67	0.0	1.0	7.299	A
5 - A1089 Dock Road	446.00	446.00	69.42	436.45	1.022	420.18	318.94	0.0	25.8	36.985	E

08:30 - 08:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	29.00	29.00	447.06	110.83	0.262	28.95	37.99	0.3	0.3	10.985	B
2 - Dock Road	169.00	169.00	394.61	206.67	0.818	166.41	81.40	1.4	4.0	21.123	C
3 - St Andrews Road	157.00	157.00	304.63	260.24	0.603	156.97	256.39	1.5	1.5	8.710	A
4 - Thurrock Park Way	114.00	114.00	271.28	245.44	0.465	114.17	190.32	1.0	0.9	6.863	A
5 - A1089 Dock Road	451.00	451.00	51.17	438.23	1.030	433.88	334.28	25.8	42.9	79.813	F

08:45 - 09:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	24.00	24.00	468.45	102.45	0.234	24.04	38.00	0.3	0.3	11.484	B
2 - Dock Road	130.00	130.00	391.52	210.89	0.616	132.32	100.97	4.0	1.7	11.770	B
3 - St Andrews Road	146.00	146.00	283.63	262.48	0.556	146.22	240.21	1.5	1.3	7.757	A
4 - Thurrock Park Way	126.00	126.00	228.94	267.84	0.470	126.00	200.91	0.9	0.9	6.344	A
5 - A1089 Dock Road	514.00	514.00	71.90	434.99	1.179	434.54	283.04	42.9	122.4	177.526	F

09:00 - 09:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	464.76	108.61	0.248	26.98	40.84	0.3	0.3	11.023	B
2 - Dock Road	93.00	93.00	373.73	221.55	0.420	93.93	118.01	1.7	0.7	7.100	A
3 - St Andrews Road	169.00	169.00	248.98	286.96	0.589	168.88	218.68	1.3	1.4	7.610	A
4 - Thurrock Park Way	122.00	122.00	219.52	269.86	0.452	122.05	198.34	0.9	0.8	6.093	A
5 - A1089 Dock Road	447.00	447.00	67.06	439.38	1.017	438.53	274.51	122.4	130.8	264.009	F

2022 + Comm + Av Con 2 + Cumu, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	133.65	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 period length (min)	Time segment length (min)	Run automatically
D8	2022 + Comm + Av Con 2 + Cumu	AM	DIRECT	08:15	09:15	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:15 - 08:30	From	1 - London Distribution Park	0.00	1.00	3.00	1.00	21.00
	2 - Dock Road	0.00	0.00	7.00	23.00	101.00	
	3 - St Andrews Road	0.00	4.00	8.00	20.00	129.00	
	4 - Thurrock Park Way	6.00	18.00	33.00	2.00	69.00	
	5 - A1089 Dock Road	43.00	80.00	185.00	136.00	0.00	

Demand (Veh/TS)

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	3.00	4.00	21.00
	2 - Dock Road	1.00	0.00	7.00	43.00	118.00
	3 - St Andrews Road	1.00	3.00	3.00	24.00	125.00
	4 - Thurrock Park Way	0.00	13.00	30.00	1.00	70.00
	5 - A1089 Dock Road	37.00	66.00	223.00	123.00	0.00

Demand (Veh/TS)

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	1.00	21.00
	2 - Dock Road	1.00	0.00	7.00	46.00	76.00
	3 - St Andrews Road	1.00	0.00	7.00	17.00	120.00
	4 - Thurrock Park Way	2.00	29.00	31.00	2.00	62.00
	5 - A1089 Dock Road	40.00	85.00	226.00	161.00	0.00

Demand (Veh/TS)

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	2.00	1.00	3.00	21.00
	2 - Dock Road	5.00	0.00	3.00	31.00	59.00
	3 - St Andrews Road	0.00	8.00	4.00	30.00	126.00
	4 - Thurrock Park Way	3.00	27.00	25.00	1.00	66.00
	5 - A1089 Dock Road	40.00	86.00	185.00	134.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 08:15 -
08:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	57	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	48	4	44	6	0

Heavy Vehicle Percentages

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	4	66	7	82
	4 - Thurrock Park Way	0	4	7	8	16
	5 - A1089 Dock Road	50	4	44	6	0

Heavy Vehicle Percentages

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	0	58	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	44	6	0

Heavy Vehicle Percentages

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	62	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	44	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.26	11.51	0.3	B	26.50	105.99
2 - Dock Road	0.82	21.13	4.0	C	131.99	527.97
3 - St Andrews Road	0.60	8.63	1.5	A	157.49	629.98
4 - Thurrock Park Way	0.51	7.23	1.0	A	122.50	490.01
5 - A1089 Dock Road	1.18	256.61	125.6	F	462.25	1849.00

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	26.00	26.00	443.69	110.77	0.235	25.70	46.62	0.0	0.3	10.543	B
2 - Dock Road	131.00	131.00	370.92	223.68	0.586	129.62	98.46	0.0	1.4	9.437	A
3 - St Andrews Road	161.00	161.00	275.04	270.86	0.594	159.57	225.51	0.0	1.4	7.989	A
4 - Thurrock Park Way	128.00	128.00	260.44	250.43	0.511	126.97	174.17	0.0	1.0	7.232	A
5 - A1089 Dock Road	444.00	444.00	70.42	437.30	1.015	419.89	316.99	0.0	24.1	35.235	E

08:30 - 08:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	29.00	29.00	446.94	110.79	0.262	28.95	38.04	0.3	0.3	10.990	B
2 - Dock Road	169.00	169.00	394.42	206.64	0.818	166.40	81.47	1.4	4.0	21.132	C
3 - St Andrews Road	156.00	156.00	304.80	260.16	0.600	155.96	256.02	1.4	1.5	8.632	A
4 - Thurrock Park Way	114.00	114.00	270.26	246.15	0.463	114.16	190.50	1.0	0.9	6.826	A
5 - A1089 Dock Road	449.00	449.00	52.17	437.69	1.027	432.82	332.26	24.1	40.3	75.553	F

08:45 - 09:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	24.00	24.00	468.72	102.25	0.235	24.04	38.07	0.3	0.3	11.514	B
2 - Dock Road	130.00	130.00	391.57	210.65	0.617	132.32	101.19	4.0	1.7	11.808	B
3 - St Andrews Road	145.00	145.00	284.06	262.18	0.553	145.22	239.83	1.5	1.3	7.711	A
4 - Thurrock Park Way	126.00	126.00	227.93	268.51	0.469	126.00	201.34	0.9	0.9	6.314	A
5 - A1089 Dock Road	512.00	512.00	72.90	434.38	1.177	433.89	281.03	40.3	118.4	171.172	F

09:00 - 09:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	463.98	109.13	0.247	26.99	45.83	0.3	0.3	10.953	B
2 - Dock Road	98.00	98.00	372.83	222.90	0.439	98.84	118.13	1.7	0.8	7.304	A
3 - St Andrews Road	168.00	168.00	253.89	285.27	0.589	167.86	217.78	1.3	1.4	7.652	A
4 - Thurrock Park Way	122.00	122.00	223.42	268.48	0.454	122.04	198.33	0.9	0.8	6.147	A
5 - A1089 Dock Road	445.00	445.00	72.98	437.71	1.016	436.82	272.48	118.4	126.6	256.605	F

2022 + Comm + P Con 2 + Cumu, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	134.56	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 period length (min)	Time segment length (min)	Run automatically
D9	2022 + Comm + P Con 2 + Cumu	AM	DIRECT	08:15	09:15	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
08:15 - 08:30	From	1 - London Distribution Park	0.00	1.00	3.00	1.00	21.00
	2 - Dock Road	0.00	0.00	7.00	23.00	101.00	
	3 - St Andrews Road	0.00	4.00	9.00	20.00	129.00	
	4 - Thurrock Park Way	6.00	18.00	33.00	2.00	69.00	
	5 - A1089 Dock Road	43.00	80.00	185.00	136.00	0.00	

Demand (Veh/TS)

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	3.00	4.00	21.00
	2 - Dock Road	1.00	0.00	7.00	43.00	118.00
	3 - St Andrews Road	1.00	3.00	4.00	24.00	125.00
	4 - Thurrock Park Way	0.00	13.00	30.00	1.00	70.00
	5 - A1089 Dock Road	37.00	66.00	223.00	123.00	0.00

Demand (Veh/TS)

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	1.00	21.00
	2 - Dock Road	1.00	0.00	7.00	46.00	76.00
	3 - St Andrews Road	1.00	0.00	8.00	17.00	120.00
	4 - Thurrock Park Way	2.00	29.00	31.00	2.00	62.00
	5 - A1089 Dock Road	40.00	85.00	226.00	161.00	0.00

Demand (Veh/TS)

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	2.00	1.00	3.00	21.00
	2 - Dock Road	0.00	0.00	3.00	31.00	59.00
	3 - St Andrews Road	0.00	8.00	5.00	30.00	126.00
	4 - Thurrock Park Way	3.00	27.00	25.00	1.00	66.00
	5 - A1089 Dock Road	40.00	86.00	185.00	134.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 08:15 -
08:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	62	7	81
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	48	4	44	6	0

Heavy Vehicle Percentages

 08:30 -
08:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	4	74	7	82
	4 - Thurrock Park Way	0	4	7	8	16
	5 - A1089 Dock Road	50	4	44	6	0

Heavy Vehicle Percentages

 08:45 -
09:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	38	0	13	5	4
	3 - St Andrews Road	88	0	63	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	44	6	0

Heavy Vehicle Percentages

 09:00 -
09:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	15	78	17	89
	2 - Dock Road	0	0	13	5	4
	3 - St Andrews Road	0	4	69	7	82
	4 - Thurrock Park Way	15	4	7	8	16
	5 - A1089 Dock Road	49	4	44	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.26	11.55	0.3	B	26.50	105.99
2 - Dock Road	0.82	21.39	4.0	C	130.75	523.01
3 - St Andrews Road	0.60	8.73	1.5	A	158.49	633.98
4 - Thurrock Park Way	0.51	7.28	1.0	A	122.50	490.01
5 - A1089 Dock Road	1.18	258.49	126.3	F	462.25	1849.00

Main Results for each time segment

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	26.00	26.00	444.22	110.41	0.235	25.70	46.57	0.0	0.3	10.591	B
2 - Dock Road	131.00	131.00	371.55	223.00	0.587	129.61	98.37	0.0	1.4	9.503	A
3 - St Andrews Road	162.00	162.00	274.87	270.59	0.599	160.54	226.29	0.0	1.5	8.076	A
4 - Thurrock Park Way	128.00	128.00	261.41	249.60	0.513	126.97	174.01	0.0	1.0	7.278	A
5 - A1089 Dock Road	444.00	444.00	71.41	436.42	1.017	419.38	316.96	0.0	24.6	35.796	E

08:30 - 08:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	29.00	29.00	447.40	110.45	0.262	28.95	38.00	0.3	0.4	11.035	B
2 - Dock Road	169.00	169.00	394.94	206.05	0.820	166.36	81.40	1.4	4.0	21.394	C
3 - St Andrews Road	157.00	157.00	304.62	259.94	0.604	156.96	256.68	1.5	1.5	8.732	A
4 - Thurrock Park Way	114.00	114.00	271.23	245.33	0.465	114.16	190.34	1.0	0.9	6.871	A
5 - A1089 Dock Road	449.00	449.00	53.17	436.85	1.029	432.22	332.23	24.6	41.4	77.317	F

08:45 - 09:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	24.00	24.00	468.92	102.00	0.235	24.04	38.01	0.4	0.3	11.552	B
2 - Dock Road	130.00	130.00	391.93	210.13	0.619	132.36	101.03	4.0	1.7	11.899	B
3 - St Andrews Road	146.00	146.00	283.78	262.01	0.557	146.22	240.51	1.5	1.3	7.790	A
4 - Thurrock Park Way	126.00	126.00	228.97	267.66	0.471	126.00	201.03	0.9	0.9	6.352	A
5 - A1089 Dock Road	512.00	512.00	73.90	433.50	1.179	433.03	281.06	41.4	120.4	174.437	F

09:00 - 09:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	27.00	27.00	466.12	108.24	0.249	26.98	40.99	0.3	0.3	11.073	B
2 - Dock Road	93.00	93.00	374.78	221.06	0.421	93.94	118.32	1.7	0.7	7.129	A
3 - St Andrews Road	169.00	169.00	249.39	286.49	0.590	168.88	219.34	1.3	1.4	7.641	A
4 - Thurrock Park Way	122.00	122.00	219.53	269.73	0.452	122.05	198.74	0.9	0.8	6.096	A
5 - A1089 Dock Road	445.00	445.00	69.06	439.01	1.012	438.05	272.51	120.4	127.3	258.489	F

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
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Filename: Asda Rbt Mit + LTC test 1700-1800.j9
Path: P:\JNY9639 - Thurrock Generation Plant\Transport\Arcady
Report generation date: 12/09/2020 20:36:52

- »2022 + Comm, PM
- »2022 + Comm + Av Con 1, PM
- »2022 + Comm + P Con 1, PM
- »2022 + Comm + Av Con 2, PM
- »2022 + Comm + P Con 2, PM
- »2022 + Comm + Av Con 1 + Cumu, PM
- »2022 + Comm + P Con 1 + Cumu, PM
- »2022 + Comm + Av Con 2 + Cumu, PM
- »2022 + Comm + P Con 2 + Cumu, PM

Summary of junction performance

PM				
	Set ID	Queue (Veh)	Delay (s)	RFC
2022 + Comm				
1 - London Distribution Park	D1	0.6	7.24	0.39
2 - Dock Road		1.0	6.57	0.50
3 - St Andrews Road		4.0	11.37	0.81
4 - Thurrock Park Way		23.0	61.93	1.06
5 - A1089 Dock Road		3.1	8.73	0.76
2022 + Comm + Av Con 1				
1 - London Distribution Park	D2	0.6	7.20	0.39
2 - Dock Road		1.0	6.60	0.50
3 - St Andrews Road		4.0	11.50	0.81
4 - Thurrock Park Way		23.4	62.77	1.07
5 - A1089 Dock Road		3.1	8.85	0.77
2022 + Comm + P Con 1				
1 - London Distribution Park	D3	0.6	7.27	0.39
2 - Dock Road		1.0	6.65	0.50
3 - St Andrews Road		4.3	12.01	0.82
4 - Thurrock Park Way		24.6	65.39	1.08
5 - A1089 Dock Road		3.2	9.07	0.77
2022 + Comm + Av Con 2				
1 - London Distribution Park	D4	0.6	7.22	0.39
2 - Dock Road		1.0	6.60	0.50
3 - St Andrews Road		4.1	11.65	0.82
4 - Thurrock Park Way		23.8	63.72	1.07
5 - A1089 Dock Road		3.1	8.81	0.77
2022 + Comm + P Con 2				

1 - London Distribution Park	D5	0.6	7.26	0.39
2 - Dock Road		1.0	6.65	0.50
3 - St Andrews Road		4.2	11.85	0.82
4 - Thurrock Park Way		24.2	64.63	1.07
5 - A1089 Dock Road		3.1	8.88	0.77
2022 + Comm + Av Con 1 + Cumu				
1 - London Distribution Park	D6	0.6	7.73	0.40
2 - Dock Road		1.1	7.19	0.53
3 - St Andrews Road		7.3	17.90	0.90
4 - Thurrock Park Way		44.0	130.65	1.20
5 - A1089 Dock Road		3.9	10.58	0.80
2022 + Comm + P Con 1 + Cumu				
1 - London Distribution Park	D7	0.7	7.77	0.40
2 - Dock Road		1.1	7.23	0.53
3 - St Andrews Road		7.5	18.18	0.90
4 - Thurrock Park Way		44.5	133.53	1.20
5 - A1089 Dock Road		3.9	10.74	0.81
2022 + Comm + Av Con 2 + Cumu				
1 - London Distribution Park	D8	0.6	7.74	0.40
2 - Dock Road		1.1	7.20	0.53
3 - St Andrews Road		7.0	17.36	0.90
4 - Thurrock Park Way		43.3	128.48	1.19
5 - A1089 Dock Road		3.8	10.51	0.80
2022 + Comm + P Con 2 + Cumu				
1 - London Distribution Park	D9	0.7	7.78	0.40
2 - Dock Road		1.1	7.24	0.53
3 - St Andrews Road		7.3	17.82	0.90
4 - Thurrock Park Way		44.3	133.10	1.20
5 - A1089 Dock Road		3.9	10.60	0.80

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	26/07/2019
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EUR\Joanna.gunn
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	perTimeSegment	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 period length (min)	Time segment length (min)	Run automatically
D1	2022 + Comm	PM	DIRECT	17:00	18:00	60	15	✓
D2	2022 + Comm + Av Con 1	PM	DIRECT	17:00	18:00	60	15	✓
D3	2022 + Comm + P Con 1	PM	DIRECT	17:00	18:00	60	15	✓
D4	2022 + Comm + Av Con 2	PM	DIRECT	17:00	18:00	60	15	✓
D5	2022 + Comm + P Con 2	PM	DIRECT	17:00	18:00	60	15	✓
D6	2022 + Comm + Av Con 1 + Cumu	PM	DIRECT	17:00	18:00	60	15	✓
D7	2022 + Comm + P Con 1 + Cumu	PM	DIRECT	17:00	18:00	60	15	✓
D8	2022 + Comm + Av Con 2 + Cumu	PM	DIRECT	17:00	18:00	60	15	✓
D9	2022 + Comm + P Con 2 + Cumu	PM	DIRECT	17:00	18:00	60	15	✓

Analysis Set Details

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

2022 + Comm, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	19.94	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	London Distribution Park	
2	Dock Road	
3	St Andrews Road	
4	Thurrock Park Way	
5	A1089 Dock 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 - London Distribution Park	3.50	8.60	15.0	45.0	116.0	38.0	
2 - Dock Road	3.70	7.30	22.5	21.0	116.0	32.0	
3 - St Andrews Road	7.42	8.11	37.0	36.0	116.0	27.0	
4 - Thurrock Park Way	3.70	9.00	13.5	45.0	116.0	34.0	
5 - A1089 Dock Road	7.45	7.45	0.0	60.0	116.0	25.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1 - London Distribution Park	0.460	449.879
2 - Dock Road	0.464	458.508
3 - St Andrews Road	0.568	631.041
4 - Thurrock Park Way	0.471	464.299
5 - A1089 Dock Road	0.550	592.526

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 period length (min)	Time segment length (min)	Run automatically
D1	2022 + Comm	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
17:00 - 17:15	From	1 - London Distribution Park	0.00	8.00	4.00	6.00	66.00
		2 - Dock Road	0.00	0.00	4.00	29.00	77.00
		3 - St Andrews Road	0.00	11.00	6.00	23.00	267.00
		4 - Thurrock Park Way	1.00	51.00	14.00	1.00	165.00
		5 - A1089 Dock Road	16.00	99.00	88.00	87.00	1.00

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
17:15 - 17:30	From	1 - London Distribution Park	0.00	3.00	0.00	9.00	59.00
		2 - Dock Road	0.00	0.00	10.00	42.00	85.00
		3 - St Andrews Road	3.00	8.00	4.00	26.00	183.00
		4 - Thurrock Park Way	1.00	36.00	28.00	1.00	137.00
		5 - A1089 Dock Road	15.00	116.00	95.00	99.00	1.00

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
17:30 - 17:45	From	1 - London Distribution Park	0.00	1.00	1.00	9.00	58.00
		2 - Dock Road	0.00	0.00	6.00	30.00	89.00
		3 - St Andrews Road	3.00	8.00	8.00	23.00	163.00
		4 - Thurrock Park Way	0.00	55.00	9.00	1.00	196.00
		5 - A1089 Dock Road	21.00	102.00	66.00	94.00	0.00

Demand (Veh/TS)

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	7.00	1.00	7.00	48.00
	2 - Dock Road	0.00	0.00	10.00	47.00	78.00
	3 - St Andrews Road	2.00	10.00	4.00	17.00	160.00
	4 - Thurrock Park Way	0.00	39.00	20.00	1.00	122.00
	5 - A1089 Dock Road	19.00	98.00	97.00	95.00	0.00

Vehicle Mix
Heavy Vehicle Percentages

 17:00 -
17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	20
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	0	0	55	8	25
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	86	1	67	10	0

Heavy Vehicle Percentages

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	0	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	26
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	89	1	66	10	0

Heavy Vehicle Percentages

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	77	1	69	10	0

Heavy Vehicle Percentages

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	26
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	80	1	66	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.39	7.24	0.6	A	71.75	287.02
2 - Dock Road	0.50	6.57	1.0	A	126.75	507.00
3 - St Andrews Road	0.81	11.37	4.0	B	232.25	929.01
4 - Thurrock Park Way	1.06	61.93	23.0	F	219.50	878.01
5 - A1089 Dock Road	0.76	8.73	3.1	A	302.25	1209.02

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	84.00	84.00	349.23	217.81	0.386	83.38	16.79	0.0	0.6	6.664	A
2 - Dock Road	110.00	110.00	269.60	288.91	0.381	109.39	163.01	0.0	0.6	4.996	A
3 - St Andrews Road	307.00	307.00	265.15	378.58	0.811	302.99	113.84	0.0	4.0	11.371	B
4 - Thurrock Park Way	232.00	232.00	423.37	217.97	1.064	208.92	144.77	0.0	23.1	61.932	F
5 - A1089 Dock Road	291.00	291.00	77.11	426.51	0.682	288.90	555.17	0.0	2.1	6.446	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	71.00	71.00	392.45	195.30	0.364	71.05	19.04	0.6	0.6	7.244	A
2 - Dock Road	137.00	137.00	296.40	273.17	0.502	136.62	167.10	0.6	1.0	6.572	A
3 - St Andrews Road	224.00	224.00	295.41	363.38	0.616	226.38	137.61	4.0	1.6	6.680	A
4 - Thurrock Park Way	203.00	203.00	345.09	259.55	0.783	222.13	176.70	23.1	4.0	32.902	D
5 - A1089 Dock Road	326.00	326.00	86.50	426.97	0.763	324.99	480.71	2.1	3.1	8.733	A

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	69.00	69.00	342.38	220.16	0.313	69.12	24.02	0.6	0.5	5.962	A
2 - Dock Road	125.00	125.00	246.95	304.94	0.410	125.29	164.55	1.0	0.7	5.017	A
3 - St Andrews Road	205.00	205.00	281.65	366.17	0.560	205.35	90.59	1.6	1.3	5.610	A
4 - Thurrock Park Way	261.00	261.00	329.52	269.96	0.967	252.65	157.47	4.0	12.3	39.538	E
5 - A1089 Dock Road	283.00	283.00	82.21	433.21	0.653	284.18	499.96	3.1	1.9	6.086	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	63.00	63.00	365.78	203.64	0.309	63.01	20.99	0.5	0.5	6.399	A
2 - Dock Road	135.00	135.00	272.79	283.81	0.476	134.80	156.00	0.7	0.9	6.033	A
3 - St Andrews Road	193.00	193.00	275.76	369.95	0.522	193.19	131.84	1.3	1.1	5.098	A
4 - Thurrock Park Way	182.00	182.00	302.16	282.55	0.644	192.44	166.78	12.3	1.9	11.123	B
5 - A1089 Dock Road	309.00	309.00	78.48	423.44	0.730	308.29	416.13	1.9	2.6	7.765	A

2022 + Comm + Av Con 1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	20.15	C

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 period length (min)	Time segment length (min)	Run automatically
D2	2022 + Comm + Av Con 1	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
17:00 - 17:15	From					
	1 - London Distribution Park	0.00	8.00	4.00	6.00	66.00
	2 - Dock Road	0.00	0.00	4.00	29.00	77.00
	3 - St Andrews Road	0.00	11.00	6.00	23.00	268.00
	4 - Thurrock Park Way	1.00	51.00	14.00	1.00	165.00
	5 - A1089 Dock Road	16.00	99.00	89.00	87.00	1.00

Demand (Veh/TS)

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	3.00	0.00	9.00	59.00
	2 - Dock Road	0.00	0.00	10.00	42.00	85.00
	3 - St Andrews Road	3.00	8.00	4.00	26.00	184.00
	4 - Thurrock Park Way	1.00	36.00	28.00	1.00	137.00
	5 - A1089 Dock Road	15.00	116.00	96.00	99.00	1.00

Demand (Veh/TS)

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	9.00	58.00
	2 - Dock Road	0.00	0.00	6.00	30.00	89.00
	3 - St Andrews Road	3.00	8.00	8.00	23.00	164.00
	4 - Thurrock Park Way	0.00	55.00	9.00	1.00	196.00
	5 - A1089 Dock Road	21.00	102.00	67.00	94.00	0.00

Demand (Veh/TS)

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	7.00	1.00	7.00	48.00
	2 - Dock Road	0.00	0.00	10.00	47.00	78.00
	3 - St Andrews Road	2.00	10.00	4.00	17.00	161.00
	4 - Thurrock Park Way	0.00	39.00	20.00	1.00	122.00
	5 - A1089 Dock Road	19.00	98.00	98.00	95.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 17:00 -
17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	20
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	0	0	55	8	25
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	86	1	67	10	0

Heavy Vehicle Percentages

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	0	0	22
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	89	1	66	10	0

Heavy Vehicle Percentages

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	77	1	69	10	0

Heavy Vehicle Percentages

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	26
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	28
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	80	1	66	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.39	7.20	0.6	A	71.75	287.02
2 - Dock Road	0.50	6.60	1.0	A	126.75	507.00
3 - St Andrews Road	0.81	11.50	4.0	B	233.25	933.01
4 - Thurrock Park Way	1.07	62.77	23.4	F	219.50	878.01
5 - A1089 Dock Road	0.77	8.85	3.1	A	303.26	1213.02

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	84.00	84.00	350.09	217.21	0.387	83.38	16.78	0.0	0.6	6.694	A
2 - Dock Road	110.00	110.00	270.55	288.18	0.382	109.39	162.92	0.0	0.6	5.017	A
3 - St Andrews Road	308.00	308.00	265.13	378.57	0.814	303.93	114.80	0.0	4.1	11.501	B
4 - Thurrock Park Way	232.00	232.00	424.31	217.43	1.067	208.54	144.76	0.0	23.5	62.768	F
5 - A1089 Dock Road	292.00	292.00	77.00	426.12	0.685	289.87	555.85	0.0	2.1	6.507	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	71.00	71.00	393.50	196.00	0.362	71.06	19.04	0.6	0.6	7.205	A
2 - Dock Road	137.00	137.00	297.41	272.68	0.502	136.62	167.16	0.6	1.0	6.596	A
3 - St Andrews Road	225.00	225.00	295.41	361.26	0.623	227.40	138.62	4.1	1.7	6.840	A
4 - Thurrock Park Way	203.00	203.00	346.11	258.41	0.786	222.40	176.70	23.5	4.1	34.334	D
5 - A1089 Dock Road	327.00	327.00	86.58	426.53	0.767	325.97	481.93	2.1	3.2	8.852	A

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	69.00	69.00	343.37	219.52	0.314	69.11	24.02	0.6	0.5	5.990	A
2 - Dock Road	125.00	125.00	247.96	304.16	0.411	125.29	164.52	1.0	0.7	5.041	A
3 - St Andrews Road	206.00	206.00	281.65	366.12	0.563	206.38	91.61	1.7	1.3	5.647	A
4 - Thurrock Park Way	261.00	261.00	330.54	269.36	0.969	252.51	157.48	4.1	12.6	40.265	E
5 - A1089 Dock Road	284.00	284.00	82.18	432.69	0.656	285.21	500.87	3.2	1.9	6.154	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	63.00	63.00	366.82	202.99	0.310	63.01	20.99	0.5	0.5	6.429	A
2 - Dock Road	135.00	135.00	273.79	283.06	0.477	134.80	156.05	0.7	0.9	6.063	A
3 - St Andrews Road	194.00	194.00	275.76	367.48	0.528	194.17	132.83	1.3	1.1	5.200	A
4 - Thurrock Park Way	182.00	182.00	303.15	281.26	0.647	192.66	166.78	12.6	1.9	11.356	B
5 - A1089 Dock Road	310.00	310.00	78.53	423.03	0.733	309.28	417.28	1.9	2.7	7.859	A

2022 + Comm + P Con 1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	20.86	C

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 period length (min)	Time segment length (min)	Run automatically
D3	2022 + Comm + P Con 1	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
17:00 - 17:15	From	1 - London Distribution Park	0.00	8.00	4.00	6.00	66.00
	2 - Dock Road	0.00	0.00	4.00	29.00	77.00	
	3 - St Andrews Road	0.00	11.00	6.00	23.00	269.00	
	4 - Thurrock Park Way	1.00	51.00	14.00	1.00	165.00	
	5 - A1089 Dock Road	16.00	99.00	90.00	87.00	1.00	

Demand (Veh/TS)

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	3.00	0.00	9.00	59.00
	2 - Dock Road	0.00	0.00	10.00	42.00	85.00
	3 - St Andrews Road	3.00	8.00	4.00	26.00	185.00
	4 - Thurrock Park Way	1.00	36.00	28.00	1.00	137.00
	5 - A1089 Dock Road	15.00	116.00	97.00	99.00	1.00

Demand (Veh/TS)

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	9.00	58.00
	2 - Dock Road	0.00	0.00	6.00	30.00	89.00
	3 - St Andrews Road	3.00	8.00	8.00	23.00	165.00
	4 - Thurrock Park Way	0.00	55.00	9.00	1.00	196.00
	5 - A1089 Dock Road	21.00	102.00	68.00	94.00	0.00

Demand (Veh/TS)

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	7.00	1.00	7.00	48.00
	2 - Dock Road	0.00	0.00	10.00	47.00	78.00
	3 - St Andrews Road	2.00	10.00	4.00	17.00	162.00
	4 - Thurrock Park Way	0.00	39.00	20.00	1.00	122.00
	5 - A1089 Dock Road	19.00	98.00	99.00	95.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 17:00 -
17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	20
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	0	0	55	8	26
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	86	1	67	10	0

Heavy Vehicle Percentages

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	0	0	22
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	89	1	67	10	0

Heavy Vehicle Percentages

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	28
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	77	1	70	10	0

Heavy Vehicle Percentages

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	26
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	28
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	80	1	67	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.39	7.27	0.6	A	71.75	287.02
2 - Dock Road	0.50	6.65	1.0	A	126.75	507.00
3 - St Andrews Road	0.82	12.01	4.3	B	234.25	937.01
4 - Thurrock Park Way	1.08	65.39	24.6	F	219.50	878.01
5 - A1089 Dock Road	0.77	9.07	3.2	A	304.26	1217.02

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	84.00	84.00	350.72	216.71	0.388	83.37	16.78	0.0	0.6	6.719	A
2 - Dock Road	110.00	110.00	271.45	287.47	0.383	109.39	162.64	0.0	0.6	5.037	A
3 - St Andrews Road	309.00	309.00	265.12	375.91	0.822	304.72	115.72	0.0	4.3	12.009	B
4 - Thurrock Park Way	232.00	232.00	425.11	215.77	1.075	207.36	144.73	0.0	24.6	65.393	F
5 - A1089 Dock Road	293.00	293.00	76.65	425.84	0.688	290.84	555.82	0.0	2.2	6.567	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	71.00	71.00	394.77	194.88	0.364	71.06	19.04	0.6	0.6	7.273	A
2 - Dock Road	137.00	137.00	298.44	271.48	0.505	136.61	167.39	0.6	1.0	6.655	A
3 - St Andrews Road	226.00	226.00	295.39	361.20	0.626	228.59	139.66	4.3	1.7	6.914	A
4 - Thurrock Park Way	203.00	203.00	347.28	257.74	0.788	223.51	176.69	24.6	4.1	36.741	E
5 - A1089 Dock Road	328.00	328.00	86.91	425.00	0.772	326.91	483.88	2.2	3.2	9.067	A

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	69.00	69.00	344.31	218.63	0.316	69.12	24.02	0.6	0.5	6.025	A
2 - Dock Road	125.00	125.00	248.98	303.06	0.412	125.30	164.44	1.0	0.7	5.072	A
3 - St Andrews Road	207.00	207.00	281.66	363.78	0.569	207.36	92.62	1.7	1.3	5.767	A
4 - Thurrock Park Way	261.00	261.00	331.54	268.05	0.974	252.05	157.49	4.1	13.1	41.660	E
5 - A1089 Dock Road	285.00	285.00	82.07	431.39	0.661	286.25	501.51	3.2	2.0	6.256	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	63.00	63.00	367.93	201.94	0.312	63.01	20.99	0.5	0.5	6.480	A
2 - Dock Road	135.00	135.00	274.79	281.86	0.479	134.80	156.15	0.7	0.9	6.110	A
3 - St Andrews Road	195.00	195.00	275.75	367.43	0.531	195.19	133.84	1.3	1.1	5.231	A
4 - Thurrock Park Way	182.00	182.00	304.17	280.68	0.649	193.18	166.77	13.1	1.9	11.579	B
5 - A1089 Dock Road	311.00	311.00	78.66	421.55	0.738	310.25	418.69	2.0	2.7	8.029	A

2022 + Comm + Av Con 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	20.39	C

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 period length (min)	Time segment length (min)	Run automatically
D4	2022 + Comm + Av Con 2	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
17:00 - 17:15	From	1 - London Distribution Park	0.00	8.00	4.00	6.00	66.00
	2 - Dock Road	0.00	0.00	4.00	29.00	77.00	
	3 - St Andrews Road	0.00	11.00	7.00	23.00	267.00	
	4 - Thurrock Park Way	1.00	51.00	14.00	1.00	165.00	
	5 - A1089 Dock Road	16.00	99.00	88.00	87.00	1.00	

Demand (Veh/TS)

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	3.00	0.00	9.00	59.00
	2 - Dock Road	0.00	0.00	10.00	42.00	85.00
	3 - St Andrews Road	3.00	8.00	5.00	26.00	183.00
	4 - Thurrock Park Way	1.00	36.00	28.00	1.00	137.00
	5 - A1089 Dock Road	15.00	116.00	95.00	99.00	1.00

Demand (Veh/TS)

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	9.00	58.00
	2 - Dock Road	0.00	0.00	6.00	30.00	89.00
	3 - St Andrews Road	3.00	8.00	9.00	23.00	163.00
	4 - Thurrock Park Way	0.00	55.00	9.00	1.00	196.00
	5 - A1089 Dock Road	21.00	102.00	66.00	94.00	0.00

Demand (Veh/TS)

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	7.00	1.00	7.00	48.00
	2 - Dock Road	0.00	0.00	10.00	47.00	78.00
	3 - St Andrews Road	2.00	10.00	5.00	17.00	160.00
	4 - Thurrock Park Way	0.00	39.00	20.00	1.00	122.00
	5 - A1089 Dock Road	19.00	98.00	97.00	95.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 17:00 -
17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	21
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	0	0	62	8	25
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	86	1	67	10	0

Heavy Vehicle Percentages

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	0	0	22
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	63	8	26
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	89	1	66	10	0

Heavy Vehicle Percentages

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	60	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	77	1	66	10	0

Heavy Vehicle Percentages

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	26
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	63	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	80	1	66	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.39	7.22	0.6	A	71.75	287.02
2 - Dock Road	0.50	6.60	1.0	A	126.75	507.00
3 - St Andrews Road	0.82	11.65	4.1	B	233.25	933.01
4 - Thurrock Park Way	1.07	63.72	23.8	F	219.50	878.01
5 - A1089 Dock Road	0.77	8.81	3.1	A	302.26	1209.03

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	84.00	84.00	349.97	215.68	0.389	83.37	16.78	0.0	0.6	6.781	A
2 - Dock Road	110.00	110.00	270.51	287.73	0.382	109.39	162.82	0.0	0.6	5.029	A
3 - St Andrews Road	308.00	308.00	265.13	377.49	0.816	303.87	114.77	0.0	4.1	11.647	B
4 - Thurrock Park Way	232.00	232.00	424.25	216.82	1.070	208.11	144.75	0.0	23.9	63.722	F
5 - A1089 Dock Road	291.00	291.00	77.86	425.75	0.683	288.89	554.50	0.0	2.1	6.479	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	71.00	71.00	393.66	195.81	0.363	71.06	19.04	0.6	0.6	7.216	A
2 - Dock Road	137.00	137.00	297.46	272.52	0.503	136.62	167.27	0.6	1.0	6.604	A
3 - St Andrews Road	225.00	225.00	295.42	362.71	0.620	227.47	138.66	4.1	1.7	6.773	A
4 - Thurrock Park Way	203.00	203.00	346.18	258.88	0.785	222.87	176.71	23.9	4.0	34.611	D
5 - A1089 Dock Road	326.00	326.00	87.73	426.02	0.765	324.97	481.33	2.1	3.1	8.811	A

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	69.00	69.00	343.36	220.16	0.313	69.12	24.02	0.6	0.5	5.962	A
2 - Dock Road	125.00	125.00	247.97	304.92	0.410	125.30	164.50	1.0	0.7	5.020	A
3 - St Andrews Road	206.00	206.00	281.66	365.10	0.564	206.35	91.60	1.7	1.3	5.681	A
4 - Thurrock Park Way	261.00	261.00	330.52	269.05	0.970	252.36	157.49	4.0	12.7	40.500	E
5 - A1089 Dock Road	283.00	283.00	83.14	434.76	0.651	284.23	499.74	3.1	1.9	6.027	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	63.00	63.00	366.83	202.89	0.311	63.01	20.99	0.5	0.5	6.434	A
2 - Dock Road	135.00	135.00	273.78	282.94	0.477	134.80	156.06	0.7	0.9	6.066	A
3 - St Andrews Road	194.00	194.00	275.74	368.89	0.526	194.19	132.84	1.3	1.1	5.157	A
4 - Thurrock Park Way	182.00	182.00	303.16	281.68	0.646	192.79	166.77	12.7	1.9	11.331	B
5 - A1089 Dock Road	309.00	309.00	79.56	422.59	0.731	308.26	416.38	1.9	2.6	7.817	A

2022 + Comm + P Con 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	20.65	C

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 period length (min)	Time segment length (min)	Run automatically
D5	2022 + Comm + P Con 2	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
17:00 - 17:15	From	1 - London Distribution Park	0.00	8.00	4.00	6.00	66.00
	2 - Dock Road	0.00	0.00	4.00	29.00	77.00	
	3 - St Andrews Road	0.00	11.00	8.00	23.00	267.00	
	4 - Thurrock Park Way	1.00	51.00	14.00	1.00	165.00	
	5 - A1089 Dock Road	16.00	99.00	87.00	87.00	1.00	

Demand (Veh/TS)

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	3.00	0.00	9.00	59.00
	2 - Dock Road	0.00	0.00	10.00	42.00	85.00
	3 - St Andrews Road	3.00	8.00	6.00	26.00	183.00
	4 - Thurrock Park Way	1.00	36.00	28.00	1.00	137.00
	5 - A1089 Dock Road	15.00	116.00	95.00	99.00	1.00

Demand (Veh/TS)

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	9.00	58.00
	2 - Dock Road	0.00	0.00	6.00	30.00	89.00
	3 - St Andrews Road	3.00	8.00	10.00	23.00	163.00
	4 - Thurrock Park Way	0.00	55.00	9.00	1.00	196.00
	5 - A1089 Dock Road	21.00	102.00	66.00	94.00	0.00

Demand (Veh/TS)

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	7.00	1.00	7.00	48.00
	2 - Dock Road	0.00	0.00	10.00	47.00	78.00
	3 - St Andrews Road	2.00	10.00	6.00	17.00	160.00
	4 - Thurrock Park Way	0.00	39.00	20.00	1.00	122.00
	5 - A1089 Dock Road	19.00	98.00	97.00	95.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 17:00 -
17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	20
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	0	0	67	8	25
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	86	1	67	10	0

Heavy Vehicle Percentages

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	0	0	22
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	69	8	26
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	89	1	66	10	0

Heavy Vehicle Percentages

17:30 - 17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	64	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	77	1	69	10	0

Heavy Vehicle Percentages

17:45 - 18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	26
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	69	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	80	1	66	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.39	7.26	0.6	A	71.75	287.02
2 - Dock Road	0.50	6.65	1.0	A	126.75	507.00
3 - St Andrews Road	0.82	11.85	4.2	B	234.25	937.02
4 - Thurrock Park Way	1.07	64.63	24.2	F	219.50	878.01
5 - A1089 Dock Road	0.77	8.88	3.1	A	302.01	1208.02

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	84.00	84.00	349.85	217.04	0.387	83.38	16.78	0.0	0.6	6.703	A
2 - Dock Road	110.00	110.00	270.49	287.89	0.382	109.39	162.73	0.0	0.6	5.025	A
3 - St Andrews Road	309.00	309.00	265.13	377.02	0.820	304.78	114.74	0.0	4.2	11.851	B
4 - Thurrock Park Way	232.00	232.00	425.17	216.25	1.073	207.70	144.75	0.0	24.3	64.634	F
5 - A1089 Dock Road	290.00	290.00	78.72	425.40	0.682	287.91	554.14	0.0	2.1	6.451	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	71.00	71.00	394.71	195.03	0.364	71.06	19.04	0.6	0.6	7.264	A
2 - Dock Road	137.00	137.00	298.44	271.62	0.504	136.61	167.33	0.6	1.0	6.647	A
3 - St Andrews Road	226.00	226.00	295.39	361.76	0.625	228.53	139.66	4.2	1.7	6.879	A
4 - Thurrock Park Way	203.00	203.00	347.23	257.96	0.788	223.20	176.70	24.3	4.1	36.003	E
5 - A1089 Dock Road	326.00	326.00	88.83	425.12	0.767	324.93	481.60	2.1	3.2	8.883	A

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	69.00	69.00	344.27	218.67	0.316	69.12	24.02	0.6	0.5	6.021	A
2 - Dock Road	125.00	125.00	248.96	303.11	0.412	125.30	164.43	1.0	0.7	5.069	A
3 - St Andrews Road	207.00	207.00	281.65	364.05	0.569	207.36	92.60	1.7	1.3	5.759	A
4 - Thurrock Park Way	261.00	261.00	331.53	268.14	0.973	252.06	157.48	4.1	13.0	41.530	E
5 - A1089 Dock Road	283.00	283.00	84.08	431.51	0.656	284.21	499.52	3.2	1.9	6.162	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	63.00	63.00	367.94	202.08	0.312	63.01	20.99	0.5	0.5	6.471	A
2 - Dock Road	135.00	135.00	274.80	282.01	0.479	134.80	156.15	0.7	0.9	6.104	A
3 - St Andrews Road	195.00	195.00	275.75	367.76	0.530	195.19	133.85	1.3	1.1	5.223	A
4 - Thurrock Park Way	182.00	182.00	304.17	280.78	0.649	193.14	166.78	13.0	1.9	11.552	B
5 - A1089 Dock Road	309.00	309.00	80.65	421.69	0.733	308.28	416.66	1.9	2.7	7.881	A

2022 + Comm + Av Con 1 + Cumu, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	35.99	E

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 period length (min)	Time segment length (min)	Run automatically
D6	2022 + Comm + Av Con 1 + Cumu	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
17:00 - 17:15	From	1 - London Distribution Park	0.00	8.00	4.00	6.00	66.00
	2 - Dock Road	0.00	0.00	5.00	29.00	80.00	
	3 - St Andrews Road	0.00	11.00	6.00	24.00	295.00	
	4 - Thurrock Park Way	1.00	53.00	15.00	1.00	171.00	
	5 - A1089 Dock Road	16.00	102.00	97.00	89.00	1.00	

Demand (Veh/TS)

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	3.00	0.00	9.00	59.00
	2 - Dock Road	0.00	0.00	10.00	42.00	89.00
	3 - St Andrews Road	3.00	8.00	4.00	26.00	212.00
	4 - Thurrock Park Way	1.00	38.00	29.00	1.00	143.00
	5 - A1089 Dock Road	15.00	118.00	103.00	101.00	1.00

Demand (Veh/TS)

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	9.00	58.00
	2 - Dock Road	0.00	0.00	6.00	30.00	92.00
	3 - St Andrews Road	3.00	8.00	8.00	24.00	192.00
	4 - Thurrock Park Way	0.00	57.00	10.00	1.00	202.00
	5 - A1089 Dock Road	21.00	104.00	74.00	96.00	0.00

Demand (Veh/TS)

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	7.00	1.00	7.00	48.00
	2 - Dock Road	0.00	0.00	10.00	47.00	81.00
	3 - St Andrews Road	2.00	10.00	4.00	17.00	189.00
	4 - Thurrock Park Way	0.00	41.00	21.00	1.00	127.00
	5 - A1089 Dock Road	19.00	100.00	106.00	97.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 17:00 -
17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	20
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	0	0	55	8	26
	4 - Thurrock Park Way	0	0	12	25	4
	5 - A1089 Dock Road	86	1	70	10	0

Heavy Vehicle Percentages

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	0	0	22
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	89	1	69	10	0

Heavy Vehicle Percentages

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	27
	4 - Thurrock Park Way	0	0	12	25	4
	5 - A1089 Dock Road	77	1	72	10	0

Heavy Vehicle Percentages

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	26
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	28
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	80	1	69	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.40	7.73	0.6	A	71.75	287.02
2 - Dock Road	0.53	7.19	1.1	A	130.25	521.00
3 - St Andrews Road	0.90	17.90	7.3	C	261.51	1046.03
4 - Thurrock Park Way	1.20	130.65	44.0	F	228.27	913.07
5 - A1089 Dock Road	0.80	10.58	3.9	B	315.01	1260.03

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	84.00	84.00	359.60	210.29	0.399	83.34	16.68	0.0	0.7	7.051	A
2 - Dock Road	114.00	114.00	279.80	280.29	0.407	113.32	163.14	0.0	0.7	5.369	A
3 - St Andrews Road	336.00	336.00	269.86	373.42	0.900	328.66	123.26	0.0	7.3	17.900	C
4 - Thurrock Park Way	241.00	241.00	451.18	201.29	1.197	196.84	147.34	0.0	44.2	108.367	F
5 - A1089 Dock Road	305.00	305.00	73.80	422.41	0.722	302.48	574.22	0.0	2.5	7.359	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	71.00	71.00	407.55	187.50	0.379	71.05	19.03	0.7	0.6	7.731	A
2 - Dock Road	141.00	141.00	306.14	265.29	0.532	140.56	172.46	0.7	1.1	7.187	A
3 - St Andrews Road	253.00	253.00	301.23	357.65	0.707	257.86	145.47	7.3	2.5	9.429	A
4 - Thurrock Park Way	212.00	212.00	380.36	239.54	0.887	234.26	178.73	44.2	21.9	130.653	F
5 - A1089 Dock Road	338.00	338.00	89.95	420.20	0.804	336.63	524.67	2.5	3.9	10.584	B

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	69.00	69.00	355.97	211.77	0.326	69.13	24.11	0.6	0.5	6.314	A
2 - Dock Road	128.00	128.00	259.52	295.50	0.433	128.34	165.58	1.1	0.8	5.396	A
3 - St Andrews Road	235.00	235.00	286.79	363.17	0.647	235.62	101.07	2.5	1.9	7.091	A
4 - Thurrock Park Way	270.00	270.00	361.82	251.55	1.072	249.61	160.60	21.9	42.3	127.015	F
5 - A1089 Dock Road	295.00	295.00	83.49	426.90	0.691	296.59	527.94	3.9	2.3	6.989	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	63.00	63.00	388.73	191.25	0.329	63.00	20.97	0.5	0.5	7.016	A
2 - Dock Road	138.00	138.00	285.69	273.77	0.504	137.77	166.04	0.8	1.0	6.607	A
3 - St Andrews Road	222.00	222.00	280.72	364.17	0.610	222.29	142.74	1.9	1.6	6.356	A
4 - Thurrock Park Way	190.00	190.00	334.22	263.92	0.721	229.55	168.79	42.3	2.8	51.525	F
5 - A1089 Dock Road	322.00	322.00	88.79	413.41	0.779	320.92	474.98	2.3	3.4	9.610	A

2022 + Comm + P Con 1 + Cumu, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	36.64	E

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 period length (min)	Time segment length (min)	Run automatically
D7	2022 + Comm + P Con 1 + Cumu	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

17:00 - 17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	8.00	4.00	6.00	66.00
	2 - Dock Road	0.00	0.00	5.00	29.00	80.00
	3 - St Andrews Road	0.00	11.00	6.00	24.00	296.00
	4 - Thurrock Park Way	1.00	53.00	15.00	1.00	171.00
	5 - A1089 Dock Road	16.00	102.00	98.00	89.00	1.00

Demand (Veh/TS)

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	3.00	0.00	9.00	59.00
	2 - Dock Road	0.00	0.00	10.00	42.00	89.00
	3 - St Andrews Road	3.00	8.00	4.00	26.00	213.00
	4 - Thurrock Park Way	1.00	38.00	29.00	1.00	143.00
	5 - A1089 Dock Road	15.00	118.00	104.00	101.00	1.00

Demand (Veh/TS)

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	9.00	58.00
	2 - Dock Road	0.00	0.00	6.00	30.00	92.00
	3 - St Andrews Road	3.00	8.00	8.00	24.00	193.00
	4 - Thurrock Park Way	0.00	57.00	10.00	1.00	202.00
	5 - A1089 Dock Road	21.00	104.00	75.00	96.00	0.00

Demand (Veh/TS)

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	7.00	1.00	7.00	48.00
	2 - Dock Road	0.00	0.00	10.00	47.00	81.00
	3 - St Andrews Road	2.00	10.00	4.00	17.00	190.00
	4 - Thurrock Park Way	0.00	41.00	21.00	1.00	127.00
	5 - A1089 Dock Road	19.00	100.00	107.00	97.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 17:00 -
17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	20
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	0	0	55	8	26
	4 - Thurrock Park Way	0	0	12	25	4
	5 - A1089 Dock Road	86	1	70	10	0

Heavy Vehicle Percentages

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	0	0	22
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	89	1	69	10	0

Heavy Vehicle Percentages

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	28
	4 - Thurrock Park Way	0	0	12	25	4
	5 - A1089 Dock Road	77	1	73	10	0

Heavy Vehicle Percentages

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	26
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	55	8	28
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	80	1	69	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.40	7.77	0.7	A	71.75	287.02
2 - Dock Road	0.53	7.23	1.1	A	130.25	521.00
3 - St Andrews Road	0.90	18.18	7.5	C	262.50	1050.02
4 - Thurrock Park Way	1.20	133.53	44.5	F	228.27	913.07
5 - A1089 Dock Road	0.81	10.74	3.9	B	316.01	1264.03

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	84.00	84.00	360.43	209.69	0.401	83.34	16.68	0.0	0.7	7.086	A
2 - Dock Road	114.00	114.00	280.74	279.54	0.408	113.32	163.03	0.0	0.7	5.393	A
3 - St Andrews Road	337.00	337.00	269.84	373.42	0.902	329.50	124.21	0.0	7.5	18.180	C
4 - Thurrock Park Way	241.00	241.00	452.03	200.81	1.200	196.40	147.32	0.0	44.6	109.472	F
5 - A1089 Dock Road	306.00	306.00	73.67	422.04	0.725	303.44	574.76	0.0	2.6	7.437	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	71.00	71.00	408.33	186.94	0.380	71.05	19.02	0.7	0.6	7.770	A
2 - Dock Road	141.00	141.00	307.01	264.59	0.533	140.56	172.37	0.7	1.1	7.229	A
3 - St Andrews Road	254.00	254.00	301.22	357.63	0.710	258.99	146.35	7.5	2.5	9.552	A
4 - Thurrock Park Way	212.00	212.00	381.48	238.91	0.889	233.69	178.72	44.6	22.9	133.535	F
5 - A1089 Dock Road	339.00	339.00	89.76	419.90	0.807	337.59	525.41	2.6	4.0	10.739	B

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	69.00	69.00	356.75	210.90	0.327	69.13	24.12	0.6	0.5	6.353	A
2 - Dock Road	128.00	128.00	260.59	294.34	0.435	128.34	165.29	1.1	0.8	5.432	A
3 - St Andrews Road	236.00	236.00	286.79	360.81	0.654	236.60	102.14	2.5	1.9	7.281	A
4 - Thurrock Park Way	270.00	270.00	362.80	250.10	1.079	248.38	160.60	22.9	44.6	133.237	F
5 - A1089 Dock Road	296.00	296.00	83.25	425.66	0.695	297.61	527.93	4.0	2.3	7.118	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	63.00	63.00	390.27	190.39	0.331	63.00	20.97	0.5	0.5	7.063	A
2 - Dock Road	138.00	138.00	286.77	272.96	0.506	137.77	166.50	0.8	1.0	6.647	A
3 - St Andrews Road	223.00	223.00	280.73	364.11	0.612	223.32	143.81	1.9	1.6	6.408	A
4 - Thurrock Park Way	190.00	190.00	335.26	263.33	0.723	231.75	168.80	44.6	2.8	57.281	F
5 - A1089 Dock Road	323.00	323.00	89.34	412.79	0.783	321.90	477.66	2.3	3.4	9.774	A

2022 + Comm + Av Con 2 + Cumu, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	35.44	E

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 period length (min)	Time segment length (min)	Run automatically
D8	2022 + Comm + Av Con 2 + Cumu	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

		To					
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road	
17:00 - 17:15	From	1 - London Distribution Park	0.00	8.00	4.00	6.00	66.00
	2 - Dock Road	0.00	0.00	5.00	29.00	80.00	
	3 - St Andrews Road	0.00	11.00	7.00	24.00	294.00	
	4 - Thurrock Park Way	1.00	53.00	15.00	1.00	171.00	
	5 - A1089 Dock Road	16.00	102.00	96.00	89.00	1.00	

Demand (Veh/TS)

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	3.00	0.00	9.00	59.00
	2 - Dock Road	0.00	0.00	10.00	42.00	89.00
	3 - St Andrews Road	3.00	8.00	5.00	26.00	211.00
	4 - Thurrock Park Way	1.00	38.00	29.00	1.00	143.00
	5 - A1089 Dock Road	15.00	118.00	102.00	101.00	1.00

Demand (Veh/TS)

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	9.00	58.00
	2 - Dock Road	0.00	0.00	6.00	30.00	92.00
	3 - St Andrews Road	3.00	8.00	9.00	24.00	191.00
	4 - Thurrock Park Way	0.00	57.00	10.00	1.00	202.00
	5 - A1089 Dock Road	21.00	104.00	73.00	96.00	0.00

Demand (Veh/TS)

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	7.00	1.00	7.00	48.00
	2 - Dock Road	0.00	0.00	10.00	47.00	81.00
	3 - St Andrews Road	2.00	10.00	5.00	17.00	188.00
	4 - Thurrock Park Way	0.00	41.00	21.00	1.00	127.00
	5 - A1089 Dock Road	19.00	100.00	105.00	97.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 17:00 -
17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	20
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	0	0	62	8	25
	4 - Thurrock Park Way	0	0	12	25	4
	5 - A1089 Dock Road	86	1	69	10	0

Heavy Vehicle Percentages

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	0	0	22
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	63	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	89	1	69	10	0

Heavy Vehicle Percentages

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	60	8	27
	4 - Thurrock Park Way	0	0	12	25	4
	5 - A1089 Dock Road	77	1	72	10	0

Heavy Vehicle Percentages

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	26
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	63	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	80	1	68	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.40	7.74	0.6	A	71.75	287.02
2 - Dock Road	0.53	7.20	1.1	A	130.25	521.00
3 - St Andrews Road	0.90	17.36	7.0	C	261.50	1046.02
4 - Thurrock Park Way	1.19	128.48	43.3	F	228.27	913.07
5 - A1089 Dock Road	0.80	10.51	3.8	B	314.01	1256.03

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	84.00	84.00	359.83	210.44	0.399	83.34	16.69	0.0	0.7	7.047	A
2 - Dock Road	114.00	114.00	279.86	280.54	0.406	113.32	163.32	0.0	0.7	5.361	A
3 - St Andrews Road	336.00	336.00	269.87	375.36	0.895	328.92	123.30	0.0	7.1	17.362	C
4 - Thurrock Park Way	241.00	241.00	451.42	202.11	1.192	197.57	147.37	0.0	43.4	106.583	F
5 - A1089 Dock Road	304.00	304.00	75.00	422.92	0.719	301.52	573.99	0.0	2.5	7.271	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	71.00	71.00	407.50	187.42	0.379	71.05	19.02	0.7	0.6	7.736	A
2 - Dock Road	141.00	141.00	306.17	265.16	0.532	140.56	172.38	0.7	1.1	7.196	A
3 - St Andrews Road	253.00	253.00	301.23	356.94	0.709	257.58	145.50	7.1	2.5	9.447	A
4 - Thurrock Park Way	212.00	212.00	380.10	239.40	0.887	234.03	178.71	43.4	21.4	128.484	F
5 - A1089 Dock Road	337.00	337.00	90.90	419.79	0.803	335.63	523.23	2.5	3.9	10.511	B

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	69.00	69.00	355.84	211.72	0.326	69.13	24.11	0.6	0.5	6.319	A
2 - Dock Road	128.00	128.00	259.45	295.41	0.433	128.34	165.52	1.1	0.8	5.399	A
3 - St Andrews Road	235.00	235.00	286.79	362.27	0.649	235.63	101.00	2.5	1.9	7.142	A
4 - Thurrock Park Way	270.00	270.00	361.82	251.22	1.074	249.26	160.59	21.4	42.2	126.026	F
5 - A1089 Dock Road	294.00	294.00	84.37	426.60	0.689	295.58	526.72	3.9	2.3	6.952	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	63.00	63.00	388.74	191.53	0.329	63.00	20.98	0.5	0.5	7.001	A
2 - Dock Road	138.00	138.00	285.72	274.10	0.503	137.77	166.02	0.8	1.0	6.591	A
3 - St Andrews Road	222.00	222.00	280.74	365.72	0.607	222.31	142.75	1.9	1.6	6.292	A
4 - Thurrock Park Way	190.00	190.00	334.25	264.45	0.719	229.42	168.80	42.2	2.8	50.562	F
5 - A1089 Dock Road	321.00	321.00	89.76	414.00	0.775	319.96	473.91	2.3	3.3	9.457	A

2022 + Comm + P Con 2 + Cumu, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	3 - St Andrews Road - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4, 5	36.50	E

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 period length (min)	Time segment length (min)	Run automatically
D9	2022 + Comm + P Con 2 + Cumu	PM	DIRECT	17:00	18:00	60	15	✓

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1 - London Distribution Park		DIRECT	✓	100.000
2 - Dock Road		DIRECT	✓	100.000
3 - St Andrews Road		DIRECT	✓	100.000
4 - Thurrock Park Way		DIRECT	✓	100.000
5 - A1089 Dock Road		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

17:00 - 17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	8.00	4.00	6.00	66.00
	2 - Dock Road	0.00	0.00	5.00	29.00	80.00
	3 - St Andrews Road	0.00	11.00	8.00	24.00	294.00
	4 - Thurrock Park Way	1.00	53.00	15.00	1.00	171.00
	5 - A1089 Dock Road	16.00	102.00	96.00	89.00	1.00

Demand (Veh/TS)

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	3.00	0.00	9.00	59.00
	2 - Dock Road	0.00	0.00	10.00	42.00	89.00
	3 - St Andrews Road	3.00	8.00	6.00	26.00	211.00
	4 - Thurrock Park Way	1.00	38.00	29.00	1.00	143.00
	5 - A1089 Dock Road	15.00	118.00	102.00	101.00	1.00

Demand (Veh/TS)

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	1.00	1.00	9.00	58.00
	2 - Dock Road	0.00	0.00	6.00	30.00	92.00
	3 - St Andrews Road	3.00	8.00	10.00	24.00	191.00
	4 - Thurrock Park Way	0.00	57.00	10.00	1.00	202.00
	5 - A1089 Dock Road	21.00	104.00	73.00	96.00	0.00

Demand (Veh/TS)

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0.00	7.00	1.00	7.00	48.00
	2 - Dock Road	0.00	0.00	10.00	47.00	81.00
	3 - St Andrews Road	2.00	10.00	6.00	17.00	188.00
	4 - Thurrock Park Way	0.00	41.00	21.00	1.00	127.00
	5 - A1089 Dock Road	19.00	100.00	105.00	97.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

 17:00 -
17:15

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	20
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	0	0	67	8	25
	4 - Thurrock Park Way	0	0	12	25	4
	5 - A1089 Dock Road	86	1	69	10	0

Heavy Vehicle Percentages

 17:15 -
17:30

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	0	0	22
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	69	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	89	1	69	10	0

Heavy Vehicle Percentages

 17:30 -
17:45

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	23
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	64	8	27
	4 - Thurrock Park Way	0	0	12	25	4
	5 - A1089 Dock Road	77	1	72	10	0

Heavy Vehicle Percentages

 17:45 -
18:00

		To				
		1 - London Distribution Park	2 - Dock Road	3 - St Andrews Road	4 - Thurrock Park Way	5 - A1089 Dock Road
From	1 - London Distribution Park	0	0	33	0	26
	2 - Dock Road	0	0	4	5	0
	3 - St Andrews Road	25	0	69	8	27
	4 - Thurrock Park Way	0	0	13	25	4
	5 - A1089 Dock Road	80	1	68	10	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
1 - London Distribution Park	0.40	7.78	0.7	A	71.75	287.02
2 - Dock Road	0.53	7.24	1.1	A	130.25	521.00
3 - St Andrews Road	0.90	17.82	7.3	C	262.50	1050.02
4 - Thurrock Park Way	1.20	133.10	44.3	F	228.27	913.07
5 - A1089 Dock Road	0.80	10.60	3.9	B	314.01	1256.03

Main Results for each time segment

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	84.00	84.00	360.59	209.75	0.400	83.34	16.69	0.0	0.7	7.083	A
2 - Dock Road	114.00	114.00	280.77	279.67	0.408	113.32	163.16	0.0	0.7	5.389	A
3 - St Andrews Road	337.00	337.00	269.86	374.66	0.899	329.67	124.23	0.0	7.3	17.822	C
4 - Thurrock Park Way	241.00	241.00	452.19	201.34	1.197	196.88	147.34	0.0	44.1	108.343	F
5 - A1089 Dock Road	304.00	304.00	75.77	422.17	0.720	301.50	573.29	0.0	2.5	7.314	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	71.00	71.00	408.20	186.77	0.380	71.05	19.02	0.7	0.6	7.781	A
2 - Dock Road	141.00	141.00	307.00	264.34	0.533	140.56	172.25	0.7	1.1	7.244	A
3 - St Andrews Road	254.00	254.00	301.22	356.13	0.713	258.77	146.34	7.3	2.6	9.666	A
4 - Thurrock Park Way	212.00	212.00	381.28	238.40	0.891	233.14	178.71	44.1	23.0	133.016	F
5 - A1089 Dock Road	337.00	337.00	91.61	419.07	0.804	335.61	522.81	2.5	3.9	10.595	B

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	69.00	69.00	356.78	210.96	0.327	69.13	24.12	0.6	0.5	6.353	A
2 - Dock Road	128.00	128.00	260.59	294.42	0.435	128.35	165.32	1.1	0.8	5.432	A
3 - St Andrews Road	236.00	236.00	286.80	361.35	0.653	236.65	102.14	2.6	1.9	7.254	A
4 - Thurrock Park Way	270.00	270.00	362.84	250.28	1.078	248.55	160.60	23.0	44.5	133.099	F
5 - A1089 Dock Road	294.00	294.00	85.30	425.76	0.690	295.59	526.09	3.9	2.3	6.997	A

17:45 - 18:00

Arm	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Throughput (exit side) (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - London Distribution Park	63.00	63.00	390.28	190.56	0.331	63.00	20.97	0.5	0.5	7.054	A
2 - Dock Road	138.00	138.00	286.79	273.16	0.505	137.77	166.49	0.8	1.0	6.637	A
3 - St Andrews Road	223.00	223.00	280.74	364.76	0.611	223.32	143.83	1.9	1.6	6.378	A
4 - Thurrock Park Way	190.00	190.00	335.25	263.56	0.722	231.66	168.81	44.5	2.8	56.763	F
5 - A1089 Dock Road	321.00	321.00	91.32	412.92	0.778	319.93	475.59	2.3	3.3	9.569	A

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