Extra MSA Group

Warrington Motorway Service Area, J11 M62

Addendum to Environmental Statement

Part 2 – Traffic and Transportation Technical Paper 2

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Appendix 2.1 – Transport Assessment (ref ITM12377-002B R)

Appendix 2.2 – Cumulative Development Assessment

Appendix 2.3 – Summary Table of Deletions

1. Introduction

1.1 This document now constitutes part of an Addendum to the Environmental Statement originally submitted to Warrington Council in August 2019 to accompany the outline planning application for a 'New Concept' Motorway Service Area (MSA) at Junction 11 of the M62 Motorway.

1.2 Following the submission of the outline planning application, Warrington Council have refused the Planning Application (Decision Notice dated 17 June 2021) and subsequently, the Applicant has submitted an appeal under Section 78 of the Town and Country Planning Act 1990 against the refusal by Warrington Borough Council for which an Inquiry will be held.

1.3 As part of the Cumulative Assessment, HS2 is included as one of the projects assessed, as there *'might'* be cumulative environmental effects when considered with the Application Proposals. Since the submission of the planning application, additional information has been made available by the Secretary of State for Transport and HS2. The Applicant has also had ongoing discussions with HS2 due to the proximity of the Site to the HS2 proposals and HS2's requirement for land associated with the Application Proposals as shown through the Safeguarding Plans, most recently those plans relating to the Safeguarding Directions, dated 2020 (**ES Part 1 Report, Appendix 14c**), which are an update to the previous plans relating to the Safeguarding Directions, dated 2018 (**ES Part 1 Report, Appendix 14b**).

1.4 This Addendum to the ES is primarily to provide an update to the cumulative assessment in light of this additional information. However it also updates other matters such as policy and guidance references where relevant, most notably in relation to a newly published National Planning Policy Framework (2021). There are no resulting amendments to the assessment of the likely environmental effects as a result of the Application Proposals when considered individually, which remain as set out within the original ES (August 2018).

1.5 The cumulative assessment is a requirement of the Environmental Impact Assessment Regulations (2017) and is undertaken to identify whether there are likely to be any incremental effects from the combined influences of various projects coming forward, based on the information that is available at the time. Schedule 4 of the EIA Regulations states that an Environmental Statement must include a description of the likely significant effects of the development on the environment resulting from '*the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas*

of particular environmental importance likely to be affected or the use of natural resources' (Schedule 4 (5)(e)).

1.6 It is to be noted that it is not the role of an Environmental Statement to assess every theoretical possibility that may come forward, but to look at the reasonable likelihood of a development occurring. Assessment should be of the likely significant effects and be proportionate. It is the assessment of the accumulation of, and interrelationship between, effects which might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place. Thereby, assessing the likely residual effects as a result of the interrelationship between the proposed and cumulative sites at that point in time.

1.7 The amendments to Section 9 of the ES Part 1 Addendum (Interaction of Effects and Cumulative Impact) provides a project description in respect of the HS2 proposals, supported by a series of plans, included at ES Part 1 Report, Appendix 14a-14f, as well as an update as a result of the cumulative assessment undertaken within this ES Part 2 Technical Paper Addendum.

1.8 In order to ensure the Addendum is understandable and to avoid extensive cross referencing, changes have been integrated within the original text of the ES and its technical papers to form a single Addendum to the ES. Wherever changes or additions have been made to the text of the original technical paper, the text has been underlined and anything that is no longer relevant or valid has been struck through (~~struck through~~) but retained within the text. A log is also included within the appendix of this Technical Paper (Appendix 2.3) so that the text removed (i.e. the text struck through within the paper) is identified and a reason for its removal provided. This Addendum should however be read in conjunction with the original ES (August 2019) as not all the technical papers have been subject to change.

1.9 The Application is now the subject of an Appeal, and as such all references to Application Proposals, Application Site, Applicant should be read as Appeal Proposals, Appeal Site and Appellant respectively. These references have not however been amended within the ES Part 1 or Part 2 Addendum documents.

1.10 This section of the Addendum to the Environmental Statement has been prepared by i-Transport and examines the environmental impact of the traffic that will be 'attracted' by the Proposed Development. The Motorway Service Area (MSA) development proposals that are

now subject to ~~this~~ a planning appeal ~~application~~ will attract traffic flows that could have potential impacts on the highway network surrounding the Site. These impacts may relate to driver delays, pedestrian delay and amenity, fear and intimidation, severance and road safety.

1.11 A full Transport Assessment (TA) and Framework Travel Plan (TP) accompanied ~~have been produced to accompany~~ the planning application. The TA forms an Appendix to this ES paper, Appendix 2.1.

1.12 The assessments presented in this ES are based on a combination of traffic surveys conducted along Birchwood Way in November 2018 and average flows recorded at the Highways England MIDAS~~s~~ counters along the M62 Motorway mainline and slip roads. Details of the baseline data are set out in Section 5 of this paper.

1.13 Scoping discussions have been undertaken with Warrington Borough Council (WBC) in its capacity as the Local Highway Authority (LHA) and Highways England (HE) (now known as National Highways) regarding impacts on the Strategic Road Network (SRN).

2. Documents Consulted

2.1 The following guidance documents have been referenced in the ES and the TA:-

- Planning Practice Guidance ID42: Travel Plans, Transport Assessments and Statements in decision-taking;
- Guidelines for the Environmental Assessment of Road Traffic (IEMA) 1993 (IEMA have confirmed that the 1993 Guidance remains the most current version and has not been superseded by a complete replacement document);
- Design Manual for Roads and Bridges (DfT);
- DGN 2: Travel Plans (WBC), August 2016.

Planning Policy and Guidance

2.2 The following planning policy documents have been referred to and considered in this traffic and transportation section of the ES and also the TA:-

- **National Planning Policy Framework ~~February 2019 (NPPF19)~~ July 2021(NPPF21)**

"~~102.~~104. Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

a) The potential impacts of development on transport networks can be addressed;

b) Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;

c) Opportunities to promote walking, cycling and public transport use are identified and pursued;

d) The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding mitigating any adverse effects and for net environmental gains; and

e) Patterns of movement, streets, parking and other transport considerations are integral to the design schemes and contribute to making high quality places.

~~105.~~107. If setting local parking standards for residential and non-residential development, policies should take into account:

a) *The accessibility of the development;*

b) *The type, mix and use of development;*

c) *The availability of and opportunities for public transport;*

d) *Local car ownership levels; and*

e) *The need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles.*

~~*106.*~~*108.* *Maximum parking standards for residential and non-residential development should only be set where there is a clear and compelling justification that they are necessary for managing the local road network, or for optimizing the density of development in city and town centres and other locations that are well served by public transport (in accordance with chapter 11 of this Framework). In town centres, local authorities should seek to improve the quality of parking so that it is convenient, safe and secure, alongside measures to promote accessibility for pedestrians and cyclists.*

~~*107.*~~*109* *Planning policies and decisions should recognize the importance of providing adequate overnight lorry parking facilities, taking into account any local shortages, to reduce the risk of parking in locations that lack proper facilities or could cause a nuisance. Proposals for new or expanded distribution centres should make provision for sufficient lorry parking to cater for their anticipated use.*

~~*108.*~~*110.* *In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:*

a) *appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*

b) *safe suitable access to the site can be achieved for all users;* ~~*and*~~

c) *the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code 46; and*

d) *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.*

~~109.~~111. *Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.*

~~110.~~112. *Within this context, applications for development should:*

a) *Give priority first to pedestrian and cycle movements, both within the scheme and neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*

b) *Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*

c) *Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*

d) *Allow for the efficient delivery of goods, and access by service and emergency vehicles; and*

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

~~111.~~113. *All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment.*

- **DfT Circular 02/2013 The Strategic Road Network and the Delivery of Sustainable Development.**

"9. Development proposals are likely to be acceptable if they can be accommodated within the existing capacity of a section (link or junction) of the strategic road network, or they do not increase demand for use of a section that is already operating at over-capacity levels, taking account of any travel plan, traffic management and/or capacity enhancement measures that may be agreed. However, development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

11. Local authorities and developers will be required to ensure that their proposals comply in all respects with design standards. Where there would be physical changes to the network, schemes must be submitted to road safety, environmental, and non-motorised user audit4 procedures, as well as any other assessment appropriate to the proposed development. The Design Manual for Roads and Bridges sets out details of the Secretary of State's requirements for access, design, and audit, with which proposals must conform.

25. The overall forecast demand should be compared to the ability of the existing network to accommodate traffic over a period up to ten years after the date of registration of a planning application or the end of the relevant Local Plan whichever is the greater. This is known as the review period.

26. The Highways Agency expects the promoters of development to put forward initiatives that manage down the traffic impact of proposals to support the promotion of sustainable transport and the development of accessible sites. This is particularly necessary where the potential impact is on sections of the strategic road network that could experience capacity problems in the short or medium term.

27. Where the overall forecast demand at the time of opening of the development can be accommodated by the existing infrastructure, further capacity mitigation will not be sought.

34. Where insufficient capacity exists to provide for overall forecast demand at the time of opening, the impact of the development will be mitigated to ensure that at that time, the strategic road network is able to accommodate existing and development generated traffic. Any associated mitigation works should be appropriate to the overall connectivity and capacity of any affected part of the strategic road network."

- **DfT Circular 02/2013 - Annex B: Roadside Facilities for Road Users on Motorways and All Purpose Trunk Roads in England**

"B2. This policy applies to all existing signed roadside facilities, and to all proposed signed roadside facilities. It should be noted that the operation of all signed roadside facilities will be the subject of a legal agreement between the Secretary of State and the operator.

B4. Motorway service areas and other roadside facilities perform an important road safety function by providing opportunities for the travelling public to stop and take a break in the course of their journey. Government advice is that motorists should stop and take a break of at least 15 minutes every two hours. Drivers of many commercial and public service vehicles are subject to a regime of statutory breaks and other working time restrictions and these facilities assist in compliance with such requirements.

B5. The network of service areas on the strategic road network has been developed on the premise that opportunities to stop are provided at intervals of approximately half an hour. However, the timing is not prescriptive as at peak hours, on congested parts of the network, travel between service areas may take longer.

B6. The Highways Agency therefore recommends that the maximum distance between motorway service areas should be no more than 28 miles. The distance between services can be shorter, but to protect the safety and operation of the network, the access/egress arrangements of facilities must comply with the requirements of the Design Manual for Roads and Bridges including its provisions in respect of junction separation.

B7. Speed limits on the strategic road network vary and therefore, applying the same principles, the maximum distance between signed services on trunk roads should be the equivalent of 30 minutes driving time. This distance can also be shorter, also subject to compliance with design requirements set out in the Design Manual for Roads and Bridges.

B8. *The distances set out above are considered appropriate for to all parts of the strategic road network and to be in the interests and for the benefit of all road users regardless of traffic flows or route choice. In determining applications for new or improved sites, local planning authorities should not need to consider the merits of the spacing of sites beyond conformity with the maximum and minimum spacing criteria established for safety reasons. Nor should they seek to prevent competition between operators; rather they should determine applications on their specific planning merits.*

B9. *It is for the private sector to promote and operate service areas that meet the needs of the travelling public. New and existing roadside facilities are subject to the provisions of relevant planning legislation and regulation, which together set the framework within which local planning authorities would consider the planning proposals for such developments.*

B11. *In circumstances where there is potential for these to become destinations in their own right, the Highways Agency will only support proposals for or within service areas and other roadside facilities if it can be shown that there would be no overall increase in trip mileage, and always provided that there would be no significantly adverse impact on the safety and operation of the strategic road network.*

B12. *At all roadside facilities, it is particularly important to avoid adverse impacts upon the effective operation of the strategic road network, such as increasing the risk of congestion or of vehicles slowing or stopping on the main carriageway. Proposals for new roadside facilities will be subject to road safety audit procedures to be undertaken in accordance with the requirements of the Design Manual for Roads and Bridges.*

B13. *On-line (between junctions) service areas are considered to be more accessible to road users and as a result are more attractive and conducive to encouraging drivers to stop and take a break. They also avoid the creation of any increase in traffic demand at existing junctions.*

B14. *Therefore, in circumstances where competing sites are under consideration, on the assumption that all other factors are equal, the Highways Agency has a preference for new facilities at on-line locations.*

B15. *However, in circumstances where an on-line service area cannot be delivered due to planning, safety, operational or environmental constraints, a site sharing a common boundary with the highway at a junction with the strategic road network is to be preferred to the continued absence of facilities.*

B27. *The methodology set out in Schedule 1 will also be used for calculating the levels of parking provision for all new sites promoted after the publication of this policy.*

B28. *However, notwithstanding the provisions of the previous two paragraphs, levels of provision may be adjusted to reflect local conditions through a process of site specific negotiation. It will be the responsibility of the site operator to demonstrate that any departure from the requirements of Schedule 1 is appropriate.*

B32. *Separate parking must be provided to service such developments [hotels, conference centres and business centres] so as to avoid any reduction in the general parking provision available to other road users.*

B36. *Operators of roadside facilities are encouraged to provide refuelling facilities for low emission vehicles, including recharging facilities for plug-in vehicles and other arrangements that meet the needs of emergent low carbon and alternative fuel technologies as appropriate, such as gas refuelling stations."*

- **Highways England; The Strategic Road Network. Planning for the Future. A guidance to working with Highways England on planning matters.**

"2. *The advice and guidance in this document applies to the whole strategic road network, comprising of motorways and all-purpose trunk roads in England.*[1]

8. *We will support economic growth, providing the conditions that help businesses to succeed and grow, facilitating new development around the network, and supporting investment and trade. This will take place alongside maintaining a safe and efficient SRN. The document sets out how we, along with those working on our behalf, will work with development promoters to help you to assess and successfully manage the relationship between your proposed development and the SRN.*

29. *The primary function of the SRN is to facilitate the safe and efficient movement of goods and people.*

30. *A safe and efficient network supports the national and regional economies by providing certainty, improving access to markets, enabling competition, improving labour mobility, enabling economies of scale, and helping to attract inward investment.*

35. *Our advice to local planning authorities will be to refuse or place conditions on developments only where the residual cumulative impacts of development on the capacity of the SRN (once proposed mitigations are taken into account) are still assessed to be severe. For example, if development would lead to operating conditions that significantly erode the safe operation of the SRN.*

38. *The continued safe operation of the SRN will remain our primary consideration, even where proposals would not result in capacity issues.*

39. *Where there would be physical changes to the network, schemes must be subject to road safety, environmental and non-motorised user audits, as well as any other assessment appropriate to the proposed development. Local authorities and developers need to ensure that their proposals comply with requirements for access, design and audit as set out in the DMRB.*

40. *Although identification of the scale and nature of action required to support a particular development is the responsibility of the development promoter, we will help to identify options for this and share with you any relevant information we hold to help you make informed decisions. The issues can be complex and take some time to work through, so we encourage engagement with us at the earliest opportunity.*

41. *The mitigation of impacts should be approached in the following manner:*

i. ***Avoidance*** *– the promoter should take all reasonable steps to minimise the level of physical mitigation required, through the use of measures such as Travel Plans, and travel demand management measures, such as development phasing, HGV booking systems and encouraging flexible working and sustainable travel;*

ii. ***Off-line improvements*** *– before considering to propose changes to the SRN, the promoters of development should assess the potential for alterations to be made to the local road network in the alternative;*

iii. ***Alterations to the SRN*** *– once all other options have been examined, we will consider the potential for changes to be made to the SRN.*

44. *As a consequence, we will encourage the promoters of new development to access their proposals via the local road network or existing junctions on the SRN. Modifications to existing junctions will be agreed where the residual cumulative impact of the proposed development would not be severe. In line with standards contained in the DMRB, direct connections to slip roads and/or connector roads will not be allowed for safety and operational reasons.*

45. *Where a new junction or access is proposed in connection with a signed roadside facility, permanent highway depot or major transport interchange, we will seek the imposition of planning conditions which prohibit subsequent changes of use and the creation of any form of through access to any adjacent development.*

46. *Where a new junction or direct means of access is agreed, the promoter will be expected to secure all necessary consents, and fund related design and construction works.*

48. *Developers and scheme promoters will need to provide sufficient environmental information to satisfy the LPA, and any other consenting authorities, that all environmental implications of the proposals have been appropriately considered.*

49. *We will expect to see measures implemented that fully mitigate any and all environmental impacts arising from and relating to the interaction between developments and the SRN. There are three aspects to this:*

- *The environmental impacts arising from the temporary construction works;*
- *The environmental impacts of the permanent transport solution associated with development; and*
- *The environmental impact of the road network upon the development itself.*

50. *To assist in the process we will willingly participate in the screening and scoping processes to help identify any significant transport-related environmental impacts of proposals.*

51. *Assessment undertaken by the promoter of the development should be sufficiently comprehensive to establish the likely transport-related environmental impacts, including air quality, light pollution and noise, and to identify the measures to mitigate these impacts.*

Roadside Facilities, including Motorway Service Areas

56. *We continue to have an interest in roadside facility proposals and will provide advice to local planning authorities on matters relating to the impact that such proposed development will have upon the SRN. New and existing roadside facilities are subject to the provisions of relevant planning legislation and regulation, which together set the framework within which local planning authorities should consider the planning proposals for such developments.*

57. *Local planning authorities, developers and operators are encouraged to discuss with us at the earliest opportunity any proposals to develop new roadside facilities or to alter and/or sign existing sites. All such proposals should be referred to: roadsidefacilities@highwaysengland.co.uk*

58. *For the provision of signed roadside facilities for road users, permanent highway maintenance depots (and associated compounds) and major transport interchanges, our planning response will be limited to the initial development only. We would require further consultation to consider any subsequent expansions at the site or new development on adjacent land. To this end we will see planning conditions restricting changes of use of the premises and its associated access onto the SRN so as to ensure that any such proposals are subject of separate assessment through the planning process.*

86. *In submitting a planning application, the developer should provide all the information that we will need to fully consider the interaction of the development with the SRN, and the suitability of any related actions proposed.*

88. *If, however, the development proposed has not been subject to an appropriate level of assessment or is not included or consistent with an approved local plan, then we would anticipate agreeing the scope of work required to make a full assessment. For those sites that have been considered at local plan stage, we will take into account any assessment already undertaken.*

89. *We would anticipate that a full assessment would include assessment of the impact of the development based on the performance and character of the SRN as determined by the presumption that the local plan proposals (if any) will be fully implemented, unless other more appropriate assumptions about development in the area should be made as a result of local circumstances changing. We would expect proposals set out in an emergent local plan to be afforded weight appropriate to its stage of development.*

90. *We would also anticipate that the assessment would include the identification of any mitigation necessary, and a road safety audit (stage 1). We will also seek to agree appropriate levels of assessment and mitigation relating to the scale of the development in relation to other development in the area.*

Assessment of development impact

100. *The overall forecast demand[1] On the SRN and surrounding local road network should be assessed and compared to the ability of the existing network to accommodate traffic. For developments which will be brought forward in phases, this assessment should focus on the overall forecast demand of the development as a whole, not just the initial phase(s).*

101. *Assessments should be carried out for:*

- *The development and construction phase; and*
- *The opening year, assuming full buildout and occupation, and*

[1] The overall forecast demand will be the existing flow plus traffic likely to be generated by development already committed, plus traffic likely to be generated by the development under consideration, less any reduction arising from any travel plan or demand management measures that are being proposed.

- *Either the date ten years after the date of registration of the associated planning application or the end of the Local Plan period (whichever is greater).*

The assessment at opening will be used for the determination of impact mitigation needs whilst the latter is necessary to determine the risk which will transfer to us.

102. *We need these assessments to enable us to better plan for the future of the network, to inform an appropriate split of responsibilities between he parties involved, and to identify and plan to address any future problems before they arise. In line with the NPPF these assessments will also help us, and the LPA, to assess whether any development proposals which do not feature in an adopted or emerging Local Plan could compromise the delivery of that Plan.*

Travel plans and demand management

103. *We expect the development promoters to put forward initiatives that reduce the traffic impact of proposals by supporting the promotion of sustainable transport and the development of accessible sites. This is particularly necessary where the potential impact is on sections of the SRN that could experience capacity problems in the foreseeable future. Early engagement with us enables us to support this thinking, and we will work with developers and LPAs to identify appropriate measures to facilitate the delivery of sustainable development.*

104. *The preparation, implementation, monitoring and updating of a robust travel plan that promotes the use of sustainable transport modes (such as walking, cycling and public transport) is an effective means of managing the impact of development on the road network, and reducing the need for major transport infrastructure. This contributes to the ongoing effectiveness of the SRN in ensuring swift connections nationally and regionally, minimising delays and congestions. Retaining some network capacity within the SRN facilitates the provision for further developments.*

107. *However, quite often, the implementation of travel plan measures along will not be sufficient to reduce the traffic demand of proposed development to acceptable levels. In such instances we will work with LPAs and local highway authorities to determine whether the implementation of more direct demand management measures could effectively regulate and manage traffic flows so as to support the delivery of the travel plan outcomes and to make the most effective use of the available capacity on the SRN.*

Capacity enhancement (planning applications)

108. *Where overall forecast demand in the opening year of the development can be safely accommodated by the existing infrastructure, capacity enhancement will not be sought.*

109. *Capacity enhancement measures on the SRN will only be considered after the travel plan has been incorporated in the development proposal. While capacity enhancements should normally be addressed at the plan making stage, such measures may be considered at the time when individual planning applications are submitted, subject to the over-riding principle that delivery of the adopted local plan proposals should not be compromised.*

110. *Where insufficient capacity will be available to provide for overall forecast demand in the development's opening year, the impact of the development would need to be mitigated to ensure that, at the time, the SRN is able to accommodate existing and development specific traffic. Such works can to take place on the SRN or on the adjacent local road network, and both options should be explored, and the impact on the relationship with both networks should be considered.*

115. *Where physical changes to the SRN are proposed in order to support planning application a road safety audit (stage 1) and non-motorised user assessment is required before planning permission is granted, carried out in accordance with the standard current at the time. Pre-application engagement with us is particularly important in this situation."*

- **Warrington Local Plan (July 2014)**

"Policy MP1:

To secure sustainable development the Council and its partners will support proposals where they:

- *reduce the need for private car use through its location, travel planning and marketing (smarter choices) and other measures to change travel behaviour.*
- *Consider demand management measures including the effective reallocation of road space in favour of public transport, pedestrians and cyclists.*
- *Adhere to locally determined car and cycle parking standards.*

- *Mitigate the impact of development or improve the performance of Warrington's Transport network, including the Strategic Road Network, by delivering the site-specific infrastructure which will support the proposed level of development.*

Policy MP3:

The Council will expect that a high priority will be given to the needs and safety of pedestrians and cyclists in new development.

New development should not compromise and should contribute to enhancing and developing integrated networks of continuous, attractive and safe routes for walking and cycling including improvements to roads, Rights of Way and the Greenway Network (as shown on the Policies Map). This should include appropriate segregation of users and appropriate priority should be given to users at junctions. Where appropriate the Council will consider the use of conditions or planning obligations to secure such improvements.

Enhancements and improvements should look to increase accessibility and make the most of potential environmental, social and health benefits.

Particular priority will be given to routes linking residential areas (especially those in recognised areas of deprivation) with employment areas, transport interchanges, schools, Warrington hospital and other local services and facilities."

Policy MP4:

The Council will aim to secure improvements to public transport infrastructure and services (including bus, rail and taxi/private hire) in partnership with operators and delivery partners.

In accordance with the overall Spatial Strategy, development should be located in areas with easy access to public transport. Development should aim to make public transport a viable and attractive alternative by;

- *Integrating with existing public transport infrastructure and services as far as possible, and*

- *Providing additional public transport infrastructure and services that are reasonably related in scale to the proposed development where existing facilities are not available or are in need of improvement, provided this does not impact on the deliverability of the scheme.*

Where appropriate the Council will consider the use of conditions or planning obligations to secure these improvements."

- ~~**Warrington Local Transport Plan (March 2011)**~~

~~*"Objectives:*~~

~~*To build and manage a transport network that:*~~

- ~~*Is integrated and customer focused and reduces the need to travel by car.*~~
- ~~*Enables the regeneration of the Borough and supports economic growth.*~~
- ~~*Maintains the highway, minimises congestion for all modes of travel and enables Warrington's 'smart growth'.*~~
- ~~*Improves everyone's access to health, employment, education, culture, leisure and the natural environment.*~~
- ~~*Improves everyone's access to the town centre by all modes of travel.*~~
- ~~*Enhances accessibility for those in disadvantaged communities or groups.*~~
- ~~*Improves neighbourhoods and residential areas.*~~
- ~~*Improves safety and security for all modes of travel.*~~
- ~~*Reduces the impact of traffic on air quality in Warrington and helps to reduce carbon emissions and tackle climate change.*~~
- ~~*Makes Warrington safer, sustainable and healthier.*~~
- ~~*Integrates with transport networks outside Warrington to enhance the sustainability of cross boundary travel."*~~

- **Warrington Local Transport Plan (December 2019) – LTP4**

"Objectives:

Through LTP4 we will:

- *Provide people with a choice about how they travel for each journey*
- *Encourage a culture change that reduces the need for people to travel by car*
- *Improve access to the town centre for all sustainable modes*
- *Develop a resilient and efficient transport network that supports the town's growth*
- *Reduce traffic congestion*
- *Reduce both exhaust and non-exhaust emissions from transport*
- *Maintain and improve all transport infrastructure*
- *Encourage healthier lifestyles by increasing dayto-day activity*
- *Improve safety for all highway users*
- *Make Warrington a more disabled friendly place"*

- **Guidance Documents**

2.3 The following guidance documents will be referenced in the ES and the TA:-

- Planning Practice Guidance ID42: Travel Plans, transport assessments and statements in decision-taking;
- Guidelines for the Environmental Assessment of Road Traffic (IEMA), 1993
- Design Manual for Roads and Bridges (DfT)
- Manual for Streets (DCLG/DfT), March 2007
- DGN 2: Travel Plans (WBC), August 2016.
- Parking Standards Supplementary Planning Document, Warrington Borough Council, March 2015
- Warrington Borough Council Design Guide Note 1 (DGN1) – Parking & Servicing, April 2015
- Warrington Borough Council Design Guide Note 2 (DGN2) – Travel Plans and Guidance, April 2016

3. Consultations

3.1. i-Transport has held pre-application discussions with officers at WBC which is the Local Highway Authority (LHA); and National Highways (formerly Highways England (HE)) which is the body responsible for the Strategic Road Network including the M62 Motorway Junction 11 (M62J11).

Theme / Issue	Date	Consultee	Method	Summary of Discussion	Outcome / Output
M62 Smart Motorway	August 2018	HE	Telephone	Liaison with HE re. timescales associated with smart motorway works	Used in consideration of Survey Dates
Birchwood Way Widening	August 2018	WBC	Telephone	Liaison with WBC re. timescales for Birchwood Way improvements	Used in consideration of Survey Dates
Traffic Surveys	September 2018	WBC	Telephone	Liaison with WBC re. traffic survey permissions	Used in consideration of Survey Dates
General regarding the scheme	September 2018	WBC	Meeting	General briefing to WBC on the scheme	Informed WBC of potential scheme
Traffic Surveys	October 2018	WBC	Telephone	Liaison regarding roadworks	Used to plan traffic surveys
M62/M6 Modelling	October 2018	HE	Telephone	Liaison regarding VISSIM modelling & whether can provide weaving proportions	Used to plan traffic surveys
Needs Case	October 2018	WBC	Meeting	Briefed WBC on needs case	WBC aware of policies and site specific issues
General re. MSA	December 2018	WBC Member	Meeting	Briefed Culcheth Member on the MSA	Member aware of scheme
TA Scoping	December 2018	WBC/HE	Meeting	Discussed Scheme, needs case and assessment methodology	Used to prepare the TA
General re. MSA	January 2019	WBC	Meeting	General discussions re. the scheme	Informed the TA, ES
Highways England network boundary	January 2019	HE	Email	Liaison to determine details of extent of Highways England ownership/maintenance liability adjacent to southern boundary of Site	HE researching details from CPO records
ES Scoping Opinion Response	February 2019	WBC	Letter	ES Scoping Report submitted on 20 December 2018 (refer to ES Part 1 Appendix 17). Local Planning Authority's response was received on 13 February 2019 (refer to ES Part 1 Appendix 18).	Used to inform the ES.
Needs Case	February 2019	HE	Meeting	Briefed HE MSA Planning Team on scheme and needs case	HE fully aware of need for MSA
General re. MSA	February 2019	Warrington Chamber of Commerce	Meeting	Briefed Chief Executive on scheme and needs case	Chief Exec fully aware of MSA proposals

Theme / Issue	Date	Consultee	Method	Summary of Discussion	Outcome / Output
General re. MSA	February 2019	MP	Meeting	Briefed Helen Jones MP on scheme and needs case	MP fully aware of MSA proposals
General re. MSA	March 2019	Croft & Culcheth Parish Councils	Meeting	Briefed Parish Councils on scheme and needs case	Parish Councils fully aware of MSA proposals
General re. MSA	April 2019	Public Consultation	Open Public Consultation	Various regarding the scheme	Confirmed the design and assessment of the scheme
General re. MSA	April 2019	Lead & Chief Executive of WBC	Meeting	Various regarding the scheme	Confirmed the design and assessment of the scheme
General re. MSA	April 2019	Chester & Warrington LEP	Meeting	Briefed Chief Executive on scheme and needs case	Chief Exec fully aware of MSA proposals
General re. MSA	April 2019	Birchwood Forum	Meeting	Briefed representatives of the Forum on the scheme and needs case	Fully aware of MSA proposals
Birchwood Way Widening	April 2019	WBC	Email	Liaison for details of scheme including modelling of future year	Forecast model report provided
Pre-Application Response	April 2019	WBC	Letter	Local Highway Authority's pre-application advice.	Confirmation of need for a Transport Assessment incorporating: gapping analysis; an assessment of parking and servicing requirements (including swept paths); junction capacity analysis; collision analysis; and consideration of Public Rights of Way and public transport accessibility.
Stage 1 Road Safety Audit Brief	May 2019	HE	Email	Content of Stage 1 Road Safety Audit Brief	Agreement of brief and appointment of audit team
Walking, Cycling and Horse-Rider Assessment and Review (WCHAR)	May 2019	HE	Email	Content of WCHAR Brief	Agreement of brief and appointment of assessment team
General re. MSA	June 2019	WBC	Meeting	Briefed officers on anticipated number and mode split of staff journeys to/from the proposed MSA and discussed potential Travel Plan measures. Discussed assessment of M62 J11 and pedestrian route across motorway.	Applicant advised to consider implementation of a demand responsive staff shuttle bus between the site and Birchwood station. Applicant advised of need to provide suitable pedestrian route across the motorway junction.

Table 2.1: Summary of Consultations and Discussions

4. Methodology and Approach

4.1. This section of the ES Paper summarises the methodology used to derive traffic flows and the consideration of the methodology used to assess the environmental impacts of road traffic.

4.2. The study area for the assessment of traffic and transportation impacts has been agreed ~~in principle~~ with both highway authorities. This includes M62 Motorway Junction 11 (including its slip roads) and the Birchwood Way / Daten Avenue / Moss Gate junction. Weaving between M62 Motorway Junctions 10 and 11 has also been considered.

4.3. The detailed methodology for the derivation of traffic flows for use in the impact assessments is set out in Section 8.0 of the TA, appended this paper as Appendix 2.1. It considers the approach and detailed inputs into the assessments of the traffic impacts of the proposals. It includes details of:

- The scenarios considered in the traffic assessments and the rationale for these;
- Base year traffic flows and the survey and other data used to derive these (further details of these are set out in Section 5 of this chapter);
- The consideration of traffic growth;
- Committed developments and the traffic flows generated by these (further details are set out in Section 5); and
- The traffic flows 'generated' by the application proposals (proposed MSA) with further details presented in Section 7 of this chapter.

4.4. Traffic flows for the following scenarios have been derived:-

Scenario	Traffic Flow Inputs	M62J11 Assumed Layout
A	Base 2018	Existing (2018) Layout
B	2022 + Committed Development	HE Smart Motorway Scheme + Birchwood Way Widening
C	2022 + Committed Development + MSA	HE Smart Motorway Scheme + Birchwood Way Widening
D	2029 + Committed Development	HE Smart Motorway Scheme + Birchwood Way Widening
E	2029 + Committed Development + MSA	HE Smart Motorway Scheme + Birchwood Way Widening

Table 2.2: Traffic Flow Scenarios

4.5. Scenario A, the 2018 base, is set out for information to explain the current situation. Scenario B is the committed position with background traffic growth applied to 2022 on the mainline.

Scenario C considers the incremental impacts of the MSA against the formal committed position. Scenarios D and E are the same as B and C except with background traffic growth applied to 2029 on the mainline.

4.6. The detailed results of the traffic impact assessments are set out in subsequent sections of the TA report: Section 9, the impacts of the MSA flows at M62J11, Section 10 assesses the impacts on weaving and merge/diverge provision at M62J11; and Section 11, assesses the impacts of the development on the local road network.

4.7. The assessment has considered the potential impacts of the proposals upon: -

- Driver delay
- Pedestrian delay and amenity
- Fear and intimidation (pedestrians and cyclists)
- Severance
- Accidents and road safety
- Public Transport Users

Driver Delay

4.8. Changes in delays to drivers have been considered at junctions surrounding the Site. Junction capacity assessments have been undertaken using standard software. These programs output ratios of flow to capacity (RFC) and degrees of saturation (DoS), which give an indication of the overall operational capacity of the junctions, together with queues and delays for each approach.

4.9. Different software programs have been used for different junction types – ARCADY has been used to assess roundabout junctions and LINSIG has been used to assess traffic-signal controlled junctions. Junction capacity assessments have been conducted at the following junctions for the AM and PM peak hours, using the software noted:

- M62J11 Baseline – ARCADY
- M62J11 Proposed – LINSIG
- Birchwood Way / Daten Avenue – LINSIG

Pedestrian Delay and Amenity

4.10. Pedestrian delays along a particular walking journey are related to traffic flows. A change in vehicular demand affects the ability of pedestrians to cross local routes, which results in an impact on an individual's desire to make a particular walking journey. Changes in the volume,

speed or composition of traffic and the physical condition for the crossing points affect pedestrian amenity.

4.11. Guidelines for the calculation of pedestrian delay are identified in Design Manual for Roads and Bridges (DMRB) Volume 11, Section 3. The determination of a material impact on pedestrian delay and amenity is not precisely defined, but should be made with 'knowledge of local factors and conditions'.

4.12. In general, however the Guidelines for the Assessment of Environmental Impact on Road Traffic suggest that pedestrian delay at an individual link should not exceed 40 seconds, for a link with no crossing facilities. Notwithstanding this the potential scale of impacts upon pedestrian delay and amenity set out in Table 2.3 below, have therefore been used in this assessment.

Fear and Intimidation

4.13. A further impact that traffic may have on pedestrians and cyclists is described as 'fear and intimidation'. This is influenced by the volume of traffic, HGV content and, in the case of pedestrians, the width of the footpath. Again, the Guidelines for Environmental Assessment of Road Traffic recognise that there are no commonly agreed thresholds based on local traffic flows, number of HGV's and traffic speeds (as set out in Table 2.3 below).

Degree of Hazard	Average traffic flow over 18 hour day (vehicles/hour)	Total 18 hour heavy goods vehicle flow	Average Speed over 18 hour day (mph)
Extreme	1,800+	3,000+	20+
Great	1,200 – 1,800	2,000 – 3,000	15 – 20
Moderate	600 – 1,200	1,000 – 2,000	10 - 15

Table 2.3 Fear and Intimidation Thresholds

4.14. The table above identifies how a potential change in the degree of hazard is used to determine the scale of impact of the development proposals upon the levels of fear and intimidation on the surrounding network.

Severance

4.15. The concept of severance is a perceived division that occurs when a traffic link separates part of an existing community. This can occur when a road becomes too heavily trafficked,

making crossing the road a problem, or when a new route physically divides existing land. It is particularly relevant to situations where access to an essential amenity is impaired.

4.16. The Guidelines for Environmental Assessment of Road Traffic notes that the term severance is used to describe a complex series of factors. It goes on to state that:

> *"the measurement and prediction of severance is extremely difficult. The correlation between the extent of severance and the physical barrier of a road is not clear and there are no predictive formulae which give relationships between traffic factors and levels of severance."*

4.17. A number of factors have been identified when assessing new severance relating to new routes, including road width, traffic speeds, crossing facilities and existing crossing provision. Three main indicators for the assessment of separation have been formulated from studies of changes in traffic flow on observed links and are discussed in the Guidelines for Environmental Assessment of Road Traffic. It should be noted that these are intended as guidelines only and are highly dependent upon ambient traffic levels. The following indicators are set out in the Guidelines

- 30% flow increase – slight separation effects
- 60% flow increase – moderate separation effects
- 90% increase – substantial separation effects

4.18. These indicators have been used to form the basis of criteria against which the assessment of the Proposed Development has been carried out. Table 2.5 below indicates the potential scale of impacts of the proposals, setting out the criteria for the determination of impacts from substantial down to negligible. These criteria have been used in the assessment presented in this Technical Paper.

Accidents and Safety

4.19. The assessment of accident risk and highway safety considers the traffic and transport related risks to human health, and is based upon knowledge of existing accident rates for particular classifications of roads and junction types and specific local circumstances. These are used to identify locations of specific concern (commonly referred to as 'accident blackspots'). For example, should a particular link or junction be found to have a very high existing accident rate as a result of its layout, then the addition of substantial traffic volumes

could have a further detrimental impact on highway safety and mitigation measures may be required.

4.20. The appraisal of the potential impacts of the proposals upon accidents and safety has been conducted through a comparison of accident rates at links and junctions within the assessment area, both in the future year baseline and future year with development scenarios. The accident rates have been calculated using the formulae set out within the DMRB Volume 13 Section 1.

4.21. The location of the MSA at M62J11 will satisfy a road safety need, as identified in Circular 02/2013, and will have a positive impact on human health as it will encourage motorists to stop more frequently thus potentially reducing fatigue and sleep related accidents. A qualitative assessment of this has been undertaken.

Public Transport Users

4.22. There is no industry guidance on the assessment of impacts on public transport users.

4.23. Two potential impacts are identified as follows:

- The creation of additional demand on public transport services; and
- The effects of changed traffic flows on existing public transport routes.

4.24. With regard to the creation of additional demand on public transport services, and as a direct function of the proposed MSA's purpose as a facility for the road travelling public, the number of journeys to/from the Site by public transport will be relatively few. A proportion of staff working at the proposed MSA can be expected to undertake at least part of their journey by public transport.

4.25. A Draft Framework Staff Travel Plan was submitted with the planning application ~~has been produced~~ for the Proposed Development. It is agreed with Warrington Council that a Final Travel Plan will be implemented by the Council's Smarter Choices Manager and funded through agreed Developer contributions; ~~this includes details of proposed measures intended to encourage staff travel by modes of transport other than car driver. The Framework Travel Plan sets a proposed target of no more than 50% of staff travelling to work as a car driver and it is anticipated that, of those using alternative methods of transport~~

~~to work, a~~ A high proportion of staff are likely to be car passengers and a small percentage will use public transport. This is considered to represent an insignificant demand in the context of public transport services in Warrington and does not warrant further consideration in this paper.

4.26. The impact of changed traffic flows on public transport users is considered below.

Receptors

4.27. Receptors will comprise drivers and other users of the highway affected by increased traffic levels resulting from the development proposals. The importance of the receptors is as follows

Designation	Receptors
International	None
National	None
Regional	Drivers at M62J11
County	None
Borough / District	Drivers at Birchwood Way / Daten Avenue Junction
Local/Neighbourhood	Pedestrians at M62J11 and Birchwood Way / Daten Avenue Pedestrians on Site Access Arm Bus Users in the Vicinity of the Site

Table 2.4: Receptors

4.28. A Traffic and Transport Receptor Plan (Figure 2.1) is included at the rear of this document.

Environmental Impacts

4.29. The scale of impacts has been assessed and reported in the ES using the following criteria which have been established with reference to the various Guidance noted above and/or through professional experience.

Magnitude	Description	Development Receptors
Substantial	Driver Delay	Over 2 minutes increase in delay, averaged over all arms at a junction
	Pedestrian Delay	Over 2 minute increase in delay for pedestrians at crossing point
	Fear and Intimidation	Change in degree of hazard from moderate to extreme

Magnitude	Description	Development Receptors
	Severance	Over 90% increase in traffic flows on relevant links
	Accidents and Road Safety	Over 50% increase in traffic flows at locations with existing adverse accident record (blackspot).
	Public Transport Users	Over 2 minutes increase in delay along bus route in vicinity of Site
High	Driver Delay	Between 1.5 – 2 minutes increase in delay, averaged over all arms at a junction.
	Pedestrian Delay	Between 1.5 – 2 minutes increase in delay for pedestrians at crossing point.
	Pedestrian Amenity	Between 50% - 100% increase in traffic flow where the footway width is sub-standard.
	Fear and Intimidation	Change in degree of hazard from great to extreme.
	Severance	Between 60% - 90% increase in traffic flows on relevant links.
	Accidents and Road Safety	Over 50% increase in traffic flows at location with accident rate above DMRB default for junction type
	Public Transport Users	Between 1.5 – 2 minutes increase in delay along bus routes in the vicinity of the Site.
Moderate	Driver Delay	Between 1.0 – 1.5 minutes increase in delay, averaged over all arms at a junction
	Pedestrian Delay	Between 1.0 – 1.5 minutes increase in delay for pedestrians at a crossing point.
	Pedestrian Amenity	Between 10-50% increase in traffic flow where the footway width is sub-standard
	Fear and Intimidation	Change in degree of hazard from moderate to great.
	Severance	60% increase in traffic flows on relevant links
	Accidents and Safety	30% - 50% increase in traffic flows at locations with accident rates above DMRB default for the junction type.
Minor	Driver Delay	Between 0.5 – 1.0 minutes increase in delay, averaged over all arms at a junction.
	Pedestrian Delay	Between 0.5 – 1.0 minutes increase in delay for pedestrians at a crossing point.
	Pedestrian Amenity	Doubling of traffic flow where the footway width is satisfactory.
	Fear and Intimidation	Change in degree of hazard to moderate
	Severance	Between 30% - 60% increase in traffic flows on relevant links.
	Accidents and Road Safety	10% - 30% increase in traffic flows at a location with an accident rate above DMRB default for the junction type.
	Public Transport Users	Between 0.5 – 1.0 minutes increase in delay along bus routes in the vicinity of the Site.
Negligible	Driver Delay	Less than 0.5 minutes increase in delay, averaged over all arms at a junction.
	Pedestrian Delay	Less than 0.5 minutes increase in delay for pedestrians at crossing points.

Magnitude	Description	Development Receptors
	Pedestrian Amenity	Less than doubling of traffic flow where the footway width is satisfactory.
	Fear and Intimidation	No change in degree of hazard.
	Severance	Less than 30% increase in traffic flows on relevant links
	Accidents and Road Safety	Less than 10% increase in traffic flows at location with accident rate above DMRB default for junction type.
	Public Transport Users	Less than 0.5 minutes increase in delay along bus routes in the vicinity of the Site.
Neutral	Driver delay	No change in the delay averaged over all arms at a junction.
	Pedestrian delay	No change in pedestrian delay at a crossing point.
	Pedestrian amenity	No change in the traffic flow on relevant links.
	Fear and intimidation	No change in traffic flows / composition / speeds affecting the degree of hazard.
	Severance	No change in traffic flows on relevant links
	Accidents and road safety	No change in traffic flows on relevant links and junctions.
	Public transport users	No change in the delay along bus route in the vicinity of the Site.

Table 2.5: Environmental Impacts

Significance of Effects

4.30. The significance of effect is determined using the significance matrix in Section 6 of the Environmental Statement Part 1 Report. This identifies the receptor level across the top of the matrix and the magnitude of environmental impact down the side and where they meet within the matrix identifies the significance of the effect. Neutral, negligible and minor effects are not considered to be significant, whereas moderate, high and substantial effects are considered to be significant.

Impact Prediction Confidence

4.31. It is also of value to attribute a level of confidence by which the predicted impact has been assessed. The criteria for these definitions are set out below:

Confidence Level	Description
High	The predicted impact is either certain i.e. a direct impact, or believed to be very likely to occur, based on reliable information or previous experience.
Low	The predicted impact and its levels are best estimates, generally derived from first principles of relevant theory and experience of the assessor. More information may be needed to improve confidence levels.

Table 2.6: Confidence Levels

5. Baseline Information

5.1. This section of the Traffic and Transport ES Paper sets out:

- A description of the surrounding transport networks;
- The traffic survey data used in the assessments and the derivation of baseline (2018) traffic flows;
- Road casualty data;
- Future traffic flows taking account of committed developments; and
- Baseline traffic capacity assessments.

Transport Networks – Existing

5.2. The Site is located to the north east of the urban area of Warrington, approximately 8km (5 miles) from Warrington town centre, north of the M62 Motorway at Junction 11 (M62J11). The Site is thus located adjacent to the SRN, with direct access to the M62 Motorway via M62J11 on the section between the M6 Motorway and the M60 Motorway. The SRN is discussed further in the next Section. M62J11 provides access to the Birchwood area of Warrington located to the south of the M62 Motorway corridor, via A574 Birchwood Way.

5.3. Immediately to the west of the Site is a former landfill site (Restored Risley Landfill Site), where landfilling began in 1979, but which has since ceased and the site has been restored and planted. To the east and north is arable farmland. A disused railway line dissects the farmland, and arches to the east and north approximately 0.6km (0.4 miles) from the Site boundary. The settlement of Culcheth lies to the north west of the Site, with its centre approximately 2km (1.2 miles) from the Site.

5.4. The proposed route of High Speed 2 Phase Two runs to the north of the Site, and the Secretary of State for Transport has published safeguarding maps showing land which is safeguarded for the route. This safeguarding zone has been accounted for in the design of the proposed Site layout.

5.5. A Public Right of Way runs along the western boundary of the Site and leads north to Silver Lane Pools, and west around the adjacent restored landfill site, before heading north to Culcheth and east to Holcroft Lane. Footpath number 28 continues around the north of the restored landfill site, connecting to Footpath 14a to the western boundary, which connects to Footpath 25 to the southern boundary, before reconnecting with Footpath 13 adjacent to the Application Site. This also links to a footpath at the spur of the Junction 11 roundabout

and around the roundabout, before linking to footpath 25 to the south eastern quadrant of the Junction 11 roundabout in Birchwood.

5.6. Footways are provided on the eastern side of the M62J11 roundabout, connecting the Site to Silver Lane south of the M62 Motorway, which is a Public Right of Way that continues around the eastern boundary of the Gorse Covert residential area. A shared footway / cycle way can be accessed from Silver Lane which continues to the south west running adjacent to Birchwood Way providing access to the residential areas of Gorse Covert and Oakwood as well as Birchwood Park to the north of Birchwood Way.

5.7. Existing bus provision in the vicinity of the Site is limited. There are a number of bus routes which operate along Daten Avenue within Birchwood Park; the 17C service operates a 30 minute frequency to Warrington town centre whilst the 28E offers an hourly evening service to Warrington and Leigh. There are no regular bus services which run to the northern arm of the M62J11.

5.8. Birchwood Rail station is approximately 3.2km south east of the Site. The station is on the Manchester to Liverpool line with frequent connections to Manchester Oxford Road, Warrington Central and Liverpool Lime Street.

5.9. Additional rail services can be accessed at Warrington Bank Quay station located in the town centre, c8.8km south east of the Site. Warrington Bank Quay is a major hub with fast and frequent connections to a number of major cities such as London Euston, Edinburgh and Glasgow Central.

5.10. The Site is adjacent to the M62 Motorway which provides a national strategic connection between Liverpool, Manchester, Leeds and Hull. The M62 Motorway connects with the M6 Motorway at junction 10 c.3.9km to the east of the Site and the M60 Motorway c10.5km to the west of the Site.

5.11. Within the vicinity of the Site the M62 Motorway is a three-lane motorway with a central reservation and a hard shoulder (DMRB Road Type D3M). It is subject to the national speed limit and stopping is prohibited.

5.12. M62J11 is currently a five-arm all movements grade separated junction, albeit Birchwood Way to the north of the junction is currently closed to traffic approximately 60m from the

circulatory carriageway of the roundabout and Silver Lane is a private road. All arms of the roundabout are currently priority controlled.

5.13. All four slip roads at the junction are taper merge / diverges (type A); a single lane is provided on the eastbound merge whilst the westbound merge and both the diverges have two lanes. ~~Planned improvements at the junction are considered in Section 5.0.~~

5.14. Birchwood Way is a primary route into Warrington town centre and the principal access to Birchwood Park. It is currently a single carriageway subject to a 50mph speed limit along its length. Stopping and/or loading is prohibited.

~~Currently, Birchwood Way widens to two lanes at the approach to M62J11 and four lanes on the approach to the signalised junction with Daten Avenue and Moss Gate, with two dedicated right turn lanes, one ahead lane and one ahead and left lane. Birchwood Way is in the process of being improved, details of which are set out in paragraphs 5.19 to 5.21 below.~~

~~Transport Networks – Planned~~

5.15. National Highways ~~Highways England are in the process of~~ have now completed upgrading the section of the M62 Motorway from Junction 10 to Junction 12 to Smart Motorway. A layout plan is included in Appendix 5.B of the TA, a copy of which is included in Appendix 2.1 of this paper. Works began in summer 2018 and were completed by January 2021. ~~are due to be completed by Spring 2020.~~

5.16. The Smart Motorway scheme involves the following improvements:

- Conversion of the hard shoulder to increase the number of lanes from 3 to 4 in each direction.
- Variable mandatory speed limits
- Driver information, including lane availability, provided through a mixture of gantries and cantilever signs
- Queue detection and automatic signalling system, which provides queue protection and congestion management.

5.17. It is anticipated that this will reduce congestion and smooth the flow of traffic on the mainline. The scheme only has minor impacts on Junction 11 itself converting the eastbound off-slip from two lanes to one lane plus flare and converting the westbound on-slip from two lanes to one.

5.18. Warrington Borough Council have developed a highways improvement scheme to improve traffic flow in east Warrington. Phase 1 of the project was completed in March 2016 and amongst other improvements involved the signalisation of the Birchwood Way / Daten Avenue / Moss Gate junction ~~Roundabout~~. Work on Phase 2 of the scheme began in July 2018 ~~with the project due to be~~ and were completed in December 2019. The works ~~will~~ improve capacity at the following junctions along Birchwood Way to the south east of the Site:

- Oakwood Gate South;
- College Place Roundabout; and
- Blackbrook Avenue Roundabout

5.19. The final phase of the improvements (Warrington East Phase 3), completed in 2020, involves the dualling of Birchwood Way from the Daten Avenue / Moss Gate junction to the M62J11 and the resurfacing of M62J11 with new road markings. The scheme ~~will~~ provides a 2-lane exit from M62J11 by enabling 2 lanes of traffic to turn right from the eastbound off-slip onto Birchwood Way, and 2 lanes to turn left from the westbound off-slip onto Birchwood Way.

~~The scheme is fully funded, and construction began in December 2018, the works are due to be completed by January 2020. A stakeholder engagement for the scheme was carried out in May 2018, it is understood that the scheme received extensive support.~~

Traffic Surveys

5.20. A series of traffic surveys was undertaken in November 2018. These consisted of:

i) Manual Classified Counts (MCC) at the following locations on Tuesday 13th November:

- Junction 11 M62 Motorway (07:00 - 19:00)
- M62 Motorway mainline at Junction 11 (07:00 - 19:00)
- Birchwood Way (A574) / Daten avenue / Moss Gate (07:00 - 10.00 and 16:00 - 19:00)

ii) An additional MCC at Junction 11 M62 Motorway on Saturday 17th November between the hours of 10:00 and 17:00.

iii) Queue length surveys at the above junctions on the same dates. Queue length data were recorded at one-minute intervals.

iv) An Automatic Traffic Count (ATC) for a continuous 14-day period on the A574 Birchwood Way, between Daten Avenue and Junction 11 of the M62 Motorway (6th November to and including 20th November).

5.21. Maximum queues have been recorded in vehicle numbers separated into Light Vehicles and Heavy Vehicles and by each particular lane at the end of each red phase for each cycle of the traffic signals. At non-signalised sites vehicles were recorded at 1-minute intervals.

5.22. An origin / destination survey was undertaken of the movement from the M6 Motorway southbound off-slip to the M62 Motorway Junction 11 (eastbound) off-slip (and the opposite direction of travel), using Automatic Number Plate Recognition (ANPR) technology. This data has been used to derive weaving proportions on the M62 Motorway between Junctions 10 and 11. An audit of the traffic survey methodology and results has identified that, whilst ANPR observations of eastbound trips (i.e. from J10 to J11) were undertaken on the same day as the turning counts (Tuesday 13th November 2018), the westbound ANPR cameras were programmed to capture data two days later, on Thursday 15th November 2018. Weaving proportions for movements from J11 to J10 are therefore based on observations from the Thursday.

5.23. All traffic data was recorded in 15-minute intervals. COBA vehicle classifications were adopted (pedal cycles, motorcycles, cars, LGVs, OGV1s, OGV2s and buses).

5.24. Data from Highways England's MIDAS database has also been used to establish baseline traffic flows, as set out in more detail below.

5.25. The first stage of processing survey data is to check that the survey day was representative of typical conditions, however observations of the network during the survey period suggest this was not the case. During the AM peak, there were three separate road traffic accidents on the M6 Motorway southbound, south of the junction with the M62 Motorway. A screenshot from Google Maps showing the resultant impact on traffic flows is included in Appendix 8.B of the TA (Appendix 2.1 of this ES Chapter), and as can be seen there were extensive queues back along the M62 Motorway eastbound and the M6 Motorway southbound. This may have caused significant reassignment of traffic across the wider network, with potential knock-on effects on traffic movements over the rest of the day.

5.26. The survey data for Junction 11 was therefore compared with average traffic flows recorded at the Highways England MIDAS counters on the slip roads. The results are shown in the table below:

Location	AM Peak			PM Peak		
	Survey Day	Average Day	Difference	Survey Day	Average Day	Difference
M62 Eastbound off-slip	405	382	+6.0%	247	276	-10.5%
M62 Eastbound on-slip	1188	924	+28.6%	788	816	-3.4%
M62 Westbound off-slip	890	904	-1.5%	385	459	-16.1%
M62 Westbound on-slip	324	350	-7.4%	1043	1204	-13.4%
M62 Eastbound Mainline (upstream)	3880	4498	-13.7%	3933	3838	+2.5%
M62 Westbound Mainline (upstream)	4301	4580	-6.1%	4598	4862	-5.4%

Table 2.7 Variation Between Surveyed Flows and Average Day (Vehicles)

5.27. As can be seen from Table 2.7, eastbound traffic levels during the AM peak hour on the survey day were significantly lower than for the same period on an average weekday and, possibly linked to this, the traffic levels joining the eastbound carriageway at Junction 11 during the same period were significantly higher than on an average weekday. During the PM peak hour, whilst mainline traffic levels were generally in line with an average weekday, the westbound on and off-slips had considerably lower than average traffic flows recorded.

5.28. The survey day ATC derived flows on Birchwood Way have also been compared to those averaged over the remaining weekdays of the ATC survey. The results are shown in the tables below. As ATC information is only available for individual hour periods (as opposed to the 15 minute periods provided by the MCC and MIDAS data), results are set out for two AM hours and two PM hours:

Direction	07.00-08.00			08.00-09.00		
	Survey Day	Average Day	Difference	Survey Day	Average Day	Difference
Eastbound	1620	1424	+13.7%	1103	985	+12.0%
Westbound	981	1073	-8.6%	1403	1447	-3.0%

Table 2.8 Variation in ATC Survey Flow – AM Period

Direction	16.00-17.00			17.00-18.00		
	Survey Day	Average Day	Difference	Survey Day	Average Day	Difference
Eastbound	1813	1774	+2.2%	1716	1611	+6.5%
Westbound	586	551	+6.4%	671	577	+16.3%

Table 2.9 Variation in ATC Survey Flow – AM Period

5.29. As can be seen from Tables 2.8 and 2.9 above, the eastbound traffic flows during the AM period on Birchwood Way (i.e. towards Junction 11 of the M62 Motorway were markedly higher than for the same period on an average weekday. During the later PM period hour of 17.00-18.00, there were significantly more trips westbound than on an average day, potentially due to ongoing effects of the traffic disruption earlier in the day.

5.30. In order to establish a set of baseline traffic flows that is representative of typical weekday peak hours therefore, average traffic flows from MIDAS have been used to establish turning volumes at the Junction 11 roundabout.

5.31. The junction provides access to and from four directions: The M62 Motorway eastbound, the M62 Motorway westbound, Birchwood Way (South) and Birchwood Way (North). The Birchwood Way (North) arm is currently a dead-end stub with no through route to any other destination, and only a very small amount of traffic was observed turning into and out of this arm on the day of the survey. As a result, the junction effectively consists only of a side arm (Birchwood Way South) joining the M62 Motorway mainline, meaning there is generally only one turning movement that will be made to or from each slip road. For example, traffic exiting the motorway via the eastbound off-slip can be expected to turn right into Birchwood Way (South). However, small numbers of vehicles were recorded during the MCC either u-turning at the roundabout or turning into or out of the existing northern 'stub' arm of the junction. Turning movements based on MIDAS flows have therefore been adjusted to account for the small number of these manoeuvres observed during the survey.

5.32. Given that the traffic survey results would also have been affected for the junction of Birchwood Way (A574) / Daten Avenue / Moss Gate, baseline traffic flows through this junction will be based on turning count results, with traffic levels into and out of Birchwood Way (south of the signals) and Daten Avenue adjusted to match average MIDAS traffic flows to and from M62J11.

5.33. The following peak hours have been identified for the M62J11 and the Birchwood Way traffic signals:

	M62 Mainline Sliproads	M62 Sliproads Only	Birchwood Signals
AM Peak Hour	07:00-08:00	07:30-08:30	07:30-08:30
PM Peak Hour	16:00-17:00	16:30-17:30	16:45-17:45

Table 2.10 Peak Hours Identified from Baseline Traffic Flows

5.34. The analysis of the data to derive peak hours is included in Appendix 8.C of the Transport Assessment contained within Appendix 2.1 of this paper. It is proposed to assess the impact of the proposals on the Birchwood Way signals for the peak hours identified for that junction.

5.35. For the M62J11 roundabout and the Merge/Diverge and Weaving assessments however, it is proposed to assess these elements for the two AM peak hours and two PM peak hours identified (i.e. 07:00-08:00 & 07:30-08:30 and 16:00-17:00 & 16:30-17:30). The above peak hours are based on total trips passing through the junction, however some individual turning manoeuvres at the roundabout are greatest in the M62 Motorway mainline and sliproads peak hours of 07:00-08:00/16:00-17:00, and likewise, some merge/diverge flows are greatest during the Roundabout peak hours of 07:30-08:30/16:30-17:30. Modelling of these two sets of peak hours will therefore ensure a robust assessment is undertaken.

5.36. Existing two-way peak hour flows on the motorway are as follows:

Section of M62 Motorway	AM Peak Hour1	PM Peak Hour2
West of Junction 11	4,498	3,838
East of Junction 11	4,790	4,862

Table 2.11 Peak Hour from Baseline Traffic Flows

5.37. The total traffic flows entering M62J11 in the AM and PM peak hours are demonstrated in the list below:

	AM Peak		PM Peak	
	07:00-08:00	07:30-08:30	16:00-17:00	16:30-17:30
Flows (Vehicles)	2,435	2,513	2,725	2,758

Table 2.12 Peak Hour Traffic Flows Entering M62J11

5.38. Peak hour traffic flows represent a significant proportion of daily flows reflecting commuter movements to and from Birchwood Park.

5.39. The existing 24-hour AADT traffic flows along with the proportion of HGVs are set out in the table below:

Link	24 Hour AADT Flows	
	Total Vehicles	HGV Proportion
M62 Motorway Mainline East of J11	113,700	14.5%
M62 Motorway Mainline West of J11	109,900	14.2%
M62 Motorway Westbound Off-Slip	5,800	6.4%
M62 Motorway Westbound On-Slip	6,100	6.4%
M62 Motorway Eastbound Off-Slip	4,200	8.5%
M62 Motorway Eastbound On-Slip	6,200	7.1%
A574 Birchwood Way	22,300	7.0%

Table 2.13: Existing 2018 AADT Traffic Flows

5.40. Existing (AADT) traffic flows on the M62 Motorway are c.113,700 and 109,900 vehicles per day, east and west of M62J11 respectively. The Heavy Goods Vehicle (HGV) proportion varies from 14.2%-14.5%.

5.41. Daily (24 hour AADT) flows on the slip roads are c.5,800 – 6,200 for the east facing slips and c4,200 – 6,100 vehicles per day for the west facing slips.

5.42. Daily (24-hour AADT) flows on Birchwood Way are c.22,300 vehicles with around 7% HGVs. Two Way Flows in the morning and evening peaks are as follows:

	AM Peak		PM Peak	
	07:00-08:00	07:30-08:30	16:00-17:00	16:30-17:30
Two-Way Flow (Vehicles)	2,410	2,454	2,669	2,691

Table 2.14 Peak Hour Traffic Flows on Birchwood Way

5.43. In the morning peak hours, the flows are evenly split with c.56% heading north east towards the M62 Motorway and c.46% heading south west towards Birchwood Park and Warrington between 07:00 – 08:00. Between 07:30 – 08:30 the northbound flow makes up c.51% of the

two-way flow and the southbound flow makes up c.49%. Whereas in the evening peak hours, the northbound flows makes up c.74% and c.75% of the two way flow between 16:00-17:00 and 16:30-17:30 respectively.

5.44. All of the traffic flows which inform the assessment have been vetted and agreed by both National Highways and WBC. The effects of the Covid-19 pandemic are such that the traffic surveys conducted in November 2018 remain the most reliable baseline traffic data available.

Road Casualty Data

5.45. Existing collision records have been obtained from WBC for the local area, including A574 Birchwood Way and the following junctions:

- M62 Motorway Junction 11 – including slip roads
- Moss Gate / A574 Birchwood Way / Daten Avenue

5.46. The data has been obtained for the five year period ending July 2018 (i.e. pre-Pandemic and hence relevant to the consideration of 'typical' conditions) and is included in Appendix 12.A of the TA (contained within Appendix 2.1 of this Paper).

5.47. A summary of the collisions is set out in Table 2.15 below:-

Link	Severity			
	Slight	Serious	Fatal	Total
M62 Motorway Junction 11 – Roundabout	7	0	0	7
M62 Motorway Junction 11 – Slip Roads	2	0	0	2
M62 Motorway Junction 11 – Mainline	3	0	0	3
Moss Gate / A574 Birchwood Way / Daten Avenue	1	1	0	2
A574 Birchwood Way Link	2	0	0	2
Total	**15**	**1**	**0**	**16**

Table 2.15: Summary of Historic Collision Data

5.48. As can be seen, a total of 16 collisions occurred in the highlighted area during the five-year period, 15 of these were reported as slight and 1 serious.

5.49. The TA contained within Appendix 2.1 of this Paper includes a full description of the accident data.

5.50. As can be seen from Table 2.15 seven slight accidents occurred at M62J11 during the latest five year period, this included two accidents involving drivers with a positive breath test for alcohol. Table 2.16 below compares the observed accident rates with the DMRB default accident rates calculated from the formulae set out in the COBA Manual.

	Observed	Observed – Excluding Positive Breath Tests	DMRB Default
Accident Rate	1.40	1.00	1.23

Table 2.16 Baseline Accident Rate

Future Traffic Flows

5.51. The TA (Appendix 2.1 of this chapter) sets out the treatment of traffic growth. No background traffic growth will be applied to turning movements at M62J11 as growth is represented by the traffic generated by committed developments at Birchwood Business Park.

5.52. Traffic growth across the wider network is caused by a number of factors, including traffic generated by new developments. There are a number of committed developments in the vicinity of M62J11, as listed in the Environmental Impact Scoping report:

i. Zones 3 to 6 Residential, Omega South, Warrington (Planning Application Ref: 2015/26469)

ii. Former Bayleaf Public House, Harpers Road, Warrington (Planning Application Ref: 2016/27896)

iii. The Quadrant, Birchwood, Warrington (Planning Application Ref: 2014/23358)

iv. Redevelopment of Birchwood Park, Birchwood, Warrington (Planning Application Ref: 2015/26044)

v. Omega Zones 1 and 2, Warrington (Planning Application Ref: 2003/01449)

vi. Omega Zone 7, Omega South, Warrington (Planning Application Ref: 2014/23290.

5.53. Of the sites listed above the Omega sites (sites i, v & vi) are all located at Junction 8 of the M62 Motorway, some six miles from the application Site. It is therefore not considered that they would have a significant effect upon turning movements at M62J11 and traffic growth resulting from these developments is included within the overall growth factors calculated for the mainline (set out below).

5.54. Development ii is an extra care facility located 3 miles from the Site, on the far side of the M6 Motorway. The Transport Statement accompanying the planning application set out that the peak hour trip generation would be 12 two-way trips. It is not considered that this will have a discernable effect pm the highway network in the vicinity of the Site and it is therefore not considered further in the Transport Assessment or this ES Paper.

5.55. Development iii, The Quadrant, is included within development iv (application ref 2015/26044) which is an update to previous planning consents at Birchwood Business Park to amend the quantum of different land uses consented at the site.

5.56. Development iv, Birchwood Business Park, is a major development which originally received planning consent some 18 years ago. Since then a number of phases have been built out, and there is a large amount of floorspace yet to be implemented. In order to identify the level of traffic likely to be generated by the unimplemented floorspace, i-Transport has liaised with officers at Warrington Metropolitan Borough Council (WMBC) and reference has been made to the TA produced by Vectos to accompany application 2015/26044.

5.57. The derivation of the traffic flows generated by the committed developments is set out at Section 8.4 of the TA with the details of the traffic flows included within Appendix D of the TA, which is included in Appendix 2.1 of this Chapter.

5.58. Traffic Growth relating to more distant developments will be accounted for by applying factors calculated from Tempro to the M62 Motorway mainline traffic. Tempro takes account of local planning data in conjunction with national or regional traffic growth forecasts. These are also assumed to take account of any influence on growth resulting from improved network capacity (for example in the North West the Smart Motorway schemes on the M6 Motorway and M62 Motorway). The growth factors to be used are:

Year	Rural Motorway: NW Region	
	AM	PM
2018-2022	1.0619	1.0593
2018-2029	1.1398	1.1358

Table 2.17: TEMPro Growth Factors Applied to M62 Motorway Mainline

Baseline Traffic Capacity Assessments

5.59. Baseline traffic capacity analysis has been conducted for M62J11 and the Birchwood Way / Daten Avenue / Moss Gate signals.

5.60. Traffic capacity assessments have been conducted for 2018 and for the future baseline with committed development. The future baseline with committed development scenario assesses the likely evolution of the environment without implementation of the Proposed Development. This includes the Smart Motorway improvements to the M62 Motorway Junctions 10-12 and the Warrington East Phase 3 improvements to Birchwood Way. Traffic flows generated by the build out of the remaining consented development at Birchwood Business Park are also included in the future baseline with committed development scenario.

5.61. The traffic flows are set out in Appendix 8.D of the TA (Appendix 2.1 of this chapter). The summary results of the baseline capacity assessments are set out in tables in the TA with the detailed model outputs included in Appendices as follows.

Junction	Data	Base 2018	Base + Committed
M62J11	Summary Results	TA Table 9.1	TA Tables 9.2 & 9.3
	Detailed Outputs	TA Appendix 9.A	TA Appendix 9.A
Birchwood Way / Daten Avenue / Moss Gate Way	Summary Results	TA Table 11.1	TA Tables 11.2 & 11.3
	Detailed Outputs	Appendix 11.A	Appendix 11.A

Table 2.18: Baseline Capacity Assessment TA References

5.62. The modelling demonstrates that M62J11 currently operates within capacity with slight queuing on the M62 East off-slip in the late AM peak hour and on Birchwood Way South in the PM peak hours. In the Base + Committed scenario the junction is shown to operate approaching capacity in the later PM peak hour.

5.63. Modelling of the Birchwood Way/Daten Avenue junction demonstrates that it is currently approaching capacity in the PM peak hour, with queuing on Moss Gate, Birchwood Way and Daten Avenue. In the Base + Committed scenario, the junction is shown to continue to operate within capacity in the AM peak hour. However, in the PM peak hour the junction is shown to operate over capacity as a result of the addition of committed development traffic flows, with significant queueing on Birchwood Way South and Daten Avenue

6. Alternatives Considered

6.1. Alternative Locations for the proposed MSA are considered in the 'Alternative Sites Assessment' which is included within the suite of planning application documents and Appendix 13 of the ES Part 1 Report.

6.2. Various alternative arrangements to the proposed signalisation of M62J11 have been considered and these are detailed within Section 7.0 of the Transport Assessment (Appendix 2.1 to this Technical Paper).

6.3. Option 1 - provision of two lanes from A574 Birchwood Way to M62 (west) – assumed the capacity of the Birchwood Way arm would be improved by retaining the give-way control at the junction, and amending the lane destination markings such that the left turn to the westbound on-slip would be possible from both the nearside and offside lanes. Currently the westbound on-slip can only be accessed from the nearside lane, with the offside lane being used by vehicles turning right (onto the eastbound on-slip) or ahead (to the northern Birchwood Way cul-de-sac). The restriction of left-turners to use only the nearside lane is shown to lead to capacity issues during the PM peak hours in the future year scenarios. However, preliminary modelling has shown that if the offside lane were to be allocated to be used for all turning movements (i.e. left, ahead and right), this would enable the junction to operate within capacity with the Proposed Development in place. There are two lanes on the westbound on-slip on exit from the roundabout, and under this potential alternative arrangement, two lanes could be used by left-turners, leading to the improvement in capacity. The nearside lane would retain its designation as left-turn only, meaning that no conflicting traffic movements would be introduced.

6.4. Option 1 has however been discounted on road safety grounds following without prejudice discussions with a road safety auditor. Those discussions highlighted concerns that conflicts may occur on the circulatory carriageway under this arrangement as a consequence of unfamiliar lane markings.

6.5. Option 2 considered widening A574 Birchwood Way to provide three lanes on entry to M62J11. The results of preliminary modelling show a worsening in operational performance in the AM peak hours. This option has therefore not been progressed.

6.6. Option 3 considered providing a left-turn bypass lane from A574 Birchwood Way to M62 (west). In terms of deliverability, this option requires land beyond the highway boundary not in the applicant's control. It is also considered that a Departure from Standard(s) would be needed, either in respect of the achievable exit taper length or the reduction taper length (or both), irrespective of whether land outside the highway boundary could be acquired. The process to agree necessary Departures from Standard with National Highways ~~Highways England~~ cannot be guaranteed. The currently proposed signal-controlled arrangement does not require any Departures from Standard. Option 3 was therefore discounted.

6.7. Option 4 – a variation to the proposed signal-controlled arrangement, whereby the A574 Birchwood Way provides a three lane approach to the junction – has also been considered. The results of preliminary capacity testing do not however compare favourably to the proposed signal arrangement and as such, Option 4 has been discounted.

6.8. Option 5 considered providing a left-turn bypass lane from A574 Birchwood Way to M62 (west) as part of the signal-controlled arrangement. This option suffers the same deliverability issues as Option 3 above and has been discounted.

6.9. Option 6 – implementing signal control at the Birchwood Way entry to the roundabout only – has the potential to reduce queuing on the critical Birchwood Way arm of the junction. It does not however achieve an improved environment for pedestrians to cross M62J11 which WBC has indicated is a key issue as part of pre-application discussions. Option 6 has also therefore been discounted.

6.10. On balance, it is considered that the introduction of traffic signal control at Junction 11 is the preferred arrangement. Signalising the junction would lead to an improved appreciation by drivers that both lanes of the Birchwood Way approach can be used to turn left to the westbound on-slip, whilst also enabling the provision of controlled pedestrian crossing points that will improve the environment for non-motorised users passing through the junction, including staff travelling to/from the Proposed Development. This will, in turn, increase the attractiveness of journeys to/from the Proposed Development by non-car modes for staff.

7. Potential Environmental Effects

7.1. Potential environmental impacts during the operational and construction phases of the development have been considered. As outlined above, the following environmental impacts have been assessed:

- Impacts on driver delay;
- Impacts on pedestrian delay and amenity;
- Impacts on fear and intimidation (pedestrians and cyclists);
- Impacts on severance;
- Impacts on accidents and road safety; and
- Impacts on public transport users.

7.2. The following sections outline the potential impacts of the development proposals on each of the environmental factors outlined above.

Construction Phase

Construction Traffic Estimates

7.3. Estimates of the number of vehicle movements associated with construction activity have been produced using information provided by Extra MSA Group (largely based on their experience of developing other MSA sites) and other members of the design team as well as using i-Tranpsort's own experience. The derivation of the construction traffic is set out below.

7.4. Vehicles associated with construction activity will relate to:-

- Muck shifting / export of material
- Import of material for construction.
- General construction deliveries.
- The labour force.

7.5. It has been assumed that up to 42,000m^3 of material will be exported off the Site. Based on an average of 15m^3 per HGV then there will be 2,800 one-way HGV movements in total. These will be spread over 6 months resulting in 22 HGVs in and 22 HGVs out per day. These will be spread over a the 07:00 - 18:00 period resulting in 2 HGVs in and 2 HGVs out per hour.

7.6. The import of material for drainage will lead to approximately 45,700m^3 of imported engineering fill. With 15m^3 per HGV assumed then the total movements in and out will be 3,047 HGVs in each direction. With this import taking place over six months then this will result in 23 HGVs in and out per day, spread evenly over the 07:00 – 18:00 period giving 2 HGVs in and 2 HGVs out per hour.

7.7. Extra MSA Group advise that general construction deliveries will include 20 vehicle movements in and out per day. With these all assumed to be HGVs as a worst case and spread over 07:00 – 18:00 then this results in 2HGVs in and 2HGVs out per hour.

7.8. Extra MSA Group advises that up to 300 staff will be on site during construction. Assuming an average vehicle occupancy of 2.0 and with no allowance for access by non-car modes then this results in 150 arrivals and departures per day. Arrivals will be spread over the morning peak period with departures over the evening peak period. Assuming half arrive and depart in the peak hours then this results in 75 car/van arrivals in the AM peak hour and 75 car/van departures in the PM peak hour.

7.9. A summary of the daily number of traffic movements is set out in Table 2.19 with those in the peak hours include in Table 2.20.

Activity	Daily HGVs		Daily Cars/Vans		Daily Total	
	In	Out	In	Out	In	Out
Export	22	22	-	-	22	22
Drainage	23	23	-	-	23	23
General Construction	20	20	-	-	20	20
Labour Force	-	-	150	150	150	150
Total	65	65	150	150	215	215

Table 2.19 Daily Construction Traffic Estimates

Activity	AM Peak Hour						PM Peak Hour					
	HGVs		Cars/Vans		Total		HGVs		Cars/Vans		Total	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Export	2	2	-	-	2	2	2	2	-	-	2	2
Drainage	2	2	-	-	2	2	2	2	-	-	2	2
General Construction	2	2	-	-	2	2	2	2	-	-	2	2
Labour Force	-	-	75	-	75	-	-	-	-	75	-	75
Total	6	6	75	-	81	6	6	6	-	75	6	81

Table 2.20 Peak Hour Construction Traffic Estimates

7.10. In terms of traffic flows on the road network, assumptions have been made regarding the routes used to travel to and from the Site. The source of general and drainage construction material and destination of the export material is unknown but it is expected most will arrive / depart via the motorway with 50% to/from each of the east and west assumed. The distribution pattern derived from 2011 census journey to work data has been adopted for the labour force with 27% via Birchwood Way, 27% via the M62 Motorway east and 46% via the M62 Motorway west.

7.11. The resultant construction traffic flows are set out in Table 2.21 below.

	Daily		Peak Hour	
	Total Vehicles	HGVs	Total Vehicles	HGVs
M62 Motorway East	147	65	27	6
M62 Motorway West	203	65	41	6
Birchwood Way	80	0	20	0
Access Road	430	130	88	12

Table 2.21 Construction Traffic Flows (Two-Way)

Impacts on Driver Delay

7.12. The construction traffic flows at M62J11 and on the Site access will be significantly lower than during the operational phase and these will not have an impact on driver delay. Construction traffic flows on the M62 Motorway east and west of M62J11 will typically be 0.2% of existing

daily flows and 0.4%-0.6% of peak hour flows. These will lead to less than 0.5 minutes increase in delay across the junction during peak hours and will therefore have a **negligible** impact on delay at M62J11.

7.13. The daily construction traffic flows on Birchwood Way are predicted to be slightly lower than during the operational phase. The impact of the operational traffic has been assessed and the results show that the impacts on driver delay will be **negligible**.

7.14. In the Peak hours the construction flows on Birchwood Way will be 20 vehicles. As part of the operational phase assessment the impact of an additional 9 vehicles in the late PM peak was assessed and the results show that there was no impact on driver delay, an additional 11 vehicles for a temporary period would therefore have no more than a negligible effect on driver delay.

7.15. It is therefore concluded that the impacts of construction traffic on driver delay will be **negligible.**

Impacts on Pedestrian Delay and Amenity

7.16. Traffic flows during the construction phase will be less than during the operational phase and few pedestrians are expected at M62J11 during the construction period.

7.17. The increase in traffic flows along Birchwood Way are minor, increasing the existing traffic flows by 0.8% in the peak hours (with lower daily increases). With reference to Figure 1 of DMRB Volume 11 Section 3 Part 8 this level of increase is expected to lead to an increase in average pedestrian delay of less than 0.5 minutes. Using the scale of impacts set out in Table 2.5 then it is concluded that the impacts on pedestrian delay and amenity will be **negligible.**

Impacts on Fear and Intimidation

7.18. Again, traffic flows (total vehicles and HGVs) will be significantly less than during the operation phase, other than on Birchwood Way in the peak hours. No additional HGVs are predicted along this route in the operational phase.

7.19. Because the speeds along Birchwood Way are greater than 20mph then the existing degree of hazard will be 'extreme' as set out in Table 2.3. The additional vehicles, representing very

small increases in traffic, will not change the degree of hazard and impact on fear and intimidation will be **negligible.**

Impacts on Severance

7.20. Increases in flows will be less than during the operational phase other than on Birchwood Way. The Guidelines for the Environmental Assessment of Road Traffic (GEART) includes indicators for severance as set out in Section 4 above with a 30% flow increase indicating a slight separation effect. The flow increases as a result of construction activity are only 0.8% in the peak hour (lower daily) and therefore using the criteria set in Table 2.5 impacts on severance are **negligible.**

Impacts on Accidents and Road Safety

7.21. The increases in traffic flows are lower than during the operational phase other than on Birchwood Way where the 0.8% increase in traffic in the peak hours indicate a **negligible** impact on road safety using criteria in Table 2.5.

Public Transport Users

7.22. As part of the ~~Framework~~ Travel Plan, travel information will be issued to the principal contractor during the construction phase to allow construction personnel at the site to be made aware of their sustainable travel options. Construction personnel who use public transport services as part of their journey to travel to the Site will primarily do so outside of the peak hours and hence the impacts can be categorised as negligible. As mentioned above the impacts on driver delay will be negligible and therefore impacts on delays to bus users will be negligible.

7.23. It is therefore concluded that the impacts on public transport users will be **negligible.**

Summary

7.24. Construction traffic generated by the development will generally result in negative but negligible impacts which will be short-term and temporary over the construction period. The likely significance of effects (pre-mitigation) is set out below:-

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level
Driver Delay	Drivers at M62J11 Regional	Negligible	Negligible	High
Driver Delay	Drivers at Birchwood Way / Daten Avenue junction Borough / District	Negligible	Negligible	High
Pedestrian Delay	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High
Pedestrian Delay	Pedestrians at M62J11 Site Access Local / Neighbourhood	Negligible	Negligible	High
Pedestrian Delay	Pedestrians at Birchwood Way / Daten Avenue Junction Local / Neighbourhood	Negligible	Negligible	High
Pedestrian Amenity	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High
Pedestrian Amenity	Pedestrians at M62J11 Site Access Local / Neighbourhood	Negligible	Negligible	High
Pedestrian Amenity	Pedestrians at Birchwood Way / Daten Avenue Junction Local / Neighbourhood	Negligible	Negligible	High
Fear and Intimidation	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High
Fear and Intimidation	Pedestrians at M62J11 Site Access Local / Neighbourhood	Negligible	Negligible	High
Fear and Intimidation	Pedestrians at Birchwood Way / Daten Avenue Junction Local / Neighbourhood	Negligible	Negligible	High
Severance	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level
Severance	Pedestrians along Birchwood Way Local / Neighbourhood	Negligible	Negligible	High
Accidents and Road Safety	Highway Users at M62J11 Regional	Negligible	Negligible	High
Accidents and Road Safety	Highway Users at Birchwood Way / Daten Avenue Junction Borough / District	Negligible	Negligible	High
Public Transport Users	Bus Users Local / Neighbourhood	Negligible	Negligible	High

Table 2.22: Significance of Effect - Construction Phase

Operational Phase

Development Traffic Generation

7.25. The methodology for deriving the traffic flows generated by the MSA proposals is set out in detail in Section 8.5 of the TA (Appendix 2.1 of this chapter). This is based on turn-in rates from the motorway network observed at the Extra 'new concept' MSA site at Beaconsfield on M40 Motorway.

7.26. The turn in flows in vehicles per hour in the early and late AM peak hours are 443 (0700-0800) and 478 (0730-0830) whilst in the PM peak hours the turn-in flows are 475 (1600-1700) and 453 (1630-1730).

7.27. Daily traffic flows have also been estimated for the proposed MSA and these are c.8,240 vehicles per day (24 hour AADT) with c.11.7% HGVs.

Proportional Traffic Impacts

7.28. As set out above, the requirement for assessment of the effects of the traffic flows generated by the proposals takes account of the criteria set out in the IEMA's 1993 'Guidelines for the Environmental Assessment of Road Traffic' which provides two broad rules to define the need for environmental impact analysis:

- Highway links where the traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%).
- Any other specifically sensitive areas where traffic flows will increase by 10% or more.

7.29. IEMA have confirmed that the 1993 Guidance remains the most current version and has not been superseded by a complete replacement document.

7.30. The ES scoping report notes that there are no specifically sensitive areas in traffic impact terms and therefore the 30% 'rule' has been used.

7.31. Tables 2.23 and 2.24 below compare the peak hour traffic flows 'generated' by the proposed MSA with the existing traffic flows on the surrounding road network. Two-way flows are given other than on the one-way slip roads at M62J11.

Direction	0700 – 0800			0730 - 0830		
	Existing Flow	Development Flow	Increase	Existing Flow	Development Flow	Increase
M62J11 (Total inflow)	2,435	802	+32.9%	2,513	863	+34.3%
M62 Motorway Eastbound On-Slip	1,033	183	+17.7%	926	200	+21.6%
M62 Motorway Westbound Off-Slip	842	174	+20.7%	904	175	+19.4%
M62 Motorway Westbound On-Slip	331	175	+52.9%	351	179	+50.1%
M62 Motorway Eastbound Off-Slip	249	184	+73.9%	382	201	+52.6%
M62 Motorway East of J11	9,977	1	+0.0%	9,622	10	+0.1%
M62 Motorway West of J11	8,682	3	+0.0%	8,526	17	+0.2%
Birchwood Way	2,410	1	+0.0%	2,454	9	+0.4%
MSA Access Link		887	-	-	958	-

Table 2.23 Development Traffic Flows (Two-Way) – AM Period

Direction	1600 – 1700			1630 - 1730		
	Existing Flow	Development Flow	Increase	Existing Flow	Development Flow	Increase
M62J11 (Total inflow)	2,725	860	+31.6%	2,758	817	+29.6%
M62 Motorway Eastbound On-Slip	819	172	+21.0%	788	161	+20.4%
M62 Motorway Westbound Off-Slip	459	213	+46.4%	467	199	+42.6%
M62 Motorway Westbound On-Slip	1,210	213	+17.6%	1,281	197	+15.4%
M62 Motorway Eastbound Off-Slip	276	172	+62.3%	274	164	+59.8%
M62 Motorway East of J11	9,243	0	0.0%	8,893	9	+0.1%
M62 Motorway West of J11	9,451	0	0.0%	9,193	14	+0.2%
Birchwood Way	2,669	0	0.0%	2,691	8	+0.3%
MSA Access Link	-	950	-	-	906	-

Table 2.24 Development Traffic Flows (Two-Way) – PM Period

7.32. The daily AADT traffic flows generated by the proposals are set out in Table 2.25 below and compared with existing 24-hour AADT flows.

Link	Existing Flow	Development Flow	Increase
M62J11 (Total inflow)	22,310	14,154	+63.4%
M62 Motorway Eastbound On-Slip	6,163	3,436	+55.8%
M62 Motorway Westbound Off-Slip	5,836	3,612	+61.9%
M62 Motorway Westbound On-Slip	6,145	3,641	+59.3%
M62 Motorway Eastbound Off-Slip	4,166	3,465	+83.2%
M62 Motorway East of J11	113,664	84	+0.1%
M62 Motorway West of J11	109,946	142	+0.1%
Birchwood Way	22,310	82	+0.4%
MSA Access Link	-	16,479	-

Table 2.25: Daily AADT (Two-Way)

7.33. Thus on the basis of the peak hour flows, assessment is required at M62J11, including both of the westbound slips and the eastbound off-slip and on the access road leading from M62J11

to the development Site, as these links are shown to experience over a 30% increase in traffic flows as a result of the development proposals.

Impacts on Driver Delay

7.34. The TA includes a range of traffic assessment scenarios as described in Table 2.2 above. Scenario B includes committed developments whilst scenario C tests the incremental impacts of the MSA proposals.

7.35. At M62J11, the tables summarising the assessment results of the ARCADY model in the TA include the average delay per vehicle. The summary tables for the LinSig model used to assess the mitigation scheme include total delay at the junction, the delay for each vehicle is then calculated by dividing by the total number of vehicles entering the junction. The results for M62J11 for scenarios B and C are set out in Table 2.26 below.

Link	Delays per Vehicle (Mins)			
	0700-0800	0730-0830	1600-1700	1630-1730
Scenario B: 2022 Base + Committed	0.08	0.08	0.13	0.20
Scenario C: 2022 Base + Committed + MSA	0.38	0.42	0.42	0.42
Difference	0.30	0.34	0.29	0.22

Table 2.26: Delays at M62J11

7.36. Using the scale of impacts set out in Table 2.5 above, all impacts are **negligible**.

7.37. Traffic capacity assessments of the Birchwood Way / Daten Avenue / Moss Gate signalised junction are also included in the TA and the summary tables include total delay at the junction. Again, the delay for each vehicle is then calculated by dividing by the total number of vehicles entering the junction.

7.38. The results for scenarios B and C are summarised in the table below.

Scenario	Delays per Vehicle (Mins)			
	0700-0800	0730-0830	1600-1700	1630-1730
Scenario B: 2022 Base + Committed	0.62	0.53	2.35	2.15
Scenario C: 2022 Base + Committed + MSA	0.62	0.53	2.35	2.15
Difference	0.00	0.00	0.00	0.00

Table 2.27: Delays at Birchwood Way/Daten Avenue/Moss Gate

7.39. The table demonstrates that there are no increases in driver delay at the Birchwood Way / Daten Avenue / Moss Gate junction, therefore the impact at this location is **neutral.**

Impacts on Pedestrian Delay and Amenity

7.40. There are currently uncontrolled crossing points on the Site access arm of the junction and at the top of the east facing slip roads. As part of the proposals to signalise the roundabout these crossing points are to become signalised and crossings are to be provided of the circulating carriageway and the entry and exit carriageways on the MSA access. The current level of provision for pedestrians is not necessarily substandard, however the use of uncontrolled crossings at the top of slip roads is not considered desirable and is likely to deter some pedestrians. The proposed upgrades to pedestrian facilities are considered likely to improve confidence of pedestrians passing through the junction and encourage trips on foot, and are therefore considered to have a beneficial impact on human health.

7.41. Given the proposed MSA will not add significant additional traffic movements to Birchwood Way there will be no adverse impacts on pedestrian delay on this link **(negligible)**.

7.42. In terms of pedestrian amenity, all footways to be provided as part of the application proposals will be developed to meet current standards. Thus using the scale of impacts, the impacts on pedestrian amenity will be **negligible** albeit as outlined above the proposed improvements are likely to encourage trips on foot and result in positive health benefits.

Impacts on Fear and Intimidation

7.43. Given the existing and proposed speed limits then all degrees of hazard are currently classed as extreme and the development proposals do not change the degree of hazard. Therefore impacts of the development on fear and intimidation will be **negligible.**

Impacts on Severance

7.44. Given the lack of existing facilities and pedestrian movements immediately to the north of the M62J11 it is not envisaged that the MSA proposals including the access road will cause severance. Other than on the M62J11 there only very minor changes in flows elsewhere on the network, therefore the impact of the development on severance will be **negligible.** Furthermore, the proposed improvements to pedestrian crossing facilities at M62J11 will provide an enhanced environment for pedestrians.

Impacts on Accidents and Road Safety

7.45. ~~There have been seven~~ Seven accidents were recorded in the ~~most recent~~ five years period to July 2018 at M62J11, this equates to 1.4 accidents per year. The accident descriptions provided by WBC demonstrate that there are no patterns to the seven accidents, in that they occur at varying times on varying days of the week. Just one of the accidents occurred during peak times at 16:15; therefore it reasonable to suggest that the other accidents were not in relation to higher traffic flows. Also two of the seven accidents involved drivers who provided positive breath tests for alcohol.

7.46. The junction has been assessed using the formulae set out in the COBA Manual and this gives the DMRB default accident rate of 1.23 accidents per annum. This is slightly lower than the observed accident rate. Further analysis demonstrates that with the addition of the committed developments this default accident rate rises to 1.30 accidents per annum and then with the MSA proposals a further 1.31 accidents per year would be predicted at the junction.

7.47. As set out in Table 2.25 above the introduction of the MSA proposals results in a 63.4% increase in flows at M62J11. Therefore in accordance with Table 2.5 the impact of the MSA on Accidents and Road safety will be **high adverse.**

7.48. However, two of the observed accidents involved drivers under the influence of alcohol when these accidents are excluded from this analysis, for the reason that the main contributory factor resulting in these two collisions was alcohol and not highway layout or traffic flows, this gives an accident rate of 1.00 accident per annum which is lower than the DMRB default of 1.23. In these circumstances the impact of the MSA on Accidents and Road Safety will be **negligible** based on Table 2.5.

7.49. The accident rate at the junction is shown to rise as a result of the increased level of traffic entering the junction following the opening of the MSA. It is important to note however that this is a direct function of the number of vehicle movements through the junction. Using the DMRB predictive formula, an increase in vehicle movements through any junction leads to more potential for conflicts occurring. This is the case for any development which leads to an increase in traffic flows through a junction, or indeed the provision of a new junction onto the local or strategic road network. The accident rate calculations should therefore be considered in that context.

7.50. MSA's underpin the safe and efficient operation of the motorway network, including the M62 Motorway and M6 Motorway. Circular 02/2013 recommends that the maximum distance between MSAs should be no more than 28 miles, or 30 minutes travel time. The existing gap between MSAs relevant to the proposals are set out in Table 2.28 below:

Existing Gap	Distance
Charnock Richard – Birch	35 miles
Charnock Richard – M67 Motorway Terminus	47 miles
M58 Motorway Terminus – Birch	40 miles
M58 Motorway Terminus – M67 Motorway Terminus	52 miles

Table 2.28: Existing Gaps Between MSA's

7.51. The distances set out above are clearly in excess of the 28 mile maximum distance requirement set out in Circular 02/2013 and there is therefore a 'need' for a MSA between the existing facilities. Furthermore, the peak hour travel time between the existing areas is generally much greater than 30 minutes.

7.52. Thus having established that there is a 'need' for the service area, it follows that the provision of the MSA will result in road safety benefits, encouraging drivers (particularly those making longer distance journeys) to rest. This is anticipated to reduce sleep and fatigue related accidents, which are often serious in nature.

7.53. Drivers on the M6 Motorway and M62 Motorway between existing service areas will therefore benefit from the MSA proposals. These are 'receptors' of regional significance and we anticipate that the traffic and transport related impacts to human health will be minor-moderate positive resulting in **moderate – high benefit.**

Public Transport Users

7.54. There are no bus services in the vicinity of the Site and impacts on bus services which operate in Birchwood will be commensurate with the driver delay impacts at the Birchwood Way / Daten Avenue / Moss Gate junction and are hence defined as **negligible.**

Operational Phase

7.55. The environmental impact along with significance of effect of the operational phase of development is set out in Table 2.29 below.

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level
Driver Delay	Drivers at M62J11 Regional	Negligible	Negligible	High
Driver Delay	Drivers at Birchwood Way/Daten Avenue junction Borough/District	Neutral	Neutral	High
Pedestrian Delay	Pedestrians at M62 Motorway J11 / Site Access Local / Neighbourhood	Negligible	Negligible	High
Pedestrian Delay	Pedestrians at Birchwood Way / Daten Avenue / Moss Gate Local / Neighbourhood	Negligible	Negligible	High
Pedestrian Amenity	Pedestrians at M62 Motorway J11 Local / Neighbourhood	Negligible	Negligible	High
Pedestrian Amenity	Pedestrians Birchwood Way / Daten Avenue / Moss Gate Local / Neighbourhood	Negligible	Negligible	High
Fear and Intimidation	Pedestrians at M62 Motorway J11 Local / Neighbourhood	Negligible	Negligible	High
Fear and Intimidation	Pedestrians at Birchwood Way / Daten Avenue / Moss Gate Local / Neighbourhood	Negligible	Negligible	High

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level
Severance	Pedestrians at M62 Motorway J11 Local / Neighbourhood	Negligible	Negligible	High
Severance	Pedestrians along Birchwood Way Local / Neighbourhood	Negligible	Negligible	High
Accidents and Road Safety	Highway users at M62 Motorway J11 Regional	High Negative	High Adverse*	High
Accidents and Road Safety	Highway users at Birchwood Way / Daten Avenue / Moss Gate Borough / District	Negligible	Negligible	High
Accidents and Road Safety	Drivers using M6 Motorway and M62 Motorway between existing services Regional	Minor to Moderate Positive	Moderate to High Beneficial	High
Public Transport Users	Bus Users Local / Neighbourhood	Negligible	Negligible	High

Table 2.29: Significance of Effect - Operational Phase

*** two of the observed accidents informing this significance of effect involved drivers under the influence of alcohol. When these accidents are excluded from this analysis, this gives an accident rate of 1.00 accident per annum which is lower than the DMRB default of 1.23. In these circumstances the impact of the MSA on Accidents and Road Safety will be negligible based on Table 2.5.**

7.56. The majority of impacts during operational phase are also concluded to be **negligible**. No mitigation is therefore required. There is a **high adverse** impact on accidents and safety at M62J11, however as set out most of the observed accidents occurred outside of peak hours and two of these involved drivers who returned a positive breath test, suggesting that they were not related to high traffic flows. The accident rate is expected to rise as a result of the increased level of traffic entering the junction following the opening of the MSA, this is a direct function of the number of vehicle movements through the junction. More vehicle movements through a junction leads to more potential conflicts occurring and this is the case for any development which leads to an increase in traffic flows through a junction or indeed the provision of a new junction. The accident rate calculations should therefore be considered in this context – **not significant**.

8. Proposed Mitigation

8.1. Given the type and scale of development a level of mitigation is inherent in the development proposals to provide access to the Site and as a result of amendments to the existing layout. These include:

- Signalisation of the M62J11 roundabout junction.
- Opening the existing 'stub' to the north of the Site access junction to accommodate the Site access arm.
- Provision of pedestrian crossing and footways on eastern side of the M62J11 roundabout.
- Provision of sufficient parking within the development.
- Developer contributions towards off-site pedestrian network and wayfinding measures have also been agreed with Warrington Council.

Construction Phase

8.2. As outlined in the previous section, the impacts of the construction vehicles upon traffic and transport-related environmental factors are anticipated to be negligible.

8.3. A Construction Environmental Management Plan (CEMP) – a framework of which is included at ES Part 1 Appendix 12 - will be prepared to support the development proposals and this will seek to minimise the level of disruption caused during the construction phase of the development. It is anticipated that all impacts will remain as **negligible**.

Operational Phase

8.4. The impacts of the MSA proposals are considered to be negligible during the operational phase.

8.5. The proposed signalisation of the M62J11 will ensure that the junction continues to operate within capacity with the development in place and will improve facilities for pedestrians passing across the junction.

8.6. The development proposals will be supported by a ~~Framework~~ Travel Plan aimed to minimise the level of vehicular traffic associated with staff trips to the development, particularly single-occupancy vehicle trips, and to promote the use of sustainable travel modes. The Travel Plan will be developed and implemented by the Council's Smarter Choices Manager and funded

through agreed developer contributions. ~~include a range of measures including the appointment of a Travel Plan Co-ordinator, promotion of travel details via the Site's website, notice boards and dedicated Travel Packs for staff.~~

8.7. Whilst it is therefore considered that the Travel Plan will help to mitigate the impacts of the traffic associated with the development proposals, no change in the level of impacts is anticipated.

9. Potential Residual Effects

Overview

9.1. The mitigation is inherent within the proposals and therefore the residual effects are as set out below.

Potential Residual Effects – Construction Phase

9.2. The overall impact of the proposal in terms of traffic and transportation issues during the construction phase is highlighted in the table below:

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level	Mitigation	Residual Significance of Effect
Driver Delay	Drivers at M62J11 Regional	Negligible	Negligible	High	None Required	Negligible
Driver Delay	Drivers at Birchwood Way / Daten Avenue junction Borough / District	Negligible	Negligible	High	None Required	Negligible
Pedestrian Delay	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Pedestrian Delay	Pedestrians at M62J11 Site Access Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Pedestrian Delay	Pedestrians at Birchwood Way / Daten Avenue Junction Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Pedestrian Amenity	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Pedestrian Amenity	Pedestrians at M62J11 Site Access Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Pedestrian Amenity	Pedestrians at Birchwood Way / Daten Avenue Junction Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level	Mitigation	Residual Significance of Effect
Fear and Intimidation	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Fear and Intimidation	Pedestrians at M62J11 Site Access Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Fear and Intimidation	Pedestrians at Birchwood Way ? Daten Avenue Junction Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Severance	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Severance	Pedestrians along Birchwood Way Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Accidents and Road Safety	Highway Users at M62J11 Regional	Negligible	Negligible	High	None Required	Negligible
Accidents and Road Safety	Highway Users at Birchwood Way / Daten Avenue Junction Borough / District	Negligible	Negligible	High	None Required	Negligible

Table 2.30: Residual Significance of Effect - Construction Phase

9.3. Following proposed mitigation, the residual effects of the Proposed Development on traffic and transportation issues during the construction phase are concluded to **not be significant**.

Potential Residual Effects – Operational Phase

9.4. The Travel Plan will have no material impact on the traffic flows attracted to the proposed MSA and visitor centre and therefore no impacts on the significance of effects which are set out in Table 2.29. The overall impact of the proposal in terms of traffic and transportation issues during the operational phase is highlighted in the table below:

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level	Mitigation	Residual Significance of Effect
Driver Delay	Drivers at M62 Motorway J11 Regional	Negligible	Negligible	High	None Required	Negligible
Driver Delay	Birchwood Way / Daten Avenue / Moss Gate Borough / District	Negligible	Negligible	High	None Required	Negligible
Pedestrian Delay	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Pedestrian Delay	Pedestrians at M62J11 / Site Access Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Pedestrian Delay	Pedestrians at Birchwood Way / Daten Avenue / Moss Gate Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Pedestrian Amenity	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Pedestrian Amenity	Pedestrians Birchwood Way / Daten Avenue / Moss Gate Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Fear and Intimidation	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Fear and Intimidation	Pedestrians at Birchwood Way / Daten Avenue / Moss Gate Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Severance	Pedestrians at M62J11 Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level	Mitigation	Residual Significance of Effect
Severance	Pedestrians along Birchwood Way Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible
Accidents and Road Safety	Highway users at M62J11 Regional	High	High Adverse*	High	None Required	High Adverse*
Accidents and Road Safety	Highway users at Birchwood Way / Daten Avenue / Moss Gate Borough / District	Negligible	Negligible	High	None Required	Negligible
Accidents and Road Safety	Drivers using M6 Motorway and M62 Motorway between existing services	Minor to Moderate Positive	Moderate to High Beneficial	High	None Required	Moderate to High Beneficial
Public Transport Users	Bus Users Local / Neighbourhood	Negligible	Negligible	High	None Required	Negligible

Table 2.31: Residual Significance of Effect – Operational Phase

*** two of the observed accidents informing this significance of effect involved drivers under the influence of alcohol. When these accidents are excluded from this analysis, this gives an accident rate of 1.00 accident per annum which is lower than the DMRB default of 1.23. In these circumstances the impact of the MSA on Accidents and Road Safety will be negligible based on Table 2.5.**

9.5. Overall it is concluded that there would be no residual high adverse or substantial adverse environmental impact as a result of the application proposals, with the exception of Accidents and Safety at M62J11. However, as set out in paragraph 7.48, taking account of the nature of the accidents that have been recorded at this location, and using professional judgements, overall it is considered that the impact of the MSA on Accidents and Road Safety will be **negligible**. There are therefore **no significant impacts**.

10. Additive Impacts (Cumulative Impacts and their Effects)

Cumulative Developments

10.1. For the purposes of this Addendum to ES ~~we define~~ the additive cumulative effects are defined as:

> ***'Those that result from additive impacts (cumulative) caused by other existing and/or approved projects together with the project itself and the synergistic effects (in-combination) which arise from the reaction between impacts of the project on different aspects of the environment'***

10.2. Committed developments are included in the future baseline scenario as set out in paragraphs 5.52 to 5.62. These include the M62 J10-12 Smart Motorway scheme, the Warrington East Phase 3 scheme, and consented developments at Birchwood Business Park.

10.3. The developments that are likely to have a cumulative impact when considered with the Proposed Development have been scoped with the Local Authority and Key Consultees during the preparation of this ES (a full list is included within Section 9 of the ES Part One Report).

10.4. Ordinarily, projects that are not committed development (i.e. those that do not have the benefit of planning permission), or not reasonably foreseeable, would not be included within the cumulative assessment. However, in this instance, given the national significance of the HS2 proposals, and the location of the potential future HS2 railway line proposed to the land immediately to the north, but outside of, the Proposed Development, and related HS2 construction and HS2 operational maintenance access, which would be partly within the Application Site, HS2 will form part of the cumulative assessment. This will be based on the published information that is available to date. Full details are provided at Section 9 of the ES Part One Report.

10.5. Construction traffic associated with HS2 (Phase 2b) is considered to have a cumulative impact, in the vicinity of the development site. The following table ~~includes the agreed list of~~ sets out the constituent elements of the HS2 project ~~cumulative developments~~ that have been assessed

in respect of Traffic and Transport. These are also shown geographically on the plan included at **Appendix 14** of the ES Part One Report.

Cumulative Development	Details	Status	Justification for Inclusion in Cumulative Assessment
HS2 (adjacent to the Site)	Land safeguarded for the HS2 Phase 2b route	Government consultation	Current construction programme outlined for HS2 overlaps with that for the proposed MSA
M62 West Viaduct South satellite compound	Land safeguarded for the HS2 Phase 2b route	Government consultation	Current construction programme outlined for HS2 overlaps with that for the proposed MSA
M62 West Viaduct North satellite compound	Land safeguarded for the HS2 Phase 2b route	Government consultation	Current construction programme outlined for HS2 overlaps with that for the proposed MSA
A574 Warrington Road satellite compound	Land safeguarded for the HS2 Phase 2b route	Government consultation	Current construction programme outlined for HS2 overlaps with that for the proposed MSA

Table 2.32: Cumulative Development

10.6. ~~In November 2016 the Secretary of State for Transport confirmed part of the Phase 2b route for HS2, whilst also announcing a consultation on seven route refinement areas. On 17 July 2017, the Secretary of State for Transport announced his decisions on these refinements and on 10 October 2018 the Secretary of State announced a consultation on the working draft Environmental Statement for Phase 2b.~~

10.7. ~~The current construction programme for HS2 Phase 2b (as identified in Appendix 14 of this ES) is anticipated to overlap with that of the Proposed Development.~~

10.8. Further information has been made available by the Secretary of State for Transport and HS2 since the preparation of the original ES. On 7th October 2020 the Secretary of State for Transport issued updated Safeguarding Directions in relation to Phase 2b: the Western leg (Crewe to Manchester). Subsequent to the 2020 Safeguarding directions, HS2 published a

series of Map Books (February 2021) providing more detail on the Construction and Operational Phase requirements.

10.9. A number of assumptions (as set out in Section 9 of the ES Part One Report) have been made in respect of the delivery of the Warrington MSA and HS2. The HS2 assumptions are based on information publically available and discussions with HS2. Based on those stated assumptions it is considered that the Proposed Warrington MSA would be fully or virtually completed at the point of opening by the time HS2 require access for construction and use of site compounds.

10.10. The working draft ES for HS2 notes that construction activities would be managed from compounds. The current proposals for HS2 Phase 2b include a compound adjacent to the Site which is identified on the relevant drawing (Drawing No. CT-05-327) as 'M62 West Viaduct North Satellite Compound and Transfer Node'.

10.11. The currently available Environmental Statement for HS2 Phase 2b remains the working draft referred to above and the relevant section is 'Volume 2: MA05', which covers the section of the route between Risley and Bamfurlong. It notes, at Paragraph 14.2.5 that:

> ***'The potential effects on traffic and transport have been assessed qualitatively, based on the Proposed Scheme design, proposed construction routes, initial estimates of construction traffic and professional judgement.'***

10.12. Paragraph 14.2.6 goes on to note that:

> ***'No quantitative assessment has been undertaken at this stage. A quantitative assessment will be presented in the formal ES.'***

10.13. The working draft Environmental Statement for HS2 Phase 2b notes that M62J11 and A574 Birchwood Way will be primary access routes for construction traffic. Paragraph 14.4.5 concludes however that:

> ***'Changes in traffic have the potential, at some locations, to result in increased travel distance, congestion and delays and increased traffic severance for non-motorised users. The assessment of these changes will be reported in the formal ES.'***

10.14. ~~Given that no quantitative assessment has yet been conducted for HS2 Phase 2b it is not possible to derive traffic figures for the construction phase and hence it is not possible to assess the implications of the HS2 Phase 2b construction phase in combination with the Proposed Development.~~ For the HS2 development, there is no traffic data publicly available for the construction or operational phases of the HS2 development. As such, first principles assumptions have been made as to the likely construction traffic associated with the HS2 construction phase within in the vicinity of the Site, taking account of published information for Phase 1 of HS2 between London and the West Midlands. This enables a quantitative cumulative assessment to be undertaken, which builds on the qualitative cumulative assessment undertaken as part of the original ES (dated, August 2018). The operational phase of the development is expected to consist of the occasional light vehicle in the vicinity of the Site, such as a small van, for maintenance purposes, which would not be material to the operational traffic for the Application Proposals and as such, does not lead to any further assessment.

10.15. The working draft Environmental Statement for HS2 Phase 2b does however identify various measures that are proposed to avoid or reduce that project's effect on transport users on the transport networks surrounding the Site. The measures currently identified at Paragraph 14.4.1 of the working draft ES 'Volume 2: MA05' are:

- ***'New highways (roads and PRoW) would be constructed and operational prior to the permanent closure of any existing highways, insofar as reasonably practicable;***
- ***The majority of roads crossing the route of the Proposed Scheme would be maintained or locally diverted during construction to limit the need for diversion of traffic onto alternative routes;***
- ***Traffic management measures would be implemented to limit any disruption;***
- ***Road closures would be restricted to overnight and weekends, insofar as is reasonably practicable;***
- ***Temporary alternative routes for PRoW would be provided during construction, insofar as reasonably practicable, where either the existing or final proposed route is not available;***
- ***Where reasonably practicable, site haul roads would be created adjacent to the route of the Proposed Scheme to transport construction materials***

and equipment to reduce heavy goods vehicle (HGV) movements on public roads with access taken from the main road network;

- ***HGV would be routed, insofar as reasonably practicable, along the strategic and/or primary route network;***
- ***The use of the local road network would, insofar as reasonably practicable, be limited to use for site set-up, access for surveys and on-going servicing (including refuse collection and general deliveries to compounds) during construction;***
- ***The reuse of excavated material along the route of the Proposed Scheme, insofar as reasonably practicable;***
- ***Highway measures including junction improvements, passing places and carriageway widening would be provided, as required, to manage the safe passing of construction vehicles on construction HGV routes; and***
- ***On-site welfare facilities would be provided, which would reduce daily travel by site workers.'***

10.16. The working draft Environmental Statement for HS2 Phase 2b also makes reference (at Paragraph 14.4.2) to there being a Code of Construction Practice (CoCP) during the construction phase which will include controls on vehicle types, hours of site operation and routes for HGVs to reduce the impact of road-based construction traffic. In addition, a Construction Workforce Travel Plan will be enacted by HS2 (Paragraph 14.4.6).

10.17. Section 9 of the ES Part One Report explains how Extra MSA Group has engaged with HS2. ~~over recent months and will work proactively to agree how access to/from the proposed 'M62 West Viaduct North Satellite Compound and Transfer Node' can be achieved in the context of the Proposed Development that is the subject of this ES.~~

Cumulative Development Impact

HS2 Construction Traffic

10.18. In order to estimate the likely vehicle trips that could be generated by each of the three HS2 construction compounds, information has been taken from the available Environmental Statement for HS2 Phase 1 between London and the West Midlands (HS2 Phase One Environmental Statement Volume 5 Traffic and Transport Part 6 and Part 7 (November

2013)). The HS2 Phase 1 Environmental Statement was produced in 2014 and contains details of construction compound sites along the route, including the location of compounds, anticipated duration of construction activity and estimates of busiest period vehicle trips.

10.19. Using that data, and excluding compounds located in the metropolitan areas of London and Birmingham, both the mean average and 90th percentile construction vehicle trips for HS2 compounds have been derived, using the busiest trip generating period stated in each case. The available data and trip generation derivation is presented in Appendix 2.2. The resulting trip generation, per construction compound, is summarised in Table 2.33.

Link	Two-way Daily Trips Per Compound		
	Car/LGV	HGV	Total Vehicles
Average Trips	126	162	290
90th Percentile Trips	242	377	619

Table 2.33: HS2 Compound Daily Trips (Two-Way)

10.20. To ensure a robust assessment, the 90th percentile trips set out above have been applied to each of the three HS2 construction compounds in the vicinity of M62 J11 and it has been assumed that all three compounds would operate concurrently.

10.21. The distribution of HGV movements associated with the HS2 compounds in the vicinity of M62 J11 has been estimated through an analysis of recorded daily traffic flows on the motorway network, including M62 and M6, extracted from available 2019 counts conducted by the Department for Transport (DfT) (www.roadtraffic.dft.gov.uk). The DfT count data is presented in Appendix 2.2,

10.22. The distribution of car/LGV trips is informed by surveyed daily flows on the motorway network and Birchwood Way, using the same data source. The resultant assumed distribution of HS2 construction traffic movements is summarised in Table 2.34 below.

Location	DfT Site Ref No.	Daily Traffic Flows	Distribution Car/LGV	Distribution HGV
Birchwood Way	90231	24,214	5%	-
M6 South	6028	164,994	32%	33%
M62 West	6051	108,216	21%	22%
M6 North	36027	112,970	22%	23%

Location	DfT Site Ref No.	Daily Traffic Flows	Distribution Car/LGV	Distribution HGV
M62 East	17800	106,869	21%	22%

Table 2.34: HS2 Construction Traffic Distribution

Cumulative Development Impact

10.23. Consistent with the Operational Phase assessment (Section 7 of this Technical Paper), the cumulative impacts of the Proposed Development plus assumed HS2 construction traffic flows have been assessed at M62J11, including both of the westbound slips and the eastbound off-slip and on the access road leading from M62J11 to the Proposed Development Site.

10.24. Tables 2.35 and 2.36 below compare the peak hour traffic flows associated with the cumulative development with the existing traffic flows on the surrounding road network. Two-way flows are given other than on the one-way slip roads at M62J11.

Direction	0700 – 0800			0730 - 0830		
	Existing Flow	Cumulative Development Flow (MSA+HS2)	Increase	Existing Flow	Cumulative Development Flow (MSA+HS2)	Increase
M62J11 (Total inflow)	2,435	989	+40.6%	2,513	1,050	+41.8%
M62 Motorway Eastbound On-Slip	1,033	193	+18.6%	926	210	+22.7%
M62 Motorway Westbound Off-Slip	842	204	+24.2%	904	205	+22.7%
M62 Motorway Westbound On-Slip	331	221	+66.8%	351	225	+64.1%
M62 Motorway Eastbound Off-Slip	249	302	+121.3%	382	319	+83.5%
M62 Motorway East of J11	9,977	41	+0.4%	9,622	50	+0.5%
M62 Motorway West of J11	8,682	147	+1.7%	8,526	161	+1.8%
MSA Access Link		949	-	-	1,020	-

Table 2.35 Cumulative Development Traffic Flows (Two-Way) – AM Period

Direction	1600 – 1700			1630 - 1730		
	Existing Flow	Cumulative Development Flow (MSA+HS2)	Increase	Existing Flow	Cumulative Development Flow (MSA+HS2)	Increase
M62J11 (Total inflow)	2,725	1,103	+40.5%	2,758	1,060	+38.4%
M62 Motorway Eastbound On-Slip	819	220	+26.9%	788	209	+26.5%
M62 Motorway Westbound Off-Slip	459	223	+48.6%	467	209	+44.8%
M62 Motorway Westbound On-Slip	1,210	347	+28.7%	1,281	331	+25.8%
M62 Motorway Eastbound Off-Slip	276	218	+79.0%	274	210	+76.6%
M62 Motorway East of J11	9,243	58	0.6%	8,893	67	+0.8%
M62 Motorway West of J11	9,451	160	1.7%	9,193	174	+1.9%
MSA Access Link	-	1,036	-	-	992	-

Table 2.36 Cumulative Development Traffic Flows (Two-Way) – PM Period

10.25. The daily AADT traffic flows generated by the cumulative developments are set out in Table 2.37 below and compared with existing 24-hour AADT flows.

Link	Existing Flow	Cumulative Development Flow (MSA+HS2)	Increase
M62J11 (Total inflow)	22,310	15,959	+71.5%
M62 Motorway Eastbound On-Slip	6,163	3,582	+58.1%
M62 Motorway Westbound Off-Slip	5,836	3,758	+64.4%
M62 Motorway Westbound On-Slip	6,145	4,168	+67.8%
M62 Motorway Eastbound Off-Slip	4,166	3,992	+95.8%
M62 Motorway East of J11	113,664	376	+0.3%
M62 Motorway West of J11	109,946	1,196	+1.1%
MSA Access Link	-	16,935	-

Table 2.37: Daily AADT (Two-Way)

Impacts on Driver Delay

10.26. Impacts on driver delay have been assessed in the same manner as for the Proposed Development Operational Phase – i.e. by comparing driver delay results returned by the ARCADY model for the existing junction layout (for Scenario B '2022 Base + Committed Development') with those derived from the LinSig assessment of the cumulative scenario (i.e. 2022 Base + Committed Development + Proposed MSA + HS2 Construction).

10.27. For the purpose of the cumulative assessment the LinSig model assumes that access to M62 West northern compound will be accessed from the proposed MSA access road, via a signal controlled junction and the southern compound will be from Silver Lane, which will be incorporated into the proposed signalised junction at M62J11.

10.28. The LinSig results for M62J11 for the 2022 Base + Cumulative Development assessments are included in Appendix 2.2. The average junction delay experienced by each vehicle through the junction is compared to the 2022 Base + Committed and presented in Table 2.38 below.

Link	**Delays per Vehicle (Mins)**			
	0700-0800	**0730-0830**	**1600-1700**	**1630-1730**
2022 Base + Committed	0.08	0.08	0.13	0.20
2022 Base + Cumulative	0.47	0.53	0.53	0.54
Difference	0.39	0.45	0.40	0.34

Table 2.38: Driver Delays at M62J11

10.29. Using the scale of impacts set out in Table 2.5 above, the impacts on driver delay are shown to be **negligible**.

Impacts on Pedestrian Delay and Amenity

10.30. As previously noted, there are currently uncontrolled crossing points on the Site access arm of the junction and at the top of the east facing slip roads. As part of the proposals to signalise the roundabout these crossing points are to become signalised, with crossings provided on the circulating carriageway and the entry and exit carriageways on the MSA access. It is anticipated that, to facilitate efficient access to the proposed southern HS2 construction compound, Silver Lane will also be signal-controlled.

10.31. Given that neither the proposed MSA nor the HS2 construction compounds will add significant additional pedestrian movements to M62J11 there will be no adverse impacts on pedestrian delay and these will be **negligible**.

10.32. Again, the current level of provision for pedestrians is not necessarily substandard, however the use of uncontrolled crossings at the top of slip roads is not considered desirable and is likely to deter some pedestrians. The proposed upgrades to signalised pedestrian facilities are considered likely to improve confidence of pedestrians passing through the junction and encourage trips on foot, and are therefore considered to have a beneficial impact.

10.33. In terms of pedestrian amenity, all footways to be provided as part of the Application Proposals will be developed to meet current standards. Thus, the impacts on pedestrian amenity are assessed as being **negligible.**

Impacts on Fear and Intimidation

10.34. Given the existing and proposed speed limits then all degrees of hazard are currently classed as extreme and the cumulative developments do not change the degree of hazard, the impacts of the cumulative development on fear and intimidation will be **negligible.**

Impacts on Severance

10.35. Given the lack of existing facilities and pedestrian movements at the M62J11 (as evidenced in the Walking, Cycling and Horse-Riding Assessment and Review report which forms Appendix 7.C to the Transport Assessment, Technical Appendix 2.1) it is not envisaged that the cumulative development will cause severance. Other than on the M62 Motorway and at M62J11 there are only very minor changes in flows elsewhere on the network associated with the cumulative development, therefore the impact of the development on severance will be **negligible.** Furthermore, the proposed improvements to pedestrian crossing facilities at M62J11 as part of the signalisation scheme will provide an enhanced environment for pedestrians.

Impacts on Accidents and Road Safety

10.36. As set out in Section 7 there were seven accidents recorded in the five year period to July 2018 at M62J11, this equates to 1.4 accidents per year. The accident descriptions provided by WBC demonstrate that there are no patterns to the seven accidents, in that they occur at varying times on varying days of the week. Just one of the accidents occurred during peak times at 16:15; therefore it is reasonable to suggest that the other accidents were not in relation to higher traffic flows. Also two of the seven accidents involved drivers who provided positive breath tests for alcohol.

10.37. The junction was assessed using the formulae set out in the COBA Manual which gives a DMRB default accident rate of 1.23 accidents per annum. This is slightly lower than the observed accident rate.

10.38. As set out in Table 2.37 above the additional traffic associated with the cumulative developments, both MSA and HS2 construction traffic, results in a 71.5% increase in flows at M62J11. Therefore in accordance with Table 2.5 the impact of the MSA on Accidents and Road safety will be **high adverse.**

10.39. However, two of the observed accidents involved drivers under the influence of alcohol when these accidents are excluded from this analysis, for the reason that the main contributory factor resulting in these two collisions was alcohol and not highway layout or traffic flows, this gives an accident rate of 1.00 accident per annum which is lower than the DMRB default of 1.23. In these circumstances the impact of the MSA on Accidents and Road Safety will be **negligible** based on Table 2.5.

Public Transport Users

10.40. There are no bus services operating at M62J11 and therefore the impact on Public Transport Users is defined as **negligible.**

Cumulative Development – Significance of Effect

10.41. The environmental impact along with significance of effect of the cumulative development is set out in Table 2.35 below.

Nature of Impact	Receptor	Environmental Impact	Significance of Effect	Confidence Level
Driver Delay	Drivers at M62J11 Regional	Negligible	Negligible	High
Pedestrian Delay	Pedestrians at M62 Motorway J11 / Site Access Local / Neighbourhood	Negligible	Negligible	High
Pedestrian Amenity	Pedestrians at M62 Motorway J11 Local / Neighbourhood	Negligible	Negligible	High
Fear and Intimidation	Pedestrians at M62 Motorway J11 Local / Neighbourhood	Negligible	Negligible	High
Severance	Pedestrians at M62 Motorway J11 Local / Neighbourhood	Negligible	Negligible	High
Accidents and Road Safety	Highway users at M62 Motorway J11 Regional	Negligible	High Adverse*	High
Public Transport Users	Bus Users Local / Neighbourhood	Negligible	Negligible	High

Table 2.39: Significance of Effect – Cumulative Development

*** two of the observed accidents informing this significance of effect involved drivers under the influence of alcohol. When these accidents are excluded from this analysis, this gives an accident rate of 1.00 accident per annum which is lower than the DMRB default of 1.23. In these circumstances the impact of the Cumulative Development on Accidents and Road Safety will be negligible based on Table 2.5.**

10.42. The majority of impacts are concluded to be **negligible**. No mitigation is therefore required. There is a **high adverse** impact on accidents and safety at M62J11, however as previously set out, two of the observed accidents involved drivers under the influence of alcohol when these accidents occurred and are not related to highway layout or traffic flows. With these accidents excluded from the analysis the impact of the cumulative development on Accidents and Road Safety will be **negligible** based on Table 2.5.

10.43. In this context, the potential environmental effects of cumulative development have been assessed and, consistent with the primary assessment it is concluded that there are **no likely significant impacts**.

11. Conclusion

11.1. This section of the Environmental Statement has been prepared by i-Transport and examines the environmental impacts of the traffic that will be attracted by the Proposed Development. The MSA development proposals will attract traffic flows that could have potential impacts on the highway network surrounding the Site. These impacts may relate to driver delays, pedestrian delay and amenity, fear and intimidation, severance and road safety and impact on public transport users.

11.2. A full Transport Assessment (TA) and Travel Plan (TP) have been produced to accompany the planning application. The TA forms an Appendix to this ES paper, Appendix 2.1.

11.3. The assessments presented in the ES are based on a comprehensive series of independent traffic surveys conducted at various locations on the M62 Motorway and the A574 Birchwood Way during November 2018 and DfT permanent traffic counts 2019.

11.4. The designation of receptors and scale of environmental impacts were set out in the ES Scoping Report and this has been adopted in this Paper.

11.5. Potential environmental impacts during the construction and operational phase have been assessed.

11.6. All construction impacts of the development proposals are concluded to be **negligible** with no requirement for mitigation albeit a Construction Management Plan will be implemented at the site.

11.7. The majority of impacts during operational phase are also concluded to be **negligible**. No mitigation is therefore required. There is a **high adverse** impact on accidents and safety at M62J11, however as set out most of the observed accidents occurred outside of peak hours and two of these involved drivers who returned a positive breath test, suggesting that they were not related to high traffic flows. The accident rate is expected to rise as a result of the increased level of traffic entering the junction following the opening of the MSA, this is a direct function of the number of vehicle movements through the junction. More vehicle movements through a junction leads to more potential conflicts occurring and this is the case for any development which leads to an increase in traffic flows through a junction or indeed the provision of a new junction. The accident rate calculations should therefore be considered in this context.

11.8. Mitigation is inherent within the proposals and therefore residual impacts are set out in the assessment of the operational impacts.

11.9. Overall it is concluded that there would be no residual high adverse or substantial adverse environmental impact as a result of the application proposals, with the exception of Accidents and Safety at M62J11. However, as set out in paragraph 7.48, taking account of the nature of the accidents that have been recorded at this location, and using professional judgements, overall it is considered that the impact of the MSA on Accidents and Road Safety will be negligible. There are therefore **no significant impacts**.

11.10. Potential cumulative effects have been considered in the context of the best publicly available information and stated assumptions. ~~Extra MSA Group has engaged with HS2 over recent months and will work proactively to agree how access to/from the proposed 'M62 West Viaduct North Satellite Compound and Transfer Node' can be achieved in the context of the Proposed Development that is the subject of this ES.~~ In this context, the potential environmental effects of cumulative development have been assessed and, consistent with the primary assessment it is concluded that there are **no likely significant impacts**.

12. Reference List

12.1. Planning Practice Guidance ID42: Travel Plans, Transport Assessments and statements in decision -taking;

12.2. Guidelines for the Environmental Assessment of Road Traffic (IEMA) 1993 (IEMA have confirmed that the 1993 Guidance remains the most current version and has not been superseded by a complete replacement document);

12.3. Design Manual for Roads and Bridges (DfT);

12.4. DGN 2: Travel Plans (WBC), August 2016

12.5. HS2 Phase One Environmental Statement Volume 5 Traffic and Transport Part 6: Country Assessment (November 2013)

12.6. HS2 Phase One Environmental Statement Volume 5 Traffic and Transport part 7: Country Assessment (November 2013)

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Local/Neighbourhood
Pedestrians at M62 J11 and parallel to A574 Birchwood Way

Local/Neighbourhood
Bus users in vicinity of the site

Borough/District
Drivers at A574 Birchwood Way/ Daten Avenue/ Moss Gate Junction

M62 J11

M62 J10/M6 J21A

A574 Birchwood Way

Daten Avenue

M6

N

KEY:

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TITLE:

WARRINGTON MSA, J11 M62
TRAFFIC & TRANSPORTATION -
RECEPTOR PLAN

FIGURE No:

FIGURE 2.1

Appendix 2.1 – Transport Assessment

Warrington MSA, M62 Junction 11

Transport Assessment

Client: Extra MSA Group

i-Transport Ref: SEE/GJ/ML/dc/ITM12377-002B R

Date: 07 August 2019

Warrington MSA, M62 Junction 11

Transport Assessment

Client: Extra MSA Group

i-Transport Ref: SEE/GJ/ML/dc/ITM12377-002B R

Date: 07 August 2019

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Quality Management

Report No.	Comments	Date	Author	Authorised
ITM112377-002 R	Draft	12 April 2019	Mike Lancaster / James Howe	Steven Eggleston
ITM112377-002A R	2nd Draft	25 July 2019	Mike Lancaster / Greg Jones	Steven Eggleston
ITM112377-002B R	Final	7 August 2019	Mike Lancaster / Greg Jones	Steven Eggleston

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GLOSSARY

AADT	Annual Average Daily Traffic
ANPR	Automatic Number Plate Recognition
ATC	Automatic Traffic Count
DAS	Design and Access Statement
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges
DoS	Degree of Saturation
ES	Environmental Statement
FFS	Fuel Filling Station
FTE	Full Time Equivalent
HA	Highways Agency
HE	Highways England
HGV	Heavy Goods Vehicle
LHA	Local Highway Authority
LPA	Local Planning Authority
MCC	Manual Classified Count
MIDAS	Motorway Incident Detection and Automatic Signalling
MMQ	Mean Maximum Queue
MSA	Motorway Service Area
MSOA	Middle – Layer Super Output Area
NPPF	National Planning Policy Framework
NTS	National Travel Survey
PCU	Passenger Car Unit
PPG	Planning Practice Guide
PRC	Practical Reserve Capacity
RFC	Ratio of Flow to Capacity
RIS	Road Investment Strategy
SCI	Statement of Community Involvement
SRN	Strategic Road Network
SPD	Supplementary Planning Document
TA	Transport Assessment
TEMPRO	Trip End Model Presentation Program
TRICS	Trip Rate Information Computer System
WBC	Warrington Borough Council

SECTION 1 Introduction

1.1 Overview

1.1.1 i-Transport LLP has been appointed by Extra MSA Group ('Extra' or 'the Applicant') to prepare a Transport Assessment (TA) to assess the transport implications of a proposed 'new concept' Motorway Service Area (MSA) immediately north of Junction 11 of the M62 motorway. The development, if permitted and then constructed, will be known as Warrington Services. The location of the MSA is shown in **Appendix 1.A.**

1.2 Extra Motorway Service Area Group

1.2.1 Extra is a leading developer, investor and experienced operator of high-quality MSA properties across the Strategic Road Network (SRN). Extra has developed two of the largest and busiest new MSAs on the motorway network, at Cobham (M25 J9-J10) and Beaconsfield (M40 J2). Including these two latest MSA developments, Extra has, since deregulation of the market in 1992, directly or indirectly successfully delivered nine MSAs, significantly more than any other party involved in the MSA sector over this period.

1.2.2 Extra is the largest freehold investment owner of MSAs in the UK and has 18 MSA 'quasi-infrastructure' property assets. In terms of geography, Extra has a network of MSAs spread in strategic locations across the motorway network, attracting in excess of an aggregate of 850,000 vehicles per week (circa 45 million vehicles each year).

1.2.3 Extra is keen to expand its operations into areas where there is an identified gap on the SRN and in doing so, deliver high quality services to the safety and welfare benefit of road users. In this regard, Extra is currently constructing its latest Motorway Service Area at Leeds Skelton Lake (M1J45), scheduled to open late 2019. The Skelton Lake MSA was granted outline planning consent in December 2016 following extensive liaison with Leeds City Council Highways and Highways England.

1.3 Proposed Warrington MSA

1.3.1 The delivery of the proposed Warrington MSA represents an investment of c.£75 million by Extra.

1.3.2 Once operational, the MSA will likely employ approximately 240 full-time equivalent staff (incorporating part-time employment opportunities) working in a range of shift patterns for opening on a 24 hour / 7 day a week basis. Reflecting flexible patterns of working, the proposed MSA could support employment (on a full-time or part-time basis) for around 300 workers.

1.4 Project Description

1.4.1 The planning application is submitted in outline for:

> ***'Erection of a Motorway Service Area including Facilities Building, up to 100 bedroom Hotel, service yard, Fuel Filling Station, Electric Charging Station, parking facilities for each category of vehicle, access and internal circulation roads, structured and natural landscaping with outside amenity space/picnic space and dog walking zone, pedestrian and cycle links, boundary fencing, surface water drainage areas, ecological mitigation, pumping station(s), substation(s), retaining structures and associated infrastructure and earthworks.'***

1.4.2 All matters, with exception of means of access, will be reserved for determination at a future date.

1.5 Scoping of the Transport Assessment

1.5.1 i-Transport has held initial pre-application discussions with officers at: Warrington Borough Council (WBC) which is the Local Highway Authority (LHA); and Highways England (HE) which is the body responsible for the Strategic Road Network including M62J11,

1.5.2 Having Regard to the discussions detailed above, this TA has been prepared with reference to:

- The National Planning Policy Framework (NPPF)
- The Planning Practice Guide (PPG) which is available on-line at: https://www.gov.uk/government/collections/planning-practice-guidance
- The requirements of DfT circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development'
- Planning for the Future: A Guide to Working with Highways England on Planning Matters.

1.6 Public Consultation

1.6.1 The Applicant has undertaken consultation with local residents, businesses and stakeholder groups, including via three rounds of public exhibitions held on the following dates:

- Thursday 4th April at Croft Village Memorial Hall, 5 Mustard Lane, Croft, WA3 7BQ
- Saturday 6th April at Gorse Covert Primary School, Gorse Covert Road, Birchwood, WA3 6TS
- Friday 12th April at Pentahotel Warrington, Birchwood Business Park, Aston Avenue, Risley, WA3 6ZN.

1.6.2 Consultation brochures were distributed to c11,000 residential properties in the local area, providing detailed information about the proposals. A public-facing project website has been set up and can be accessed via: https://warringtonservices.co.uk

1.6.3 Full details of the consultation process are set out in the Statement of Community Involvement (SCI) which accompanies the application.

1.7 Structure

1.7.1 The remainder of this report is structured as follows:

- Section 2 considers the transport policy that is relevant to the determination of the application;
- Section 3 describes the site and sets out its existing accessibility by a range of transport modes;
- Section 4 discusses existing highway conditions;
- Section 5 identifies committed and proposed highway infrastructure improvements;
- Section 6 presents an assessment of the 'need' for an MSA at M62J11 in the context of prevailing policy;

- Section 7 describes the development proposal in detail including consideration of the site access, parking provision and vehicular circulation within the site, and interaction with the neighbouring former landfill site operated by Biffa.
- Section 8 sets out the methodology adopted to assess the traffic impacts of the development;
- Section 9 presents a quantitative assessment of traffic impacts at M62J11;
- Section 10 assesses impacts on merge and diverge slip roads and weaving on the M62;
- Section 11 assesses the impacts of the development on the local road network;
- Section 12 presents a safety assessment;
- Section 13 discusses the impacts of the MSA on travel distances; and
- Section 14 presents a summary of this TA and our conclusions.

1.7.2 This TA should be read in conjunction with the following documents:

a) Environmental Statement coordinated by Spawforths;

b) Planning Statement prepared by Spawforths;

c) Alternative Sites Assessment prepared by Spawforths;

d) Design and Access Statement prepared by Spawforths and Architecture 519;

e) Application drawings prepared by Architecture 519;

f) Travel Plan prepared by i-Transport.

1.8 Conclusions

1.8.1 This TA concludes that:

- The proposals will provide a significant road safety benefit, satisfying a currently unmet road safety related 'need' for services on this section of the M62 motorway. The proposals are in full accordance with Circular 02/2013.

- The Extra MSA proposals for Warrington MSA will not have a severe impact on the safety and operation of the local and strategic road networks. Satisfactory and safe access can be provided.

- Finally, it is concluded the proposals are consistent with local and national policy, including NPPF. Accordingly, it is concluded that there should be no highways or transport reasons why these proposals should not be granted planning consent.

SECTION 2 Transport Policy

2.1 Introduction

2.1.1 This section considers the transport policy context within which the application should be determined. A full review of the planning policy context related to the site is set out in the Planning Statement prepared by Spawforths.

2.2 National Planning Policy Framework

2.2.1 The revised NPPF was released in July 2018 and updated in February 2019 and sets out the Government's planning policies for England and how these should be applied. The document highlights that the purpose of planning is to help achieve sustainable development. Section 9 of the document relates to promoting sustainable transport.

2.2.2 The planning and transport policies relevant to this TA include the following as set out in paragraphs 108 and 109:

> ***"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:***
>
> ***a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;***
>
> ***b) safe and suitable access to the site can be achieved for all users; and***
>
> ***c) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.***
>
> ***Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."***

2.2.3 In addition, it is stated in Paragraph 110 that:

> ***"Within this context, applications for development should:***
>
> ***a) give priority to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;***

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

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

2.2.4 The primary function of an MSA is to support the safety and welfare of the travelling public on the motorway network and therefore the interpretation of paragraph 110 of the Framework should be seen in that context.

2.2.5 Paragraph 111 outlines when a Transport Assessment, Transport Statement or Travel Plan is required:

"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed."

2.2.6 The Travel Plan (TP) and the TA demonstrate that the site has sustainable transport connectivity, and is proposed with safe and suitable access to the site. This report concludes that the residual cumulative impacts of the proposed development are not significant and not severe, and that there would not be an unacceptable impact on highway safety.

2.3 Planning Practice Guidance

2.3.1 Various planning practice guidance, including guidance on the role of Travel Plans and TAs in decision-making was moved to an on-line portal, known as the Planning Practice Guidance (PPG) in 2014. This was accompanied by a Written Ministerial Statement which includes a list of the previous planning practice guidance documents cancelled when the site was launched. The PPG provides guidance to support and expand on policies within the NPPF, including guidance on interpretation of policy, and in that sense does not provide additional policy but rather more detailed consideration of how policies within the NPPF should be approached and met. The guidance covers all relevant planning policy areas under separate topics and is updated online as and when required.

2.4 Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development'

2.4.1 Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development' was issued by the DfT in September 2013. It replaced Circular 02/2007 *'Planning and the Strategic Road Network' and Circular 01/2008 'Policy on Service Areas and other Roadside Facilities on Motorways and All-purpose Trunk Roads in England'*.

2.4.2 The Circular sets out policies related to the control of development that affects the SRN and, at its Appendix B, provides specific policy on the provision of roadside service facilities.

2.4.3 The government has made it clear that the overall aims of the new policy are to facilitate development and growth. Paragraph 9 states that: -

> ***'Development proposals are likely to be acceptable if they can be accommodated within the existing capacity of a section (link or junction) of the strategic road network, or they do not increase demand for use of a section that is already operating at over-capacity levels, taking account of any travel plan, traffic management and/or capacity enhancement measures that may be agreed. However, development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.'***

2.4.4 Paragraph 11 notes that all proposals should comply with design standards set out in the Design Manual for Roads and Bridges (DMRB): -

> ***'Local authorities and developers will be required to ensure that their proposals comply in all respects with design standards. Where there would be physical changes to the network, schemes must be submitted to road safety, environmental, and non-motorised user audit procedures, as well as any other assessment appropriate to the proposed development. The Design Manual for Roads and Bridges sets out details of the Secretary of State's requirements for access, design, and audit, with which proposals must conform.'***

2.4.5 Paragraphs 25-27 deal with the assessment of development impacts at planning application stage: -

> ***'The overall forecast demand should be compared to the ability of the existing network to accommodate traffic over a period up to ten years after the date of registration of a planning application or the end of the relevant Local Plan whichever is the greater. This is known as the review period.'***

'The Highways Agency expects the promoters of development to put forward initiatives that manage down the traffic impact of proposals to support the promotion of sustainable transport and the development of accessible sites. This is particularly necessary where the potential impact is on sections of the strategic road network that could experience capacity problems in the short or medium term.'

'Where the overall forecast demand at the time of opening of the development can be accommodated by the existing infrastructure, further capacity mitigation will not be sought.'

2.4.6 Paragraphs 33 and 34 set out the approach to capacity enhancement: -

'Only after travel plan and demand management measures have been fully explored and applied will capacity enhancement measures be considered. While capacity enhancements should normally be addressed at the planmaking stage, such measures may be considered at the time when individual planning applications are submitted, subject to the over-riding principle that delivery of the adopted Local Plan proposals should not be compromised.'

'Where insufficient capacity exists to provide for overall forecast demand at the time of opening, the impact of the development will be mitigated to ensure that at that time, the strategic road network is able to accommodate existing and development generated traffic. Any associated mitigation works should be appropriate to the overall connectivity and capacity of any affected part of the strategic road network.'

2.4.7 Paragraphs 37-44 deal with access to the SRN with paragraph 42 noting:-

'Access to motorways and routes of near motorway standard for other types of development will be limited to the use of existing junctions with all-purpose roads. Modifications to existing junctions will be agreed where these do not have an adverse impact on traffic flows and safety. In line with the standards contained in the Design Manual for Roads and Bridges, for safety and operational reasons, direct connections to slip roads and/or connector roads will not be permitted'.

2.4.8 Annex B of Circular 02/2013 sets out policy on the provision of roadside facilities on the SRN. It notes proposals will be considered in the context of the NPPF and, in particular, the statement at Footnote 42 of the Framework that,

'...the primary function of roadside services should be to support the safety and welfare of the road user'.

2.4.9 The aim of Annex B of the Circular is to open up competition by removing the previous minimum spacing requirements. Paragraph B3 confirms the remit of the policy: -

'This policy applies to all existing signed roadside facilities, and to all proposed signed roadside facilities. It should be noted that the operation of all signed roadside facilities will be the subject of a legal agreement between the Secretary of State and the operator.'

2.4.10 Paragraphs B4-B8 identify the road safety function of roadside facilities, set out Government advice regarding the need for rest breaks and establish maximum recommended distances between facilities: -

> ***'B4. Motorway service areas and other roadside facilities perform an important road safety function by providing opportunities for the travelling public to stop and take a break in the course of their journey. Government advice is that motorists should stop and take a break of at least 15 minutes every two hours. Drivers of many commercial and public service vehicles are subject to a regime of statutory breaks and other working time restrictions and these facilities assist in compliance with such requirements.'***
>
> ***'B5. The network of service areas on the strategic road network has been developed on the premise that opportunities to stop are provided at intervals of approximately half an hour. However the timing is not prescriptive as at peak hours, on congested parts of the network, travel between service areas may take longer.'***
>
> ***'B6. The Highways Agency therefore recommends that the maximum distance between motorway service areas should be no more than 28 miles. The distance between services can be shorter, but to protect the safety and operation of the network, the access/egress arrangements of facilities must comply with the requirements of the Design Manual for Roads and Bridges including its provisions in respect of junction separation.'***
>
> ***'B7. Speed limits on the strategic road network vary and therefore, applying the same principles, the maximum distance between signed services on trunk roads should be the equivalent of 30 minutes driving time. This distance can also be shorter, also subject to compliance with design requirements set out in the Design Manual for Roads and Bridges.'***
>
> ***'B8. The distances set out above are considered appropriate for to all parts of the strategic road network and to be in the interests and for the benefit of all road users regardless of traffic flows or route choice. In determining applications for new or improved sites, local planning authorities should not need to consider the merits of the spacing of sites beyond conformity with the maximum and minimum spacing criteria established for safety reasons. Nor should they seek to prevent competition between operators; rather they should determine applications on their specific planning merits.'***

2.4.11 Thus, the Circular recommends that the maximum distance between MSAs is 28 miles and the equivalent of 30 minutes driving time.

2.4.12 Paragraph B9 confirms the role of the private sector in meeting the needs of the travelling public:

> ***'B9. It is for the private sector to promote and operate service areas that meet the needs of the travelling public. New and existing roadside facilities are subject to the provisions of relevant planning legislation and regulation, which together set the framework within which local planning authorities would consider the planning proposals for such developments.'***

2.4.13 Paragraph B11 notes that where MSAs could become destinations in their own right, then HE would only support the proposals where there is no overall increase in trip mileage and no significantly adverse impact on the safety and operation of the SRN:

'B11. In circumstances where there is potential for these to become destinations in their own right, the Highways Agency will only support proposals for or within service areas and other roadside facilities if it can be shown that there would be no overall increase in trip mileage, and always provided that there would be no significantly adverse impact on the safety and operation of the strategic road network.'

2.4.14 Paragraph B12 notes that all proposals for new roadside facilities will be subject to formal road safety audit procedures:

"B12. At all roadside facilities, it is particularly important to avoid adverse impacts upon the effective operation of the strategic road network, such as increasing the risk of congestion or of vehicles slowing or stopping on the main carriageway. Proposals for new roadside facilities will be subject to road safety audit procedures to be undertaken in accordance with the requirements of the Design Manual for Roads and Bridges."

2.4.15 Paragraph B17 and Table B1 set out the minimum requirements for the various types of roadside facility that may be eligible for signing from the strategic road network. Paragraph B17 notes that:

"All facilities accessed from the motorway must be signed for safety reasons and as such all existing or future sites must meet the requirements for signing."

2.4.16 Paragraph B24 states that:

"Access to other developments through a roadside facility is not permitted"

2.4.17 Paragraphs 26 and 28, and Schedule 1 of the Circular, set out mandatory parking provision requirements:

"B26. Where a site is subject to a pre-existing sealed agreement which specifies the levels of parking provision, this shall continue to apply until such time as the scale and/or scope of on-site activities is extended."

"B28. However, notwithstanding the provisions of the previous two paragraphs, levels of provision may be adjusted to reflect local conditions through a process of site specific negotiation. It will be the responsibility of the site operator to demonstrate that any departure from the requirements of Schedule 1 is appropriate."

2.4.18 Details of the parking provision proposed at the MSA are included in Section 7.5 of this report.

2.4.19 With regard to retail facilities at MSA sites, paragraph B29 sets out that:

"The scope and scale of retail activities at roadside facilities is a matter for consideration by the relevant local planning authority in line with the National Planning Policy Framework and local planning policies. However, local planning authorities should have regard to the primary function of roadside facilities which is to support the safety and welfare of the road user."

2.4.20 Paragraph B36 sets out how low emission facilities are to be considered in the proposals for new roadside facilities:

"B36. Operators of roadside facilities are encouraged to provide refueling facilities for low emission vehicles, including recharging facilities for plug-in vehicles and other arrangements that meet the needs of emergent low carbon and alternative fuel technologies as appropriate, such as gas refuelling stations."

2.5 Highways England: The Strategic Road Network. Planning for the future. A Guide to working with Highways England on planning matters.

2.5.1 This document was issued in September 2015 and it describes the approach Highways England takes to engaging in the planning system and the issues they look at when considering draft planning documents and planning applications.

2.5.2 The document sets out at paragraphs 2 and 8 that:

"2. The advice and guidance in this document applies to the whole strategic road network, comprising of motorways and all-purpose trunk roads in England.

8. We will support economic growth, providing the conditions that help businesses to succeed and grow, facilitating new development around the network, and supporting investment and trade. This will take place alongside maintaining a safe and efficient SRN. The document sets out how we, along with those working on our behalf, will work with development promoters to help you to assess and successfully manage the relationship between your proposed development and the SRN."

2.5.3 With regard to the key assessment considerations on planning matters, the Planning for the Future document sets out at paragraphs 29 – 41 that:

"29. The primary function of the SRN is to facilitate the safe and efficient movement of goods and people.

30. A safe and efficient network supports the national and regional economies by providing certainty, improving access to markets, enabling competition, improving labour mobility, enabling economies of scale, and helping to attract inward investment.

35. Our advice to local planning authorities will be to refuse or place conditions on developments only where the residual cumulative impacts of development on the capacity of the SRN (once proposed mitigations are taken into account) are still assessed to be severe. For example, if development would lead to operating conditions that significantly erode the safe operation of the SRN.

38. The continued safe operation of the SRN will remain our primary consideration, even where proposals would not result in capacity issues.

39. Where there would be physical changes to the network, schemes must be subject to road safety, environmental and non-motorised user audits, as well as any other assessment appropriate to the proposed development. Local authorities and developers need to ensure that their proposals comply with requirements for access, design and audit as set out in the DMRB.

40. Although identification of the scale and nature of action required to support a particular development is the responsibility of the development promoter, we will help to identify options for this and share with you any relevant information we hold to help you make informed decisions. The issues can be complex and take some time to work through, so we encourage engagement with us at the earliest opportunity.

41. The mitigation of impacts should be approached in the following manner:

i. Avoidance – the promoter should take all reasonable steps to minimise the level of physical mitigation required, through the use of measures such as Travel Plans, and travel demand management measures, such as development phasing, HGV booking systems and encouraging flexible working and sustainable travel;

ii. Off-line improvements – before considering to propose changes to the SRN, the promoters of development should assess the potential for alterations to be made to the local road network in the alternative;

iii. Alterations to the SRN – once all other options have been examined, we will consider the potential for changes to be made to the SRN."

2.5.4 The document sets out Highways England's approach to considering new access points to the SRN, and notes that on high-speed sections of the network there will be a presumption against connection, except where it can be provided safely and where there is a demonstrable benefit to the economy. Paragraphs 44-46 go on to explain that:

"44. As a consequence, we will encourage the promoters of new development to access their proposals via the local road network or existing junctions on the SRN. Modifications to existing junctions will be agreed where the residual cumulative impact of the proposed development would not be severe. In line with standards contained in the DMRB, direct connections to slip roads and/or connector roads will not be allowed for safety and operational reasons.

45. Where a new junction or access is proposed in connection with a signed roadside facility, permanent highway depot or major transport interchange, we will seek the imposition of planning conditions which prohibit subsequent changes of use and the creation of any form of through access to any adjacent development.

46. Where a new junction or direct means of access is agreed, the promoter will be expected to secure all necessary consents, and fund related design and construction works."

2.5.5 With regard to the Environmental Impact of development, paragraphs 48 to 51 set out that:

"48. Developers and scheme promoters will need to provide sufficient environmental information to satisfy the LPA, and any other consenting authorities, that all environmental implications of the proposals have been appropriately considered.

49. We will expect to see measures implemented that fully mitigate any and all environmental impacts arising from and relating to the interaction between developments and the SRN. There are three aspects to this:

- ***The environmental impacts arising from the temporary construction works;***
- ***The environmental impacts of the permanent transport solution associated with development; and***
- ***The environmental impact of the road network upon the development itself.***

50. To assist in the process we will willingly participate in the screening and scoping processes to help identify any significant transport-related environmental impacts of proposals.

51. Assessment undertaken by the promoter of the development should be sufficiently comprehensive to establish the likely transport-related environmental impacts, including air quality, light pollution and noise, and to identify the measures to mitigate these impacts."

2.5.6 For proposals involving the provision of roadside facilities, including Motorway Service Areas, paragraphs 56 – 58 set out that:

"56. We continue to have an interest in roadside facility proposals and will provide advice to local planning authorities on matters relating to the impact that such proposed development will have upon the SRN. New and existing roadside facilities are subject to the provisions of relevant planning legislation and regulation, which together set the framework within which local planning authorities should consider the planning proposals for such developments.

57. Local planning authorities, developers and operators are encouraged to discuss with us at the earliest opportunity any proposals to develop new roadside facilities or to alter and/or sign existing sites. All such proposals should be referred to: roadsidefacilities@highwaysengland.co.uk

58. For the provision of signed roadside facilities for road users, permanent highway maintenance depots (and associated compounds) and major transport interchanges, our planning response will be limited to the initial development only. We would require further consultation to consider any subsequent expansions at the site or new development on adjacent land. To this end we will see planning conditions restricting changes of use of the premises and its associated access onto the SRN so as to ensure that any such proposals are subject of separate assessment through the planning process."

2.5.7 Regarding Highways England's approach to planning applications, paragraphs 86 and 88-90 note that:

"86. In submitting a planning application, the developer should provide all the information that we will need to fully consider the interaction of the development with the SRN, and the suitability of any related actions proposed.

88. If, however, the development proposed has not been subject to an appropriate level of assessment or is not included or consistent with an approved local plan, then we would anticipate agreeing the scope of work required to make a full assessment. For those sites that have been considered at local plan stage, we will take into account any assessment already undertaken.

89. We would anticipate that a full assessment would include assessment of the impact of the development based on the performance and character of the SRN as determined by the presumption that the local plan proposals (if any) will be fully implemented, unless other more appropriate assumptions about development in the area should be made as a result of local circumstances changing. We would expect proposals set out in an emergent local plan to be afforded weight appropriate to its stage of development.

90. We would also anticipate that the assessment would include the identification of any mitigation necessary, and a road safety audit (stage 1). We will also seek to agree appropriate levels of assessment and mitigation relating to the scale of the development in relation to other development in the area."

2.5.8 Turning to the assessment of development impact, paragraphs 100-104, 107-110, and paragraph 115 set out that:

"100. The overall forecast demand on the SRN and surrounding local road network should be assessed and compared to the ability of the existing network to accommodate traffic. For developments which will be brought forward in phases, this assessment should focus on the overall forecast demand of the development as a whole, not just the initial phase(s).

101. Assessments should be carried out for:

- ***The development and construction phase; and***
- ***The opening year, assuming full buildout and occupation, and***

- ***Either the date ten years after the date of registration of the associated planning application or the end of the Local Plan period (whichever is greater).***

The assessment at opening will be used for the determination of impact mitigation needs whilst the latter is necessary to determine the risk which will transfer to us.

102. We need these assessments to enable us to better plan for the future of the network, to inform an appropriate split of responsibilities between he parties involved, and to identify and plan to address any future problems before they arise. In line with the NPPF these assessments will also help us, and the LPA, to assess whether any development proposals which do not feature in an adopted or emerging Local Plan could compromise the delivery of that Plan.

Travel plans and demand management

103. We expect the development promoters to put forward initiatives that reduce the traffic impact of proposals by supporting the promotion of sustainable transport and the development of accessible sites. This is particularly necessary where the potential impact is on sections of the SRN that could experience capacity problems in the foreseeable future. Early engagement with us enables us to support this thinking, and we will work with developers and LPAs to identify appropriate measures to facilitate the delivery of sustainable development.

104. The preparation, implementation, monitoring and updating of a robust travel plan that promotes the use of sustainable transport modes (such as walking, cycling and public transport) is an effective means of managing the impact of development on the road network, and reducing the need for major transport infrastructure. This contributes to the ongoing effectiveness of the SRN in ensuring swift connections nationally and regionally, minimising delays and congestions. Retaining some network capacity within the SRN facilitates the provision for further developments.

107. However, quite often, the implementation of travel plan measures along will not be sufficient to reduce the traffic demand of proposed development to acceptable levels. In such instances we will work with LPAs and local highway authorities to determine whether the implementation of more direct demand management measures could effectively regulate and manage traffic flows so as to support the delivery of the travel plan outcomes and to make the most effective use of the available capacity on the SRN.

Capacity enhancement (planning applications)

108. Where overall forecast demand in the opening year of the development can be safely accommodated by the existing infrastructure, capacity enhancement will not be sought.

109. Capacity enhancement measures on the SRN will only be considered after the travel plan has been incorporated in the development proposal. While capacity enhancements should normally be addressed at the plan making stage, such measures may be considered at the time when individual planning applications are submitted, subject to the over-riding principle that delivery of the adopted local plan proposals should not be compromised.

110. Where insufficient capacity will be available to provide for overall forecast demand in the development's opening year, the impact of the development would need to be mitigated to ensure that, at the time, the SRN is able to accommodate existing and development specific traffic. Such works can to take place on the SRN or on the adjacent local road network, and both options should be explored, and the impact on the relationship with both networks should be considered.

115. Where physical changes to the SRN are proposed in order to support planning application a road safety audit (stage 1) and non-motorised user assessment is required before planning permission is granted, carried out in accordance with the standard current at the time. Pre-application engagement with us is particularly important in this situation."

2.6 Local Policy

Warrington Local Plan (July 2014)

2.6.1 The Warrington Local Plan is the overarching strategic policy document at the heart of the Local Planning Framework. It sets out a planning framework for guiding the location and level of development in the borough up to 2027. The following policies are relevant to the determination of the application from a transport perspective:

"Policy CS1: Delivering Sustainable Development

Ensure additional provision of transport infrastructure where needed to support development.

Policy CS4: Transport

Assess the impacts of transport initiatives outside of the borough to inform their implementation and any mitigation measures.

Policy MP1: General Transport Principles

To secure sustainable development the Council and its partners will support proposals where they:

- ***reduce the need for private car use through its location, travel planning and marketing (smarter choices) and other measures to change travel behaviour.***
- ***Consider demand management measures including the effective reallocation of road space in favour of public transport, pedestrians and cyclists.***
- ***Adhere to locally determined car and cycle parking standards.***

- ***Mitigate the impact of development or improve the performance of Warrington's Transport network, including the Strategic Road Network, by delivering the site-specific infrastructure which will support the proposed level of development.***

Policy MP3:

The Council will expect that a high priority will be given to the needs and safety of pedestrians and cyclists in new development.

New development should not compromise and should contribute to enhancing and developing integrated networks of continuous, attractive and safe routes for walking and cycling including improvements to roads, Rights of Way and the Greenway Network (as shown on the Policies Map). This should include appropriate segregation of users and appropriate priority should be given to users at junctions. Where appropriate the Council will consider the use of conditions or planning obligations to secure such improvements.

Enhancements and improvements should look to increase accessibility and make the most of potential environmental, social and health benefits.

Particular priority will be given to routes linking residential areas (especially those in recognised areas of deprivation) with employment areas, transport interchanges, schools, Warrington hospital and other local services and facilities."

Policy MP4:

The Council will aim to secure improvements to public transport infrastructure and services (including bus, rail and taxi/private hire) in partnership with operators and delivery partners.

In accordance with the overall Spatial Strategy, development should be located in areas with easy access to public transport. Development should aim to make public transport a viable and attractive alternative by;

- ***Integrating with existing public transport infrastructure and services as far as possible, and***

Providing additional public transport infrastructure and services that are reasonably related in scale to the proposed development where existing facilities are not available or are in need of improvement, provided this does not impact on the deliverability of the scheme.

Where appropriate the Council will consider the use of conditions or planning obligations to secure these improvements.

Policy MP6: Transport Infrastructure

The Council will support priorities and improvements set out in the Local Transport Plan and other delivery documents by ensuring development will not prejudice the implementation of proposed transport schemes and projects that require land beyond the limits of the public highway.

Policy MP7: Transport Assessments and Travel Plans

The Council will require all development to:

- ***demonstrate that it will not significantly harm highway safety and that trips generated by the development can adequately be served by Warrington's Transport Network.***
- ***Identify where there are any significant effects on Warrington's Transport Network and/or the environment and ensure appropriate mitigation measures including any necessary transport infrastructure are in place before the development is used or occupied.***

2.6.2 Warrington's Proposed Submission Version Local Plan (draft Local Plan) has been approved for consultation by Full Council. Once adopted, the Local Plan will shape, guide and influence how the Borough develops over the next 20 years. Public consultation on the draft Local Plan commenced on 15 April 2019.

Warrington Local Transport Plan (March 2011)

2.6.3 The Warrington Local Transport Plan sets out the Local Transport Strategy for the period 2011-2030. The document sets out the following objectives:

'To build and manage a transport network that:

- ***Is integrated and customer focused and reduces the need to travel by car.***
- ***Enables the regeneration of the Borough and supports economic growth.***
- ***Maintains the highway, minimises congestion for all modes of travel and enables Warrington's 'smart growth'.***
- ***Improves everyone's access to health, employment, education, culture, leisure and the natural environment.***
- ***Improves everyone's access to the town centre by all modes of travel.***
- ***Enhances accessibility for those in disadvantaged communities or groups.***
- ***Improves neighbourhoods and residential areas.***
- ***Improves safety and security for all modes of travel.***
- ***Reduces the impact of traffic on air quality in Warrington and helps to reduce carbon emissions and tackle climate change.***
- ***Makes Warrington safer, sustainable and healthier.***

- ***Integrates with transport networks outside Warrington to enhance the sustainability of cross boundary travel.'***

2.6.4 WBC has produced a draft Local Transport Plan (LTP4), which has recently been approved by the Executive Board for consultation. LTP4 sets out the Council's proposed transport vision, policies and actions for the next twenty years, including an ambition to transform the transport system in Warrington and tackle issues of congestion, poor air quality and improve accessibility by walking, cycling and public transport.

2.6.5 Sub-section 15.9 of the Consultation Draft LTP4 (March 2019) discusses lorry parking. Table 15.4 identifies existing lorry parking facilities on the periphery of Warrington and their utilisation as a percentage of their capacity; utilisation at Burtonwood Services and the Let's Eat Truck Stop are identified as being 'critical' (over 85% utilised). The draft text noes that the utilisations identified suggest that additional lorry parking facilities may be required in the Warrington area in the future given that when facilities become over capacity there will be an impact on the local community as HGV drivers seek alternative places to park. Draft Policy FM15 notes that the Council will review lorry parking facilities and, if required, identify potential locations for additional facilities.

2.7 Summary

2.7.1 The policy requirements outlined above are addressed throughout this TA, which demonstrates that the proposed development is consistent with national and local policy and guidance.

SECTION 3 Existing Site and Accessibility

3.1 Site Location

3.1.1 The application site is located within the administrative boundary of Warrington Borough Council. **Appendix 3.A** shows the site in context. The broad accessibility of the site is shown in **Appendix 3.B**.

3.1.2 The site is located to the north east of the urban area of Warrington, approximately 8km (5 miles) from Warrington town centre, north of the M62 via M62J11 motorway at Junction 11 (M62J11). The site is thus located adjacent to the SRN, with direct access to the M62 via M62J11 on the section between the M6 and the M60. The SRN is discussed further in the next Section. M62J11 provides access to the Birchwood area of Warrington located to the south of the M62 corridor, via A574 Birchwood Way.

3.1.3 Immediately to the west of the Site is a former landfill site (Risley Landfill), where landfilling began in 1979, but which has since ceased and the site has been restored and planted. To the east and north is arable farmland. A disused railway line dissects the farmland, and arches to the east and north approximately 0.6km (0.4 miles) from the Site boundary. The settlement of Culcheth lies to the north west of the Site, with its centre approximately 2km (1.2 miles) from the Site.

3.1.4 The route of High Speed 2 Phase Two runs to the north of the site, and the Secretary of State for Transport has published safeguarding maps showing land which is safeguarded for the route. This safeguarding zone has been accounted for in the design of the proposed site layout.

3.2 Site Description

3.2.1 The application site extends to approximately 16.81 hectares (41.54 acres). The site is a greenfield site, currently with agricultural (arable) use. The site lies within the Green Belt and is designated as such in the Warrington Local Plan (parcel WR14).

3.2.2 The site is set at a lower level than the M62 Junction 11 and its associated slip roads but is higher than the M62 Motorway itself. The M62 Motorway Corridor and Junction 11 is lit in the vicinity of the Site. There are trees to the eastern, and part of the southern and western boundaries. A

post and rail fence is also in place along the southern boundary. The Site is bounded to the east, north and part of the western boundary by a water course.

3.3 Pedestrian Network

3.3.1 Plans illustrating public rights of way relevant to the site are included in **Appendix 3.C.**

3.3.2 A Public Right of Way runs along the western boundary of the Site and leads north to Silver Lane Pools, and west around the adjacent restored landfill site, before heading north to Culcheth and east to Holcroft Lane. Footpath number 28 continues around the north of the restored landfill site, connecting to Footpath 14a to the western boundary, which connects to Footpath 25 to the southern boundary, before reconnecting with Footpath 13 adjacent to the Application Site. This also links to a footpath at the spur of the Junction 11 roundabout and around the roundabout, before linking to footpath 25 to the south eastern quadrant of the Junction 11 roundabout in Birchwood.

3.3.3 Footways are provided on the eastern side of the M62J11 roundabout, connecting the site to Silver Lane south of the M62, which is a Public Right of Way that continues around the eastern boundary of the Gorse Covert residential area. A shared footway / cycle way can be accessed from Silver Lane which continues to the south west running adjacent to Birchwood Way providing access to the residential areas of Gorse Covert and Oakwood as well as Birchwood Park to the north of Birchwood Way.

3.4 Cycle Network

3.4.1 The circulatory section of M62J11 and A574 Birchwood Way are identified on the Warrington Cycle Map included at **Appendix 3.D** as being suitable for experienced cyclists. A tarmac surfaced cycle path runs adjacent to Birchwood Way on the southern side of the M62 providing access to Gorse Covert, Oakwood and Birchwood Park; this is suitable for less experienced cyclists.

3.4.2 The cycleway adjacent to Birchwood Way crosses Moss Gate at a Toucan crossing, and there is an advance cycle stopline on Moss Gate and on Daten Avenue to facilitate connections to the wider highway network and the cycle network throughout Warrington.

3.4.3 Cycle parking can be found across Warrington and will be provided on the proposed MSA site. WBC offers a full programme of cycle training for persons over 16 who live or work in Warrington

and that scheme will be promoted through the Staff Travel Plan that accompanies the planning application.

3.5 Existing Public Transport Services

Buses

3.5.1 Existing bus provision in the immediate vicinity of the site north of M62J11 is limited but there are several bus routes in the Birchwood area. There are a number of bus routes which operate along Daten Avenue within Birchwood Park; the 17C service operates a 30 minute frequency to Warrington town centre whilst the 28E offers an hourly evening service to Warrington and Leigh. There are no regular bus services which run to the northern arm of the M62J11.

3.5.2 Bus service details in the Birchwood area are set out in Table 3.1 below, and routes are shown in Appendix 3.E.

Table 3.1: Existing Bus Services – Birchwood Park

Service	Route	Mon-Friday		Saturday		Sunday	
		Day	Evening	Day	Evening	Day	Evening
17	Callands – Westbrook – Padgate – Hilden Island – Birchwood - Oakwood	30 mins	-	30 mins	-	-	-
17 A	Callands – Westbrook – Warrington – Padgate – Hilden Island – Birchwood Park – Birchwood	7 AM services[1]	-	-	-	-	-
17 C	Birchwood – Birchwood Park – Hilden Island – Padgate – Warrington – Westbrook – Gemini – Callands	7 PM services[2]	-	-	-	-	-
25	Gorse Covert – Birchwood – Locking Stumps – Cinnamon Brow – Orford – Warrington	30 mins	30 mins	30 mins	-	-	-
26 / 27	Warrington – Orford – Cinnamon Brow- Locking Stumps – Birchwood – Gorse Covert	-	-	-	-	60 mins	-
28 E	Leigh – Gorse Covert – Birchwood – Warrington	-	60 mins[3]	-	-	-	-

[1]17A – services in AM only. Arriving at Birchwood Station between 06:49 and 09:53. One-way route. 30-minute frequency. 06:49 / 07:16 / 07:55 / 08:34 / 08:58 / 09:27 / 09:53

[2]17C – services in PM only. Leaving Daten Avenue between 16:13 and 19:08. One-Way route. 30-minute frequency. 16:13 / 16:45 / 17:13 / 17:44 / 18:16 / 18:41 / 19:10

[3]Evening services at Birchwood Station from 19:30-23:30. 60-minute frequency.

Rail

3.5.3 Birchwood Rail station is approximately 3.2km south east of the site. The station is on the Manchester to Liverpool line with frequent connections to Warrington Central, Manchester Oxford Road, Manchester Piccadilly and Liverpool Lime Street. Journey times and frequencies from Birchwood to Liverpool Lime St and Manchester are shown in Table 3.2 below:

Table 3.2: Train Service Frequency and Journey Times from Birchwood

	Monday-Friday		Saturday		Sunday	
	Liverpool Lime St	Manchester (Piccadilly or Oxford Road)	Liverpool Lime St	Manchester (Piccadilly or Oxford Road)	Liverpool Lime St	Manchester (Piccadilly or Oxford Road)
Frequency (minutes)	20	20	20	20	30	30
Journey Time (minutes)	30	20	40	20	30	20
First Service	06:27	06:45	06:27	06:44	13:06	08:50
Last Service	23:59	22:59	23:51	22:59	23:27	22:50

3.5.4 Additional rail services can be accessed at Warrington Central and Bank Quay stations, giving connections to a range of local stations including Sankey, Widnes, Runcorn East, Padgate, Glazebrook and St Helens.

3.6 Proposed Accessibility Improvements

3.6.1 The main function and purpose of the MSA is to provide for the travelling public on the motorway network. As such, the vast majority of the visits to the MSA will be made by private vehicle.

3.6.2 Staff will, however, access the MSA by a range of travel modes and potential improvements to these are set out in the Travel Plan that accompanies the planning application.

SECTION 4 Existing Highway Network

4.1 Introduction

4.1.1 This section describes the highway network in the vicinity of the application site before identifying existing traffic volumes on the strategic and local road networks. The road network in the vicinity of the site is shown in **Appendix 4.A.**

4.2 Strategic Road Network

4.2.1 The site is adjacent to the M62 motorway which provides a national strategic connection between Liverpool, Manchester, Leeds and Hull. The M62 connects with the M6 at junction 10 c.3.9km to the west of the site and the M60 at junction 12 c10.5km to the east of the site. Connections to Leeds and Hull are via M60 around Manchester and then M62.

4.2.2 Within the vicinity of the site the M62 is currently a three-lane motorway with a central reservation and a hard shoulder (DMRB Road Type (D3M). It is subject to the national speed limit (70mph) and stopping is prohibited.

4.2.3 M62J11 is currently a five-arm all movements grade separated junction, albeit Birchwood Way to the north of the junction is currently closed to traffic approximately 60m from the circulatory carriageway of the roundabout and Silver Lane is a private road. All arms of the roundabout are currently priority controlled.

4.2.4 All four slips roads at the junction are taper merge / diverges (type A); a single lane is provided on the eastbound merge whilst the westbound merge and both the diverges have two lanes. Planned improvements at the junction are considered in Section 5.0.

4.3 Local Road Network

4.3.1 Birchwood Way, to the south of the motorway junction, is a primary route into Warrington town centre and the principal access to Birchwood Park. It is currently a single carriageway subject to 50mph speed limit along its length. Stopping and/or loading is prohibited.

4.3.2 Birchwood Way widens to two lanes at the approach to M62J11 and four lane on the approach to the signalised junction with Daten Avenue and Moss Gate, with two dedicated right turn lanes,

one ahead lane and one ahead and left lane. Birchwood Way is currently undergoing improvement works, details of which are set out in Section 5.

4.4 Existing Traffic Flows

4.4.1 A series of traffic surveys have been undertaken to inform the transport assessment of the development proposals and data has been obtained from the HE's online databases. Full details of the surveys and data used in the assessment are presented in Section 8.0 of this report. This section includes a summary of daily and peak hour vehicular flows across the highway network in the vicinity of the site.

4.4.2 Analysis of the existing traffic flows identified the need to assess two AM and two PM peak hours because the highest flows on the M62 slip roads and mainline occur in the hours 07:00-08:00 and 16:00-17:00 whilst the peak hours for the M62 sliproads only are 07:30-08:30 and 16:30-17:30.

M62 Mainline

4.4.3 Existing (AADT) traffic flows on the M62 are c.113,700 and c.109,900 vehicles per day, east and west of M62J11 respectively. The Heavy Goods Vehicle (HGV) proportion varies from 14.2%-14.5%. The westbound carriageway tends to have the highest flows in both the morning and evening peaks.

4.4.4 Existing flows on the motorway on the approach to M62J11 are as follows:

Table 4.1 Existing Peak Hour Flows on M62

Section of M62	AM Peak Hour[1]	PM Peak Hour[2]
West of Junction 11	4,498	3,838
East of Junction 11	4,790	4,862

1. Highest one-hour flow between 07:00 and 08:30 2. Highest one-hour flow between 16:00 and 17:30

M62 J11

4.4.5 The total traffic flows entering M62J11 in the AM and PM peak hours are:

- AM Peak (07:00-08:00) – 2,435
- AM Peak (07:30-08:30) – 2,513
- PM Peak (16:00-17:00) – 2,725

- PM Peak (16:30-17:30) – 2,758

4.4.6 In all the above hours, the highest approach flow is from Birchwood Way, with the highest flow in the morning peaks to M62 eastbound and the highest flow in the evening peaks to M62 westbound.

4.4.7 Daily (24-hour AADT) flows on the slip roads are as follows;

- Eastbound merge (On-Slip) – 6,163
- Westbound diverge (Off-Slip) – 5,836
- Westbound merge (On-Slip) – 6,145
- Eastbound diverge (Off-Slip) – 4,166

4.4.8 Peak hour traffic flows represent a significant proportion of daily flows reflecting commuter movements to and from Birchwood Park.

Birchwood Way

4.4.9 Daily (24-hour AADT) flows on Birchwood Way are c.22,300 vehicles with around 7% HGVs. Two Way Flows in the morning and evening peak hours are as follows:

- AM Peak (07:00-08:00) – 2,410
- AM Peak (07:30-08:30) – 2,454
- PM Peak (16:00-17:00) – 2,669
- PM Peak (16:30 – 17:30) – 2,691

4.4.10 In the morning peak hours, the flows are evenly split with c.56% heading north east towards the M62 and c.46% heading south west towards Birchwood Park and Warrington between 07:00 – 08:00. Between 07:30 – 08:30 the northbound flow makes up c.51% of the two-way flow and the southbound flow makes up c.49%. Whereas in the evening peak hours, the northbound flow makes up c.74% and c.75% of the two way flow between 16:00-17:00 and 16:30-17:30 respectively.

SECTION 5 Committed and Proposed Infrastructure Improvements

5.1 Introduction

5.1.1 This section of the report identifies committed and proposed future alterations to the transport networks surrounding the site.

5.2 Highways England Smart Motorway Scheme

5.2.1 Highways England are in the process of upgrading the section of the M62 from Junction 10 to Junction 12 to Smart Motorway. A layout plan is included in **Appendix 5.A.** Works began in summer 2018 and are due to be completed by Spring 2020.

5.2.2 The scheme involves the following improvements:

- Conversion of the hard shoulder to through junction running (i.e. increasing the number of lanes from 3 to 4 in each direction).
- Realignment of lanes to achieve requisite visibility in LBS1 (lane below signal 1 – the former hard shoulder).
- Variable mandatory speed limits.
- Driver information, including lane availability, provided through a mixture of gantries and cantilever signs.
- Queue detection and automatic signalling system, which provides queue protection and congestion management.

5.2.3 It is anticipated that this will reduce congestion and smooth the flow of traffic on the mainline of the motorway. The scheme only has minor impacts on Junction 11 itself, converting the eastbound off-slip from two lanes to one lane plus taper and converting the westbound on-slip from two lanes to one.

5.2.4 Other motorway improvement schemes more distant from the site are currently under construction or due to be progressed in the near future. These have not been individually assessed as part of this Transport Assessment, but it have been assumed that their effects are included for in traffic growth factors calculated from TEMPro. These schemes are:

- M62 Junction 8 Improvements
- M6 / M62 Motorway to Motorway Scheme
- Smart Motorway M6 J21A to Junction 26

5.3 Warrington East Phase 3

5.3.1 Warrington Borough Council (WBC) has developed a highways improvement scheme to improve traffic flow in east Warrington. Phase 1 of the project was completed in March 2016 and amongst other improvements involved the signalisation of the Birchwood Way, Daten Avenue, Moss Gate Roundabout. Work on Phase 2 of the scheme began in July 2018 with the project due to be completed in December 2019. The works will improve capacity at the following junctions along Birchwood Way to the south east of the site:

- Oakwood Gate South;
- College Place Roundabout; and
- Blackbrook Avenue Roundabout

5.3.2 The final phase of the improvements (Warrington East Phase 3) involves the dualling of Birchwood Way from the Daten Avenue / Moss Gate junction to the M62J11 and the resurfacing of M62J11 with new road markings. The scheme will provide a 2-lane exit from M62J11, which will increase capacity by enabling 2 lanes of traffic to turn right from the eastbound off-slip onto Birchwood Way, and 2 lanes to turn left from the westbound off-slip onto Birchwood Way. A plan of the scheme, including the works at M62J11, is included in **Appendix 5.B**.

5.3.3 The scheme is fully funded, construction began in December 2018, and the works are due to be completed by January 2020. A stakeholder engagement for the scheme was carried out in May 2018 and it is understood that the scheme received extensive support.

5.4 Summary

5.4.1 It is concluded that the delivery of the smart motorway and Birchwood Way East schemes will provide greater capacity and safety at M62J11, enhancing access to the site.

SECTION 6 Assessment of Need

6.1 Background and Context

6.1.1 Underpinning the safe and efficient operation of the M62 and other motorways is the network of MSAs. Initially MSA sites were identified by the Government. The MSA sector was deregulated in 1992, after which future provision of MSAs became the sole responsibility of the private sector. Government guidance has been published to provide a policy context for operators and others involved in identifying and filling gaps in the MSA network.

6.1.2 Before deregulation in 1992, the Government primarily owned MSAs and granted 50-year ground leases to operators. Deregulation permitted private sector freehold MSA ownership and has in subsequent years significantly improved the range and quality of MSA facilities. There are currently 112 MSAs in operation across England, 105 of which are owned by four major operators.

6.1.3 Although MSAs are privately owned and operated, they exist primarily to meet a public safety need on the motorway network; the need being to provide facilities which support the safety and welfare of the travelling public. The absence of such facilities in areas where there is a need places the safety and welfare of the travelling public at risk and increases chances of accidents. The Royal Society for the Prevention of Accidents (ROSPA) notes that some 20% of all major accidents are fatigue related[1]. The provision of properly spaced MSAs significantly assists in reducing fatigue related accidents on the motorway network.

6.1.4 Provision of MSAs is dependent entirely upon private sector funding. The decision to invest is a commercial one and represents a major capital investment within a particular area. Once operational, the ongoing management and maintenance costs remain with the MSA operator, except for those which may be covered by a commuted lumps sum such as highways maintenance.

6.2 Establishing the 'Need' Case – Policy Test

6.2.1 A detailed policy review is presented in Section 2 of this report.

[1] Source: The Royal Society for the Prevention of Accidents (ROSPA) (August 2017), 'Road Safety Factsheet: Driver Fatigue and Road Accidents Factsheet'.

6.2.2 Circular 02/2013 Paragraph B6 notes that:

> ***'The Highways Agency therefore recommends that the maximum distance between motorway service areas should be no more than 28 miles. The distance between services can be shorter…'***

6.2.3 Paragraph B8 of the Circular confirms that:

> ***'In determining applications for new and improved sites, local planning authorities should not need to consider the merits of spacing sites beyond the conformity with the maximum and minimum spacing criteria established for safety reasons.'***

6.2.4 The Circular does not include provision for traffic flows to form part of a weighting process to evaluate the importance of a gap.

6.2.5 Extra has had the opportunity to seek Leading Counsel's Opinion on the interpretation of 'need' based on Circular 02/2013. Counsel has advised that:

> ***'…once such a gap is shown to exist, it is not necessary to have regard to other considerations in determining whether a need exists (i.e. the existence of a gap is in and of itself conclusive evidence of need for planning purposes).'***

6.2.6 Thus a gap either exists or it does not; traffic flows and route choice are irrelevant. A copy of the full advice is included at **Appendix 6.A**.

6.2.7 The 'need case', which fully supports the proposed planning application for a new MSA facility at M62J11, is based primarily on four defined policy gaps in MSA provision on the motorway network in the North West, where the gapping is greater than 28 miles. These gaps are identified in Table 6.1 and illustrated in **Appendix 6.B.**

Table 6.1 Existing gaps of greater than 28 miles between MSAs

From	To	Route	Distance
Charnock Richard Services	Birch Services	M6 / M62 / M60 / M62	35 miles
Charnock Richard Services	M67 Terminus	M6 / M62 / M60 / M67	47 miles
M58 Terminus	Birch Services	M58 / M6 / M62 / M60 / M62	40 miles
M58 Terminus	M67 Terminus	M58 / M6 / M62 / M60	52 miles

6.2.8 These distances are clearly in excess of the 28 mile maximum distance requirement and therefore, in accordance with Circular 02/2013, there is 'need' fully supported by policy, for a

new additional MSA to serve the identified gapping in the table above. Meeting this 'need' has clear and essential benefits of regional and national significance.

6.2.9 The need for an MSA in this area of the motorway network has been recognised by Highways England in their 2010 report "Spatial Planning Framework: Review of Strategic Road Network Service Areas". The report identifies at Figure 4.1 the same gaps as set out above, and a full copy of the report is included at **Appendix 6.C**.

6.2.10 Furthermore, a letter from HE to WBC dated 11 June 2019 acknowledges the gaps identified above and notes that, without pre-empting its formal consultation response to the planning application, HE has no objection in principle to the proposed MSA.

6.3 Serving the 'Unmet Need'

6.3.1 Based on its extensive research and specialist MSA sector knowledge Extra has concluded that the optimal and deliverable location for satisfying this significant unmet need is at M62J11. A comprehensive 'Alternative Sites Assessment' report prepared by Spawforths is submitted with the planning application. Notwithstanding this, **Appendix 6.D** demonstrates how the proposed new MSA is strategically and optimally located at M62J11.

6.3.2 Appendix 6.D. demonstrates that the four unmet gaps identified above will be fully addressed. As shown in Table 6.2, the 35 mile non-compliant gap between Charnock Richard Services and Birch Services will be reduced to a 19 mile compliant gap, and the 40 mile non-compliant gap from M58 terminus to Birch services will be reduced to a 24 mile compliant gap. The distance from the proposed Warrington MSA to Birch services and M67 Terminus will be 16 miles and 28 miles respectively. As such, all the travel distances will be within the 28 mile maximum.

Table 6.2 Policy Compliant MSA Provision

From	To	Route	Distance
Charnock Richard Services	Warrington MSA	M6 / M62	19 miles
M58 Terminus	Warrington MSA	M58 / M6 / M62	24 miles
Warrington MSA	Birch Services	M62 / M60 / M62	16 miles
Warrington MSA	M67 Terminus	M62 / M60 / M67	28 miles

6.4 Burtonwood MSA and Minimum Spacing Requirements

6.4.1 Circular 02/2013 sets out at para B5 that ***"the access/egress arrangements of facilities must comply with the requirements of the Design Manual for Roads and Bridges including its provision in respect of junction separation".***

6.4.2 Thus the criteria governing the minimum permissible spacing of MSAs relates to the resultant compliance of the access arrangements with DMRB. Given that access to the MSA is to be taken from an existing motorway junction, this criteria is met by the proposals.

6.4.3 It is also noted that the existing Burtonwood MSA sits at Junction 8 of the M62, some 6.5 miles west of the proposed MSA at Junction 11. Whilst the Burtonwood MSA serves the needs of SRN users on the M62 west of the M6, its location means that it does not serve the SRN users on the routes (i.e. the gaps in MSA provision) in Table 6.1 above. Thus in terms of the road safety need by meeting gaps in MSA provision, the proximity of the existing Burtonwood services is not relevant.

6.5 Conclusions

6.5.1 The approach to determining the 'need' for an MSA on the Strategic Road Network is set out in Circular 02/2013. The 'need' for an MSA is established whenever any stretch of the SRN has a gap of more than 28 miles (or 30 minutes driving time) between MSAs. As paragraph B8 of the circular makes explicit, once such a gap is shown to exist, it is not necessary to have regard to other considerations in determining whether a need exists (i.e. the existence of a gap is in and of itself conclusive evidence of need for planning purposes).

6.5.2 A 'need' either exists or it does not. It is established solely in terms of the presence or otherwise of a gap on the relevant parts of the SRN. Other matters such as traffic flows, route choice and the presence or otherwise of Service Areas which do not meet the requirements of an MSA (set out in Circular 02/2013) are not relevant to the determination of 'need' and are not factors which should be taken into account.

6.5.3 The application of policy tests set out in the NPPF and Circular 02/2013 clearly and unequivocally demonstrate that a 'need' exists for a new MSA located to the north east of Warrington on the M62, which would address the 'need' that exists between Charnock Richard MSA (M6 north of J27) and Birch MSA (M62 east of J18) as well as the 'need, that exists along three other stretches

of SRN; Charnock Richard MSA to M67 terminus; M58 terminus to Birch MSA; and M58 terminus to M67 terminus. This approach (in terms of the routes along which a gap is identified) is as that adopted by the Highways Agency in their 2010 report.

6.5.4 Based on extensive research and specialist MSA knowledge, Extra and its consultants have identified M62J11 as the optimal location for satisfying this unmet 'need'.

SECTION 7 Development Proposals

7.1 Introduction

7.1.1 This section should be read in conjunction with the full suite of planning application drawings prepared by Architecture 519 and the Design and Access Statement (DAS).

7.2 Development Description

7.2.1 The planning application is for a 'new concept' MSA. It is submitted in outline for:

> ***'Erection of a Motorway Service Area including Facilities Building, up to 100 bedroom Hotel, service yard, Fuel Filling Station, Electric Charging Station, parking facilities for each category of vehicle, access and internal circulation roads, structured and natural landscaping with outside amenity space/picnic space and dog walking zone, pedestrian and cycle links, boundary fencing, surface water drainage areas, ecological mitigation, pumping station, Substation(s), retaining structures and associated infrastructure and earthworks'***

7.2.2 All matters, with the exception of means of access, will be reserved for determination at a future date.

7.2.3 The following paragraphs describe the primary component parts of the proposals in more detail.

Facilities Building

7.2.4 The facilities Building (max 5,000sqm GIA) will provide:

- A food court and ancillary retail, incorporating facilities for the sale and consumption of hot and cold food beverages on and off the premises;
- Free toilet and hand washing facilities for all users;
- Showers and washing facilities for HGV drivers; and
- A business lounge.

Hotel

- The hotel will provide up to 100 bedrooms and supporting ancillary uses.

Fuel Filling Station

- Fuel Filling Station which will include a forecourt for use by private vehicles and a HGV forecourt and a forecourt shop of a maximum 500m^2. Alternative new technology fuels will be provided (subject to availability, such as hydrogen to contribute to Low Carbon targets).
- Electric Charging Station (ECS).

Parking Facilities

7.2.5 Parking spaces for all vehicle types will be provided on the site as per the list below:

- 536 light vehicles (of which 26 will be disabled spaces)
- 105 HGV spaces
- 1 abnormal load HGV space
- 16 coach spaces
- 15 car plus caravan / motorhome / vehicle plus trailer spaces (of which 2 will be disabled spaces)
- 15 motorcycle spaces.

7.2.6 Compliance with the requirements of Schedule 1 of Circular 02/2013 is discussed further below.

7.2.7 Electric vehicle charging points will be located within the parking areas and in close proximity to the facilities building.

7.2.8 An illustrative layout plan is included in **Appendix 7.A.**

7.3 Proposed Site Access Arrangements

Proposed Arrangements

7.3.1 Vehicular access to the site is proposed via a direct signal-controlled connection to the M62 Motorway Junction 11. It is proposed to signalise the motorway junction as part of the scheme. The following paragraphs describe the proposed access arrangements and the alternatives that have been considered.

7.3.2 The site access arrangements and signalisation scheme are shown on Drawings ITM12377-SK-024 Rev C and ITM12377-SK-025 Rev B contained within **Appendix 7.B.**

7.3.3 The proposed access arrangements have been designed taking account of a preliminary feasibility design (suitable for the purposes of planning) and cognisant of committed improvements at M62J11 and Birchwood Way which are being implemented by WBC and are due to be completed by January 2020 as part of its Warrington East Phase 3 scheme. They also take account of the changes resulting from the Smart Motorway Scheme which is due to be completed by Spring 2020. It is noted that the HE Smart Motorway Scheme includes abnormal load bays within M62J11. The Proposed Development will provide an abnormal load bay within the MSA site (in the vicinity of the FFS) alongside welfare facilities for drivers. As such, the abnormal load bays shown on the HE scheme have not been included in the Applicant's proposals for M62J11 at this time.

7.3.4 Similarly, the access arrangements have been informed by a Walking, Cycling and Horse-Rider Assessment Report (WCHAR) prepared by WYG, included at **Appendix 7.C**.

7.3.5 A Stage 1 Road Safety Audit of the site access and signalisation proposals at M62J11 has been conducted. The audit brief, Stage 1 Audit and Design Team Response are included in **Appendix 7.D**. All of the recommendations made by the audit team have been accepted and are either now inherent in the updated drawings presented at Appendix 7.B or will be considered further at detailed design stage.

7.3.6 The site access arm will consist of two lanes in each direction. As the access road continues into the site, traffic will be carefully managed to allow safe and efficient circulation and ease of access to the relevant parking areas and Fuel Filling Station. A central reserve is proposed between the inbound and outbound carriageways.

7.3.7 A Public Right of Way runs through the site. This would be diverted as part of the proposals and will run southward along the western side of the access road. The access junction will include signal-controlled pedestrian crossings over the access road, to link with the proposed pedestrian improvements at M62J11.

7.3.8 Access to the former landfill site is required by Biffa for maintenance vehicles. The proposed site layout includes a controlled access point for occasional use when required.

Alternatives Considered

7.3.9 Various alternative arrangements to the proposed signalisation of M62J11 have been considered. These are:

Priority controlled options

1 Provision of two lanes from A574 Birchwood Way to M62 (west);

2 Widening A574 Birchwood Way to provide three lanes; and

3 Provision of a left turn bypass lane from A574 Birchwood Way to M62 (west).

Signal-controlled options

4 Signal-controlled arrangement with three lane approach on A574 Birchwood Way.

5 Incorporation of a left turn bypass lane from A574 Birchwood Way to M62 (west) into the signals scheme.

6 Introduction of signals at A574 Birchwood Lane entry (only).

7.3.10 Option 1 - provision of two lanes from A574 Birchwood Way to M62 (west) – assumed the capacity of the Birchwood Way arm would be improved by retaining the give-way control at the junction, and amending the lane destination markings such that the left turn to the westbound on-slip would be possible from both the nearside and offside lanes. Currently the westbound on-slip can only be accessed from the nearside lane, with the offside lane being used by vehicles turning right (onto the eastbound on-slip) or ahead (to the northern Birchwood Way cul-de-sac). The restriction of left-turners to use only the nearside lane is shown to lead to capacity issues during the PM peak hours in the future year scenarios. However, preliminary modelling has shown that if the offside lane were to be allocated to be used for all turning movements (i.e. left, ahead and right), this would enable the junction to operate within capacity with the Proposed Development in place. There are two lanes on the westbound on-slip on exit from the roundabout, and under this potential alternative arrangement, two lanes could be used by left-turners, leading to the improvement in capacity. The nearside lane would retain its designation as left-turn only, meaning that no conflicting traffic movements would be introduced.

7.3.11 Option 1 has however been discounted on road safety grounds following without prejudice discussions with a road safety auditor. Those discussions highlighted concerns that conflicts may occur on the circulatory carriageway under this arrangement as a consequence of unfamiliar lane markings.

7.3.12 Option 2 considered widening A574 Birchwood Way to provide three lanes on entry to M62J11. The results of preliminary modelling show a worsening in operational performance in the AM peak hours. This option has therefore not been progressed.

7.3.13 Option 3 considered providing a left-turn bypass lane from A574 Birchwood Way to M62 (west). In terms of deliverability, this option requires land beyond the highway boundary not in the applicant's control. It is also considered that a Departure from Standard(s) would be needed, either in respect of the achievable exit taper length or the reduction taper length (or both), irrespective of whether land outside the highway boundary could be acquired. The process to agree necessary Departures from Standard with Highways England cannot be guaranteed. The currently proposed signal-controlled arrangement does not require any Departures from Standard. Option 3 was therefore been discounted.

7.3.14 Option 4 – a variation to the proposed signal-controlled arrangement, whereby the A574 Birchwood Way provides a three lane approach to the junction – has also been considered. The results of preliminary capacity testing do not however compare favourably to the proposed signal arrangement and as such, Option 4 has been discounted.

7.3.15 Option 5 considered providing a left-turn bypass lane from A574 Birchwood Way to M62 (west) as part of the signal-controlled arrangement. This option suffers the same deliverability issues as Option 3 above as has been discounted.

7.3.16 Option 6 – implementing signal control at the Birchwood Way entry to the roundabout only – has the potential to reduce queuing on the critical Birchwood Way arm of the junction. It does not however achieve an improved environment for pedestrians to cross M62J11 which WBC has indicated is a key issue as part of pre-application discussions. Option 6 has also therefore been discounted.

Conclusion

7.3.17 On balance, it is considered that the introduction of traffic signal control at Junction 11 is the preferred arrangement. Signalising the junction would lead to an improved appreciation by drivers that both lanes of the Birchwood Way approach can be used to turn left to the westbound on-slip, whilst also enabling the provision of controlled pedestrian crossing points that will improve the environment for non-motorised users passing through the junction, including staff travelling to/from the Proposed Development.

7.3.18 A letter of support from HE appended to WBC's June 2017 National Productivity Infrastructure (NPIF) bid to the Department for Transport (DfT) for its Warrington East Phase 3 project notes that HE is supportive in principle of signalising M62J11. It states that,

'installing traffic signals will help both highway authorities to manage traffic more effectively.'

7.3.19 A subsequent 2018 study conducted by WBC's consultants, Mott MacDonald, titled 'Warrington East Phase 3 – M62 Junction 11 Option Tests' recommended that the committed Warrington East Phase 3 works 'future proof' M62J11 to enable the future provision of signal control. As such the proposed signal-controlled arrangement is consistent with previous consideration of potential improvements given by the two highway authorities.

7.4 Site Layout

7.4.1 The proposed site layout is shown on the plan reproduced at **Appendix 7.A.** It has been designed to provide a coherent and expeditious customer arrival experience. The FFS will be located such that it can be reached without the need to enter the main parking areas. It will also be accessed on egress from the main facilities.

7.4.2 HGVs, coaches and caravans will be segregated from light vehicles as far as practicable and each category of vehicle will be provided with a specific parking area. Motorcycle parking will be provided close to the facilities building and will hence benefit from good surveillance. Circulation plans are included in **Appendix 7.E.**

7.4.3 Dimensions of parking aisles and bays as well as gradients across the site will be in line with industry best practice guidance. Servicing of the facilities building and hotel will take place within demised service yards.

7.4.4 Internal pedestrian and cycle circulation will be provided as part of the scheme with links provided to the residential and employment areas to the south of the M62 motorway.

7.4.5 Swept path analyses have been carried out to ensure that vehicles, including abnormal loads, can access, egress and circulate within the site, The plans at **Appendix 7.F** show the swept paths of vehicles into and around the site, demonstrating these will operate satisfactorily.

7.5 Parking Provision

7.5.1 Paragraphs B27 and B28 of Circular 02/2013 confirm the approach to be taken with regard to the provision of parking facilities:-

> ***'B27. The methodology set out in Schedule 1 will also be used for calculating the levels of parking provision for all new sites promoted after the publication of this policy.***
>
> ***B28. However, notwithstanding the provisions of the previous two paragraphs, levels of provision may be adjusted to reflect local conditions through a process of site specific negotiation.'***

7.5.2 Paragraph B32 advises that, where proposed, parking for hotels, conference centres and business centres should be provided separately:-

> ***'B32. Separate parking must be provided to service such developments [hotels, conference centres and business centres] so as to avoid any reduction in the general parking provision available to other road users.'***

Circular 02/2013 Parking Provision

7.5.3 The methodology for calculating parking provision is set out in Schedule 1 of the Circular. This is based on the peak monthly flow and averaging that to derive the daily flow. Parameters are then calculated as:

A = number of cars and light goods vehicles

B = number of HGVs and coaches

7.5.4 MIDAS data has been used to identify the peak monthly flow and the average daily flow within it. The peak month in the last year is July 2018.

7.5.5 Traffic flows on the M62 approaching M62J11 have been derived from MIDAS.

7.5.6 The traffic flows approaching M62J11 are as follows:-

Table 7.1 Daily Traffic flows approaching M62J11

Route	Daily Flows
M62 Eastbound	55,632
M62 Westbound	57,955
Total	**113,587**

7.5.7 Midas data does not include HGV and coach proportions however the proportion of vehicles greater than 6.6m in length is provided. This is 14.5% on the M62 eastbound between J10-J11 and 14.3% westbound between J12-J11. For the purpose of the parking calculations these proportions have been adopted.

7.5.8 Thus the daily traffic flows for use in the Circular 02/2013 parking calculation are:

A = number of cars and light goods vehicles = 97,233

B = number of HGVs and coaches = 16,354

7.5.9 The number of parking spaces for different vehicle types is then calculated using the methodology set out in Schedule 1 of the Circular. This also notes that additional spaces should be provided for lodges at one space per two bedrooms. The resultant number of parking spaces required is:-

Table 7.2 Circular 02/2013 Parking Requirements

Vehicle Type	Calculation	No. Spaces
Cars	0.5% of A	486
HGV	0.5% of B	82
Abnormal Load	Minimum of 1	1
Coach	0.1% of B	16
Caravan/Motorhome/Vehicle and Trailer	0.015% of A	15
Motorcycle	0.015% of A	15
Lodge / Hotel	1 / 2 bedrooms	50

7.5.10 Schedule 1 also defines the number of spaces for disabled users, being 5% of the car spaces and 5% of the caravan/motorhome/vehicle and trailer spaces, with a minimum of five and two spaces respectively. This results in 24 spaces for disabled users of cars, two for caravan / motorhome / vehicle and trailer space users. A minimum of two spaces should be provided for disabled lodge users.

7.5.11 Thus the parking provision on the site will be provided in line with Circular 02/2013.

7.5.12 The number of HGV parking space to be provided is 23 more than that required by the Circular. The DfT Road haulage update of 21 May 2018, identified a strategic national need for more lorry parking. In addition, the National Survey of Lorry Parking (2017) found that a total of 61 additional lorry spaces are required within the North West and highlights that the lorry parking

at nearby MSAs are all operating above critical levels (>85%). The HGV parking utilisation levels at nearby MSAs in the north west are as follows:

- Welcome Break Charnock Richard Services Southbound 126%
- Welcome Break Charnock Richard Services Northbound 125%
- Roadchef Chester Services 113%
- Moto Birch Services Westbound 113%
- Welcome Break Burtonwood Services M62 94%
- Moto Knutsford Northbound 90%

7.5.13 As discussed in Section 2.0, WBC has identified (in its Consultation Draft LTP4, March 2019) that existing lorry parking facilities on the periphery of Warrington are already at 'critical' levels of utilisation.

7.5.14 Thus the provision of an appropriate number of HGV parking spaces over and above the Circular requirements is considered to be of benefit to both the north west region and to the Borough.

7.6 Signage

7.6.1 Circular 02/2013 notes that all new MSA's should be signed from the motorway and Table B.1 of the Circular sets out the minimum requirements for signing from the SRN. Extra confirms that these requirements will be met at the Warrington MSA.

7.6.2 Signing from the motorway will be provided in accordance with a standard Traffic Signs Agreement between the developer and the Secretary of State for Transport, as stated within Circular 02/2013. Funding for the signs will be secured from the developer by means of an agreement under section 278 of the Highways Act 1980.

7.6.3 Within the site, signage directing MSA visitors to their respective parking areas and fuel forecourts will be provided in accordance with the standards laid down in the prevailing version of the Traffic Signs Manual and Traffic Signs Regulations and General Directions.

7.7 Travel Plan

7.7.1 The policy review presented in Section 2 of this TA highlights the role of Travel Plans in protecting and exploiting opportunities for the use of sustainable transport modes for the movement of goods or people.

7.7.2 The primary role of an MSA is to **'support the safety and welfare of the road user'** and as such access to the site for the vast majority of users will be via the motorway network. Notwithstanding this, it is acknowledged by the Applicant that for staff, and particularly for those recruited locally, the ability to travel to/from the site by means other than single occupancy private cars is important. In this context, a Framework Travel Plan which focusses on staff travel and reducing emissions accompanies the planning application as a stand-alone document.

7.7.3 It is expected that the proposed development could support the generation of up 200-250 Full Time Equivalent (FTE) jobs. In the interest of robustness and to allow for some part-time shift working, staff trip numbers have been calculated based on a total workforce of 308. Staff will be drawn from the local labour market wherever practicable. Table 7.3 presents an indication of the potential shift pattern for staff working at the MSA, based on the above job creation estimate and experience at existing Extra facilities.

Table 7.3 Estimated Shift Patterns and Employee Numbers

Shift Time	Employees
07:00 – 15:30 (early shift)	109
11:00 – 20:00 (cross shift)	49
15:00 – 23:00 (late shift)	72
23:00 – 07:30 (night shift)	10
Administration (mostly office hours)	60
Total Daily	**300**

7.7.4 It is acknowledged by the Applicant that for staff at the site, and particularly for those recruited locally, the ability to travel to/from the site by means other than single occupancy private car journeys is important. The Travel Plan will therefore include measures such as the introduction and management of a car sharing club and the promotion of journeys to work by alternative modes of transport to the private car.

7.7.5 Other potential measures to encourage travel by non-car modes include the improvement of pedestrian routes to the site from Culcheth to the north and Gorse Covert to the south, shuttle

bus provision to and from Birchwood train station and a guaranteed lift home in the event of inclement weather or a car share partner being off work.

7.7.6 The Framework Travel Plan has been prepared with reference to best practice advice including Warrington's Design Guidance 2: Travel Plans (August 2016).

7.8 Construction Traffic

7.8.1 The traffic flows associated with construction activity on the site have been estimated taking into account the cut/fill exercise, import of material for the access road construction, general construction vehicles and the labour force. Full details are included in the Environmental Statement (ES).

7.8.2 The resultant number of vehicles, daily and in both peak hours, shown as two-way flows for HGV's and cars/vans, are:-

Table 7.3: Construction Vehicle Estimates

Time Period	Vehicle Types		
	HGVs	Cars/Vans	Total
Daily	130	300	430
Peak Hour	12	75	87

7.8.3 Both the daily and peak hour HGV and total traffic volumes are significantly lower than those for the operational phase.

SECTION 8 Traffic Assessment Methodology

8.1 Introduction

8.1.1 This section considers the approach and detailed inputs to the assessments of the traffic impacts of the proposals. It includes details of:

- The scenarios considered in the assessments and rationale for these;
- Base year traffic flows and the survey and other data used to derive these;
- The consideration of traffic growth;
- Committed developments and the traffic flows generated by these; and
- The traffic flows 'generated' by the MSA.

8.1.2 The results of the traffic impact assessments are set out in subsequent sections of this report: Section 9, the impacts of the MSA flows at M62J11; Section 10, assesses the impacts on weaving and merge / diverge provision at M62J11; and Section 11, assesses the impacts of the development on the local road network.

8.2 Assessment Scenarios

8.2.1 In accordance with Highways England standard requirements, assessments will be undertaken for the opening year of 2022 and a future year of ten years after the date of registration of the planning application (2029). This is in line with paragraph 101 of Highways England's Planning for the Future document, which requires assessments to be undertaken for the opening year and a date ten years after the date of registration. As set out in the Highways England guidance, the assessment at opening will be used for the determination of impact mitigation needs whilst the latter is used to determine the risk which will transfer to HE.

8.2.2 The future base position needs to consider committed developments, which are covered in more detail in Section 8.4 of this report, and committed infrastructure schemes that are currently under construction, namely the Birchwood Way widening scheme and the M62 J10 to J12 Smart Motorway scheme, together with any other relevant schemes such as the M6 Smart Motorway improvements.

8.2.3 Taking account of the above, traffic flows for the following scenarios have been derived:

Table 8.1 Traffic Flow Scenarios

Scenario	Traffic Flow Inputs	M62J11 Layout Assumed
A	Base 2018	Existing (2018) Layout
B	2022 + Committed Development	HE Smart Motorway Scheme + Birchwood Way widening
C	2022 + Committed Development + MSA	HE Smart Motorway Scheme + Birchwood Way widening
D	2029 + Committed Development	HE Smart Motorway Scheme + Birchwood Way widening
E	2029 + Committed Development + MSA	HE Smart Motorway Scheme + Birchwood Way widening

8.3 Base Year Traffic Flows

Traffic Surveys

8.3.1 A series of traffic surveys was undertaken in November 2018. These consisted of:

i Manual Classified Counts (MCC) at the following locations on Tuesday 13th November:

- Junction 11 M62 Motorway (07:00 - 19:00)
- M62 Motorway mainline at Junction 11 (07:00 - 19:00)
- Birchwood Way (A574) / Daten avenue / Moss Gate (07:00 - 10.00 and 16:00 - 19:00)

ii An additional MCC at Junction 11 M62 Motorway on Saturday 17th November between the hours of 10:00 and 17:00.

iii Queue length surveys at the above junctions on the same dates. Queue length data were recorded at one-minute intervals.

iv An Automatic Traffic Count (ATC) for a continuous 14-day period on the A574 Birchwood Way, between Daten Avenue and Junction 11 of the M62 Motorway (6th November to and including 20th November).

8.3.2 Maximum queues have been recorded in vehicle numbers separated into Light Vehicles and Heavy Vehicles and by each particular lane at the end of each red phase for each cycle of the traffic signals. At the M62J11 roundabout vehicles were recorded at 1-minute intervals.

8.3.3 An origin / destination survey was undertaken of the movement from the M6 southbound off-slip to the M62 Motorway Junction 11 (eastbound) off-slip (and the opposite direction of travel), using Automatic Number Plate Recognition (ANPR) technology. This data has been used to

derive weaving proportions on the M62 Motorway between Junctions 10 and 11. An audit of the traffic survey methodology and results has identified that, whilst ANPR observations of eastbound trips (i.e. from J10 to J11) were undertaken on the same day as the turning counts (Tuesday 13th November 2018), the westbound ANPR cameras were programmed to capture data two days later, on Thursday 15th November 2018. Weaving proportions for movements from J11 to J10 are therefore based on observations from the Thursday.

8.3.4 All traffic data was recorded in 15-minute intervals. COBA vehicle classifications were adopted (pedal cycles, motorcycles, cars, LGVs, OGV1s, OGV2s and buses).

8.3.5 Data from Highways England's MIDAS database has also been used to establish baseline traffic flows, as set out in more detail below.

8.3.6 The traffic survey data adopted in the assessments is included in **Appendix 8.A**.

Survey Day Check

8.3.7 The first stage of processing survey data is usually to check that the survey day was representative of typical conditions; however observations of the network during the survey period suggest this may not have been the case. During the AM peak, there were three separate road traffic accidents on the M6 southbound, south of the junction with the M62. A screenshot from Google Maps showing the resultant impact on traffic flows is included in **Appendix 8.B**, and as can be seen there were extensive queues back along the M62 eastbound and the M6 southbound. This may have caused reassignment of traffic across the wider network, with potential knock-on effects on traffic movements over the rest of the day.

8.3.8 The survey data for Junction 11 was therefore compared with average traffic flows recorded at the Highways England MIDAS counters on the slip roads. The results are shown in the table below:

Table 8.2 Variation Between Surveyed Flows and Average Day (Vehicles)

Location	AM Peak (07.30-08.30)			PM Peak (16.00-17.00)		
	Survey Day[1]	Average Day[2]	Difference	Survey Day[1]	Average Day[2]	Difference
M62 Eastbound off-slip	405	382	+6.0%	247	276	-10.5%
M62 Eastbound on-slip	1188	924	+28.6%	788	816	-3.4%
M62 Westbound off-slip	890	904	-1.5%	385	459	-16.1%
M62 Westbound on-slip	324	350	-7.4%	1043	1204	-13.4%
M62 Eastbound Mainline (upstream)	3880	4498	-13.7%	3933	3838	+2.5%
M62 Westbound Mainline (upstream)	4301	4580	-6.1%	4598	4862	-5.4%

1. From MCC undertaken 13/11/19.

2. Averaged from MIDAS data for Tuesday-Thursday for March-September excluding school and bank holiday weeks

8.3.9 As can be seen from Table 8.2, eastbound traffic levels during the AM peak hour on the survey day were significantly lower than for the same period on an average weekday and, possibly linked to this, the traffic levels joining the eastbound carriageway at Junction 11 during the same period were significantly higher than on an average weekday. During the PM peak hour, whilst mainline traffic levels were generally in line with an average weekday, the westbound on and off-slips had considerably lower than average traffic flows recorded.

8.3.10 The survey day ATC derived flows on Birchwood Way have also been compared to those averaged over the remaining weekdays of the ATC survey. The results are shown in the tables below. As ATC information is only available for individual hour periods (as opposed to the 15 minute periods provided by the MCC and MIDAS data), results are set out for two AM hours and two PM hours:

Table 8.3 Variation in ATC Survey Flows – AM Period

Direction	07.00-08.00			08.00-09.00		
	Survey Day	Average Day[1]	Difference	Survey Day	Average Day[1]	Difference
Eastbound	1620	1424	+13.7%	1103	985	+12.0%
Westbound	981	1073	-8.6%	1403	1447	-3.0%

[1]Excluding survey day

Table 8.4 Variation in ATC Survey Flows – PM Period

Direction	16.00-17.00			17.00-18.00		
	Survey Day	Average Day[1]	Difference	Survey Day	Average Day[1]	Difference
Eastbound	1813	1774	+2.2%	1716	1611	+6.5%
Westbound	586	551	+6.4%	671	577	+16.3%

[1]Excluding survey day

8.3.11 As can be seen from Tables 8.3 and 8.4 above, the eastbound traffic flows during the AM period on Birchwood Way (i.e. towards Junction 11 of the M62 were markedly higher than for the same period on an average weekday. During the later PM period hour of 17.00-18.00, there were significantly more trips westbound than on an average day, potentially due to ongoing effects of the traffic disruption earlier in the day.

8.3.12 Therefore to establish a set of baseline traffic flows that is representative of typical weekday peak hours, average traffic flows from MIDAS have been used to establish turning volumes at the Junction 11 roundabout.

8.3.13 The junction provides access to and from four directions: the M62 eastbound, the M62 westbound, Birchwood Way (South) and Birchwood Way (North). The Birchwood Way (North) arm is currently a dead-end stub with no through route to any other destination, and only a very small amount of traffic was observed turning into and out of this arm on the day of the survey. As a result, the junction effectively consists only of a side arm (Birchwood Way South) joining the M62 mainline, meaning there is generally only one turning movement that will be made to or from each slip road. For example, traffic exiting the motorway via the eastbound off-slip can be expected to turn right into Birchwood Way (South). However, small numbers of vehicles were recorded during the MCC either u-turning at the roundabout or turning into or out of the existing northern 'stub' arm of the junction. Turning movements based on MIDAS flows have therefore been adjusted to account for the small number of these manoeuvres observed during the survey.

8.3.14 Given that the traffic survey results would also have been affected for the junction of Birchwood Way (A574) / Daten Avenue / Moss Gate, baseline traffic flows through this junction have been derived based on turning count results, with traffic levels into and out of Birchwood Way (south of the signals) and Daten Avenue adjusted to match average MIDAS traffic flows to and from M62 J11.

8.3.15 The following peak hours have been identified for the M62J11 and the Birchwood Way traffic signals:

Table 8.5 Peak Hours Identified from Baseline Traffic Flows

	M62 Mainline and Sliproads	M62 Sliproads Only (Roundabout Flows)	Birchwood Way Signals
AM Peak Hour	07:00-08:00	07:30-08:30	07:30-08:30
PM Peak Hour	16:00-17:00	16:30-17:30	16:45-17:45

8.3.16 The analysis of the data to derive peak hours is included in **Appendix 8.C**. It is proposed to assess the impact of the proposals on the Birchwood Way signals for the peak hours identified for that junction.

8.3.17 For the M62J11 roundabout and the Merge/Diverge and Weaving assessments however, it is proposed to assess these elements for the two AM peak hours and two PM peak hours identified (i.e. 07:00-08:00 & 07:30-08:30 and 16:00-17:00 & 16:30-17:30). The above peak hours are based on total trips passing through the junction, however some individual turning manoeuvres at the roundabout are greatest in the M62 Mainline and Sliproads peak hours of 07:00-08:00/16:00-17:00, and likewise, some merge/diverge flows are greatest during the Roundabout peak hours of 07:30-08:30/16:30-17:30. Modelling of these two sets of peak hours will therefore ensure a robust assessment is undertaken.

8.3.18 The resultant peak hour turning flows are given in **Appendix 8.D**. Note that all traffic flow diagrams are included in this Appendix with these labelled with the relevant scenario. Separate traffic flow diagrams are provided for the M62J11 roundabout and the Birchwood Way Signals.

8.3.19 Vehicle flows on M62 mainline and the slip roads are included in **Appendix 8.E**, with these used for merge / diverge and weaving analysis.

Weekday Inter-Peak and Saturday Traffic Flows

8.3.20 Peak hour MSA turn-in rates are discussed in detail in Section 8.5 below; turn-in rates of c5% are typical based on the data used at Extra's new concept MSA site at Beaconsfield. Turn-in rates during the weekday inter-peak (12:00 – 13:00) and Saturday peak (12:00 – 13:00) at this MSA are typically 10% and 8% respectively. Thus turn-in rates are higher but both existing flows at the junction and M62 mainline flows are lower during these periods.

8.3.21 Highways England MIDAS data has been used to establish average vehicle movements during the inter-peak and Saturday peak hours. The table below shows the variation in traffic flows between the weekday peak hours and the inter-peak and Saturday peak hours:

Table 8.6 Comparison of Peak Hour Flows with Inter-Peak and Saturday Peak Flows (Vehicles)

Location	Time Period					
	AM Peak Hour[1]	PM Peak Hour[2]	Weekday 12:00-13:00	Difference[3] (%)	Saturday 12:00-13:00	Difference[3] (%)
M62J11 total inflow	2,560	2,802	1,343	-52.1%	999	-64.3%
M62 Eastbound[4]	4,498	3,838	3,550	-21.1%	3,240	-28.0%
M62 Westbound[5]	4,790	4,862	3,469	-28.7%	3,707	-23.8%

2. Highest one-hour flow between 07:00 and 08:30 2. Highest one-hour flow between 16:00 and 17:30
3. Compared to maximum of AM and PM 4. J10 to J11 5. J12 to J11

8.3.22 As can be seen above, the weekday inter-peak and Saturday peak hour flows are significantly lower than those observed during the weekday peak hours, particularly at the M62J11 roundabout.

8.3.23 The turns into the MSA (using flows on the mainline of M62 and the turn-in rates described in Section 8.5) are:

Table 8.7 Comparison of Peak Hour MSA Flows with Inter-Peak and Saturday MSA Flows

Time Period	Total Turn-In Flow
07:00-08:00	443
07:30-08:30	478
16:00-17:00	475
16:30-17:30	453
Weekday Inter-Peak	725
Saturday Peak	561

8.3.24 Whilst the total turn-in flow during the weekday interpeak is expected to be around 282 trips greater than during the AM peak hour of 07:00-18:00, the total baseline trips on the slip roads during the same peak hour are 1,109 fewer. The difference in total inflow at the roundabout between peak and inter-peak hours increases when taking account of committed developments, which will generate highest flows during the AM and PM peak hours. It is therefore considered

that assessment of the junction is not necessary for the Weekday inter-peak and Saturday peak periods. Similarly, flows on the slip roads will be lower during the Weekday inter-peak and Saturday peak periods and therefore it is considered that merge/diverge and weaving analysis for those periods is not necessary.

Traffic Weaving Observations

8.3.25 Weaving assessments require data related to slip road movements and, for vehicles entering the motorway, the proportions of vehicles joining the mainline compared to those leaving at the next junction and, for vehicles on the mainline, the proportion staying on the motorway compared to those leaving at the next junction (i.e. the non-weaving flows and major and minor weaving flows defined in TD22).

8.3.26 ANPR surveys have been used to match vehicles travelling eastbound from the M62 J10 on-slip to the J11 off-slip, and those travelling westbound to the M62 J10 off-slip from the J11 on-slip. Once these proportions are identified, it is possible to determine all other flows required for the weaving calculation (mainline-mainline, on-slip to mainline, and mainline to off-slip) by using existing MIDAS data.

8.3.27 The surveys were conducted in November 2018. An audit of the traffic survey methodology and results has identified that, whilst ANPR observations of eastbound trips (i.e. from J10 to J11) were undertaken on the same day as the turning counts (Tuesday 13th November 2018), the westbound ANPR cameras were programmed to capture data two days later, on Thursday 15th November 2018. Weaving proportions for movements from J11 to J10 are therefore based on observations from the Thursday.

8.3.28 It is not considered that westbound ANPR data being from a different day to the eastbound data would affect the results; both sets of ANPR observations were undertaken on a weekday, the eastbound and westbound movements are not inter-dependant, and the ANPR data is to be used to establish typical weaving proportions between the two junctions, not typical weaving numbers. The weaving proportions are to be applied to average weekday flows calculated from MIDAS data in order to calculate weaving numbers, and the data returned by the ANPR surveys is considered appropriate for this purpose.

8.3.29 The ANPR data found the following existing weaving proportions:

Table 8.8 2018 Observed Weaving Proportions Between M62 J10 and J11.

Eastbound				
Movement	**07:00-08:00**	**07:30-08:30**	**16:00-17:00**	**16:30-17:30**
J10 on-slip to J11 off-slip	9%	13%	16%	20%
J10 on-slip to mainline through J11	91%	87%	84%	80%
Westbound				
Movement	**07:00-08:00**	**07:30-08:30**	**16:00-17:00**	**16:30-17:30**
J10 off-slip from J11 on-slip	9%	8%	19%	18%
J10 off-slip from mainline through J11	91%	92%	81%	82%

8.3.30 ANPR survey data showing the derivation of the above proportions, together with the resultant baseline weaving flow diagrams, are shown in **Appendix 8.F**.

8.4 Committed Developments and Traffic Growth

8.4.1 Traffic growth across the wider network is caused by a number of factors, including traffic generated by new developments. There are a number of committed developments in the vicinity of M62J11, as listed in the Environmental Impact Scoping report:

i Zones 3 to 6 Residential, Omega South, Warrington (Planning Application Ref: 2015/26469)

ii Former Bayleaf Public House, Harpers Road, Warrington (Planning Application Ref: 2016/27896)

iii The Quadrant, Birchwood, Warrington (Planning Application Ref: 2014/23358)

iv Redevelopment of Birchwood Park, Birchwood, Warrington (Planning Application Ref: 2015/26044)

v Omega Zones 1 and 2, Warrington (Planning Application Ref: 2003/01449)

vi Omega Zone 7, Omega South, Warrington (Planning Application Ref: 2014/23290.

8.4.2 Of the above, developments i, v & vi are located within the Omega Development at Junction 8 of the M62, some six miles from the application site, and with major road links in the A49 and M6 between it and the MSA site. It is therefore not considered that they would have a significant effect upon turning movements at M62J11, and indeed the Transport Assessments submitted in support of these developments did not assess the performance of the M62J11. The growth in

traffic resulting from the Omega development is therefore assumed to be included within the overall growth factors calculated for through movements on the M62 mainline and set out below.

8.4.3 Development ii, the former Bayleaf Public House, is for an extra care facility located some 3 miles from the site, on the far side of the M6 motorway. A Transport Statement accompanied the planning application, and this set out that the peak hour traffic generation of the development would be 12 two-way trips. It is not considered that this will have a discernible effect on the highway network in the vicinity of the site and it is therefore not considered any further.

8.4.4 Development iii, The Quadrant, is included within development iv (application ref 2015/26044) which is an update to previous planning consents at Birchwood Business Park to amend the quantum of different land uses consented at the site.

8.4.5 Development iv, Birchwood Business Park, is a major development which originally received planning consent some 18 years ago. Since then a number of phases have been built out, and there is a large amount of floorspace yet to be implemented. In order to identify the level of traffic likely to be generated by the unimplemented floorspace, i-Transport has liaised with officers at Warrington Borough Council (WBC) and reference has been made to the TA produced by Vectos to accompany application 2015/26044.

8.4.6 Table 2.1 of the 2015 Vectos TA sets out levels of floorspace delivered at that time, and Table 4.2 of the same TA set out the updated levels of floorspace for which consent was being sought. Officers of WBC have confirmed that since 2015, three B2/B8 buildings consented under application 2015/26044 have been constructed and brought into use. These buildings are on Cavendish Avenue and are occupied by BiSN Oil Tools, Werfen and Bathgate Flooring. The resultant level of consented and implemented floorspace at Birchwood Business Park as of November 2018 is therefore set out below:

Table 8.9 Consented Floorspaces (GFA) at Birchwood Business Park

Land Use	Implemented by 2015[1]	Implemented since 2015[2]	Consented[3]	Total Implemented	Remaining
B1	48,413m^2	-	91,235m^2	48,413m^2	42,822m^2
B2/B8	7,365m^2	4,894m^2	40,215m^2	12,259m^2	27,956m^2

1. From Table 2.1 of Vectos TA for application 2015/26044.
2. Floorspace from Plan 4 of Vectos TA for application 2014/23358 (Quadrant).
3. From Table 4.2 of Vectos TA for application 2015/26044.

8.4.7 The Vectos TA includes trip rates for each of the land uses, and the resultant trips from the remaining floorspace at the site are set out in Tables 8.10 and 8.11 below:

Table 8.10 Committed Development Trips – AM Period

Land Use	Trip Rates				Trip Numbers			
	07:00-08:00		07:30-08:30		07:00-08:00		07:30-08:30	
	Arrive	Depart	Arrive	Depart	Arrive	Depart	Arrive	Depart
B1	0.771	0.086	1.401	0.152	330	37	600	65
B2/B8	0.258	0.082	0.426	0.077	72	23	119	22
Total					**402**	**60**	**719**	**87**

Table 8.11 Committed Development Trips – PM Period

Land Use	Trip Rates				Trip Numbers			
	16:00-17:00		16:30-17:30		16:00-17:00		16:30-17:30	
	Arrive	Depart	Arrive	Depart	Arrive	Depart	Arrive	Depart
B1	0.227	1.139	0.213	1.507	97	488	91	645
B2/B8	0.074	0.223	0.067	0.277	21	62	19	77
Total					**118**	**550**	**110**	**722**

8.4.8 This traffic has been assigned to the local network in line with trip assignment figures set out in the TPi Transport Assessment that accompanied the original application for the site.

8.4.9 Traffic Flow Diagrams showing the committed development flows through the Birchwood Way signals and the M62J11 are included in **Appendix 8.G.**

8.4.10 The percentage impact of the committed development flows upon the 2018 baseline flows passing through Junction 11 and along Birchwood Way is shown in Table 8.12. below:

Table 8.12 Percentage Impact of Committed Development Trips on J11 Roundabout

Time Period	2018 Baseline trips through J11 Roundabout (PCU)	Committed Development trips through J11 Roundabout (PCU)	Increase due to Committed Development
07:00-08:00	2650	462	17.4%
07:30-08:30	2786	806	28.9%
16:00-17:00	2921	668	22.9%
16:30-17:30	2952	832	28.2%

8.4.11 Tables 8.10 and 8.11 above demonstrate that there is a significant level of traffic forecast to be generated by the areas of Birchwood Business Park that are yet to be implemented. It is considered that this will be the principle contributor to traffic growth on the Birchwood Way corridor; indeed, Table 8.12 demonstrates that traffic levels through Junction 11 following full implementation can be expected to be up to 28.9% higher than they are currently. It is therefore proposed not to apply traffic growth factors to flows to or from Birchwood Way as growth will be accounted for by including the committed development trips within the baseline traffic flows for the future assessment years.

8.4.12 The Birchwood Business Park first came into use in 2000 and, as set out above, just over half the consented floorspace has been implemented. It would therefore be reasonable to expect that the remaining floorspace could be implemented over several years. However in the interests of simplicity, and in the absence of any more detailed information on likely future build-out rates of the business park, at this stage the full committed development flows have been included in the 2022 baseline flows. This clearly represents a worst case for the traffic impact assessment.

8.4.13 Growth relating to more distant developments, such as those at Omega, will be accounted for by applying factors calculated from Tempro to the M62 mainline traffic. TEMPRO takes account of local planning data in conjunction with national or regional traffic growth forecasts to provide factors which can provide local traffic projection factors. These are also assumed to take account of any influence on growth resulting from improved network capacity (for example in the North West the Smart Motorway schemes on the M6 and M62). The growth factors used are:

Table 8.13 TEMPro Growth Factors Applied to M62 Mainline

Year	Rural Motorway: NW Region	
	AM	PM
2018-2022	1.0619	1.0593
2018-2029	1.1398	1.1358

8.4.14 The approach detailed above is broadly consistent with that taken by WBC's consultants, Mott MacDonald, in its 'Warrington East Phase 3 – M62 Junction 11 Option Test: VISSIM Modelling' report, dated May 2018. Paragraph 4.4 of the Mott MacDonald report notes that for the Warrington East Phase 3 project a 2018 Year of Opening and 2028 Future Year were assessment and that the forecast VISSIM models assume known committed developments with background growth constrained to TEMPro; the growth factors applied by Mott MacDonald are not explicitly stated.

8.5 MSA Turn-In Rates

Methodology

8.5.1 Warrington MSA, at Junction 11 M62, will be an 'off-line' MSA with the service area accessed from the circulatory carriageway of Junction 11 of the M62. The MSA will be an Extra 'new concept' facility.

8.5.2 Turn-in rates for the MSA have been derived by calculating turn-in rates based on existing vehicle movements at Extra's off-line new concept MSA at Beaconsfield on the M40.

8.5.3 Extra's site at Beaconsfield is similar to the proposed site at Warrington in that it features many similar proposed facilities, including:

- A large Food Court with suppliers including national brands such as JD Wetherspoon, Pizza Express, McDonald's, Starbucks, Greggs, Nando's, Patisserie Valerie, M&S Simply Food, WH Smith, and KFC.
- A 105 room Ibis Hotel.
- Extensive outdoor areas including lakeside terrace with paths into landscaped grounds and preserved woodlands, and children's play area.

8.5.4 A comparison of key parameters for the existing Beaconsfield and proposed Warrington MSAs is set out in Table 8.14 below:

Table 8.14 Comparison of key parameters of Beaconsfield and Warrington MSAs

Location	Size of Amenities Building (m^2 GFA)	Number of Car Parking Spaces
Beaconsfield (existing)	5,052	523
Warrington (proposed)	5,000	536

8.5.5 Average weekday peak hour traffic volumes carried by the M62 in the vicinity of J11 and the M40 in the vicinity of the Beaconsfield MSA are also broadly comparable as set out below:

Table 8.15: Average Peak Hour Mainline Traffic Flows (Vehicles):

Motorway	MIDAS Site	07:00-08:00	07:30-08:30	16:00-17:00	16:30-17:30
M62 Eastbound	1328A	4,403	4,498	3,838	3,731
M62 Westbound	1389B	4,790	4,580	4,862	4,648
M62 two-way		**9,193**	**9,078**	**8,700**	**8,379**
M40 Northbound	8367A	4,396	4,627	4,968	5,312
M40 Southbound	8422B	6,302	6,109	5,099	5,277
M40 two-way		**10,698**	**10,736**	**10,067**	**10,589**

Source: Highways England 2017 MIDAS data

8.5.6 The Beaconsfield MSA is therefore very similar to that proposed at Warrington with the following common factors:

- Off-line location accessed from a motorway junction;
- Same MSA operator;
- Similar mix of facilities including access to outdoor leisure area; and
- Similar levels of motorway traffic benefitting from services area

8.5.7 It is therefore considered appropriate to calculate turn-in rates for the MSA proposed at Warrington based on traffic movements (turn-in rates) at the Beaconsfield MSA.

8.5.8 Existing vehicle movements at Extra's Beaconsfield MSA have been obtained for neutral month periods as follows, avoiding bank and school holidays and coinciding with periods when MIDAS mainline traffic flow data is available:

- 24th April 2018 to 3rd May 2018;
- 9th October 2018 to 20th October 2018;
- 5th November 2018 to 17th November 2018.

8.5.9 MIDAS traffic count data on the M40 has also been obtained for the same periods, on the northbound and southbound carriageways approaching the junction where the MSA is located.

8.5.10 In terms of the data itself, the following has been adopted:

- Data from Tuesdays, Wednesdays, and Thursday used in the analysis;
- The AM peak hours to be assessed at M62 J11 are 07:00-08:00 & 07:30-08:30. An AM peak hour turn-in rate for 07:00-08:00 has been derived directly, and a turn-in rate for 07:30-08:30 has been derived using 07:00-09:00 data (as only hourly turn-in flows are available);
- The PM peak hours to be assessed at M62 J11 are 16:00-17:00 & 16:30-17:30. A PM peak hour turn-in rate for 16:00-17:00 has been derived directly, and a turn-in rate for 16:30-17:30 has been derived using 16:00-18:00 data (again, as only hourly turn-in flows are available).
- Turn-in rates are calculated using flows in vehicles per hour from Extra's counters at the Beaconsfield MSA and from MIDAS. Hourly HGV turn-in data are not available and therefore turn-in flows for junction assessment have been derived by applying the derived turn-in rates to flows on M62 in PCU/hour. Turn-in flows for merge/diverge and weaving assessments use flows in vehicles/hour.

8.5.11 The turn-in and MIDAS traffic flows data at the Beaconsfield Extra new concept MSA is included at **Appendix 8.H**.

Turn-In Rates

8.5.12 The derived turn-in rates at the Beaconsfield off-line new concept MSA are calculated using observations of vehicles entering the site and mainline flows on the adjacent sections of the motorway, approaching the junction where the MSA is located. The counts of vehicles entering the site include those approaching from the local road network (as off-line MSA's can be accessed by local traffic that does not use the motorway) but traffic flow data for the local roads is not available. The turn-in rate is therefore expressed as a proportion of the approaching motorway flow.

8.5.13 The observed peak hour off-line turn-in rates are as follows:

Table 8.16: Beaconsfield MSA Observed Turn-In Rates

Hour	07:00-08:00	07:30-08:30	16:00-17:00	16:30-17:30
Turn-in Rate	4.82%	5.27%	5.46%	5.41%

8.5.14 It is therefore proposed to use the above turn-in rates for the AM and PM peak hours to be assessed respectively. These are applied to M62 mainline traffic flows approaching Junction 11 to calculate the total number of trips to the MSA.

8.5.15 In addition to traffic on the M62 mainline approaches, traffic joining the M62 at Junction 11 (from the A574 Birchwood Way) would also have the potential to call in at the MSA. It would be reasonable to expect that these drivers would be less likely to visit the MSA than those already travelling along the M62 as they would be at the start or end of their journey and therefore less likely to be in need of a break from driving. The main purpose of Motorway Service Areas as providing opportunities to take a break from driving is set out in section B4 of DfT Circular 02/2013:

> ***"Motorway service areas and other roadside facilities perform an important road safety function by providing opportunities for the travelling public to stop and take a break in the course of their journey. Government advice is that motorists should stop and take a break of at least 15 minutes every two hours. "***

8.5.16 Furthermore, it is unlikely that the MSA would attract any trips in its own right as the facilities provided within it (fuel station, convenience stores etc) are already readily available at other facilities nearby and accessed from the local road network, as shown in **Appendix 8.I.**

8.5.17 It is proposed to distribute the traffic turning into the MSA based on the traffic flows on the M62 eastbound and westbound mainline upstream of the junction, and on the A574 Birchwood Way northbound into the junction. In order to allow for the lower likelihood of drivers from Birchwood Way visiting the MSA, the flows on that approach a weighting factor of 0.5 applied for the purposes of assigning trips.

Turn-In Flows to Warrington MSA

8.5.18 The traffic flows approaching M62 J11, in vehicles/hour and pcu/hour, have been derived from average peak hour flows from MIDAS data for the mainline on the eastbound and westbound carriageways. The derived flows for 2018 are shown in Tables 8.17 and 8.18 below:

Table 8.17 Traffic Flows Approaching M62 J11 – AM Period

Link/Direction	07:00-08:00		07:30-08:30	
	Vehicles/Hour	PCU/Hour	Vehicles/Hour	PCU/Hour
Eastbound (J10-J11)	4403	5076	4498	5220
Westbound (J12-J11)	4790	5574	4580	5334

Table 8.18 Traffic Flows Approaching M62 J11 – PM Period

Link/Direction	16:00-17:00		16:30-17:30	
	Vehicles/Hour	PCU/Hour	Vehicles/Hour	PCU/Hour
Eastbound (J10-J11)	3838	4445	3731	4256
Westbound (J12-J11)	4862	5430	4648	5164

8.5.19 The turn-in flows in vehicles/hour based on the above existing flows are therefore as follows:

Table 8.19 Warrington MSA Turn-in Flows

	07:00-08:00	07:30-08:30	16:00-17:00	16:30-17:30
Vehicles/Hour	443	478	475	453
PCU/Hour	513	556	539	510

8.5.20 Turn-in flows for visitors to the MSA are shown in **Appendix 8.J**.

Staff Travel Movements

8.5.21 The turn-in rates and therefore resultant turn-in flows include movements by staff as these are included within the observed vehicle numbers entering the existing Extra MSA at Beaconsfield.

8.5.22 It is expected that the proposed development could support the generation of up to 240 Full Time Equivalent (FTE) jobs. In the interest of robustness and to allow for some part time shift working staff trip numbers have been calculated based on a total workforce of 300 persons. Staff will be drawn from the local labour market wherever practicable. Table 8.20 presents an indication of the potential shift pattern for staff working at the MSA, based on the above job creation estimate and experience at existing Extra facilities.

Table 8.20 Estimated Shift Patterns and Employee Numbers

Shift Time	Employees
07:00 – 15:30 (early shift)	109
11:00 – 20:00 (cross shift)	49
15:00 – 23:00 (late shift)	72
23:00 – 07:30 (night shift)	10
Administration (mostly office hours)	60
Total Daily	**300**

8.5.23 It is acknowledged by the Applicant that for staff at the site, and particularly for those recruited locally, the ability to travel to/from the site by means other than single occupancy private car journeys is important. A Travel Plan will therefore accompany the planning application for the MSA; this will include measures such as the introduction and management of a car sharing club and the promotion of journeys to work by alternative modes of transport to the private car. Given the location of the site it is expected that car-sharing would be the most effective measure in reducing single occupancy car trips. It is considered that a realistic and achievable mode-share target for the Travel Plan is car driver – 50%; other modes – 50%.

8.5.24 Based on these mode splits and the shift patterns set out in Table 8.20 above, Table 8.21 below shows the expected employee car arrival and departure profile for a typical weekday.

Table 8.21 Employee Trips (Typical Weekday)

Hour Commencing	Arrivals	Departures	Total
06:00	55		55
07:00		5	5
08:00	30		30
10:00	24		24
14:00	36		36
15:00		55	55
17:00		30	30
20:00		24	24
22:00	5		5
23:00		36	36
Total	**150**	**150**	**300**

8.5.25 Over a 24-hour period it is expected that there would be in the order of 300 two-way car movements associated with employee travel. The majority of trips made by employees will occur outside of the network peaks with only administration staff likely to travel in the peak. There is

an overlap of half an hour between the some of the hours to be assessed and the hours allowed for in the employee trip profile. In the interests of robustness the 5 outbound movements occurring 07:00-08:00 and the 30 inbound movements occurring 08:00-09:00 will be included in 07:30-08:30 assessments. There are no shift changes expected during the network PM peak hour of 16:00-17-00 and therefore no staff trips are expected during that period. The 30 outbound staff trips occurring during 17:00-18:00 will all be included within the assessments for 16:30-17:30.

8.5.26 Staff movements will be spread over three approach routes – M62 east and west and A574 Birchwood Way – and therefore the number of additional vehicle trips on any individual link will be minimal. The employee trips are included in the turn-in rates established above and any addition of staff trips would result in a reduction in other movements.

8.5.27 Staff vehicular trips have been assigned across the highway network in the vicinity of the site based on travel to work census data for the nearby Birchwood area (Warrington 004). Assignment calculations based on the census data are included in **Appendix 8.K**, and the proportion of staff expected to use each potential route to the site is set out in Table 8.22 below:

Table 8.22 Staff Routes to Work

Access Route	Proportion of Staff
M62 (East)	27.4%
M62 (West)	46.1%
A574 Birchwood Way (from Birchwood Way (W))	20.8%
A574 Birchwood Way (from Daten Ave)	4.4%
A574 Birchwood Way (from Moss Gate)	1.3%
Total	**100.0%**

8.5.28 The assignment of staff trips across the network is shown in **Appendix 8.L**.

Deliveries and Servicing

8.5.29 Table 8.23 below summarises the anticipated frequency of daily and weekly servicing movements to/from the MSA. These servicing movements cover the delivery of food, fuel and other goods to be sold on the site, the removal of refuse and trips associated with the routine maintenance, monitoring and repair of the premises and grounds surrounding them. The figures are based on Extra's experience of requirements at other MSAs and provide a 'high season' estimate of activity.

8.5.30 Deliveries to the MSA would usually be expected to take place during normal working hours when staff would be available to supervise off-loading. Under normal circumstances, no deliveries will be scheduled to the site overnight.

Table 8.23 Indicative Delivery/Servicing Movements

Type	COBA Class	Weekday Average	Saturday	Sunday	Weekly Total	Other Monthly
Vans/Cars	OGV1	23	14	2	131	14
7.5 Tonne	OGV2	7	1	0	36	
13.5 Tonne+	OGV2	2	0	0	10	
Artics	OGV2					3
Fuel Tanker	OGV2	1	1	0	6	
Total		**33**	**16**	**2**	**183**	**17**

8.5.31 Table 8.23 shows that the MSA will generate around 2-3 delivery/service trips per hour during weekdays, which, in the context of baseline traffic flows on the M62 will not represent a material impact. Trips at weekends will be fewer. As with employee trips, the above are included within the established turn-in rates presented in Table 8.19 above.

8.5.32 The resultant overall turn-in flows and the effect on turning movements at M62J11 in vehicles/hour and pcu's/hour are shown in **Appendix 8.M**.

Trip Rate Comparison With TRICS

8.5.33 Highways England have requested that trip numbers based on TRICS should be calculated to demonstrate that the turn-in rates set out in Table 8.19 are appropriate. The TRICS database has therefore been interrogated for MSA sites, of which there are three available with weekday surveys within the default TRICS date range, these are:

- Durham A1(M): 190 car parking spaces, includes 36-bed hotel, 2,500m^2 GFA;
- Cambridge A14: 346 car parking spaces, 6,000m^2 GFA;
- Grantham A1(M): 152 car parking spaces, 3,058m^2 GFA.

8.5.34 The peak hour trips rates for these sites is are:

Table 8.24 Peak Hour Trip Rates for MSA sites within TRICS

Site	AM		PM	
	In	Out	In	Out
A1(M) Durham	7.200	6.320	5.480	5.920
A14 Cambridge	4.000	3.700	5.383	5.583
A1(M) Grantham	3.434	3.041	3.547	3.434
Average	**4.542**	**4.092**	**4.932**	**5.087**

8.5.35 The GFA of the proposed MSA at Warrington is approximately 5,000m^2 GFA, and application of the average trip rates shown in Table 8.24 would result in the peak hour trip numbers set out in Table 8.25 below. Also set out in Table 8.25 for comparison are the peak hour turn-in flows calculated for the proposed MSA at Warrington based on existing turn-in rates at Beaconsfield:

Table 8.25 Comparison of TRICS Turn-In Flows with Proposed MSA Turn-In Flows

Methodology	AM Peak Hour[1]		PM Peak Hour[2]	
	In	Out	In	Out
TRICS Average Trip Rates	227	204	247	254
Ex. Beaconsfield Turn-In Rates[1]	478	478	475	475

[1] Flows shown are highest out of the two AM and two PM peak hours calculated.

8.5.36 As can be seen, the turn-in flows calculated through the use of TRICS average trip rates are generally around half those returned by using turn-in rates based on observations at the Beaconsfield Extra site.

8.5.37 Finally, Table 8.26 below compares actual turn-in numbers surveyed at the TRICS sites with those calculated for the proposed MSA at Warrington.

Table 8.26 Turn-in Flows for TRICS MSA sites

Site	AM Peak Hour[1]		PM Peak Hour[2]	
	In	Out	In	Out
A1(M) Durham	180	158	171	160
A14 Cambridge	240	222	365	330
A1(M) Grantham	110	106	110	105
Average of TRICS Sites	**177**	**162**	**215**	**198**
Proposed MSA	478	478	475	475

[1] busiest hour out of 07:00-08:00 and 08:00-09:00 for TRICS sites (as only hourly data available); flows for proposed MSA are for busiest hour out of 07:00-08:00 and 07:30-08:30.

[2] busiest hour out of 16:00-17:00 and 17:00-18:00 for TRICS sites (as only hourly data available); flows for proposed MSA are for busiest hour out of 16:00-17:00 and 16:30-17:30.

8.5.38 As can be seen, whilst the Durham site is shown in Table 8.24 to have the highest trip rate of the TRICS sites, this is because it is an older site (opened in 1978) with a much smaller facilities building. This results in higher trip rates despite actual trip numbers falling between those recorded at the other two sites in TRICS. In any case, the number of peak hour trips recorded at all three TRICS sites falls well below those calculated for the proposed MSA at Warrington based on existing turn-in rates at Beaconsfield. The proposed use of turn-in flows based on observations from the Beaconsfield Extra site is therefore considered very robust.

With-Development Traffic Flows

8.5.39 As set out in Section 2 of this note, the following scenarios are to be assessed:

- 2022 Baseline (2018 baseline with traffic growth and full committed development flows)
- 2022 With Development (2022 baseline with MSA visitor and staff trips)
- 2029 Baseline (2018 baseline with traffic growth and full committed development flows)
- 2029 With Development (2029 baseline with MSA visitor and staff trips)

8.5.40 Traffic flow diagrams, including weaving and merge/diverge diagrams have been produced for these scenarios and are included in **Appendix 8.N.**

8.5.41 As set out above, it has been assumed that growth on the local road network near Junction 11 would be due to continued development of the Birchwood Business Park. Currently the traffic flows generated by the build out of the unimplemented business park floorspace have been included in both the 2022 and 2029 Baseline Scenarios. There are therefore no 2029 Baseline or With Development traffic flow diagrams provided for the Birchwood Way signals as there would be no change from the 2022 Scenarios.

SECTION 9 Traffic Impacts at M62J11

9.1 Introduction

9.1.1 This section considers the traffic impacts of the MSA proposals at M62J11. It sets out:

- The development of the base year ARCADY traffic model of the junction;
- Assessments of scenarios B and C comparing the impacts of the MSA with background flows, taking account of committed developments and committed improvement schemes; and
- The identification of mitigation measure at M62J11.

9.1.2 No traffic growth is applied to the turning flows at M62J11, other than those generated by committed developments, and therefore Scenarios D and E (for 2029) are not assessed.

9.1.3 All capacity assessment model reports (outputs) are included in **Appendix 9.A.**

9.2 Base 2018 Traffic Model

9.2.1 An ARCADY model of the existing layout of M62J11 has been developed with input data taken from OS mapping.

9.2.2 The base traffic flows derived from MIDAS for average Tuesdays, Wednesdays and Thursdays in neutral months in 2018 have been input into the model, with these taken from the traffic flow diagrams in **Appendix 8.D.**

9.2.3 The results of the modelling of the existing junction are set out in Table 9.1 below with ARCADY outputs included in **Appendix 9.A.**

Table 9.1 – M62J11 – Scenario A – Base Year Results

Arm / Movement	AM Peak (0700-0800)		AM Peak (0730-0830)		PM Peak (1600-1700)		PM Peak (1630-1730)	
	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)
M62 East	0.76	3	0.90	9	0.42	1	0.44	1
Birchwood Way South	0.77	4	0.52	2	0.86	9	0.87	8
M62 West	0.43	1	0.74	3	0.42	1	0.38	1
Birchwood Way North	0.00	0	0.00	0	0.00	0	0.00	0

RFC = Ratio of Flow to Capacity Max Q = maximum average queue PCUs = Passenger Car Unit

9.2.4 The modelling demonstrates that the junction currently operates within capacity with slight queuing on the M62 East off-slip in the late AM peak hour and on Birchwood Way South in the PM peak hours. The modelled queues are broadly in-line with those observed during traffic surveys.

9.3 Opening Year Assessment

9.3.1 As set out in section 5.0 of this TA, M62 J11 is subject to improvements as part of WBC's Warrington East Phase 3 scheme and the HE's Smart Motorway Scheme. This committed layout has been considered for the opening year assessment (Scenarios B and C).

9.3.2 Scenario B is the base plus committed development traffic scenario and Scenario C is the base + committed + MSA scenario. Existing traffic flows demonstrate that the demand is split evenly in the peak hours therefore the ARCADY model has been run using a 'Flat Profile' rather than 'OD Tab'. The Entry Lane Analysis feature of ARCADY has been used in order to reflect the lane destination markings proposed on Birchwood Way as part of the Warrington East Phase 3 scheme. The results are presented in Tables 9.2 and 9.3 below:

Table 9.2 – M62J11 – Opening Year Scenarios B and C – AM Peak Hours

Arm / Movement	Scenario B: 2022 Base + Committed				Scenario C: 2022 Base + Committed + Development			
	(0700-0800)		(0730-0830)		(0700-0800)		(0730-0830)	
	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)
M62 East	0.39	1	0.49	2	0.60	2	0.72	3
Birchwood Way South	0.68	3	0.61	2	0.80	4	0.75	4
M62 West	0.25	1	0.37	1	0.54	2	0.65	2
Birchwood Way North	0.00	0	0.00	0	0.31	1	0.36	1
Junction Delay (s)	4.89		4.93		7.58		8.10	

RFC = Ratio of Flow to Capacity Max Q = maximum average queue PCUs = Passenger Car Unit

Table 9.3 – M62J11 – Opening Year Scenarios B and C – PM Peak Hours

Arm / Movement	Scenario B: 2022 Base + Committed				Scenario C: 2022 Base + Committed + Development			
	(1600-1700)		(1630-1730)		(1600-1700)		(1630-1730)	
	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)
M62 East	0.22	1	0.23	1	0.45	1	0.45	1
Birchwood Way South	0.84	7	0.90	10	1.00	37	1.07	108
M62 West	0.21	1	0.21	1	0.46	1	0.44	1
Birchwood Way North	0.01	0	0.01	0	0.30	0	0.28	1
Junction Delay (s)	8.63		11.21		30.67		78.50	

RFC = Ratio of Flow to Capacity Max Q = maximum average queue PCUs = Passenger Car Unit

9.3.3 The modelling demonstrates that with the committed improvement scheme built out the junction operates approaching capacity with the committed development traffic in the later PM peak hour. The impact of the re-assignment of existing M62 traffic to the MSA is shown to lead to the Birchwood Way arm of the junction operating just over capacity. This however is shown to lead to extensive queues on Birchwood Way.

9.3.4 A signals scheme is therefore proposed to mitigate the impacts of the MSA on M62J11. The signals layout is shown on i-Transport drawing ITM12377-SK024 Rev C included in Appendix 7.B. As can be seen, this would include controlled pedestrian crossings to facilitate the safe passage of pedestrians across the junction. This is a significant benefit of the proposed scheme

in addition to the improved level of operation provided for vehicles passing through the junction.

9.3.5 A LinSig model of this proposed layout has been developed and the results are presented in Table 9.4. MOVA has been included in the modelling and start lags have been coded as 1 second.

Table 9.4 – M62J11 – Proposed Signalisation Scheme

Link	Arm/Movement	Scenario C: 2022 Base + Committed + MSA							
		0700-0800		0730-0830		1600-1700		1630-1730	
		DoS	MMQ (PCUs)	DoS	MMQ (PCUs)	DoS	MMQ (PCUs)	DoS	MMQ (PCUs)
1/1 + 1/2	M62 WB Off-Slip	55.3%	6	60.6%	8	36.3%	4	35.7%	4
2/1	Birchwood Way South Left	29.5%	3	30.9%	3	87.5%	19	88.5%	20
2/2	Birchwood Way South Ahead Left	79.9%	15	75.1%	13	81.9%	16	82.8%	17
3/2+3/1	M62 EB Off-Slip Left Ahead	77.6%	6	82.8%	9	66.1%	5	51.3%	4
4/1	Birchwood Way North Left Ahead	54.5%	4	58.9%	5	46.6%	4	37.8%	4
4/2	Birchwood Way North Ahead	50.7%	4	55.0%	5	45.6%	4	36.0%	4
9/1	Circulating East Ahead	12.3%	0	22.4%	0	13.3%	1	12.8%	1
9/2	Circulating East Ahead Right	78.9%	5	82.5%	6	74.9%	5	64.2%	5
10/1+10/2	Circulating South Ahead Right	69.9%	5	70.2%	7	81.4%	11	84.2%	11
11/1+11/2	Circulating West Ahead Right	84.1%	3	85.4%	18	75.3%	18	79.0%	6
12/1	Circulating North Ahead Right	83.1%	3	82.8%	6	74.7%	4	80.4%	5
12/2	Circulating North Right	20.0%	5	28.4%	7	19.9%	5	20.7%	4
Practical Reserve Capacity (PRC)		PRC: 7.0%		PRC: 5.4%		PRC: 2.9%		PRC: 1.7%	
Cycle Time (s)		60		60		60		60	
Total Delay (pcu Hr)		24.06		28.27		29.11		29.01	

DoS = Degree of Saturation MMQ = Mean Maximum Queue PCUs = Passenger Car Units

9.3.6 Table 9.4 demonstrates that with the signalisation scheme in place the junction operates within capacity with the MSA and the committed developments fully operational. It is therefore concluded that the mitigation scheme delivers sufficient capacity to cater for the re-assignment

of traffic and new trips associated with the MSA. In particular, the queues on the slip roads are short and do not extend to the mainline of M62.

SECTION 10 Traffic Impacts on M62J11 Slip Roads and Weaving

10.1 Introduction

10.1.1 This section considers the impacts of the MSA development proposals on merge / diverge provision at the M62J11 slip roads and on weaving movements between junctions 10 and 11 of the M62 motorway. Junction 12 is some 10km to the east of J11. TD22 notes that, for rural motorways, when junctions are above about 3km apart then merges and diverges tend not to interact and can be considered separate entities, since weaving ceases to occur.

10.1.2 The traffic flows adopted are those derived as set out above and included in **Appendix 8.E.** The MSA will typically add traffic to the slip roads at M62J11 and, consequently, reduce traffic on the M62 mainline under the junction.

10.1.3 Merge diverge and weaving provision has been assessed at the scheme opening year of 2022 (Scenarios B and C) and also the design year of 2029 (Scenarios D and E). Assessments of the base 2018 position are also presented.

10.2 Merge / Diverge Assessment

Existing Provision

10.2.1 Merge / diverge provision has been assessed using the approach set out in TD22, supplemented by IAN149 where appropriate.

10.2.2 The M62 motorway currently has three lanes on the mainline both upstream and downstream of M62J11. The slips are all type A i.e. taper merge and taper diverge. The eastbound merge currently has one connector lane whilst the eastbound diverge has two connector lanes. Both the westbound merge and diverge have two connector lanes.

10.2.3 As part of the Highways England Smart Motorway scheme the mainline is to become four lanes both upstream and downstream of M62J11. The slips are to remain as type A taper merges / diverges, with the exception of the eastbound merge, which is to be upgraded from a type A to a type B parallel merge.

10.2.4 The Smart Motorway scheme also results in some changes to connector lane provision on the slip roads at M62J11. The number of lanes on the westbound merge and on the eastbound

diverge will reduce from two to one. The eastbound merge and westbound diverge arrangements are unchanged.

10.2.5 The existing and future provision at the slip roads has been compared to the theoretical requirement, derived using TD22 and base year 2018 traffic flows. TD22 merge / diverge diagrams are included in **Appendix 10.A** for all scenarios.

10.2.6 The eastbound merge is currently a type A simple taper merge with one lane on the slip road and three lanes on the mainline. The highest existing traffic flows on the slip road and on the mainline are in the early AM Peak (0700-0800); TD22 indicates that the theoretical provision should be a type B parallel merge with one lane on the slip and three lanes on the M62 both upstream and downstream of the junction.

10.2.7 The westbound merge is currently a type A simple taper merge with two lanes on the slip road and three lanes on the motorway. The highest existing traffic flows on the slip road are on the late PM peak (1630-1730) and those on the mainline are in the early PM peak (1600-1700). TD22 analysis indicates that the theoretical provision should be a type E lane gain with one lane on the slip and three lanes on the M62 upstream of the junction and four lanes downstream of the junction.

10.2.8 The eastbound diverge is currently a type A simple taper diverge with two lanes on the slip road and three lanes on the motorway. The highest existing traffic flows on the slip road are in the late AM peak (0730-0830) and those on the mainline are in the early AM peak (0700-0800). TD22 analysis shows that the existing provision is appropriate.

10.2.9 The westbound diverge is currently a type A simple taper merge with two lanes on the slip road and three lanes on the mainline. The highest existing traffic flows on the slip road are in the late AM peak (0730-0830) and those on the mainline are in the early PM peak (1600-1700). TD22 analysis indicates that the theoretical provision should be a type C lane drop taper diverge with one lane on the slip, three lanes on the mainline upstream and two lanes on the mainstream downstream.

10.2.10 The future provision at each slip is now considered, using the traffic flows included in **Appendix 8.E.** The need to apply corrections for Large Goods Vehicles and gradients has been assessed, using the approach set out in TD22, and these are not needed.

Eastbound Merge

10.2.11 The eastbound merge is to become a type B parallel merge under the Highways England Smart Motorway scheme and existing traffic flows indicate that this is appropriate.

10.2.12 The summary results of the TD22 analysis are set out in Table 10.1 below for this slip road for all the traffic flows scenarios considered. The table shows the theoretical merge provision, number of slip road lanes and the number of lanes required upstream and downstream on the M62 motorway.

Table 10.1 M62J11 Eastbound Merge

Scenario	Merge Type		No. of Lane Connectors		Upstream Mainline Lanes		Downstream Mainline Lanes	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Current Layout	A		1		3		3	
Future Layout	B		1		4		4	
Scenario A: 2018 Observed (0700-0800 & 1600 – 1700)	B	E	1	1	3	2	3	3
Scenario A: 2018 Observed (0730-0830 & 1630 – 1730)	A or D	E	1	1	2	2	3	3
Scenario B: 2022 Base (0700 -0800 & 1600 – 1700)	E	A or D	1	1	3	3	3	4
Scenario C: 2022 Base + MSA (0700 – 0800 & 1600 – 1700)	E	E	1	1	3	3	4	3
Scenario B: 2022 Base (0730 – 0830 & 1630 – 1730)	A or D	E	1	1	3	2	3	3
Scenario C: 2022 Base + MSA (0730 – 0830 & 1630 – 1730)	B	E	1	1	3	2	3	3
Scenario D: 2029 Base (0700 – 0800 & 1600 – 1700)	E	B	1	1	3	3	4	3
Scenario E: 2029 Base +MSA (0700-0800 & 1600-1700)	E	B	1	1	3	3	4	3
Scenario D: 2029 Base (0730 – 0830 & 1630 1730)	B	A or D	1	1	3	3	3	3
Scenario E: 2029 Base + MSA (0730 – 0830 & 1630 – 1730)	B	B	1	1	3	3	3	3

10.2.13 The highest flows on both the mainline and the slip road are in the early AM peak (0700-0800) in all assessment scenarios. The future year scenarios indicate that the theoretical requirement is for a type E merge, a lane gain with one lane on the slip, three lanes upstream on the mainline and four lanes downstream on the mainline.

10.2.14 Scenarios B and D show that the increase in traffic flows on the slip road resulting from background traffic growth change the theoretical requirement from a type B parallel merge to a type E lane gain in the early AM peak, whereas the impact of the development does not have an impact upon the theoretical provision on number of lanes required.

10.2.15 The MSA adds 183 vehicles to the merge in the early AM peak hour (0700-0800) but reduces the mainline flow by a corresponding amount. Analysis of the TD22 merge diagrams in Appendix 10.A shows that the MSA has no material impact on merge provision.

10.2.16 It is therefore concluded that improvements to this slip are not required as a result of the MSA.

Westbound Merge

10.2.17 The slip road is to remain as a type A as part of the Smart Motorway scheme. Existing traffic flows indicate that the theoretical provision should be a type E (lane gain).

10.2.18 Results for all traffic flow scenarios are set out in Table 10.2 below, summarising the TD22 analysis.

Table 10.2 M62J11 Westbound Merge

Scenario	Merge Type		No. of Lane Connector		Upstream Mainline Lanes		Downstream Mainline Lanes	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Current Layout	A		2		3		3	
Future Layout	A		1		4		4	
Scenario A: 2018 Observed (0700-0800 & 1600 – 1700)	A or D	E	1	1	3	3	3	4
Scenario A: 2018 Observed (0730-0830 & 1630 – 1730)	A or D	E	1	1	3	3	3	4
Scenario B: 2022 Base (0700 -0800 & 1600 – 1700)	A or D	E	1	1	3	3	3	4
Scenario C: 2022 Base + MSA (0700 – 0800 & 1600 – 1700)	A or D	F	1	2	3	3	3	4
Scenario B: 2022 Base (0730 – 0830 & 1630 – 1730)	A or D	F	1	2	3	3	3	4
Scenario C: 2022 Base + MSA (0730 – 0830 & 1630 – 1730)	A or D	F	1	2	3	3	3	4
Scenario D: 2029 Base (0700 – 0800 & 1600 – 1700)	A or D	E	1	1	3	3	3	4
Scenario E: 2029 Base +MSA (0700-0800 & 1600-1700)	A or D	F	1	2	3	3	3	4
Scenario D: 2029 Base (0730 – 0830 & 1630 - 1730)	A or D	F	1	2	3	3	3	4
Scenario E: 2029 Base + MSA (0730 – 0830 & 1630 – 1730)	A or D	F	1	2	3	3	3	4

10.2.19 The highest flows on the slip are in the late PM peak (1630-1730) but the highest flows on the mainline are in the early PM peak (1600-1700). Both peak hours are considered.

10.2.20 The traffic flows for the future year scenarios indicate that a type F merge, a lane gain with ghost island merge would be required with two lanes on the slip and four lanes on the downstream mainline of the junction.

10.2.21 The theoretical merge provision is a type F in the late evening peak in all the future year scenarios demonstrating that this level of provision would be required even without the MSA in place. The introduction of the MSA proposals do not have an impact upon the theoretical provision or number of lanes required.

10.2.22 Analysis of the TD22 merge diagrams in Appendix 10.A shows that the MSA has no material impact on merge provision.

10.2.23 It is therefore concluded that improvements to this slip road are not required as a result of the MSA.

Eastbound Diverge

10.2.24 The eastbound diverge slip is currently a type A with two connector lanes, this is to remain a type A under the Smart Motorway proposals but the number of connector lanes is to reduce to from two to one. TD22 analysis with 2018 traffic flows confirms that this is appropriate.

10.2.25 Results for all traffic flow scenarios are set out in Table 10.3 below, summarising the TD22 analysis.

Table 10.3 M62J11 Eastbound Diverge

Scenario	Merge Type		No. of Lane Connectors		Upstream Mainline Lanes		Downstream Mainline Lanes	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Current Layout	A		2		3		3	
Future Layout	A		1		4		4	
Scenario A: 2018 Observed (0700-0800 & 1600 – 1700)	A	C	1	1	3	3	3	2
Scenario A: 2018 Observed (0730-0830 & 1630 – 1730)	A	C	1	1	3	3	3	2
Scenario B: 2022 Base (0700 -0800 & 1600 – 1700)	A	A	1	1	3	3	3	3
Scenario C: 2022 Base + MSA (0700 – 0800 & 1600 – 1700)	A	A	1	1	3	3	3	3
Scenario B: 2022 Base (0730 – 0830 & 1630 – 1730)	A	A	1	1	3	3	3	3
Scenario C: 2022 Base + MSA (0730 – 0830 & 1630 – 1730)	A	C	1	1	3	3	3	2
Scenario D: 2029 Base (0700 – 0800 & 1600 – 1700)	A	A	1	1	3	3	3	3
Scenario E: 2029 Base +MSA (0700-0800 & 1600-1700)	A	A	1	1	3	3	3	3

Scenario	Merge Type		No. of Lane Connectors		Upstream Mainline Lanes		Downstream Mainline Lanes	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Scenario D: 2029 Base (0730 – 0830 & 1630 - 1730)	A	A	1	1	3	3	3	3
Scenario E: 2029 Base + MSA (0730 – 0830 & 1630 – 1730)	A	A	1	1	3	3	3	3

10.2.26 The highest flows on the diverge slip road are in the late AM peak (0730-0830) with those on the mainline in the westbound direction being in the early AM peak (0700-0800).

10.2.27 Table 10.3 and Appendix 10.A indicate that for scenarios B to E the theoretical provision should be layout type A with the exception of the later PM peak in scenario C which suggests that the provision should be layout type C. This however is due to the traffic turning into the MSA reducing the downstream mainline traffic. Generally, the theoretical provision remains a type A with the addition of the MSA proposals, with neither the provision or the number of lanes changing.

Westbound Diverge

10.2.28 When the Smart Motorway scheme is complete this slip road will be a type A taper merge with two lanes on the slip and four lanes on the mainline. The existing late AM peak (0730-0830) traffic flows indicate that a type C lane drop at a taper diverge is required, changing from 3 lanes upstream to 2 lanes on the downstream.

10.2.29 The diverge assessment summary results are set out in Table 10.4 below for all traffic flow scenarios, summarising the TD22 analysis included in **Appendix 10.A.**

Table 10.3 M62J11 Westbound Diverge

Scenario	Merge Type		No. of Lane Connector		Upstream Mainline Lanes		Downstream Mainline Lanes	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Current Layout	A		2		3		3	
Future Layout	A		2		4		4	
Scenario A: 2018 Observed (0700-0800 & 1600 – 1700)	A	A	1	1	3	3	3	3
Scenario A: 2018 Observed (0730-0830 & 1630 – 1730)	A	A	1	1	3	3	3	3
Scenario B: 2022 Base (0700 -0800 & 1600 – 1700)	A	A	1	1	3	3	3	3
Scenario C: 2022 Base + MSA (0700 – 0800 & 1600 – 1700)	A	A	1	1	3	3	3	3
Scenario B: 2022 Base (0730 – 0830 & 1630 – 1730)	A	A	1	1	3	3	3	3
Scenario C: 2022 Base + MSA (0730 – 0830 & 1630 – 1730)	A	A	1	1	3	3	3	3
Scenario D: 2029 Base (0700 – 0800 & 1600 – 1700)	A	A	1	1	3	3	3	3
Scenario E: 2029 Base +MSA (0700-0800 & 1600-1700)	A	A	1	1	3	3	3	3
Scenario D: 2029 Base (0730 – 0830 & 1630 - 1730)	A	A	1	1	3	3	3	3
Scenario E: 2029 Base + MSA (0730 – 0830 & 1630 – 1730)	A	A	1	1	3	3	3	3

10.2.30 The highest traffic flows on the slip road are in the late AM peak (0730-0830) whilst on the mainline they are in the early PM peak (1600-1700).

10.2.31 The analysis shows that in the early PM peak in scenarios B to E a layout type A with one connector lane on the slip and three lanes on the mainline is appropriate.

10.2.32 The MSA proposals do not impact upon the theoretical provision or the number of lanes in the 2032 scenarios. It is therefore concluded that the impacts of the development are not severe.

Summary

10.2.33 It is concluded that although the smart motorway layout at M62J11 does not meet the theoretical provision set out TD22 in all the future year scenarios. The proposed development

does not impact upon the theoretical provision and therefore the impacts of the development at all four slip roads are not severe and no improvements or mitigation are required.

10.3 Weaving Assessment

10.3.1 The weaving assessment indicates the number of lanes needed on the mainline of the M62 motorway, taking account of the major and minor weaving flows and the existing weaving lengths. The formula set out in TD22 is used to calculate the number of lanes.

10.3.2 The weaving movements between junction 11 and junction 12 have not been assessed due to the distance between the two junctions (over 10km).

10.3.3 The existing weaving lengths between junctions 10 and 11 are as follows:-

Table 10.5 Existing Weaving Lengths

Section M62	Weaving Length
J10 – J11	2,450m
J11 – J10	1,610m

10.3.4 The traffic flows set out in the weaving assessments are those in vehicles per hour set out in **Appendix 8.E.** ANPR surveys have been used to match vehicles travelling eastbound from the M62 J10 on-slip to the J11 off-slip, and those travelling westbound to the M62 J10 off-slip from the J11 on-slip. Once these proportions are identified, it is possible to determine all other flows required for the weaving calculation (mainline-mainline, on-slip to mainline, and mainline to off-slip) by using existing MIDAS data. This is set out in more detail in Section 8.

10.3.5 The non-weaving proportions applied to the slip road flows at junctions 10 and 11 are as follows:

Table 10.6 Weaving Proportions

On Slip	Off Slip	Non-Weaving Proportion			
		AM Peak (0700–0800)	AM Peak (0730-0830)	PM Peak (1600-1700)	PM Peak (1630-1730)
Junction 10 Eastbound	Junction 11 Eastbound	7%	9%	16%	20%
Junction 11 Westbound	Junction 10 Eastbound	50%	41%	37%	33%

10.3.6 The weaving calculations are set out in detail in **Appendix 10.B** for all traffic flow assessment scenarios. A summary of the weaving assessment, identifying the theoretical number of lanes required on the mainline of the M62 motorway, is set out in table 10.7.

Table 10.7 Weaving Assessment – Number of Mainline Lanes Required

Scenario	Section of M62			
	M62 J10 – M62 J11		M62 J11 – M62 J10	
	AM	PM	AM	PM
Current Layout	3.00		3.00	
Future Layout	4.00		4.00	
Scenario A: 2018 Base (0700-0800 & 1600–1700)	2.58	2.32	2.56	3.96
Scenario A: 2018 Base (0730-0830 & 1630-1730)	2.73	2.24	2.47	3.99
Scenario B: 2022 Base (0700-0800 & 1600-1700)	2.84	2.47	2.72	4.29
Scenario B: 2022 Base (0730-0830 & 1600-1730)	3.09	2.39	2.62	4.38
Scenario C: 2022 Base + MSA (0700-0800 & 1600-1700)	2.96	2.61	2.83	4.42
Scenario C: 2022 Base + MSA (0730-0830 & 1630-1730)	3.22	2.51	2.74	4.50
Scenario D: 2029 Base (0700-0800 & 1600-1700)	3.02	2.62	2.89	4.48
Scenario D: 2029 Base (0730-0830 & 1630-1730)	3.27	2.53	2.78	4.55
Scenario E: 2029 Base + MSA (0700-0800 & 1600-1700)	3.14	2.76	3.00	4.61
Scenario E: 2029 Base + MSA (0730-0830 & 1630-1730)	3.40	2.66	2.90	4.68

J10 – J11 Eastbound

10.3.7 The assessments with the base flows indicate that the existing three lane provision on this section of the motorway is appropriate.

10.3.8 Scenarios B to E demonstrate that on this section of the motorway three lanes on the mainline is sufficient, with background traffic growth applied and committed development flows and the MSA proposals in place. This section of motorway is to become four lanes as part of the Smart Motorway Proposals.

10.3.9 It is therefore concluded that four lanes is appropriate on this section of the M62 motorway and improvements are not required as a result of the development proposals.

J11 – J10 Westbound

10.3.10 The existing traffic flows on this section of the motorway are high in the PM peak hours and the weaving calculations identify the possible theoretical requirement for four lanes in both of the PM peak hours in the baseline scenario. This section of the M62 will become four lanes as part of the Smart Motorway Scheme.

10.3.11 As traffic increases as a result of background traffic growth and already committed development then the number of lanes calculated using the weaving formula increases above four lanes prior to the Proposed Development. The weaving calculations assume the maximum mainline flow to be 1,800 vehicles per hour (vph) (as per TA22/06 Paragraph 3.3). It is however considered that the use of 1,800 vph understates the mainline capacity. For example, Congestion Reference Flows derived from TA46/97 (Annex D) would result in greater mainline flow capacities.

10.3.12 Scenario D, which relates to the 2029 Future Year scenario prior to the development, indicates that the theoretical requirement is for 4.55 lanes. The 2029 scenarios are not intended to determine impacts for mitigation; rather, in line with HE's guidance, they should be used to determine the risk which will transfer to HE. With the addition of the proposed MSA this theoretical requirement increases to 4.68 lanes, an increase of just 0.13 of a lane. It is therefore concluded that the theoretical requirement is no different as a result of the development and the MSA does not impact upon mainline requirements for weaving traffic. Therefore improvements are not required as a result of the MSA proposals.

10.3.13 Overall, considering the two weaving sections of M62 between junctions 10 and 11, it is concluded that the development does not have a severe impact and mitigation is not necessary.

SECTION 11 Traffic Impacts on the Local Road Network

11.1 Introduction

11.1.1 The MSA is primarily expected to attract traffic from the M62 motorway with very few additional trips from A574 Birchwood Way. This is the approach adopted in the derivation of traffic flows set out in Section 8.0 and given in **Appendices 8.D** and **8.E.**

11.1.2 The MSA will add a small number of staff trips (c.8 during the am peak) to the local road network and the impact of these additional trips has therefore been modelled at the Birchwood Way / Daten Avenue signalised junction. A LinSig model has been produced and the following scenarios have been assessed:

- Scenario A – 2018 base
- Scenario B – 2022 Base + Committed Developments
- Scenario C – 2022 Base + Committed + MSA

11.2 Base 2018 Model

11.2.1 A LINSIG model of the existing layout of the Birchwood Way / Daten Avenue junction has been developed with input data taken from OS mapping, as-built drawings and traffic signal controller information supplied by WBC.

11.2.2 The observed base traffic flows derived from November 2018 surveys have been input into the model, with traffic flows adjusted to match average MIDAS traffic flows to and from M62J11 as set out in Section 8.0.

11.2.3 The results of the modelling of the existing junction are set out in Table 11.1 below with LinSig outputs included in **Appendix 11.A**.

Table 11.1 – Birchwood Way / Daten Avenue / Moss Gate – 2018 Baseline Results

Link	Arm/Movement	Scenario A – 2018 Base			
		AM Peak (0730-0830)		PM Peak (1645-1745)	
		DoS	MMQ (PCUs)	DoS	MMQ (PCUs)
1/2+1/1	Moss Gate Left Ahead Right	65.8%	6	90.7%	11
2/1	A574 Birchwood Way South Left Ahead	61.4%	7	95.0%	17
2/2+2/3	A574 Birchwood Way South Right Ahead	65.7%	9	96.1%	20
3/2+3/1	Daten Avenue Left	66.6%	7	95.2%	23
3/3	Daten Avenue Right	15.5%	1	22.8%	2
4/2+4/1	A574 Birchwood Way North Left Ahead	56.9%	8	32.3%	5
4/3+4/4	A574 Birchwood Way North Right	55.4%	7	24.6%	3
Practical Reserve Capacity		PRC: 35.1%		PRC: -6.8%	
Cycle Time (s)		90		90	
Total Delay (pcuHr)		28.84		50.52	

DoS = Degree of Saturation MMQ = Mean Maximum Queue PCUs = Passenger Car Units

11.2.4 The modelling demonstrates that the junction is currently approaching capacity in the the PM peak, with queuing on Moss Gate, Birchwood Way and Daten Avenue. The southern Birchwood Way approach has the highest degree of saturation in the PM peak hour at 96.1%.

11.3 Scenarios B and C

11.3.1 Scenario B is the base plus committed scenario, whilst scenario C is the base + committed + MSA traffic. As noted earlier, the only difference between these two scenarios is the small number of staff trips associated with the development.

11.3.2 The summary results from the LINSIG modelling of these scenarios are set out in Table 11.2 below.

Table 11.2 – Birchwood Way / Daten Avenue / Moss Gate – Scenarios B & C

Link	Arm/Movement	Scenario B – 2022 Base + Committed				Scenario C – 2022 Base + Committed + Development			
		AM Peak (0730-0830)		PM Peak (1645-1745)		AM Peak (0730-0830)		PM Peak (1645-1745)	
		DoS	MMQ (PCUs)	DoS	MMQ (PCUs)	DoS	MMQ (PCUs)	DoS	MMQ (PCUs)
1/2+1/1	Moss Gate Left Ahead Right	66.8%	7	105.8%	23	66.8%	7	105.8%	23
2/1	A574 Birchwood Way South Left Ahead	66.9%	8	110.9%	47	67.1%	8	110.9%	47
2/2+2/3	A574 Birchwood Way South Right Ahead	70.8%	10	111.3%	56	71.8%	10	111.3%	56
3/2+3/1	Daten Avenue Left	66.0%	7	109.7%	72	66.2%	7	109.7%	72
3/3	Daten Avenue Right	16.3%	1	29.0%	2	16.3%	1	29.0%	2
4/2+4/1	A574 Birchwood Way North Left Ahead	70.0%	11	33.3%	5	70.2%	11	33.8%	5
4/3+4/4	A574 Birchwood Way North Right	60.6%	8	24.8%	3	60.6%	8	24.9%	3
Practical Reserve Capacity (PRC)		PRC: 27.1%		PRC: -23.7%		PRC: 25.4%		PRC: -23.7%	
Cycle Time (s)		90		90		90		90	
Total Delay (pcu Hr)		32.84		171.50		33.02		171.55	

DoS = Degree of Saturation MMQ = Mean Maximum Queue PCUs = Passenger Car Units

11.3.3 Table 11.2 demonstrates that the junction will continue to operate within capacity in the AM peak with the proposed MSA having very little impact upon the operation of the junction. However, in the PM peak the junction operates over capacity as a result of the addition of committed development traffic flows, with significant queueing on Birchwood Way South and Daten Avenue i.e. regardless of whether the MSA is in operation or not. The impact of the MSA proposals is very limited with no increase in queues observed across the AM and PM peaks as a result of the staff trips.

11.3.4 It is therefore concluded that the MSA proposals have a negligible impact upon the operation of the local road network and therefore no mitigation is required.

SECTION 12 Impacts on Road Safety

12.1 Introduction

12.1.1 The development of the MSA at M6211 will result in significant road safety benefits access the wider motorway network as it will satisfy a road safety 'need' related to the gap in existing MSA provision, as set out in Section 6.0.

12.1.2 The MSA will result in changes in traffic flows at M62J11 and its slip roads and the impacts of these on road safety are considered in this section.

12.1.3 This section therefore includes:-

- A description of existing collision data;
- An assessment of the impacts of the development on road safety at M62J11 and its slip roads;
- An assessment of the impacts of the development on road safety along the M62 in the vicinity of the site; and
- An assessment of the impacts of road safety on the local road network.

12.2 Existing Collision Data

12.2.1 Existing collision records have been obtained from WBC for the local area, including A574 Birchwood Way and the following junctions:

- M62 Junction 11 – including slip roads
- Moss Gate / A574 Birchwood Way / Daten Avenue

12.2.2 The data has been obtained for the five-year period ending July 2018 and is included in **Appendix 12.A.**

12.2.3 A summary of the collisions is set out in Table 12.1 below:-

Table 12.1: Summary of Historic Collision Data

	Severity			
	Slight	Serious	Fatal	Total
M62 Junction 11 – Roundabout	7	0	0	7
M62 Junction 11 – Slip Roads	2	0	0	2
M62 Junction 11 – Mainline	3	0	0	3
Moss Gate / A574 Birchwood Way / Daten Avenue	1	1	0	2
A574 Birchwood Way Link	2	0	0	2
Total	15	1	0	16

12.2.4 As can be seen, a total of 16 collisions occurred in the highlighted area during the five-year period, 15 of these were reported as slight and 1 serious.

12.2.5 The serious accident occurred on Moss Gate near the junction with Birchwood Way and involved a car and a bicycle, with the cyclist receiving serious injuries. Contributory factors recorded were a failure to look properly and defective brakes.

12.2.6 Nine of these collisions occurred within the vicinity of the M62 J11 (including slip roads), three on the mainline under M62J11, two on A574 Birchwood Way in between the junction of Moss Gate / A574 Birchwood Way / Daten Avenue and the M62 Junction 11 and two were located at the junction of Moss Gate / A574 Birchwood Way / Daten Avenue.

12.2.7 There have been seven accidents in the most recent five years at the roundabout of M62 J11 (i.e. excluding slip roads), which equates to 1.4 accidents per year. The accident descriptions provided by WBC demonstrate that there are no patterns to the seven accidents, in that they occur at varying times on varying days of the week. Just one of the accidents occurred during typical weekday peak times (at 16:15) therefore it reasonable to infer that the majority of accidents were not in relation to high levels of traffic. In addition, two of the seven accidents involved drivers who provided positive breath tests for alcohol, and one of these was a single vehicle collision.

12.2.8 Of the 15 slight collisions reported in this area a range of contributory factors are listed with driver failing to look properly the most common contributory factor. Additional common contributory factors in these collisions include driver impairment by alcohol, poor turn / manoeuvre, failure to judge speeds and following too closely.

12.3 Road Safety at M62J11

12.3.1 The collision data shows that seven accidents occurred at the motorway junction in the most recent five year period, all of which were slight in nature. Whilst the MSA development will add traffic to the junction, the capacity assessments presented in Section 9.0 conclude that the impacts will not be severe and that the junction will operate within capacity with the mitigation scheme in operation.

12.3.2 As set out in Section 7.0 an independent Stage 1 Road Safety Audit of the site access and signalisation proposals at M62J11 has been conducted, following HE's agreement to the RSA Brief. None of the issues raised by the audit team are concluded to indicate any adverse safety concerns associated with the design of the scheme. Each of the recommendations made by the audit team have been accepted and are either now inherent in the updated drawings presented at Appendix 7.B or will be considered further at detailed design stage.

12.3.3 As the detailed design of the access and signals scheme are progressed then they will be subject to continuing safety audit and technical review approved by the highway authorities.

12.3.4 The junction has been assessed using the formulae set out in the COBA Manual and this gives the DMRB default accident rate of 1.23 accidents per annum. This is slightly lower than the observed accident rate. Further analysis demonstrates that with the addition of the committed developments this default accident rate rises to 1.30 accidents per annum and then with the MSA proposals a further 1.31 accidents per year would be predicted at the junction.

12.3.5 However, it must be noted that two of the observed accidents involved drivers under the influence of alcohol, and one of these was a single vehicle collision. It is therefore considered that these accidents could be potentially be excluded from this analysis, for the reason that the main contributory factor resulting in these two collisions was alcohol and not highway layout or traffic flows. This would give an accident rate of 1.00 accident per annum which is lower than the DMRB default of 1.23.

12.3.6 As set out above, the accident rate at the junction is shown to rise as a result of the increased level of traffic entering the junction following the opening of the MSA. It is important to note however that this is a direct function of the number of vehicle movements through the junction. More vehicle movements through a junction lead to more potential for conflicts occurring, and this is the case for any development which leads to an increase in traffic flows through a junction,

or indeed the provision of a new junction onto the local or strategic road network. The accident rate calculations should therefore be considered in that context.

12.3.7 The collision data record two slight category accidents as having occurred on the motorway slip roads the most recent five year period. Assessments of the merges and diverges show that the MSA proposals will not have material impacts and thus no road safety related impacts are anticipated.

12.3.8 It is therefore concluded that the MSA proposals will not have an adverse or severe impact on road safety at M62J11 including its slip roads.

12.4 Road Safety on the M62 Mainline

12.4.1 In the five-year period ending July 2018 there has been a total of three accidents on the M62 Mainline under Junction 11. The MSA will not add traffic to the mainline and will reduce traffic flows under J11, as some diverts off the mainline to use the MSA.

12.4.2 Weaving assessments presented in Section 10.0 conclude that the MSA proposals will not have adverse impacts on weaving,

12.4.3 It is therefore concluded that the MSA proposals will have no adverse or severe impacts on road safety on the mainline of the M62 motorway adjacent to the site.

12.4.4 The MSA will satisfy an existing road safety related 'need' for services between existing service areas on the M62 and M6. Thus, the proposals will encourage drivers to stop more frequently reducing sleep and fatigue related accidents and therefore resulting in a safety benefit.

12.5 Road Safety on the Local Road Network

12.5.1 A total of four accidents occurred on Birchwood Way and its junction with Moss Gate and Daten Avenue during the most recent five-year period. Of which three were slight in nature and one was serious.

12.5.2 The serious collision occurred on the eastern approach to the junction of Moss Gate / A574 Birchwood Way / Daten Avenue. This was a collision between a pedal cyclist and a car travelling in opposite directions. Contributory factors listed for this collision include driver failed to look properly and defective brakes.

12.5.3 The slight collision reported at the junction of Moss Gate / A574 Birchwood Way / Daten Avenue involved two cars travelling north on A574 Birchwood Way (S), with vehicle one colliding into the back of vehicle two.

12.5.4 Two slight collisions were reported on the A574 Birchwood Way in between the two junctions. One occurred when a car and a goods vehicle travelling in opposite directions collided. The second involved only one car travelling North East around a left-hand bend.

12.5.5 The MSA development is not expected to add significant volumes of traffic to A574 Birchwood Way and therefore impacts on road safety will be negligible.

12.5.6 It is therefore concluded that the development proposals will have no adverse or severe impact on road safety on the local network.

SECTION 13 Impact on Travel Distances

13.1.1 The proposed development includes a range of facilities which are typical of those found at MSAs elsewhere on the motorway network. These include a FFS, a food court with ancillary retail floorspace, an hotel and business lounge. The scale of the proposals adheres to the principles of Circular 02/2013 insofar as the proposed MSA will meet the needs of the travelling public rather than being a destination in its own right. Other than staff movements and limited delivering/servicing movements, the proposed development will not generate additional traffic.

13.1.2 Notwithstanding this, a qualitative evaluation of the potential for increased mileage has been undertaken based on the location of existing competing facilities. The assessment focuses on significant diversions on the wider road network rather than the additional mileage associated with the traffic turning in at J11 i.e. additional mileage to travel around M62J11. The latter occurs at any service area.

13.1.3 As set out in Section 8.0 it is unlikely that the main facilities building of the MSA would attract any trips in its own right as the facilities provided within it (convenience stores etc) are readily available at other facilities nearby and can be accessed from the local road network, as shown in **Appendix 8.I.** These facilities have very good accessibility from the surrounding area by all modes of transport and are already used by local residents as well as employees of Birchwood Technology Park. It is not expected that a significant number of these users would instead choose to drive to a motorway services area to carry out a convenience shop or as part of their lunch break in preference to their current arrangement.

13.1.4 The hotel may attract trips from road users on longer distance journeys (trips allowed for the turn-in rates adopted). In particular, these facilities will be aimed at business travellers providing hotel beds for the night. The hotel has the potential to reduce mileage by providing facilities in a location that drivers would originally pass-by. Overall, the impact of the hotel is likely to be neutral.

13.1.5 Circular 02/2013 removes previous restrictions and notes that the scale of retail facilities at roadside facilities is a matter for consideration by the LPA in line with the NPPF and local planning policies. Given the quantum of retail floorspace sought within the proposed MSA Facilities Building is typical of that provided at other MSA sites elsewhere on the motorway network, its impact is considered to be neutral.

13.1.6 Overall, it is concluded that the impact of the proposed MSA at M62J11 will be neutral.

SECTION 14 Summary and Conclusions

14.1 Summary

14.1.1 i-Transport LLP has been appointed by Extra Motorway Service Area Group to prepare this Transport Assessment (TA) to assess the transport implications of a proposed 'new concept' Motorway Service Area (MSA) to the north of Junction 11 of the M62. This TA report sets out the highways and transport implications of the new concept MSA including the impacts on the local and strategic road networks.

14.1.2 This TA follows on from pre-application discussions with WBC and HE regarding the traffic assessments.

14.1.3 Extra is a leading developer, investor and experienced operator of high-quality MSA properties across the Strategic Road Network. Extra has developed two of the largest and busiest new MSAs on the motorway network at Cobham on the M25 and Beaconsfield on the M42. Including these two latest MSA developments, Extra has, since deregulation of the market in 1992, directly or indirectly successfully delivered nine MSAs, significantly more than any other party involved in the MSA sector over this period. In terms of geography, Extra has a network of MSAs spread in strategic locations across the motorway network, attracting in excess of an aggregate of 850,000 vehicles per week (circa 45 million vehicles each year).

14.1.4 The delivery of the proposed Warrington MSA represents an investment of £50 million by Extra.

14.1.5 Section 2.0 of this report reviews the policy background, concentrating on Appendix B of Circular 02/2013 which sets out the latest national policy position with respect to the promotion of service areas, noting that the Circular recommends the maximum distance between MSA's is 28 miles or 30 minutes driving time.

14.1.6 The existing site is discussed in Section 3.0 and the existing highway network in Section 4.0.

14.1.7 Section 5.0 identifies the committed future alterations to the transport networks surrounding the site, including 'Warrington East Phase 3' and the Highways England Smart Motorway Scheme.

14.1.8 Section 6.0 presents an assessment of the need for the MSA, including the interpretation of 'need' set out in Circular 02/2013. Leading Counsel has advised: -

'…once such a gap is shown to exist, it is not necessary to have regard to other considerations in determining whether a need exists (i.e. the existence of a gap is in and of itself conclusive evidence of need for planning purposes)'

14.1.9 The 'need case', which fully supports the proposed planning application for a new MSA facility at M62J11, is based primarily on four defined policy gaps in MSA provision on the motorway network in the north west, where the gapping between MSAs is greater than 28 miles. The existing gaps are as follows: -

- Charnock Richard Services – Birch Services = 35 miles
- Charnock Richard Services – M67 Terminus = 47 miles
- M58 Terminus – Birch Services = 40 miles
- M58 Terminus – M67 Terminus = 52 miles

14.1.10 Section 6.0 continues to show how the 'unmet need' will be met and this is consistent with the Highways England 2010 report "Spatial Planning Framework: Review of Strategic Road Network Service Areas" and the analysis of gaps contained within it.

14.1.11 Section 7.0 sets out the development proposals in detail including a description of the development, the proposed site access arrangements, parking provision, signage and the layout of the site including how both operational and service vehicles will travel around the site.

14.1.12 Vehicular access to the site is proposed via a direct signal-controlled connection to the M62 Motorway Junction 11. The site access arrangements are shown on i-Transport Drawings ITM12377-SK-024 and ITM12377-SK-025.

14.1.13 Comprehensive details of the methodology used to forecast traffic flows for use in impact assessments are set out in Section 8.0. It includes details of: the scenarios considered in the assessments and the rationale for these; base year traffic flows and the survey and other data used to derive these; considerations of traffic growth; committed developments and the traffic flows generated by these; and the traffic flows 'generated' by the MSA.

14.1.14 The traffic impacts of the proposals on the capacity and operation of M62J11 are detailed in Section 9.0. The ARCADY and LinSig models used for the assessment are described and then each assessment scenario is considered.

14.1.15 Section 10.0 goes on to evaluate merge/diverge provision at M62J11 and weaving movements between J10 and J11. The methods set out in TD22 are used to assess impacts, with this section also considering existing provision.

14.1.16 Section 11.0 considers the traffic impacts of the proposals on the local road network at Birchwood Way / Daten Avenue.

14.1.17 The impacts of the development on road safety are assessed in Section 12.0, describing existing collision data and considering impacts at M62J11 and its slip roads and the proposed access as well as on the mainline of M62 motorway.

14.1.18 A qualitative assessment of the impacts of the MSA on travel distances is included at Section 13.0.

14.2 Conclusions

Need

14.2.1 The approach to determining 'need' for an MSA on the Strategic Road Network is set out in Circular 02/2013. The 'need' for an MSA is established whenever any stretch of the SRN has a gap of more than 28 miles or 30 minutes driving time between MSAs. As paragraph B8 of the Circular makes explicit, once such a gap is shown to exist, it is not necessary to have regard to other considerations in determining whether a need exists (i.e. the existence of a gap is in and of itself conclusive evidence of need for planning purposes).

14.2.2 A 'need' either exists or it does not. It is established solely in terms of the presence or otherwise of a gap on the relevant parts of the SRN. Other matters such as traffic flows, route choice and the presence or otherwise of Service Areas which do not meet the requirements of an MSA (set out in Circular 02/2013) are not relevant to the determination of 'need' and are not factors which should be taken into account. Leading Counsel has confirmed this approach.

14.2.3 The application of policy tests set out in the NPPF and Circular 02/2013 clearly and unequivocally demonstrates that a 'need' exists for a new MSA located on the M62 to the north east of Warrington between Charnock Richard Services on the M6 and Birch Services on the M62. HE has identified such a need.

14.2.4 Based on extensive research and specialist MSA knowledge, Extra and its consultants have identified M62J11 as the optimal location for satisfying unmet 'need'.

Traffic Impact at M62J11

14.2.5 A range of traffic flow scenarios have been assessed. These show that the impacts of the re-assignment of existing M62 traffic to the MSA is shown to lead to the Birchwood Way arm of the junction operating just over capacity, with significant queues.

14.2.6 A signals scheme is therefore proposed to mitigate the impacts of the MSA on M62J11. It is concluded that the mitigation scheme delivers sufficient capacity to carer for the re-assignment of traffic and new trips associated with the MSA. It will also provide signal-controlled crossing facilities for pedestrians.

14.2.7 The proposed access arrangements and signalisation of M62J11 have been subject to independent Stage 1 Road Safety Audit, the brief for which has been signed off by HE. All of the recommendations made by the audit team have been accepted and are either now inherent in the updated drawings presented at Appendix 7.B or will be considered further at detailed design stage.

M62J11 Merges and Diverges

14.2.8 The M62 motorway currently has three lanes on the mainline both upstream and downstream of M62J11. The slips are all type A i.e. taper merge and taper diverge. The eastbound merge is to be improved to a type B as part of the smart motorway scheme. Improvements are proposed by HE as part of its Smart Motorway Scheme that will widen the mainline to four lanes.

14.2.9 Each slip has been assessed and overall it is concluded that the impacts of the development on the slip roads is not severe and improvements are not required.

Weaving

14.2.10 The weaving assessment indicates the number of lanes needed on the mainline of M62 motorway, taking account of the major and minor weaving flows and the existing weaving lengths. The formula set out in TD22 has been used to calculate the number of lanes on the mainline of M62 motorway between J10 and J11.

14.2.11 Overall, considering the two weaving sections of M62 between junctions 10 and 11, it is concluded that that the development does not have a severe impact and mitigation is not necessary.

Impacts on Safety

14.2.12 The development of the MSA at M1J45 will in broad terms, result in road safety benefits as it will satisfy a road safety 'need' related to the gap in existing MSA provision. Thus, the proposals will encourage drivers to stop more frequently reducing sleep and fatigue related accidents and therefore resulting in a safety benefit.

14.2.13 The evaluation presented in Section 12.0 shows that there have been few accidents on the local road network.

14.2.14 The accident record at M62J11 has been assessed using the formulae set out in the COBA Manual and this gives the DMRB default accident rate of 1.23 accidents per annum, which is slightly lower than the observed accident rate. The predicted accident rate at the junction is shown to rise as a result of the increased level of traffic entering the junction following the opening of the MSA. This is a direct function of the number of vehicle movements through the junction. More vehicle movements through a junction lead to more potential for conflicts occurring, and this is the case for any development which leads to an increase in traffic flows through a junction, or indeed the provision of a new junction onto the local or strategic road network. Further, it is considered that two of the recorded collisions which involved drivers under the influence of alcohol could reasonably be excluded from the analysis; doing so would give an accident rate of 1.00 accident per annum which is lower than the DMRB default of 1.23. The accident rate calculations should be seen in this context.

14.2.15 It is concluded that the development will not have adverse or severe impacts on road safety.

Impacts on Travel Distances

14.2.16 The proposed development includes a range of facilities which are typical of facilities found at MSAs elsewhere on the motorway network. These include FFS, a food court with ancillary retail floorspace and a business lounge. The proposals adhere to the principles of Circular 02/2013 insofar as the proposed MSA will meet the needs of the travelling public rather than being a destination in its own right. Other than staff movements and delivery/servicing movements, the proposed development will not generate any traffic.

14.2.17 The qualitative assessment of the impacts of the proposals on travel distances concludes that the impact of the proposed MSA at M62J11 will be neutral.

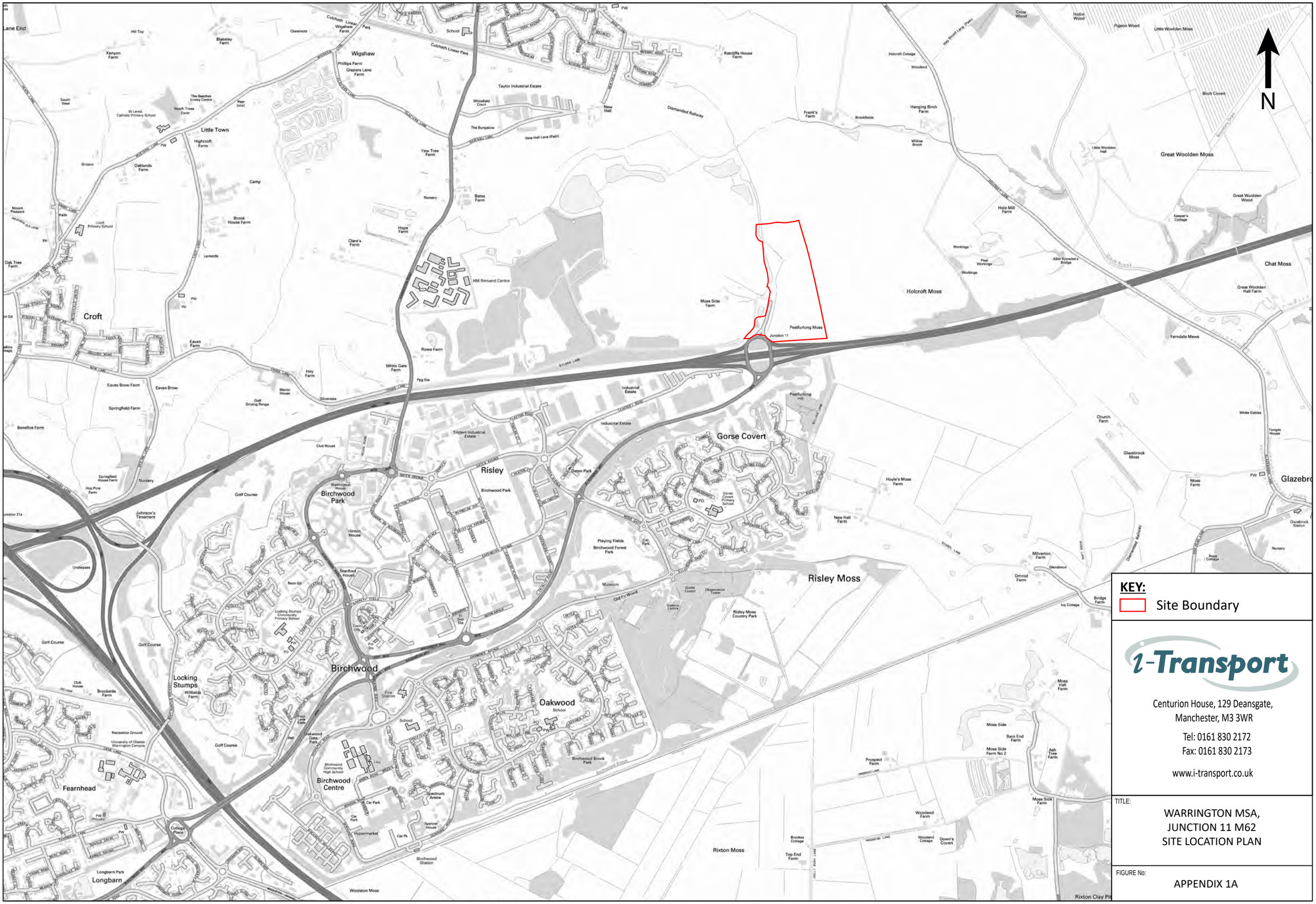
Overall Conclusions

14.2.18 This TA has demonstrated that the Extra MSA proposals at M62J11 will not have a severe impact on the safety and operation of the local and strategic road networks. Satisfactory and safe access can be provided.

14.2.19 The proposals will provide a significant road safety benefit, satisfy a currently unmet road safety related 'need' for services on this section of the motorway network. The proposals are in full accord with Circular 02/2013.

14.2.20 Finally, it is concluded the proposals are consistent with local and national policy, including NPPF. Accordingly it is concluded that there should be no highways or transport reasons why these proposals should not be granted planning consent.

APPENDIX 1.A. Site Location Plan



KEY:

Site Boundary

i-Transport

Centurion House, 129 Deansgate,
Manchester, M3 3WR

Tel: 0161 830 2172
Fax: 0161 830 2173

www.i-transport.co.uk

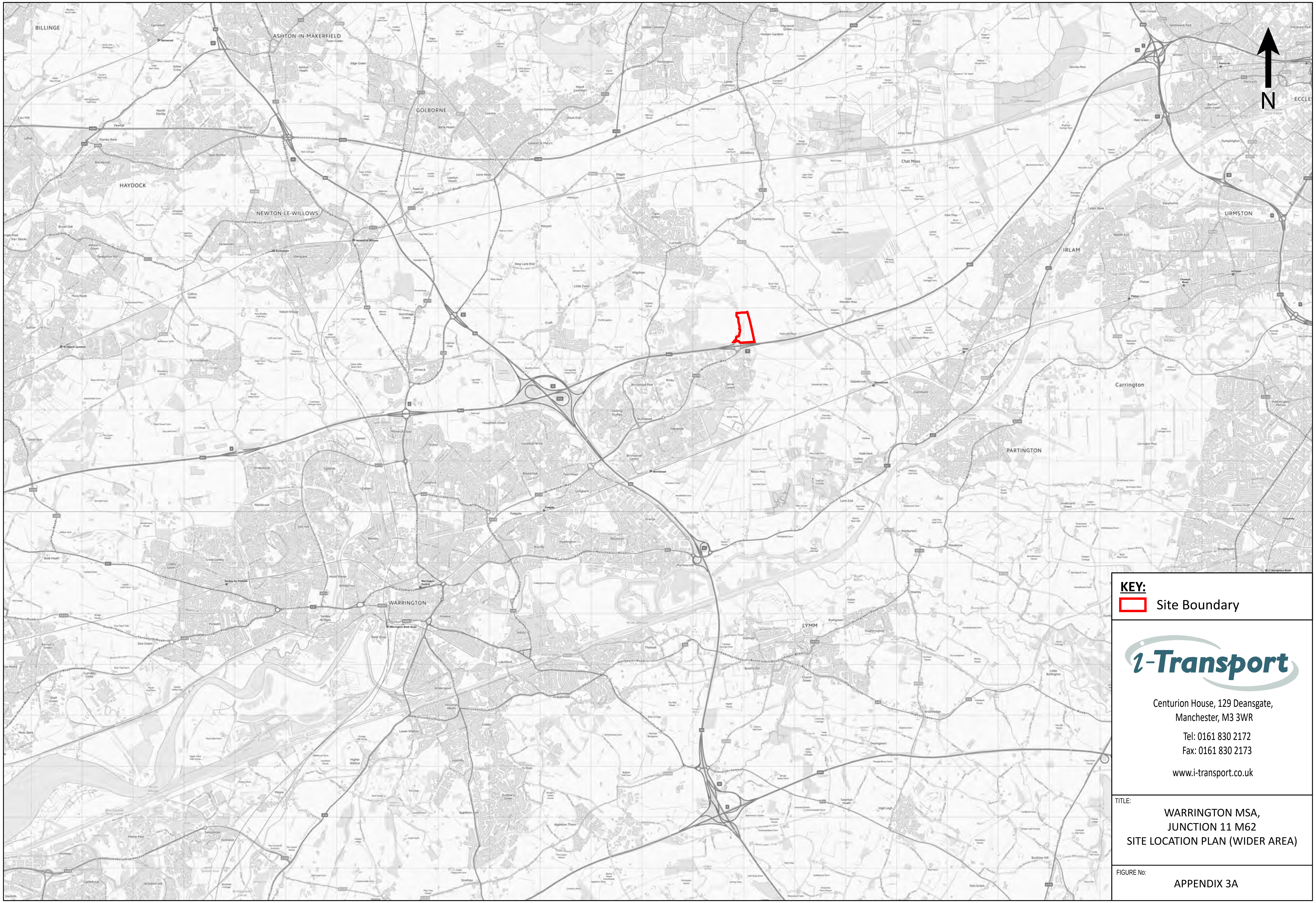
TITLE:

WARRINGTON MSA,
JUNCTION 11 M62
SITE LOCATION PLAN

FIGURE No:

APPENDIX 1A

APPENDIX 3.A. Site in Local Context



KEY:

Site Boundary

i-Transport

Centurion House, 129 Deansgate,
Manchester, M3 3WR

Tel: 0161 830 2172
Fax: 0161 830 2173

www.i-transport.co.uk

TITLE:

WARRINGTON MSA,
JUNCTION 11 M62
SITE LOCATION PLAN (WIDER AREA)

FIGURE No:

APPENDIX 3A

APPENDIX 3.B. Accessibility of the Site

5km Cycling Catchment

2km Walking Catchment

N

KEY:

Site Boundary

i-Transport

Centurion House, 129 Deansgate,
Manchester, M3 3WR

Tel: 0161 830 2172
Fax: 0161 830 2173

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TITLE:

WARRINGTON MSA,
JUNCTION 11 M62
CATCHMENT PLAN

FIGURE No:

APPENDIX 3B

APPENDIX 3.C. Public Rights of Way

N

KEY:

- Site Boundary
- Public Right of Way
- 12/3 Footpath Number

i-Transport

Centurion House, 129 Deansgate,
Manchester, M3 3WR

Tel: 0161 830 2172
Fax: 0161 830 2173

www.i-transport.co.uk

TITLE:

WARRINGTON MSA,
JUNCTION 11 M62
PUBLIC RIGHT OF WAY PLAN

FIGURE No:

APPENDIX 3C

APPENDIX 3.D Warrington Cycle Network

Cycle shops

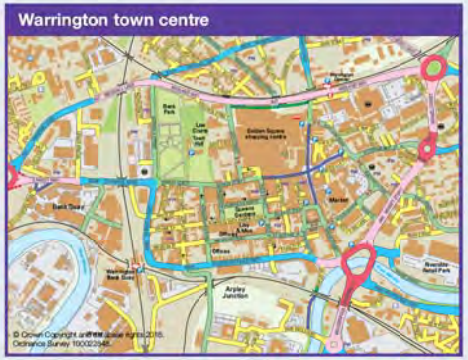
There are various cycle shops across the town, most offer at least a partial maintenance service They are:

1. **Raleigh Cyclelife**
   1 Birchbrook Road, Heatley, Lymm WA13 9RR
2. **Cyclehouse**
   Buckley Street WA2 7NS
3. **D & M Cycles**
   Hood Lane, Sankey Bridges WA5 1EJ
4. **Halfords**
   Alban Retail Park WA2 8TW
5. **Cheshire Cycles**
   Burley Lane, Appleton Thorn, Warrington WA4 4PP
6. **Decathlon**
   Jubilee Way/Winwick Road WA2 8HE
7. **Ron Spencer Cycles**
   186 Orford Lane WA2 7BE
8. **S.R Electrical & Cycles**
   53 Norris Street, Orford WA2 7RL

Burtonwood

Winwick

Warrington town centre



Culcheth

Cycling for health

People who cycle regularly not only enjoy the fitness levels of non cyclists ten years their junior but research has shown that they usually live many years more too. In fact research has shown cycling to be the most effective way to increase longevity!

Here are a few reasons why:

Cycling is good for your heart
Cycling belongs to the type of exercise known as aerobic, meaning that it uses large muscles in a continuous and rhythmical manner producing beneficial changes in the respiratory and circulatory systems. In other words it's fantastic for your heart and lungs. Regular cycling at a comfortable exertion will make your heart stronger and your lungs more efficient.

Cycling is enjoyable
Remember as a child how long you would spend on your bike? Why? It's because it was great fun. Warrington has many parks and open spaces where you too can relive those fun times in a safe environment and get some great exercise as well.

Weight control
Cycling on a regular basis will help to turn your body into a fat burning machine! The more often the body gets exercise the more fat burning enzymes it produces and burns greater amount of calories even when you are resting. A 15-minute cycle to and from work five times a week will burn the equivalent of ¾ stone in fat alone over the course of one year.

Cycling is no sweat
Ever been to a gym and sat on the bike pedaling away drenched in sweat? It isn't nice. But when cycling outside you get air movement around your body and this keeps you cooler. Ensure you choose an area that has few or no hills to keep the exertion at a comfortable pace for you and still be rewarded with all the benefits for your body.

Cycling will make you green
Do your bit for the environment if you can by cycling regularly, especially for those short journeys when you don't really need to take the car. Think about going to work on your bike a few times per week saving you pounds over the year and help to cut down on damaging emissions. Hours wasted sat in traffic jams could be a thing of the past for you.

With all these things and more in mind now is the time to get on yer bike!

Cycle safety

Lights for night riding must be used - dynamos are greener and cheaper than batteries in the long term (some flashing LED lights are now allowed but check to make sure yours are acceptable).

It is also a legal requirement to have front and rear reflectors on your bike.

Consider wearing reflective and bright clothing to make you more visible.

A cycle helmet is optional but can help to protect you against head injury.

Another way to help improve your cycling skills and safety is through cycle training.

Cycle training

Warrington has a full programme of **free** cycle training in schools. The scheme delivers high quality Bikeability training to all 10 year olds in the Borough.

Free adult cycle training is also available to anyone over 16 who lives, works or studies in Warrington. The **FREEWHEELING** courses are for absolute beginners through to experienced riders and give you the skills and confidence to cycle safely in traffic.

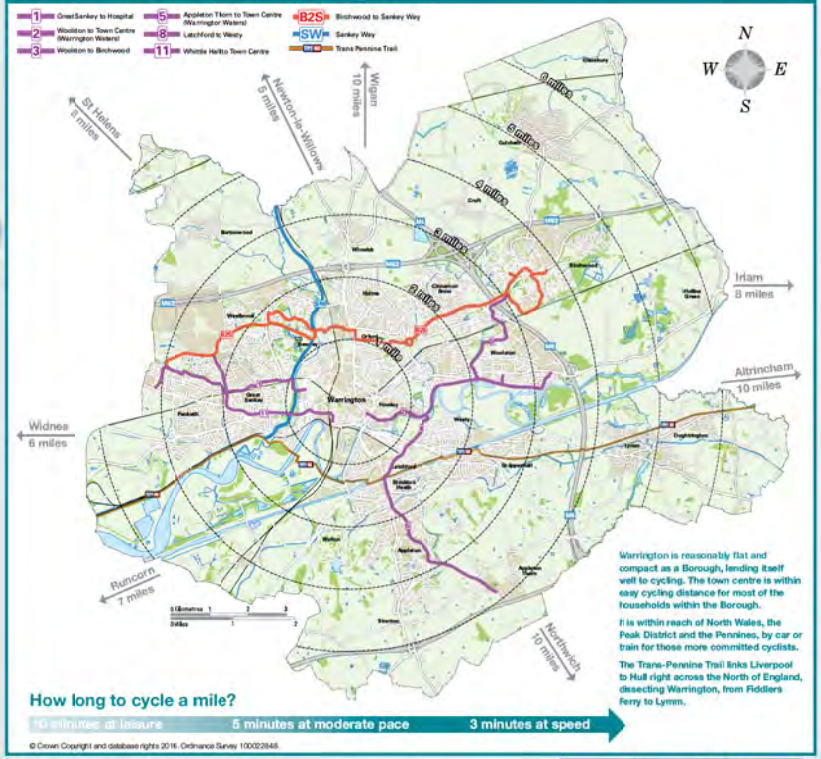
Training is delivered informally by friendly but fully accredited instructors and courses are available during daytime, evenings and weekends.

Apply at www.bikeright.co.uk/freewheeling or call 0161 230 7007.

Cycle parking

Cycle parking can be found across Warrington, with at least 9 locations around the town centre. These are shown on the map by a P. Whenever you leave your bike in a public place, alwayslock it by securing the frame to a permanent fixture. It is best to use a D lock, though even these can vary in quality, so choose a sturdy one. Crime Prevention Officers say that if all cyclists used high quality D locks, theft could fall by up to 90%! Remember to remove any quick release parts such as lights. It's a good idea to note your bike's make, colour and frame number and make sure that you add it to your household insurance policy. It's also worth post-coding or tagging your bike.

Warrington overview map showing strategic routes



Warrington is reasonably flat and compact as a Borough, lending itself well to cycling. The town centre is within easy cycling distance for most of the households within the Borough.

It is within reach of North Wales, the Peak District and the Pennines, by car or train for those more committed cyclists.

The Trans-Pennine Trail links Liverpool to Hull right across the North of England, dissecting Warrington, from Fiddlers Ferry to Lymm.

How long to cycle a mile?

10 minutes at leisure | 5 minutes at moderate pace | 3 minutes at speed

Birchwood

Key

Cycleability gradations, in increasing experience
1 2 3 4 5

- Tarmac surfaced cycle paths
- Unsurfaced cycle paths
- Bridleway
- Pedestrian links
- Shared-use cycle path
- Motorway
- One way
- One way with contra flow cycling permitted
- National Cycle Network route number & Trans-Pennine Trail
- Railway station
- Bus interchange
- Schools
- Colleges
- Hospital
- Place of worship
- Library
- Supermarket
- Post office
- Cycle parking
- Bridge
- Pedestrian crossing
- Toucan crossing

Lymm

Highways maintenance

To report a fault or pothole complete the web form on www.warrington.gov.uk

Warrington Borough Council maintains approximately 1144km of roads and 1068km of footways making this our largest valued asset. The council is investing £40 million between 2015 and 2020 to provide essential maintenance to the highway and footway/cycleway network, which will provide a smoother ride for cyclists.

Streetlighting

To report a fault complete the web form on www.warrington.gov.uk

The council maintains the majority of the 26,000 streetlights and 4,000 lit signs and bollards across the road network. Between 2015 and 2017 the council is investing £35 million to replace 18,000 street lights, columns and lanterns, which is essential to maintaining lighting across the authority for all users.

Advice to motorists & cyclists

Motorists should..

- Be aware of cyclists and take extra care at junctions, traffic lights and roundabouts.
- Give cycles plenty of room when overtaking, usually 2m (6 feet) - if there isn't room to overtake, be patient.
- Obey speed limits.
- Obey Advanced Stop Lines (green boxes at traffic signals designed to give cyclists a head start).
- Not park in or obstruct cycle lanes.
- Expect cyclists to leave cycle lanes at certain times for manoeuvres such as right turns.

Cyclists should..

- Ensure the cycle is in good working order and appropriately lit at night.
- Not cycle on the footway unless it is signed as a shared access route.
- Be considerate and give priority when sharing with pedestrians, especially alongside canals and waterways.
- Never cycle through red lights.
- On road, cycle at least 1m from the kerb where cars can see you and away from grids and gullies.
- Take care passing alongside slow moving traffic.
- Watch out for left turning vehicles as you could be in their blind spot.
- Get and read a copy of "Cyclecraft" - considered the definitive guide to safe and confident cycling.

Signs & symbols

Common road signs and markings that you may come across when cycling through the borough.

- No entry (for all vehicles including cyclists)
- Motor vehicles prohibited (cycles permitted)
- No cycling
- Be aware of cyclists
- Route for use by pedal cycles only
- Segregated route
- With flow cycle lane ahead
- Shared route for cyclists and pedestrians
- Cycle route
- Cycle lane
- Cycle route forming part of the National Cycle Network

Advanced stop lines

- Advanced stop lines enable cyclists to negotiate junctions safely.
- When the traffic signals are red, cyclists move ahead to a 'reservoir' area to position themselves safely ahead of motorists.

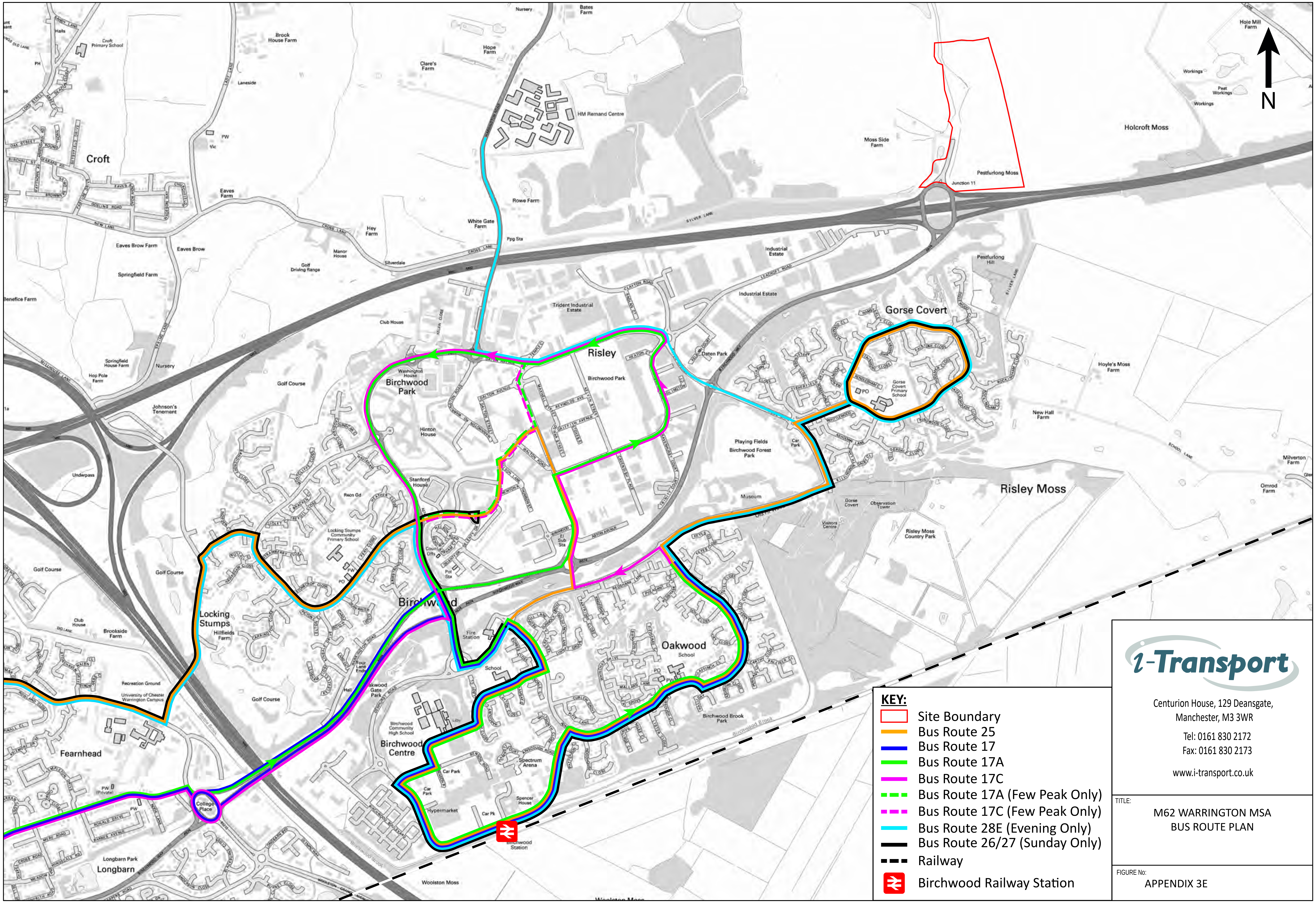
Brompton bike hire

You can hire a Brompton folding bike from any of the three docks located at Warrington Bark Quay, Warrington Central and Birchwood railway stations. The bikes are a great way to get around town, or if you're going further afield you can pop the folded bike in your car boot, or take it on trains or buses.

Hiring a bike is simple, once you've registered online, bikes can be reserved online or by text message. You can keep the bike for as long as you like, from hours to weeks at a time, and return it to any of the docks.

Register today at www.bromptonbikehire.co.uk

APPENDIX 3.E. Existing Bus Routes and Services



i-Transport

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Manchester, M3 3WR

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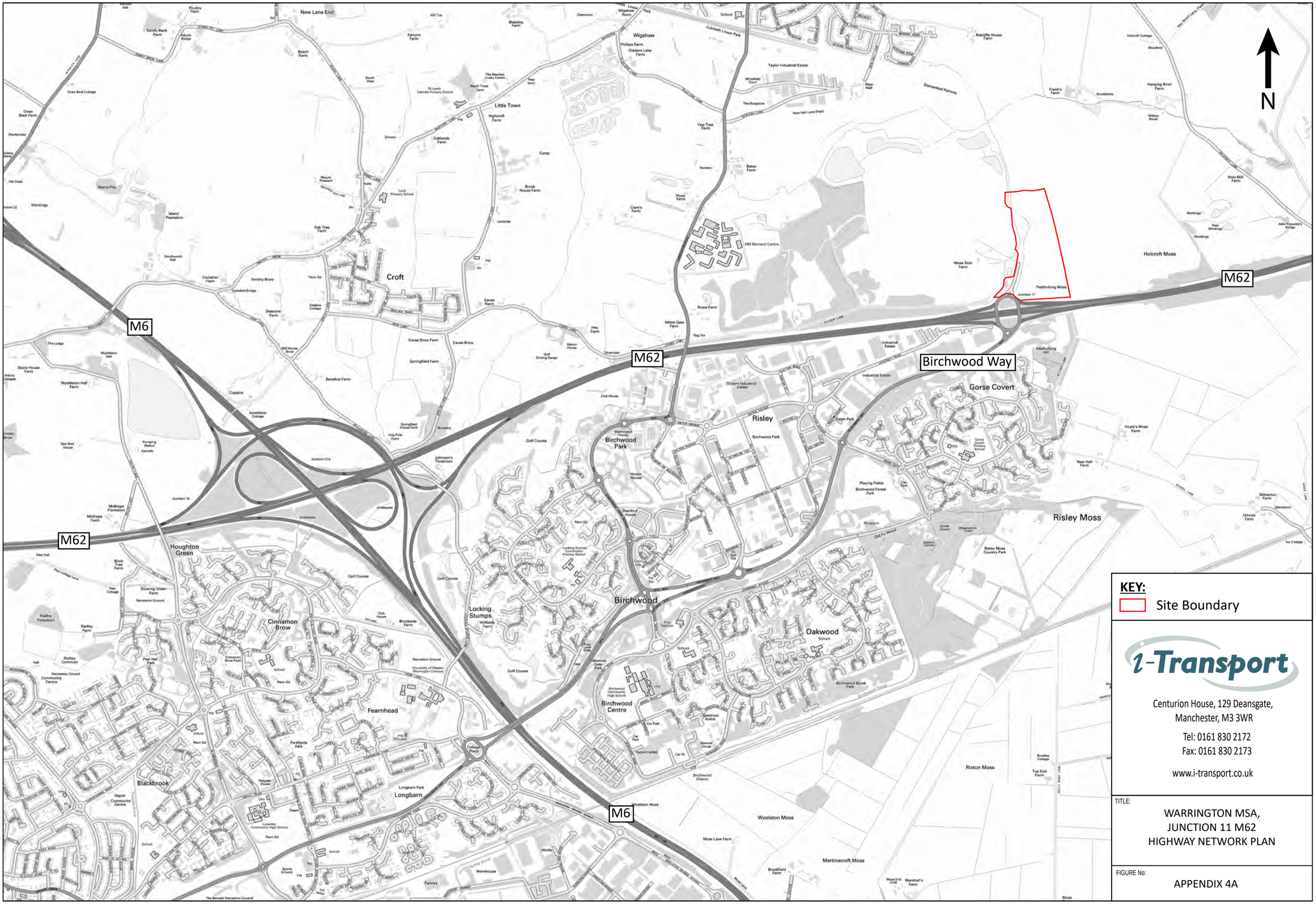
Fax: 0161 830 2173

www.i-transport.co.uk

TITLE:
M62 WARRINGTON MSA
BUS ROUTE PLAN

FIGURE No:
APPENDIX 3E

APPENDIX 4.A. Existing Highway Network



KEY:

Site Boundary

i-Transport

Centurion House, 129 Deansgate,
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Tel: 0161 830 2172
Fax: 0161 830 2173

www.i-transport.co.uk

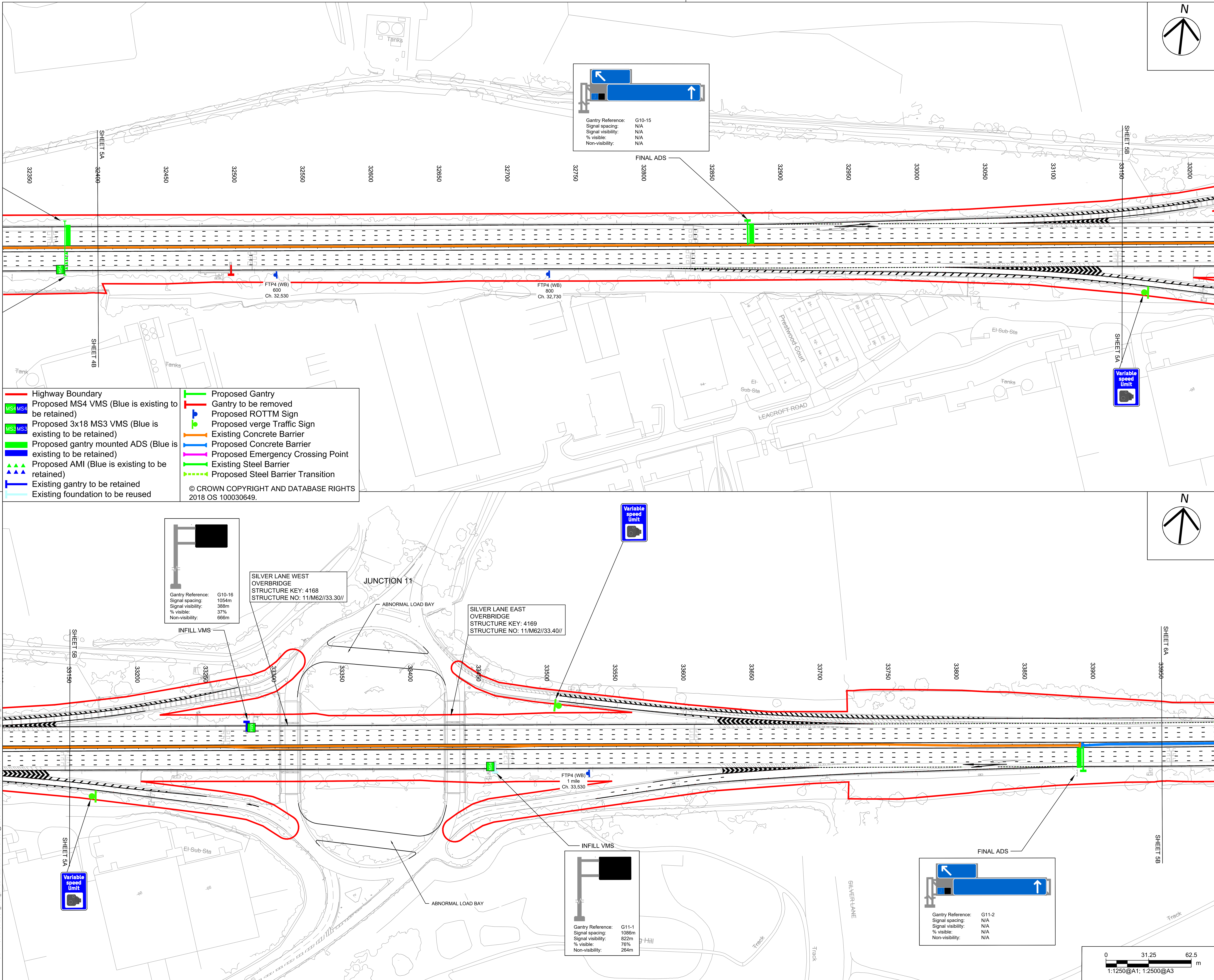
TITLE:

WARRINGTON MSA,
JUNCTION 11 M62
HIGHWAY NETWORK PLAN

FIGURE No:

APPENDIX 4A

APPENDIX 5.A. M62 Smart Motorway Scheme



N

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

HAZARDS DETERMINED TO BE SIGNIFICANT RISKS RELATING TO THE WORKS ASSOCIATED WITH THIS DRAWING ARE IDENTIFIED BELOW. SIGNIFICANT RISKS ARE THOSE WHICH ARE NOT LIKELY TO BE OBVIOUS, ARE UNUSUAL, OR LIKELY TO BE DIFFICULT TO MANAGE.

CONSTRUCTION

REFER TO SERIES SPECIFIC DRAWINGS FOR DETAILS OF SAFETY, HEALTH AND ENVIRONMENTAL RISKS.

FOR MAINTENANCE / OPERATION / DECOMMISSIONING AND DEMOLITION RISKS SEE PROJECT HEALTH AND SAFETY FILE.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

NOTES

REVISION DETAILS	By / APP	Date	Suffix
First Issue	TD / BJ	18/07/18	P01
FOR INFORMATION	DW / BJ	02/11/18	P02

Purpose of issue

FOR STAGE APPROVAL

Client
Highways England
Major Projects
The Cube
199 Wharfside Street
Birmingham
B1 1RN

Working on behalf of highways england

Client
bmJV
Metro
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Exchange Quay 2
Salford
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Project Title

SMART MOTORWAYS
M62 DESIGN & BUILD
J10-12

Drawing Title

GENERAL ARRANGEMENT
SHEET 5 OF 12

Designed	Drawn	Checked	Approved	Date
GZ	DW	JA	BJ	02/11/18

Internal Project No. 60563937	Suitability S4
Scale @ A1 1:1250	Volume Highways General

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Drawing Number
Highways England PIN / Originator / Volume
HE549341 -WSP -HGN-
S0_ZZ_ZZ_Z -DR -CH -0105
Location / Type / Role / Number

Rev P02

Plot Date : 02 November 2018 12:09:24
File Name C:\PWWORKING\AECOM_D502_UK-CL\ALEXANDER.NICHOLS@AECOM.COM\D0583311\HE549341-WSP-HGN-S0_ZZ_ZZ_Z-DR-CH-0105

APPENDIX 5.B. Warrington East Phase 3

M62

M62

M62

1031

1000

950

Cut Line - For Continuation see Sheet 2

Refer to landscaping drawing (392681-MMD-00-XX-DR-C-3003) for detail tree planting required for EPS licence in this area

1:500 0 25m 50m

P:\Liverpool\BNI\PROJECTS\Odd\392681 Warrington East Phase 3\08 Highways\Drawings\392681-MMD-00-XX-DR-C-0001 to 003_GA.dwg Nov 21, 2018 - 3:52PM COR83520

Notes

1. Design is based on topographical survey supplied by others.
2. Design details shown are indicative only. Refer to detailed design drawings for further information

Key to symbols

- Existing carriageway to be resurfaced
- Proposed full construction carriageway
- Proposed central reservation
- Proposed fill slope
- Proposed verge min width to be 3.0m
- Proposed VRS
- Extent of works

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
A	23/11/2018	CC	Construction Issue	PM	SA

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Client

WARRINGTON Borough Council

Title

Warrington East Phase 3
A574 Dualling
General Arrangement
Sheet 3 of 3

Designed	S Horsfall	SH	Eng check	P McKeown	PM
Drawn	C Coronado	CC	Coordination	P McKeown	PM
Dwg check	P McKeown	PM	Approved	S Alexander	SA

Scale at A1	Status	Rev	Security
1:500	CON	A	STD

Drawing Number
392681-MMD-00-XX-DR-C-0003

APPENDIX 6.A. Counsel's Opinion on Need

IN THE MATTER OF:

WARRINGTON MOTORWAY SERVICE AREA
JUNCTION 11 OF THE M62

OPINION

Introduction

1. Extra Motorway Service Area Group ("Extra") is in the process of preparing an outline planning application proposing the erection of a "New Concept" Motorway Service Area ("MSA") within the north eastern quadrant of Junction 11 of the M62 Motorway situated approximately 5.6km (3.5 miles) to the north of Warrington Town Centre. The proposal is for an off-line MSA on a site extending to approximately 16ha of land, and will comprise of facilities building, hotel, fuel filling station, parking facilities, landscaping and amenity area. The proposals will be fully compliant with the minimum requirements for an MSA as set out in Table B1 of Annex B to Department of Transport Circular 02/2013. Drivers will have indirect access to the M62, which runs along the southern boundary of the proposed site and connects through to the M6 and M60, and onwards to the M58 and M67. The MSA will be known as Warrington Services.

2. The site currently comprises agricultural land in arable use, and is designated as Green Belt in the adopted development plan for the area.

3. We are asked to advise on:

a. how the question of whether or not there is a "need" for an MSA should be resolved;

b. the relevance of off-line versus on-line MSA provision;

c. whether, if there is a need, this need is capable of constituting the very special circumstances ("VSC") needed to justify what Extra accepts would constitute inappropriate development in the Green Belt.

Need

4. The method for establishing a need for an MSA is set out in DfT Circular 02/2013. This Circular and the National Planning Policy Framework (February 2019) ("the Framework") are the only documents to which reference is necessary to establish what the test is for demonstrating need.

5. The starting point is paragraph 104(e) footnote 42 of the Framework. This provides that "The primary function of roadside services should be to support the safety and welfare of the road user." It is clear from this that the purpose of an MSA is to ensure the safety of drivers on the strategic road network ("SRN"). This point is reinforced in Annex B of the Circular, which states at paragraph B4

"Motorway service areas and other roadside facilities perform an important road safety function by providing opportunities for the travelling public to stop and take a break in the course of their journey. Government advice is that motorists should stop and take a break of at least 15 minutes every 2 hours. Drivers of many commercial and public service vehicles are subject to a regime of statutory breaks and other working time restrictions and these facilities assist in compliance with such requirements."

6. The Circular then goes on to explain (at B5) how decisions regarding the location of MSAs on the SRN have been informed by the need to ensure this safety objective is realized by giving drivers the opportunity to stop and take a break every two hours:

   "The network of service areas on the strategic road network has been developed on the premise that opportunities to stop are provided at intervals of approximately half an hour. However the timing is not prescriptive as at peak hours, on congested parts of the network, travel between service areas may take longer."

7. The requirement, or "need", to ensure driver safety through the provision of an MSA at intervals of approximately half an hour leads directly to the recommendation of the Highways Agency that there should an opportunity for drivers to stop and rest at a MSA every 28 miles (at B6):

   "The Highways Agency <u>therefore</u> recommends that the maximum distance <u>between motorway service areas</u> should be <u>no more</u> than 28 miles. The distance between services can be shorter, but to protect the safety and operation of the network, the access/egress arrangements of facilities must comply with the requirements of the Design Manual for Roads and Bridges including its provisions in respect of junction separation" (emphasis added).

8. It follows from the above that if the Government's objective of ensuring the safety and welfare of road users is to be realised, there is a "need" to provide an MSA on those stretches of the SRN where there is a gap of 28 miles. In other words, a "need" for an MSA is established wherever any particular stretch of the SRN has a gap of more than 28 miles (i.e where drivers are currently driving for more 28 miles before they have the opportunity to stop at a MSA).

9. There are currently four MSAs located on the SRN in and around the Warrington area: on the M6 there are Charnock Richard Services and Lymm Services, and on the M62 there are Birch Services and Burtonwood Services.

However, having regard to terminus points of the M58 and M67 and the ability of drivers to leave one motorway and join another through the various junctions around this area, it is quite clear that some drivers will be driving for more than 28 miles (and significantly longer than 30 minutes) on the SRN before they encounter a MSA. There are four such "gaps":

a. A driver taking the route from the M58 Terminus to Birch Services on the M62 will drive 40 miles (M58/M6/M62/M60/M62);

b. A driver taking the route from Charnock Richard Services on the M6 to Birch Services on the M62 will drive 35 miles (M6/M62/M60/M62);

c. A driver taking the route from the M58 Terminus to the M67 Terminus will drive 52 miles without encountering a MSA (M58/M6/M62/M60/M67);

d. A driver leaving Charnock Richard Services on the M6 and driving to the M67 Terminus will drive 47 miles with no opportunity to stop at a MSA (M6/M62/M60/M67).

10. It can be seen from the above that the existence of Burtonwood Services and Lymm Services do not address the identified gaps, for the simple reason that some drivers will take a journey whereby despite the existence of these two MSAs they will drive for more than 28 miles (and significantly longer than 30 minutes) before they encounter a MSA. How many such drivers there will be is irrelevant for the purposes of applying the Government's policy on need - as paragraph B8 of the Circular makes explicit, once such a gap is shown to exist, it is not necessary to have regard to other considerations in determining whether a need exists (i.e. the existence of the gap is in and of itself conclusive evidence of need for planning purposes):

"The distances set out above are considered appropriate for to (sic) all parts of the strategic road network and to be in the interests of and for the benefit of all road

users regardless of traffic flows or choice. In determining applications for new or improved sites, local planning authorities should not need to consider the merits of the spacing of sites beyond conformity with the maximum and minimum spacing criteria established for safety reasons. Nor should they seek to prevent competition between operators; rather they should determine applications on their specific planning merits."

11. The 2013 Circular was a deliberate departure from previous policy in that the Government decided to make clear that once a gap of more than 28 miles has been identified, the need for an MSA will be established (i.e the absence of an MSA in such a situation frustrates the Government's objective of supporting the safety and welfare of the road user). The local planning authority in such a situation should not concern itself with the merits of spacing beyond asking itself whether (a) the proposed MSA will help ensure that the maximum distance of 28 miles is not breached, and (b) that the new facility will not breach the requirements set out in the Design Manual for Roads and Bridges. For the purposes of applying the policy on "need" as set out in the Circular, it is not permissible to take a graduated approach to need by reference to the number of drivers using a particular stretch of the strategic road network or any other considerations such as route choice or the nature of the journeys. The existence of the requisite gap is conclusive evidence of need, and in the particular circumstances of this case it removes any necessity to debate how many drivers will choose a particular route (for example M6 South – M62 East, in preference to any other route).

On-line versus Off-line

12. Annex B of the Circular at B13 to B15 provides that where competing MSA sites are under consideration, the Highways Agency has a preference for on-line locations over off-line locations. It must however be noted that, firstly, this is a "preference" only (i.e it is not a mandatory requirement that an on-line location must always be selected over an off-line location); and secondly the preference is subject to the very important caveat "on the assumption

that all other factors are equal".

13. All other factors are rarely equal in life, and the sphere of planning is no exception. So, for example, the Circular itself at B15 acknowledges that an on-line facility may simply not be possible because of safety, operational or environmental constraints. We would go further and add that such a facility may be available, but the safety, operational or environmental disbenefits of such a location may outweigh the advantages that flow from being on-line as opposed to off-line, such that the latter location is considered preferable once regard is had to all matters that are relevant to what is ultimately a planning decision.

14. If there is a choice to be made between on-line and off-line facilities, the planning authority must have regard to all material considerations relevant to that choice, and that will include not only the Highways Agency "preference" (understood subject to the express caveats provided in the Circular itself), but also all of the benefits that a particular off-line location may provide when compared with a particular on-line location. So, for example, on the specific facts of a given case, the off-line location may provide broader sustainability benefits when compared with the only on-line location that is in contention.

Green Belt

15. In order to establish VSC it is necessary to demonstrate that the potential harm to the Green Belt by reason of inappropriateness, and any other harm resulting from the proposal, is clearly outweighed by other considerations (NPPF, para. 144). The question of whether VSC exist for any given proposal is decided on a case by case basis, and whether a matter or combination of matters constitute VSC sufficient to outweigh the harm by reason of inappropriateness and any other harm is quintessentially a matter of planning judgment for the decision-maker.

16. "Need" generally, and the specific need for an MSA to meet the strategic need for road side facilities in accordance with Government policy, has long been accepted as a matter that can either by itself or in combination with other matters outweigh the harm to the Green Belt by reason of inappropriateness and any other harm. Many existing MSAs are situated in the Green Belt, and were justified by reference to "need".

17. Whether a particular proposal for an MSA meets the test of VSC has to be decided by reference to a range of factors, which will include need, whether the proposal causes "other harm", the extent of such "other harm" and the availability or otherwise of alternative sites where the need can be met without causing such harm or causing less harm.

Conclusion

18. We have addressed the matters raised in our Instructions. If additional matters arise we would be pleased to assist further.

MARTIN KINGSTON QC
SATNAM CHOONGH
Number 5 Chambers

14 May 2019

IN THE MATTER OF:

WARRINGTON MOTORWAY SERVICE AREA
JUNCTION 11 OF THE M62

ADVICE NOTE

Counsel: Martin Kingston QC
Satnam Choongh

YOUR REF: PO-TP-SPA-LT-P4151-0002-A

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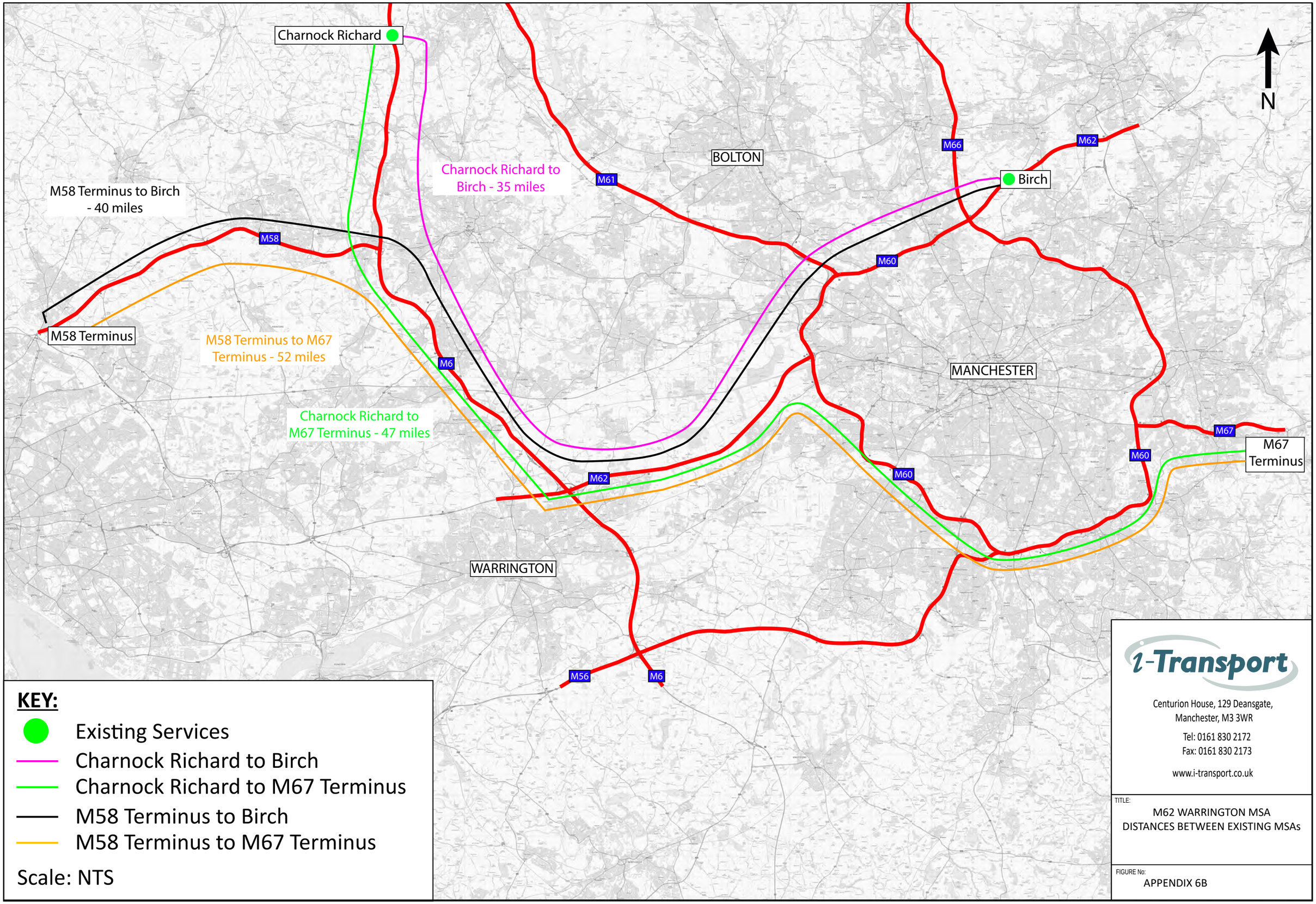
APPENDIX 6.B. Existing Gaps on the Motorway Network



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www.i-transport.co.uk

TITLE:
M62 WARRINGTON MSA
DISTANCES BETWEEN EXISTING MSAs

FIGURE No:
APPENDIX 6B

APPENDIX 6.C. HE Report 'Review of SRN Service Areas'

HIGHWAYS AGENCY

Highways Agency: Spatial Planning Framework
Review of Strategic Road Network Service Areas

National Report

Date: January 2010 Version: 2

Document Control

Document Title	Review of Strategic Road Network Service Areas
Author	JA/NB (JMP)
Owner	Iain Reidy
Distribution	
Document Status	FINAL

Revision History

Version	Date	Description	Author
DRAFT	02/11/2009	First Draft	
DRAFT	27/11/2009	Final Draft	
FINAL	15/01/2010	Final	

Reviewer List

Name	Role
Neal Byers	Senior Transport Planner

Approvals

Name	**Signature**	**Title**	**Date of Issue**	**Version**
Neville McKenzie		**Associate**	**02/12/09**	**1**

Table of Contents

1	Introduction	4
2	Gap Analysis Methodology	5
3	Identification of the Motorway Network and MSAs	7
4	Results – Motorway Service Areas	10
5	Conclusions and Recommendations	29
	Figures	31
	Appendix A	34

1 Introduction

1.1 The Highways Agency (HA) has commissioned the undertaking of a study into the provision of service areas on the Strategic Road Network in England. The Motorway Network is one element of the Strategic Road Network, the Trunk Road Network being the other, which is the road network under control of the HA.

1.2 Circular 1/2008 (the Circular) sets out the policy for the provision of service areas on the Strategic Road Network and the HA's role in relation to these facilities. The Circular supersedes previous guidance provided in Circular 1/94, Circular 4/94 and the Motorway Service Areas [MSA] Policy Statement 1998.

1.3 As part of this study, the HA have undertaken two investigations – one into Trunk Road service area provision, one into MSA provision - that have been combined into eight reports based on Government Office region. The regional reports have been produced to understand the requirements for new facilities within each Government Office boundary. The purpose of this report is to encapsulate the results of the MSA study which provides a gap study of those MSAs located in each region. This study therefore comprises the following:

- Identification of the location of MSAs along the Motorway Network
- Determination of the separation of MSAs
- Identification of any gaps in provision
- Recommendations to address provision issues along the Motorway Network.

1.4 The information presented in this report provides the evidence base from which to identify the existing gaps in MSA provision. Therefore, where necessary, the HA can provide input into the appropriate Local Development Frameworks to recommend action to address gaps in provision.

Structure of the Report

1.5 The study is split into five sections including this introduction as follows:

- Section 2 contains the methodology for the Motorway study
- Section 3 identifies the Motorway Network and MSAs
- Section 4 presents the results of the MSA gap study
- Section 5 presents conclusions and recommendations

2 Gap Analysis Methodology

2.1 Circular 1/2008 (the Circular) sets out the policy for the provision of service areas on Trunk Roads and the HA's role in relation to these facilities. The Circular supersedes previous guidance provided in Circular 1/94, Circular 4/94 and the MSA policy statement 1998.

2.2 MSAs perform an important road safety function by providing opportunities for travellers to stop and take a break in the course of their journey. The Circular states that:

"motorists should stop and take a break of at least twenty minutes every two hours. Drivers of heavy goods vehicles (HGVs) are subject to a regime of statutory breaks, and such facilities offer the opportunity for this." [paragraph 6]

2.3 Historically the spacing of MSAs has been every 30 miles based on drivers being offered the opportunity to stop roughly every 30 minutes. However, on congested parts of the network the travel time between MSAs can exceed 30 minutes. Furthermore, HGVs fitted with 56mph speed limiters have a maximum range over 30 minutes of 28 miles. Therefore any new applications for MSAs should be based upon a spacing of 28 miles or 30 minutes drive from the previous MSA, whichever is the lesser.

2.4 The Circular also specifies the HA's obligations in relation to the provision of service areas and states that:

"The Highways Agency will provide input into Local Development Frameworks, assisting Local Authorities to consider whether there is sufficient provision of roadside facilities on the Strategic Road Network" [paragraph 28]

2.5 In order to identify priority locations a distance of 40 miles or greater has been defined to represent a gap between MSAs at which the HA would consider informing a local authority of the potential need for a new MSA to be included in the Local Development Framework. Where a distance is above the 28 mile threshold contained in the Circular, this has also been noted.

2.6 In order to be signed from the Motorway Network the service area must provide the following facilities:

- Free parking for up to two hours for all vehicles
- Free toilets and hand washing facilities for all users with no obligation to make a purchase
- Parent/carer and child facilities containing baby-changing amenities
- Access to a signed, free, private breast-feeding area
- A free picnic area
- Cash operated telephone
- Fuel
- Snacks and hot drinks
- Free children's play area

[paragraph 68]

2.7 There are additional requirements in relation to factors such as opening hours, access from the surrounding highway network equality legislation and competition between providers that have not been specifically considered within this study. MSAs should be intended to be for the sole use of those using the SRN and should not become a destination in their own right.

2.8 There is no official database of MSAs available therefore it was necessary to perform a desktop study in order to identify the locations of such sites on the Motorway Network.

2.9 The desktop study used online aerial mapping sources to identify the locations of service areas on the Motorway Network. The information was then cross-referenced with conventional mapping to establish the names of the MSAs. Thus a comprehensive list of MSAs in England has been produced. As an additional check, information was cross-referenced with unofficial internet based guides to MSAs – motorwayservices.info and motorwayservicesonline.co.uk.

2.10 Each MSA was selected with the distance to the nearest MSAs in all directions measured using GIS software. Where there is no other MSA between the selected site and the terminus of the Motorway Network, the distance to the terminus of the Motorway Network has been recorded.

2.11 When the Motorway Network leaves England, the distance to the next MSA along the route has also been recorded.

2.12 Distances between MSAs were recorded in the form of a matrix with separation of over 40 miles being highlighted as an issue for further consideration.

2.13 A map displaying the location of MSAs and the Motorway Network was produced using Manifold to accompany the results matrices and display the information visually. The map displays the Motorway Network and the name and location of MSAs and can be found in the appendix.

Assumptions

2.14 No information has been collected regarding the facilities present at each MSA as this study is primarily concerned with the distances between service areas. The assumption has been made that the services are signed from the Motorway and are of sufficient standard to be in compliance with the Circular.

2.15 In general, distances have been measured from the Motorway mainline at a point deemed to be the ‘centre’ of the MSA. If service stations are not directly opposite each other a point half way between them is utilised instead. Where services are standalone or located at a junction the distance taken is to the entrance to the car parking area.

2.16 For simplicity it has been assumed that the distance between two MSAs is the same regardless of direction of travel.

2.17 All distances have been rounded to the nearest mile.

3 Identification of the Motorway Network and MSAs

3.1 The HA is responsible for the construction and effective operation of the majority of Motorways in England. According to *Transport Statistics: Great Britain 2009,* England contains 3,011 km of Motorway classified carriageway served by 72 MSAs.

3.2 **Tables 3.1 to 3.8** show the Motorways studied in this report region by region, with **Figure 3.1**; appended at the end of this report illustrating the Motorway Network and MSAs on a map.

North East Region

Table 3.1: Summary of Motorways in the North East

Trunk Road	Start Point	Finish Point
A1(M)	Yorkshire & Humber Border	Washington
A194(M)	A1(M)	Tyne Tunnel
A66(M)	A1(M)	Darlington

North West Region

Table 3.2: Summary of Motorways in the North West

Trunk Road	Start Point	Finish Point
M6	West Midlands Border	Scottish Border
M62	Liverpool	Yorkshire & Humber Border
M60	Manchester Outer Ring Road	Manchester Outer Ring Road
M56	M60	Welsh Border
M61	M60	M6
M66	M60	Edenfield
M67	M60	Hyde
M65	M6	Colne
M55	M6	Blackpool
M57	M62	Switch Island
M58	M6	Switch Island
M602	M60	Manchester City Centre
A627(M)	Oldham	Rochdale
M53	Wallasey	Chester

Yorkshire and Humber Region

Table 3.3: Summary of Motorways in the Yorkshire & Humber Region

Trunk Road	Start Point	Finish Point
M1	East Midlands Border	A1(M)
M62	A63	North West Border
M18	M1	M62
M180	M18	A180
M181	M180	Scunthorpe
A1(M)	Doncaster	Wetherby
M621	M1	M62
M606	M62	Bradford City Centre

West Midlands region

Table 3.4: Summary of Motorways in the West Midlands

Trunk Road	Start Point	Finish Point
M5	M6	South West Border
M50	M5	Ross-on-Wye
M6	M1	North West Border
M6 Toll	M6	M6
M40	South East Border	M42
M54	M6	Telford
M42	M5	East Midlands Border
M69	M1	M6
M45	M1	Coventry

East Midlands Region

Table 3.5: Summary of Motorways in the East Midlands

Trunk Road	Start Point	Finish Point
M1	South East Border	Yorks & Humber Border
M69	M6	M1
M45	West Midlands Border	M1
M6	West Midlands Border	M1

East of England Region

Table 3.6: Summary of Motorways in the East of England

Trunk Road	Start Point	Finish Point
M25	South East Border	South East Border
M11	South East Border	Cambridge
A1(M)	South East Border	East Midlands Border

South East Region

Table 3.7: Summary of Motorways in the South East

Trunk Road	Start Point	Finish Point
M1	London	East Midlands Border
M2 (inc some of A2)	M25	Faversham
M3	London	Southampton
M4	London	South West Border
M11	London	East of England Border
M20	M25	Folkestone
M25	London Orbital	London Orbital
M23	London	Crawley
M27	New Forest	Portsmouth
M26	M20	M25
A1(M)	London	East Midlands Border

South West Region

Table 3.8: Summary of Motorways in the South West

Trunk Road	Start Point	Finish Point
M4	South East Border	Welsh Border
M5	West Midlands Border	Exeter
M32	M4	Bristol City Centre
M48	M4	Welsh Border
M49	M5	M4

4 Results – Motorway Service Areas

4.1 The results from this analysis have been presented in the form of a matrix displaying the distance from an MSA to the next along all possible routes. This is appended in **Appendix A**. For the main body of the report the matrix has been split by region to breakdown the data into digestible tables.

4.2 The following tables display matrices showing the distance between MSAs broken down by Government Office regions of England. Where MSAs are subject to access restriction or other factors, these have been recorded in the notes column on the far right of the table.

4.3 The matrix is read by selecting an MSA in the far left column. The distance to the nearest MSAs (listed along the top) are recorded in the matrix itself.

4.4 Distances less than 40 miles are coloured green with distances greater than 40 miles coloured red. Those distances coloured green are deemed to be acceptable separations for MSAs. It is the distances highlighted in red which will be subject to some further analysis.

4.5 **Figure 4.1;** appended at the end of this document, displays this information visually by displaying the Motorway Network and MSAs with distances which are coloured red in the matrices highlighted on the map.

Table 4.1: Matrix Displaying MSA Separation in the North East

Motorway Service Area	Government Office Region	Durham	Terminus of A194(M) (Tyne Tunnel)	Terminus of A66(M) (Darlington)	Washington	Wetherby
Durham	North East	#			13	63
Terminus of A194(M) (Tyne Tunnel)	North East		#		5	
Terminus of A66(M) (Darlington)	North East			#		41
Washington	North East	13	5		#	
Wetherby	North East	63		41		#

4.1 **Table 4.1** shows that distances between Wetherby Services to the South on the A1 (M) and Durham Services or the terminus off the A66 (M) are further than 40 miles apart. The matrix shows that these distances are 63 and 41 miles respectively which are above the threshold of 40 miles.

4.2 Whilst the distances mentioned above are greater than the threshold of 40 miles, much of the A1 separating them is not designated as Motorway and therefore lies outside the scope of this study. On this basis these distances are not representative of actual separations and therefore no further consideration need be given at this stage.

4.3 Despite being Non-Motorway at the present time, the A1 between Dishforth and Scotch Corner is to be upgraded to Motorway standard. Upon completion, there will be a separation of 63 miles between MSAs.

4.4 Elsewhere in the North East MSA provision is good with MSA separations of under 28 miles and therefore fully compliant with Highways Agency policy.

Table 4.2: Matrix Displaying MSA Separation in the North West

Motorway Service Area	Government Office Region	Birch	Blackburn with Darwen	Bolton West	Burton in Kendal NB	Burtonwood	Charnock Richard	Chester	Gretna (A74(M) Scotland)	Hartshead Moor	Killington Lake SB	Knutsford	Lancaster (Forton)	Lymm	Sandbach	Southwaite	Tebay	Terminus of A627(M) (Oldham)	Terminus of M53 (Chester)	Terminus of M53 (Wallasey)	Terminus of M55 (Blackpool)	Terminus of M56 (Chester)	Terminus of M57/M58 (Switch Island)	Terminus of M602 (M'cr City Centre)	Terminus of M65 (Colne)	Terminus of M67 (Mottram & Hyde)	Todhills	Truckhaven (Carnforth)
Birch	North West	#		17		22	35	39		24				25				6					39	13	28	17		
Blackburn with Darwen	North West		#	16			15						25								26			32	18	35		
Bolton West	North West	17	16	#			16						28								28			18		30		
Burton-in-Kendal (Northbound O	North West				#												22											
Burtonwood	North West	22				#	20							10									18	16		34		
Charnock Richard	North West	35	15	16		20	#						25	23							26		19	30		48		
Chester	North West	39						#				20		14					6	20		6						
Gretna (A74(M) Scotland)	Scotland								#																		6	
Hartshead Moor	Yorkshire and North East	24								#								22										
Killington Lake (Southbound On	North West										#		26															15
Knutsford	North West							20				#		7	14													
Lancaster (Forton)	North West		25	28			25				26		#								28							13
Lymm	North West	25				10	23	14				7		#												26		
Sandbach	North West											14			#													
Southwaite	North West															#	27										12	
Tebay	North West															27	#											
Terminus of A627(M) (Oldham)	North West	6								22								#										
Terminus of M53 (Chester)	North West							6											#	22								
Terminus of M53 (Wallasey)	North West							20											22	#								
Terminus of M55 (Blackpool)	North West		26	28			26						28								#							
Terminus of M56 (Chester)	North West							8														#						
Terminus of M57/M58 (Switch Island)	North West	39				18	19																#	35		52		
Terminus of M602 (M'cr City Centre)	North West	13	32	18		16	30																35	#	38	26		
Terminus of M65 (Colne)	North West	28	18																					38	#			
Terminus of M67 (Mottram & Hyde)	North West	17	35	30		34	48							26									52	26		#		
Todhills	North West								6							12											#	
Truckhaven (Carnforth)	North West				5						15		12															#

4.5 **Table 4.2** and **Figure 4.1** show that in general coverage of MSAs in the North West is in accordance with the circular with only two routes; Charnock Richard and the Terminus of the M58 to the terminus of the M67 being further than 40 miles long.

4.6 A further nine routes have MSAs separated by less than 40 miles but more than 28 miles. It is recommended that these routes are noted but are not a priority for improvement. This still leaves the majority of the routes in the region fully compliant with policy set out in the Circular.

4.1 It has been identified that two routes in the region produce distances above 40 miles. Both of these routes converge at the M62 with the option of travelling in a clockwise or anticlockwise direction on the M60.

Table 4.3: Matrix Displaying MSA Separation in the Yorkshire & Humber

Motorway Service Area	Government Office Region	Doncaster North	Durham	Ferrybridge	Hartshead Moor	Terminus of M180 (A15 - Humber Br)	Terminus of M181 (Scunthorpe)	Terminus of M606 (Bradford City Centre)	Terminus of M62 (A63 - Hull)	Wetherby	Woodall	Woolley Edge
Doncaster North	Yorkshire and Humber	#		20		25	14		21		26	42
Durham	North East		#							63		
Ferrybridge	Yorkshire and Humber	20		#	23			24	26	18	31	20
Hartshead Moor	Yorkshire and Humber			23	#			5		31		21
Terminus of M180 (A15 - Humber Br)	Yorkshire and Humber	25				#	16					
Terminus of M181 (Scunthorpe)	Yorkshire and Humber	14		26		16	#					
Terminus of M606 (Bradford City Centre)	Yorkshire and Humber				5			#		32		22
Terminus of M62 (A63 - Hull)	Yorkshire and Humber	21		24					#			
Wetherby	Yorkshire and Humber		63	18	31			32		#		28
Woodall	Yorkshire and Humber	26		31							#	27
Woolley Edge	Yorkshire and Humber	42		20	21			22		28	27	#

4.2 **Table 4.3** containing the data collected for MSAs in the Yorkshire & Humber region show that generally coverage is under 40 miles between MSAs, with only two routes having MSAs spaced more than 40 miles apart.

4.3 The distance via the M1/M18 junction between Woolley Edge Services on the M1 and Doncaster North Services on the M18/180 junction is 42 miles and therefore above the 40 miles threshold.

4.4 The distance between Wetherby Services on the A1 (M) and Durham Services or the terminus off the A66 (M) are further than 40 miles apart. The matrix shows that these distances are 63 and 41 miles respectively which are above the threshold of 40 miles.

4.5 Whilst the distances mentioned above are greater than the threshold of 40 miles, much of the A1 separating them is not designated as Motorway and therefore is outside of the scope of this document. Therefore these distances are not representative of actual separations and therefore no further consideration need be given at this stage.

4.6 Despite being Non-Motorway at the present time, the A1 between Dishforth and Scotch Corner is to be upgraded to Motorway standard. Upon completion, there will be a separation of 63 miles between MSAs.

4.7 Overall, the Yorkshire and Humber is well-served by MSAs with a total of two routes having MSAs separated by more than 28 miles, of which only one is over 40.

Table 4.4: Matrix Displaying MSA Separation in the West Midlands

Motorway Service Area	Government Office Region	Cherwell Valley	Corley	Donington Park	Frankley	Hilton Park	Hopwood Park	Keele	Leicester Forest East	Michaelwood	Norton Canes	Sandbach	Stafford	Strensham	Tamworth	Telford	Terminus of M45 (Coventry)	Terminus of M50 (Ross-on-Wye)	Terminus of M54 (Telford)	Warwick	Watford Gap	Notes
Cherwell Valley	South East	#																		24		
Corley	West Midlands		#		31	29	24		23		27				17					35	25	
Donington Park	East Midlands			#					17						23							
Frankley	West Midlands		31		#	18	11							29	30							
Hilton Park	West Midlands		29		18	#					6		19		30	17				49		
Hopwood Park	West Midlands		24		11		#				37			28	27					23		
Keele	West Midlands							#				11	12									
Leicester Forest East	East Midlands		23	17					#												23	
Michaelwood	South West									#				33				56				
Norton Canes	West Midlands		27			6	37				#		22		22					47		
Sandbach	North West							11				#										
Stafford	West Midlands					19		12			22		#			33						
Strensham	West Midlands				29		28			33				#				22				
Tamworth	West Midlands		17	23	30	30	27				22				#					37		
Telford	West Midlands					17							33			#			6			
Terminus of M45 (Coventry)	West Midlands																#				9	Only southbound M1 is accessible from M45.
Terminus of M50 (Ross-on-Wye)	West Midlands									56				22				#				
Terminus of M54 (Telford)	West Midlands															6			#			
Warwick	West Midlands	24	35			49	23				47				37					#		
Watford Gap	East Midlands		25						23								9				#	

4.8 **Table 4.4** shows that distances between Warwick Services on the M40 and Hilton Park or Norton Canes on the M6 and M6 Toll respectively are further than 40 miles when the route along the M42 to the east of Birmingham is taken. The matrix shows that these distances are 49 and 47 miles respectively which are above the threshold of 40 miles.

4.9 **Table 4.4** also shows that the distance from the terminus of the M50 at Ross-on-Wye to Michaelwood services on the M5 is 56 miles.

4.10 **Table 4.5** below shows 12 hour, 18 hour and 24 hour flows along the M42 on a weekday in June 2009. The level of traffic on this route provides evidence to support the need for a MSA in this location.

Table 4.5: Flows on the M42

Flow Count	Northbound	Southbound
12 Hour	51779	31727
18 Hour	49682	29737
24 Hour	41772	24381

Table 4.6: Matrix Displaying MSA Separation in the East Midlands

Motorway Service Area	Government Office Region	Corley	Donington Park	Leicester Forest East	Newport Pagnell	Rothersthorpe	Tibshelf	Trowell	Watford Gap	Woodall
Corley	West Midlands	#		23					25	
Donington Park	East Midlands		#	17				11		
Leicester Forest East	East Midlands	23	17	#					23	
Newport Pagnell	South East				#	18				
Rothersthorpe	East Midlands				18	#			11	
Tibshelf	East Midlands						#	15		15
Trowell	East Midlands		11				15	#		
Watford Gap	East Midlands	25		23		11			#	
Woodall	Yorkshire and North East						15			#

4.11 The Motorway Network in the East Midlands primarily consists of the M1 with sections of the M6, M69 and M45. Of these roads, only the M1 has MSAs along its length, of which there are six.

4.12 The data collected for MSAs in the East Midlands is displayed in **Table 4.6** and shows that all service stations are separated by less than 40 miles.

4.13 The largest separation is 25 miles between Watford Gap and Corley Services, located in the West Midlands. The largest separation of MSAs that are both located within the East Midlands is between Leicester Forest East and Watford Gap at 23 miles.

4.14 As illustrated in **Figure 4.1**, all distances separating MSAs in the East Midlands are less than 40 miles and less than the 28 miles recommended by the Circular and it can be concluded that MSA provision in the region is fully compliant with the Circular.

Table 4.7: Matrix Displaying MSA Separation in the East of England

Motorway Service Area	Government Office Region	Baldock	Birchanger Green	Clacket Lane	Fleet	Heston	London Gateway	Newport Pagnell	Pease Pottage	Peterborough	Reading	South Mimms	Terminus of A404(M) (Maidenhead)	Thurrock	Toddington
Baldock	East of England	#								39		25			
Birchanger Green	East of England		#							56		31		31	
Clacket Lane	South East			#			64						51	22	80
Fleet	South East				#		47					51			60
Heston	South East					#	30					33			42
London Gateway	South East			64	47	30	#		71		54	17	37		27
Newport Pagnell	East Midlands							#							15
Pease Pottage	South East						71		#			73			82
Peterborough	East of England	39	56							#					
Reading	South East						54				#	54			63
South Mimms	East of England	25	31		51	33	17		73		54	#	41	33	27
Terminus of A404(M) (Maidenhead)	South East						37					41	#		50
Thurrock	East of England		31	22								33		#	
Toddington	East of England			80	60	42	27	15	82		63	27	50		#

4.15 **Table 4.7** shows that within the East of England region all the distances separating MSAs are less than the 40 mile threshold. The majority of these distances are also less than the 28 miles specified in the Circular and are therefore compliant with HA policy.

4.16 The routes which are above 28 miles but less than 40 are: Thurrock to South Mimms, South Mimms to Birchanger Green and Thurrock to Birchanger Green.

4.17 Significant cross-boundary issues have been identified at MSAs between the East of England and the South East regions. This is discussed in more detail in the South East results section.

Table 4.8: Matrix Displaying MSA Separation in the South East

Motorway Service Area	Government Office Region	Baldock	Beaconsfield	Birchanger Green	Cherwell Valley	Chievely	Clacket Lane	Fleet	Heston	London Gateway	Maidstone	Medway	Membury	Newport Pagnell	Oxford	Pease Pottage	Peterborough	Reading	Rownhams	South Mimms	Stop24 (Folkestone)	Terminus of A404(M) (Maidenhead)	Terminus of M1 (London)	Terminus of M10 (St. Albans)	Terminus of M11 (London)	Terminus of M2 (Faversham)	Terminus of M20 (Folkestone)	Terminus of M23 (Gatwick Airport)	Terminus of M27 (New Forest)	Terminus of M27 (Portsmouth)	Terminus of M271 (Soton Docks)	Terminus of M275 (Portsmouth Docks)	Terminus of M3 (London)	Terminus of M4 (Heathrow Airport)	Terminus of M4 (London)	Terminus of M40 (London)	Thurrock	Toddington	Winchester
Baldock	East of England	#															39			25																			
Beaconsfield	South East		#				48	33	15	24					25	55		37		27		24						49					22	13		7		36	
Birchanger Green	East of England			#													56			31					22												31		
Cherwell Valley	South East				#										18																							
Chievely	South East					#							12					14																				
Clacket Lane	South East		48				#	48	43	64	27	35				22		65				51						16					37	41		45	22	80	
Fleet	South East		33				48	#	28	47						54		27		51								48					21	26		30		60	23
Heston	South East		15				43	28	#	30						50		30		33		17						55					18	4	5	12		42	
London Gateway	South East		24				64	47	30	#						71		54		17		37	6					63					38	27		21		27	
Maidstone	South East						27				#	45									23																31		
Medway	South East						35				45	#														17											26		
Membury	South East					12							#																										
Newport Pagnell	South East													#																							15	
Oxford	South East		25		18										#																							
Pease Pottage	South East		55				22	54	50	71						#		71		73		58						8					44	48		52		82	
Peterborough	South East	39		56													#																					
Reading	South East		37			14	65	27	30	54						71		#		54		18						65					31	30		34		63	
Rownhams	South East																		#										7	21	3	22						16
South Mimms	East of England	25	27	31				51	33	17						73		54		#		41			23			70					40	30		25	33	27	
Stop24 (Folkestone)	South East										23										#						4											
Terminus of A404(M) (Maidenhead)	South East		24				51		17	37						58		18		41		#											16			19		50	

Motorway Service Area	Government Office Region	Baldock	Beaconsfield	Birchanger Green	Cherwell Valley	Chievely	Clacket Lane	Fleet	Heston	London Gateway	Maidstone	Medway	Membury	Newport Pagnell	Oxford	Pease Pottage	Peterborough	Reading	Rownhams	South Mimms	Stop24 (Folkestone)	Terminus of A404(M) (Maidenhead)	Terminus of M1 (London)	Terminus of M10 (St. Albans)	Terminus of M11 (London)	Terminus of M2 (Faversham)	Terminus of M20 (Folkestone)	Terminus of M23 (Gatwick Airport)	Terminus of M27 (New Forest)	Terminus of M27 (Portsmouth)	Terminus of M271 (Soton Docks)	Terminus of M275 (Portsmouth Docks)	Terminus of M3 (London)	Terminus of M4 (Heathrow Airport)	Terminus of M4 (London)	Terminus of M40 (London)	Thurrock	Toddington	Winchester
Terminus of M1 (London)	South East									6													#																
Terminus of M10 (St. Albans)	South East																							#														18	
Terminus of M11 (London)	South East			22																23					#												24		
Terminus of M2 (Faversham)	South East											17														#													
Terminus of M20 (Folkestone)	South East																				4						#												
Terminus of M23 (Gatwick Airport)	South East		49				16	48	55	63						8		65		70								#					37	41		45		75	
Terminus of M27 (New Forest)	South East																		7										#		7								
Terminus of M27 (Portsmouth)	South East																		21											#		3							33
Terminus of M271 (Soton Docks)	South East																		3										7		#								
Terminus of M275 (Portsmouth Docks)	South East																		22											3		#							34
Terminus of M3 (London)	South East		22				37	21	18	38						44		31		40		16						37					#	16		19		50	
Terminus of M4 (Heathrow Airport)	South East		13				41	26	4	27						48		30		30													16	#		9		40	
Terminus of M4 (London)	South East								5																									#				

Motorway Service Area	Government Office Region	Baldock	Beaconsfield	Birchanger Green	Cherwell Valley	Chievely	Clacket Lane	Fleet	Heston	London Gateway	Maidstone	Medway	Membury	Newport Pagnell	Oxford	Pease Pottage	Peterborough	Reading	Rownhams	South Mimms	Stop24 (Folkestone)	Terminus of A404(M) (Maidenhead)	Terminus of M1 (London)	Terminus of M10 (St. Albans)	Terminus of M11 (London)	Terminus of M2 (Faversham)	Terminus of M20 (Folkestone)	Terminus of M23 (Gatwick Airport)	Terminus of M27 (New Forest)	Terminus of M27 (Portsmouth)	Terminus of M271 (Soton Docks)	Terminus of M275 (Portsmouth Docks)	Terminus of M3 (London)	Terminus of M4 (Heathrow Airport)	Terminus of M4 (London)	Terminus of M40 (London)	Thurrock	Toddington	Winchester
Terminus of M40 (London)	South East		7				45	30	12	21						52		34		25		19						45					19	9		#		33	
Thurrock	East of England			31			22				31	26								33					24													#		
Toddington	East of England		36				80	60	42	27				15		82		63		27		50		18				75					50	40		33		#	
Winchester	South East							23											16											33		34							#

4.18 **Table 4.8** shows that long separation between MSAs in the South East is an issue with around a third of separations being higher than the 40 mile threshold.

4.19 The majority of issues are located around the west side of the M25 with another large gap between Medway and Maidstone services.

4.20 It is understood that there are proposals for a new MSA on the M25 at Cobham.

4.21 **Table 4.9** below shows the average 12 hour, 18 hour and 24 hour flows along the anti-clockwise M25 between the M3 and M23 at Cobham in 2007. The level of traffic on this route provides evidence to support the need for a MSA in this location.

Table 4.9: Flows on the anti-clockwise M25 at Cobham

Flow Count	Northbound
12 Hour	59043
18 Hour	73996
24 Hour	78235

4.22 **Table 4.10** displays the separations which will be remedied by the construction of Cobham services.

Table 4.10: Separations reduced to below 40 miles by Cobham Services

From	To
Pease Pottage	Beaconsfield
Pease Pottage	Toddington
Pease Pottage	South Mimms
Pease Pottage	London Gateway
Pease Pottage	Fleet
Pease Pottage	M4 Heathrow Spur
Pease Pottage	Reading
Pease Pottage	A404(M)
M23 Gatwick Spur	Beaconsfield
M23 Gatwick Spur	Toddington
M23 Gatwick Spur	South Mimms
M23 Gatwick Spur	London Gateway
M23 Gatwick Spur	Fleet
M23 Gatwick Spur	M4 Heathrow Spur
M23 Gatwick Spur	Reading
M23 Gatwick Spur	A404(M)
Clacket Lane	Beaconsfield
Clacket Lane	Toddington
Clacket Lane	South Mimms
Clacket Lane	London Gateway
Clacket Lane	Fleet
Clacket Lane	M4 Heathrow Spur
Clacket Lane	Reading
Clacket Lane	A404(M)

4.23 A new MSA at Cobham would not solve the separation issues for all the problem routes identified. **Table 4.11** displays the routes which would still have MSAs separated by more than 40 miles.

Table 4.11: Separations reduced to below 40 miles by Cobham Services

From	To
Toddington	Fleet
Toddington	Heston
Toddington	Reading
Toddington	A404(M)
South Mimms	Fleet
South Mimms	Reading
South Mimms	A404(M)
London Gateway	Fleet
London Gateway	Reading

Table 4.12: Matrix Displaying MSA Separation in the South West

Motorway Service Area	Government Office Region	Bridgwater	Cullompton	Exeter	Gordano	Leigh Delamere	Magor (M4 Wales)	Michaelwood	Sedgemoor	Severn View	Taunton Deane	Terminus of M32 (Bristol City Centre)	Terminus of M5 (Exeter)
Bridgwater	South West	#							13		12		
Cullompton	South West		#	12							15		
Exeter	South West		12	#									4
Gordano	South West				#	28	16	19	19	14		16	
Leigh Delamere	South West				28	#	35	28		24		24	
Magor (Wales)	Wales				16	35	#	24		11		20	
Michaelwood	South West				19	28	24	#		14		18	
Sedgemoor	South West	13			19				#				
Severn View	South West				14	24	11	14		#		12	
Taunton Deane	South West	12	15								#		
Terminus of M32 (Bristol City Centre)	South West				16	24	20	18		12		#	
Terminus of M5 (Exeter)	South West			4									#

4.24 **Table 4.12** shows that within the South West region all the distances separating MSAs are under the 40 mile threshold.

4.25 The majority of separations between MSAs in the South West are fully compliant with HA policy by being less than 28 miles with the exception of one. Leigh Delamere on the M4 and Magor Services on the M4 in Wales are separated by 35 miles.

4.26 The M4 and M5 are important constituents of the Motorway Network and are served by MSAs separated by less than 28 miles. Therefore it can be concluded that provision of MSAs in the South West region is adequate.

4.27 However, when considering cross regional border issues reference needs to be made to the West Midlands report and the Gap Identified between the terminus of the M50 at Ross-on-Wye and Michaelwood services on the M5.

5 Conclusions and Recommendations

Conclusions

5.1 This report has brought together the results of eight regional report produced to understand the provision of Strategic Road Network Service Areas. The focus of this report is the gaps in the provision of MSAs on the HA's network, with a view to making recommendations for new MSAs.

5.2 In general, the Motorway Network is well served by MSAs located less than 40 miles apart. There are however a number of stretches of Motorway which exceed the 40 mile separation and therefore are considered to be a priority. The following provides the conclusions of this report region by region.

North East

5.3 No requirements at this time but there may be some need for cross boundary coordination with the Yorkshire and Humber region.

North West

5.4 In the North West, Charnock Richard and the terminus of the M58 to the terminus of the M67 are both routes further than 40 miles long with no MSA provision. There are a further nine routes above the 28 mile threshold

Yorkshire and Humber

5.5 Despite being non-motorway at the present time, the A1 between Dishforth and Scotch Corner in the Yorkshire & Humber region is to be upgraded to Motorway standard. Upon completion, there will be a separation of 63 miles between MSAs.

West Midlands

5.6 In the West Midlands region, the routes between Warwick services and Norton Canes on the M6 Toll and Warwick services and Hilton Park on the M6 are also routes with MSAs spaced more than 40 miles apart.

East Midlands

5.7 No requirements at this time.

East of England

5.8 The results show that Motorway Network within the East of England region provides an adequate coverage of MSAs. However, the results highlight a need to coordinate future plan with the South East region in order to achieve an outcome that resolves the issues that have been identified

South East

5.9 The western stretch of M25 is poorly served by MSAs which will only be partially rectified by a new MSA at Cobham.

South West

5.10 With sections in both the West Midlands and South West regions, the route from the terminus of the M50 at Ross-on-Wye to Michaelwood services on the M5 lies above the 40 mile threshold

Recommendations

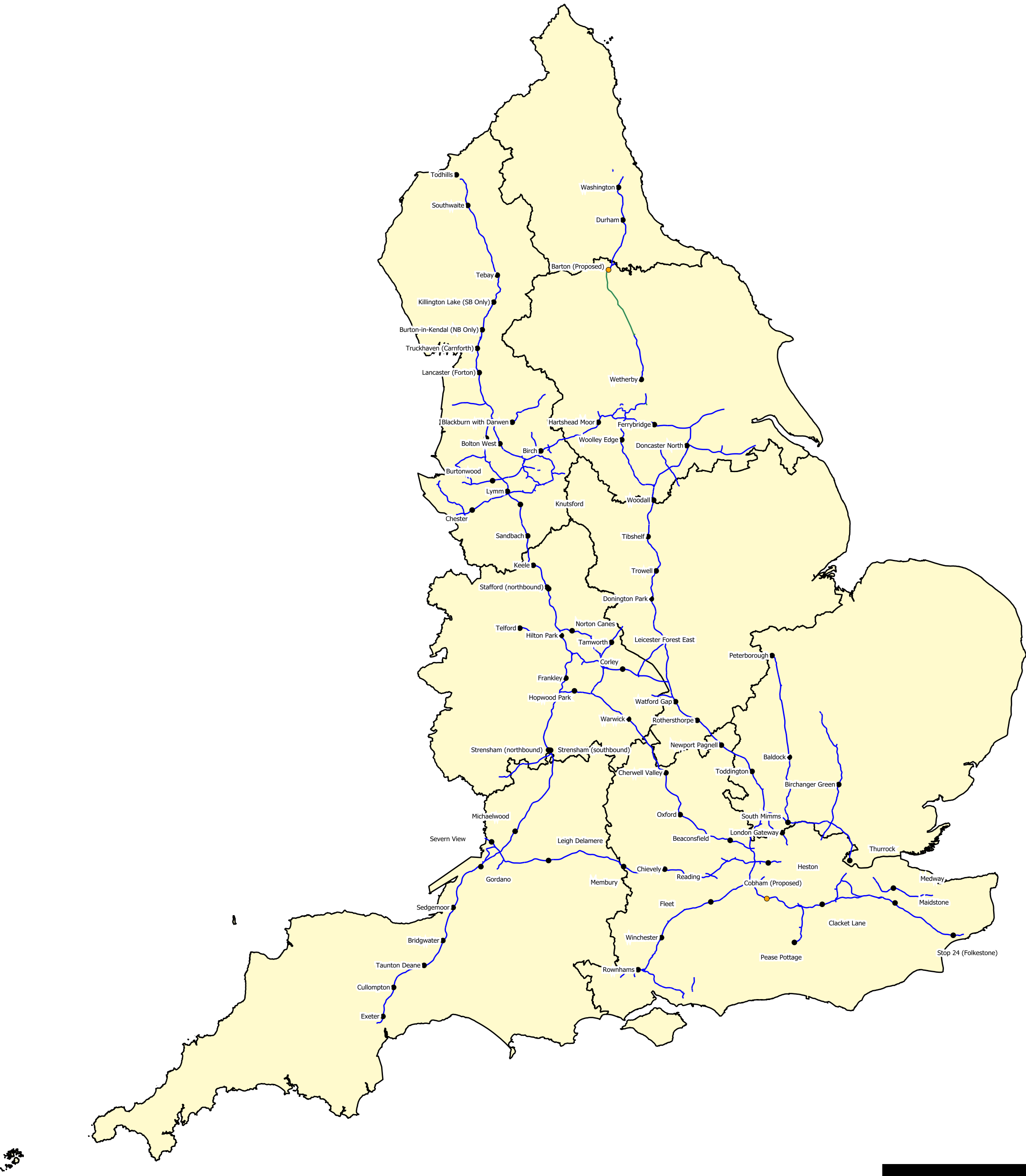
5.11 The HA will need to facilitate cross-boundary working so that a co-ordinated approach can be taken. Regions such as the Yorkshire and Humber and North East will need to work together as the A1(M) is completed to ensure appropriate provision of MSAs. Similarly, the East of England and South East regions should work closely together to ensure the needs of both are incorporated into future plans.

5.12 This study has only been concerned with the geographical location of MSAs and has not sought to validate the provision of services and facilities.

5.13 As part of taking forward recommendations consideration should be given to the location of new MSAs in relation to the local authority boundaries and the need for inclusion in the respective Local Development Frameworks. Further work will be required for identifying appropriate sites for providing MSAs. This should involve the respective local authorities early in the process to identify sustainable, available and viable sites.

Figures

Motorway Service Station Gap Analysis
National Overview - MSA locations



HIGHWAYS AGENCY

Key

GO Regions
Areas
National MSA's
Road Network
Motorway
A Roads

Figure 3.1

Motorway Service Station Gap Analysis
National Overview - Distance between MSA's

Key

GO Regions
Areas
A-Roads
National MSA's

MSA Gaps
Number of Routes > 40 miles separation
0
1-10
10-20
20+

HIGHWAYS AGENCY

Figure 4.1

Appendix A

Motorway Service Area	Government Office Region	Baldock	Beaconsfield	Birch	Birchanger Green	Blackburn with Darwen	Bolton West	Bridgwater	Burton in Kendal NB	Burtonwood	Charnock Richard	Cherwell Valley	Chester	Chievely	Clacket Lane	Corley	Cullompton	Doncaster North	Donington Park	Durham	Exeter	Ferrybridge	Fleet	Frankley	Gordano	Gretna (A74(M) Scotland)	Hartshead Moor	Heston	Hilton Park	Hopwood Park	Keele	Killington Lake SB	Knutsford	Lancaster (Forton)	Leicester Forest East	Leigh Delamere	London Gateway	Lymm	Magor (M4 Wales)	Maidstone	Medway	Membury	Michaelwood	Newport Pagnell	Norton Canes	Oxford	Pease Pottage	Peterborough	Reading	Rothersthorpe	Rownhams	Sandbach	Sedgemoor	Severn View	South Mimms	Southwaite	Stafford	Stop24 (Folkestone)	Strensham	Tamworth	Taunton Deane	Tebay	Telford	Terminus of A194(M) (Tyne Tunnel)	Terminus of A404(M) (Maidenhead)	Terminus of A627(M) (Oldham)	Terminus of A66(M) (Darlington)	Terminus of M1 (London)	Terminus of M10 (St. Albans)	Terminus of M11 (London)	Terminus of M180 (A15 - Humber Br)	Terminus of M181 (Scunthorpe)	Terminus of M2 (Faversham)	Terminus of M20 (Folkestone)	Terminus of M23 (Gatwick Airport)	Terminus of M27 (New Forest)	Terminus of M27 (Portsmouth)	Terminus of M271 (Southampton Docks)	Terminus of M275 (Portsmouth Docks)	Terminus of M3 (London)	Terminus of M32 (Bristol City Centre)	Terminus of M4 (Heathrow Airport)	Terminus of M4 (London)	Terminus of M40 (London)	Terminus of M45 (Coventry)	Terminus of M5 (Exeter)	Terminus of M50 (Ross-on-Wye)	Terminus of M53 (Chester)	Terminus of M53 (Wallasey)	Terminus of M54 (Telford)	Terminus of M55 (Blackpool)	Terminus of M56 (Chester)	Terminus of M57/M58 (Switch Island)	Terminus of M602 (M'cr City Centre)	Terminus of M606 (Bradford City Centre)	Terminus of M62 (A63 - Hull)	Terminus of M65 (Colne)	Terminus of M67 (Mottram & Hyde)	Thurrock	Tibshelf	Toddington	Todhills	Trowell	Truckhaven (Carnforth)	Warwick	Washington	Watford Gap	Wetherby	Winchester	Woodall	Woolley Edge
Baldock	East of England	#																																														39							25																																																							
Beaconsfield	South East		#											48								33					15									24									25	55		37						27										24										49					22		13		7																	36										
Birch	North West			#			17			22	35		39														24											25																												6																										39	13			28	17													
Birchanger Green	East of England				#																																												56							31															22																													31												
Blackburn with Darwen	North West					#	16				15																						25																																																								26			32			18	35													
Bolton West	North West			17		16	#				16		54																					28																																																								28			18				30													
Bridgwater	South West							#																																												13								12																																																		
Burton in Kendal NB	North West								#																																																					22																																																	
Burtonwood	North West			22						#	20																											10																																																							18	16			46	34													
Charnock Richard	North West			35		15	16			20	#																							25																																																								26		19	30				48													
Cherwell Valley	South East											#																																	18																																																											24						
Chester	North West			39			54						#																			20					14																																																			6	20			6																			
Chievely	South East													#																											12							14																																																														
Clacket Lane	South East		48												#								48					43									64			27	35						22		65																51										16					37		41		45															22		80										
Corley	West Midlands															#								31					29	24					23										27														17																																													35		25				
Cullompton	South West																#				12																																							15																																																		
Doncaster North	Yorkshire and Humber																	#				20																																																	25	14																								21														26	42
Donington Park	East Midlands																		#																17																									23																																														11								
Durham	North East																			#																																																																																						13		63			
Exeter	South West																12				#																																																																4																									
Ferrybridge	Yorkshire and Humber																	20				#					23																																																																				24	26												18		31	20
Fleet	South East		33											48								#					28									47									54		27						51																				48					21		26		30																	60								23		
Frankley	West Midlands															31								#					18	11																													29	30																																																			
Gordano	South West																								#										28			16				19										19	14																										16																														
Gretna (A74(M) Scotland)	Scotland																									#																																																																											6									
Hartshead Moor	Yorkshire and Humber			24																	23					#																																							22																													5													31			21
Heston	South East		15											43								28					#									30									50		30						33										17										55					18		4	5	12																	42										
Hilton Park	West Midlands															29								18					#																	6												19			30			17																																										49						
Hopwood Park	West Midlands															24								11						#															37														28	27																																													23						
Keele	West Midlands																														#																				11					12																																																						
Killington Lake SB	North West																															#		26																																																																						15							
Knutsford	North West												20																			#					7														11																																																												
Lancaster (Forton)	North West					25	28				25																				26		#																																																								28													13							
Leicester Forest East	East Midlands															23			17																#																																																																								23				
Leigh Delamere	South West																								28										#			35			28	28											24																										24																														
London Gateway	South East		24											64								47					30									#									71		54						17										37			6						63					38		27		21																	27										
Lymm	North West			25						10			14																			7					#																																																													26													
Magor (M4 Wales)	South West																								16										35			#				24										11																										20																														
Maidstone	South East														27																								#	45																23																																										31												
Medway	South East														35																								45	#																															17																											26												
Membury	South East													12																						28						#																																																																				
Michaelwood	South West																								19										28			24				#										14				33																					18						56																							
Newport Pagnell	South East																																											#						18																																																		15										
Norton Canes	East Midlands															27												6	37														#											22			22																																													47						
Oxford	South East		25									18																																		#																																																																	
Pease Pottage	South East		55											22								54					50									71									#		71						73										58										8					44		48		52																	82										
Peterborough	South East	39			56																																											#																																																															
Reading	South East		37											14	65								27					30									54									71		#						54										18										65					31		30		34																	63										
Rothersthorpe	East Midlands																																											18						#																																																									11				
Rownhams	South East																																																		#																									7	21	3	22																														16		
Sandbach	North West																														11		14																				#																																																										
Sedgemoor	South West							13																19																											#																																																									
Severn View	South West																								14										24			11				14										#																										12																														
South Mimms	South East	25	27		31																	51					33									17									73		54						#										41				23				70					40		30		25															33		27										
Southwaite	North West																																																							#						27																																									12									
Stafford	West Midlands																												19		12														22											#						33																																																
Stop24 (Folkestone)	South East																																							23																		#																4																																					
Strensham	West Midlands																							29						28													33																#																												22																								
Tamworth	West Midlands															17			23				30				30	27															22														#																																													37						
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Telford	West Midlands																												17																												33						#																										6																				
Terminus of A194(M) (Tyne Tunnel)	North East																																																															#																																									5					
Terminus of A404(M) (Maidenhead)	South East		24											51												17									37									58		18						41									#														16				19																	50										
Terminus of A627(M) (Oldham)	North West			6																							22																																							#																																													
Terminus of A66(M) (Darlington)	North East																																																																		#																																								41			
Terminus of M1 (London)	South East																																				6																														#																																											
Terminus of M10 (St. Albans)	South East																																																																				#																															18										
Terminus of M11 (London)	South East				22																																																			23														#																													24												
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Terminus of M181 (Scunthorpe)	Yorkshire and Humber																	14				26																																																16	#																																							
Terminus of M2 (Faversham)	South East																																								17																															#																																						
Terminus of M20 (Folkestone)	South East																																																									4																#																																					
Terminus of M23 (Gatwick Airport)	South East		49											16								48					55									63									8		65						70																				#					37		41		45																	75										
Terminus of M27 (New Forest)	South East																																																		7																									#		7																																	
Terminus of M27 (Portsmouth)	South East																																																		21																										#		3																														33		
Terminus of M271 (Southampton Docks)	South East																																																		3																									7		#																																	
Terminus of M275 (Portsmouth Docks)	South East																																																		22																										3		#																														34		
Terminus of M3 (London)	South East		22											37								21					18									38									44		31						40										16										37					#		16		19																	50										
Terminus of M32 (Bristol City Centre)	South West																								16										24			20				18										12																										#																														
Terminus of M4 (Heathrow Airport)	South East		13											41								26					4									27									48		30						30																									16		#		9																	40										
Terminus of M4 (London)	South East																											5																																																										#																												
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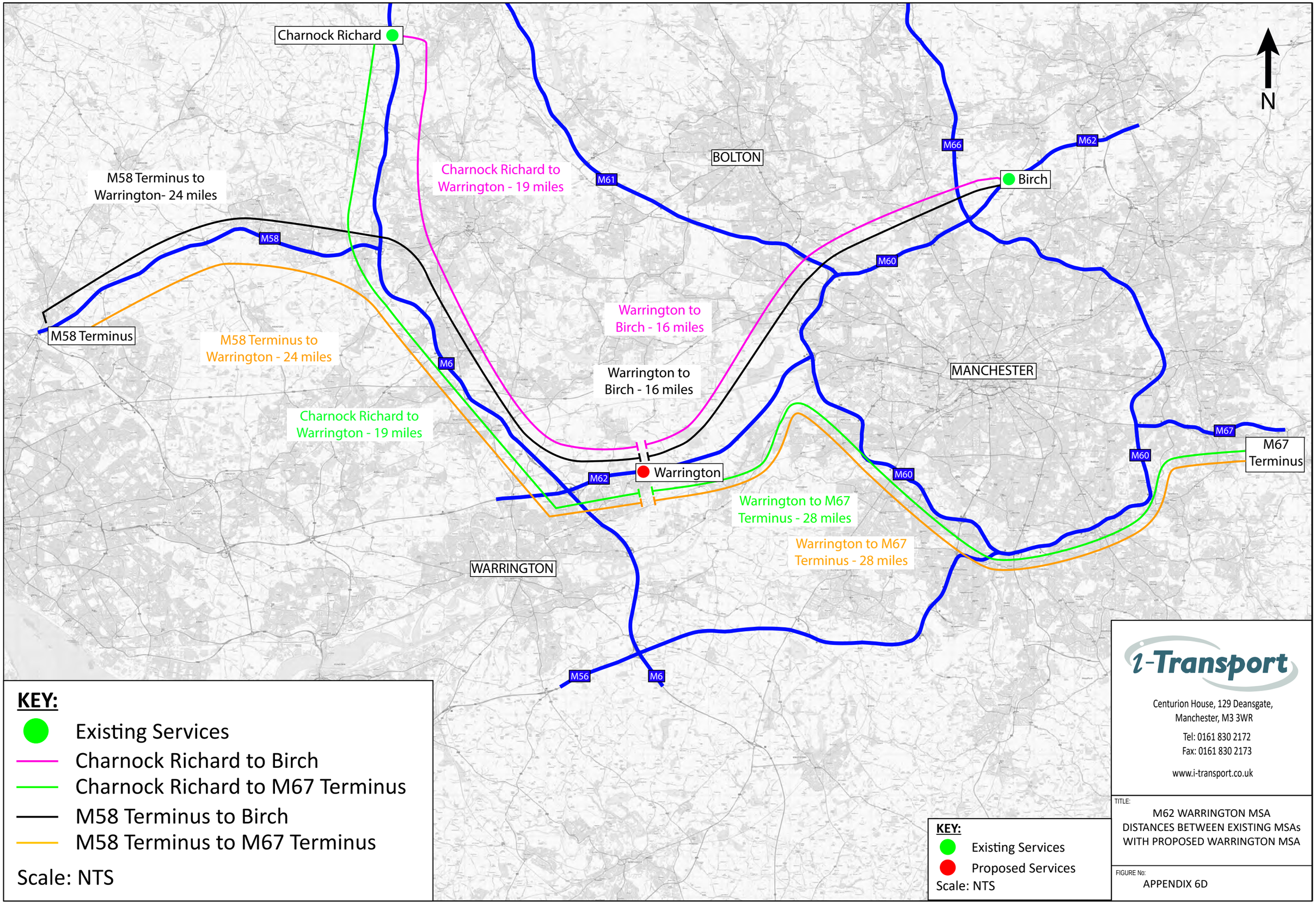
Terminus of M45 (Coventry)	West Midlands																																																																																					#																						9				
Terminus of M5 (Exeter)	South West																				4																																																																	#																									
Terminus of M50 (Ross-on-Wye)	West Midlands																																										56																22																												#																								
Terminus of M53 (Chester)	North West												6																																																																												#	22																						
Terminus of M53 (Wallasey)	North West												20																																																																												22	#																					
Terminus of M54 (Telford)	West Midlands																																																														6																										#																					
Terminus of M55 (Blackpool)	North West					26	28				26																						28																																																								#																				
Terminus of M56 (Chester)	North West												8																																																																																#																			
Terminus of M57/M58 (Switch Island)	North West			39						18	19																																																																																			#	35																	
Terminus of M602 (M'cr City Centre)	North West			13		32	18			16	30																																																																																			35	#			38	26													
Terminus of M606 (Bradford City Centre)	Yorkshire and Humber																										5																																																																				#													32			22
Terminus of M62 (A63 - Hull)	Yorkshire and Humber																	21				24																																																																																#															
Terminus of M65 (Colne)	North West			28		18				46																																																																																				38			#	42													
Terminus of M67 (Mottram & Hyde)	North West			17		35	30			34	48																										26																																																								26			42	#													
Thurrock	South East				31										22																								31	26														33														24																														#												
Tibshelf	East Midlands																																																																																																			#			15						15	
Toddington	South East		36											80								60					42									27							15			82		63						27										50				18						75					50		40		33																		#										
Todhills	North West																									6																													12																																														#									
Trowell	East Midlands																		11																																																																																					15			#								
Truckhaven (Carnforth)	North West								5																						15		12																																																																																#							
Warwick	West Midlands											24				35													49	23															47														37																																												#						
Washington	North East																			13																																													5																																											#					
Watford Gap	East Midlands															25																			23															11																																					9																						#				
Wetherby	Yorkshire and Humber																			63		18					31																																							41																												32													#			28
Winchester	South East																						23																											16																										33		34																														#		
Woodall	Yorkshire and Humber																	26				31																																																																																								15										#	27
Woolley Edge	Yorkshire and Humber																	42				20					21																																																																				22													28		27	#

Highways Agency Publications Code PR272/09

Email: roadside_facilities@highways.gsi.gov.uk

APPENDIX 6.D. Meeting Gaps on the Motorway Network



i-Transport

Centurion House, 129 Deansgate,
Manchester, M3 3WR

Tel: 0161 830 2172
Fax: 0161 830 2173

www.i-transport.co.uk

TITLE:
M62 WARRINGTON MSA
DISTANCES BETWEEN EXISTING MSAs WITH PROPOSED WARRINGTON MSA

FIGURE No:
APPENDIX 6D

APPENDIX 7.A. Illustrative Layout Plan

1:1250

0 25 50 125 m

N

KEY

Application Boundary

NOTES:

The site boundary is based on Wardell Armstrong drawing no SH11739-006.

Site and surrounding information based on Ordnance Survey Plan Information supplied by Spawforths. Licence no. 100022432.

Area of restored landfill site amended to reflect current site conditions.

Location of HS2 safe guarding zone as Wardell Armstrong drawing SH11739-003.

This drawing is indicative and the plan, elevation, massing and detailing are all subject to change within the bounds of the parameter drawings submitted as part of this application.

FOR CONSULTANT REVIEW

Rev:	Date:	Description:	By:	Rvw:
P5	11.07.19	New site layout to incorporate peat habitat zone	JLR	TW
P4	22.05.19	Planning Draft For Review	TW	NAB
P3	02.05.19	Play area moved in line with HSE comments. Parking adjusted to accomodate revised play area. Bus stop added following public consultation in line with Extra instruction. Pedestrian link from car parking to PROW added in line with Spawforths comments.	TW	TW
P2	11.04.19	Context coordination. FFS update	JLR	TW
P1	20.03.19	i-Transpoty access plan added, amenity building updated	TW	TW

architecture 519

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e. Leeds@architecture519.com
w. www.architecture519.com
t. 0113 213 5656

Client:

EXTRA MSA GROUP

Project No: 2562

Project Name: WARRINGTON MOTORWAY SERVICE AREA, J11 M62

Document Reference:

Project - Originator - Volume - Level - Type - Role - Number

RMS - 519 - ZZ - XX - DR - A - 0751

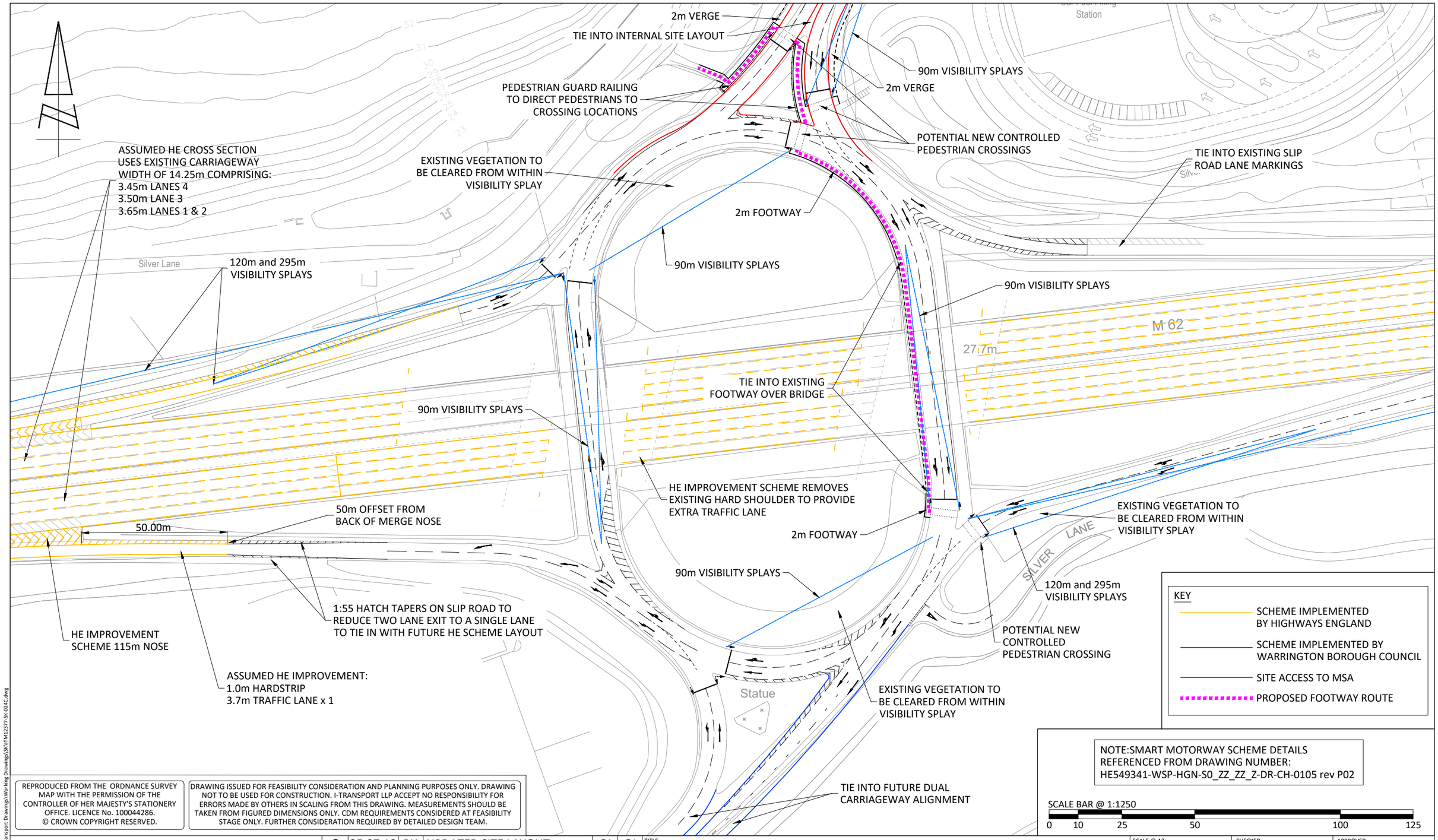
INDICATIVE SITE PLAN

Status: Code — Suitability description

Revision: Code P5 — Revision status Preliminary

Created By:	Reviewed By:	Date:	Scale at A1:
JLR	TW	01.04.19	1 : 1250

APPENDIX 7.B. Proposed Site Access Arrangements



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Manchester, M3 3WR
Tel: 0161 830 2172
Fax: 0161 830 2173
www.i-transport.co.uk

REV	DATE	BY	DESCRIPTION	CHK	APD
C	25.07.19	PH	UPDATED SITE LAYOUT	GJ	GJ
B	16.05.19	PH	ROAD MARKING ARROWS AMENDED ON SLIP ROAD	JH	JH
A	29.03.19	PH	PEDESTRIAN ROUTE AMENDED	JH	JH

STATUS: FOR INFORMATION

TITLE: PROPOSED SIGNALS SCHEME AT JUNCTION 11 M62

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

CLIENT: EXTRA MSA GROUP

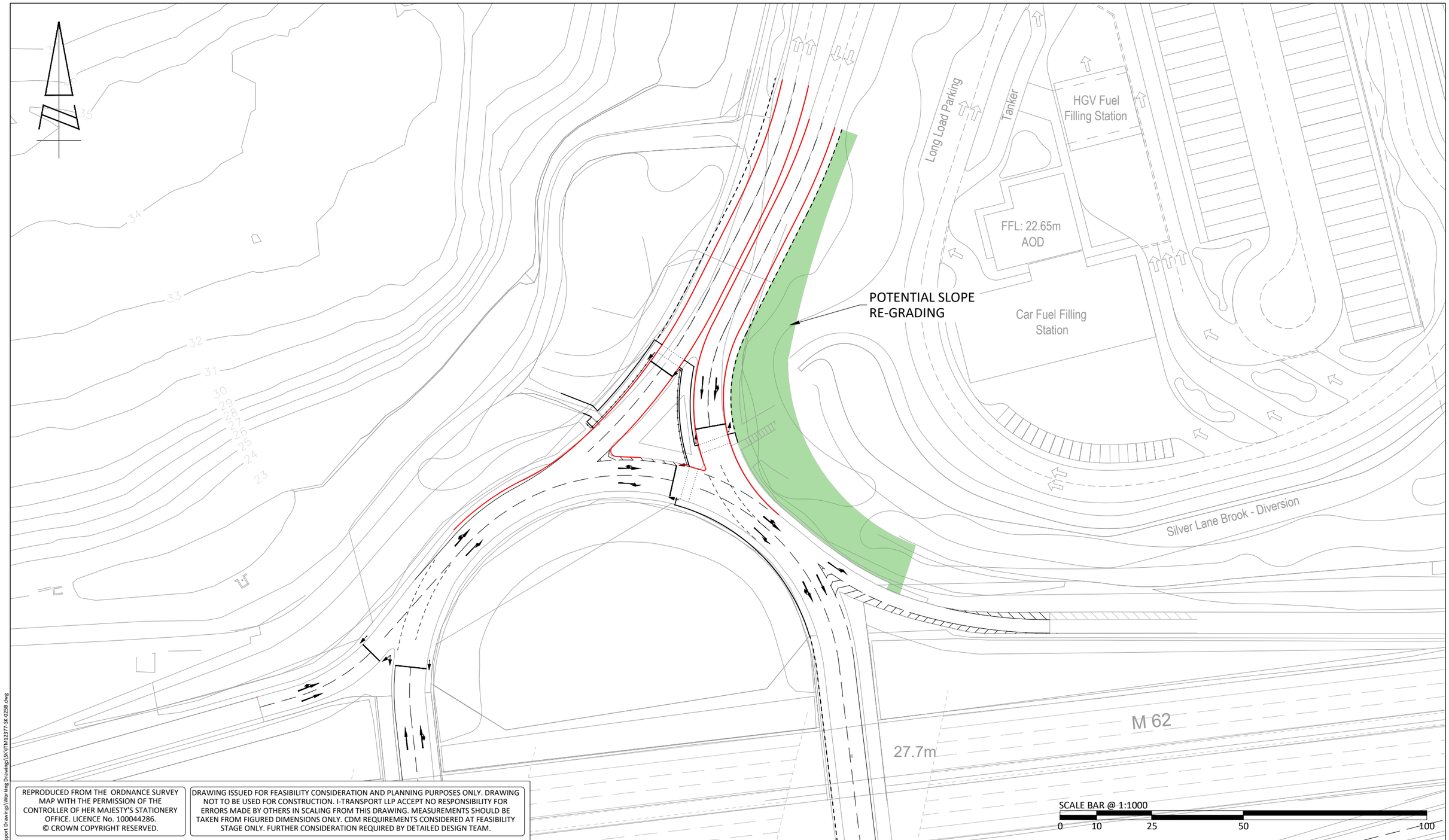
SCALE @ A3:	CHECKED:	APPROVED:
1:1250	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	12.03.19

DRAWING No: ITM12377-SK-024

PROJECT No: ITM12377

REV: C

Z:\Projects\12377ITM M62 Warrington MSA\Tech\Acad\i-Transport Drawings\Working Drawings\SK\ITM12377-SK-024C.dwg



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REV	DATE	BY	DESCRIPTION	CHK	APD
B	25.07.19	PH	UPDATED SITE LAYOUT	GJ	GJ
A	05.06.19	JB	UPDATED ROUNDABOUT LAYOUT	GJ	GJ

STATUS: FOR INFORMATION

TITLE: PRELIMINARY SITE ACCESS LAYOUT

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

CLIENT: EXTRA MSA GROUP

SCALE @ A3:	CHECKED:	APPROVED:
1:1000	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	19.03.19

DRAWING No: ITM12377-SK-025

PROJECT No: ITM12377

REV: B

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APPENDIX 7.C. WCHAR

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Basingstoke, RG24 8AG

Tel: 01256 338640

Technical Note

Project No: ITM12377
Project Title: Warrington MSA
Title: Proposed Site Access and Improvements to M62J11: WCHAR Brief
Ref: SEE/JH/ITM12377-007 TN
Date: 15 May 2019

SECTION 1 Project Summary

1.1 i-Transport LLP has been appointed by Extra MSA Group ('Extra' or 'the Applicant') to prepare a Transport Assessment (TA) to assess the transport implications of a proposed 'new concept' Motorway Service Area (MSA) immediately north of Junction 11 of the M62 motorway. The development, if permitted and then constructed, will be known as Warrington Services. The location of the MSA is shown in **Appendix A**.

1.2 Vehicular access to the site is proposed via a direct signal-controlled connection to the M62 Motorway Junction 11. It is proposed to signalise the motorway junction as part of the scheme. The following section describes the proposed access arrangements.

SECTION 2 General Details

2.1 Type of Scheme

2.1.1 This WCHA brief has been prepared in respect of a new direct signal-controlled connection to the M62 Motorway Junction 11 (M62J11) to serve a new Motorway Service Area (MSA) to be operated by Extra MSA Group. The Assessment should also include the proposed signalisation of M62J11, which includes the provision of signal-controlled pedestrian facilities. The site access arrangements are shown on i-Transport Drawing No. ITM12377-SK-024A and ITM12377-SK-025 contained within **Appendix B**

2.1.2 The proposed site access arrangements have been designed to a preliminary feasibility level suitable for the purposes of planning and cognisant of committed improvements at:

- M62J11 and Birchwood Way which are to be implemented by Warrington Borough Council (WBC), due to be completed by January 2020 as part of its 'Warrington East Phase 3' Scheme;. and

- Highways England's (HE) Smart Motorway Scheme for which works began in summer 2018 and are due to be completed by Spring 2020.

2.1.3 WBC's Warrington East Phase 3 Scheme is shown on Drawing No 392681-MMD-00-XX-DR-C-0003 and HE's Smart Motorway scheme is shown on Drawing HE549341-WSP-HGN-S0_ZZ_ZZ_Z-DR-CH-0105, both drawings are included at **Appendix C.**

2.1.4 This brief is for a Walking, Cycling and Horse-Riding Assessment, to inform the preliminary design of the scheme, regarding the proposed access layout and signalisation scheme.

2.2 Overseeing Organisation

2.2.1 The overseeing organisation for this scheme and contact details are as follows:

Robert Heywood
Highways England
Piccadilly Gate
Store Street
Manchester
M1 2WD

2.3 Design Organisation

2.3.1 The Design Organisation of this scheme, with contact details, is as follows:

i-Transport
Centurion House
129 Deansgate
Manchester
M3 3WR

2.4 Terms of Reference

2.4.1 The Walking, Cycling and Horse-Riding Assessment should be undertaken in accordance with HD 42/17 of the DMRB.

SECTION 3 Scheme Details

3.1 General

3.1.1 The scheme will provide access to a new MSA to be operated by Extra, the MSA proposals comprise:

- Facilities Building (max 5,000sqm GIA) incorporating a food court and ancillary retail floor space, up to 100 bedroom hotel, toilet, shower and washing facilities.
- Fuel Filling Station (FFS) with a forecourt for use by private vehicles and an HGV forecourt and a forecourt shop of approximately 500m^2.
- Parking spaces for all vehicle types will be provided on the site, in line with the requirements of Schedule 1 of Circular 02/2013.

3.1.2 Vehicular access to the site is proposed via a direct signal-controlled connection to Junction 11 of the M62 Motorway. It is proposed to signalise the motorway junction as part of the scheme, this includes the introduction of signal controlled pedestrian crossings.

3.1.3 The site access carriageway will provide two lanes of ingress and two lanes of egress. A central reserve is proposed between the inbound and outbound lanes. Footways are proposed on both sides of the carriageway, with crossing facilities at appropriate locations.

3.1.4 WBC have developed an improvement scheme at M62J11 and Birchwood Way, known as Warrington East Phase 3, as shown on the plan in Appendix B. The scheme is fully funded, construction began in December 2018, and the works are due to be completed by January 2020.

3.1.5 The Warrington East Phase 3 scheme involves the dualling of Birchwood Way from the Daten Avenue / Moss Gate junction to the M62J11, the resurfacing of the circulatory carriageway of M62J11, and provision of new road markings. The scheme will provide a 2-lane exit from M62J11, which will increase capacity enabling 2 lanes of traffic to turn right from the eastbound off-slip onto Birchwood Way, and 2 lanes to turn left from the westbound off-slip onto Birchwood Way.

3.2 Design Standards Applied to the Scheme

3.2.1 The proposed new access and signalisation of M62J11 have been designed in accordance with TD 22/06 and TD 50/04 of the DMRB.

3.3 Design Speeds / Speed Limits

3.3.1 The proposed site access road would be subject to a speed limit of 30mph.

3.4 Existing Traffic Flows / Queues

3.4.1 The following peak hours have been identified for the M62J11:

Table 3.1 Peak Hours Identified from Baseline Traffic Flows

	M62 Mainline and Sliproads	M62 Sliproads Only (Roundabout Flows)
AM Peak Hour	07:00-08:00	07:30-08:30
PM Peak Hour	16:00-17:00	16:30-17:30

3.4.2 Base 2018 traffic flows derived for the junction are presented in **Appendix D.**

3.5 Forecast Traffic Flows

3.5.1 Forecast traffic flows for the highway network in the vicinity of the site have been calculated based on: the expected turn-in rates for the proposed MSA; forecast traffic levels generated by committed developments local to the site; and forecast background traffic growth on the M62 mainline. Further details of the calculation of these traffic flows will be included in the Transport Assessment for the proposals.

3.5.2 Forecast traffic flows for the following scenarios are provided at **Appendix E**.

- 2022 + Committed Development
- 2022 + Committed Development + MSA

3.5.3 Additional scenarios will be presented in the Transport Assessment to be submitted with the planning application.

3.5.4 Capacity assessments of the M62J11 / site access are included at **Appendix F**, and results summaries are presented in the tables below:

Table 3.1: 2018 Assessment Results

Arm / Movement	AM Peak (0700-0800)		AM Peak (0730-0830)		PM Peak (1600-1700)		PM Peak (1630-1730)	
	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)
M62 East	0.76	3	0.90	9	0.42	1	0.44	1
Birchwood Way South	0.77	4	0.49	2	0.86	9	0.87	8
M62 West	0.64	1	0.73	3	0.42	1	0.38	1
Birchwood Way North	0.00	0	0.00	0	0.00	0	0.00	0

Table 3.2: 2022 + Committed Development – Assessment Results

Arm / Movement	(0700-0800)		(0730-0830)		(1600-1700)		(1630-1730)	
	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)
M62 East	0.39	1	0.49	2	0.21	1	0.22	1
Birchwood Way South	0.67	3	0.61	2	0.83	6	0.90	10
M62 West	0.25	1	0.37	1	0.21	0	0.21	1
Birchwood Way North	0.00	0	0.00	0	0.01	0	0.01	0
Junction Delay (s)	4.81		4.86		7.97		11.92	

RFC = Ratio of Flow to Capacity Max Q = maximum average queue PCUs = Passenger Car Unit

Table 3.3: 2022 + Committed Development + MSA and Proposed Signalisation Scheme – Assessment Results

Link	Arm/Movement	Scenario C: 2022 Base + Committed + MSA							
		0700-0800		0730-0830		1600-1700		1630-1730	
		DoS	MMQ (PCUs)	DoS	MMQ (PCUs)	DoS	MMQ (PCUs)	DoS	MMQ (PCUs)
1/1 + 1/2	M62 WB Off-Slip	55.3%	6	60.6%	8	36.3%	4	35.7%	4
2/1	Birchwood Way South Left	29.5%	3	30.9%	3	87.5%	19	88.5%	20
2/2	Birchwood Way South Ahead Left	79.9%	15	75.1%	13	81.9%	16	82.8%	17
3/2+3/1	M62 EB Off-Slip Left Ahead	77.6%	6	82.8%	9	66.1%	5	51.3%	4
4/1	Birchwood Way North Left Ahead	54.5%	4	58.9%	5	46.6%	4	37.8%	4
4/2	Birchwood Way North Ahead	50.7%	4	55.0%	5	45.6%	4	36.0%	4
9/1	Circulating East Ahead	12.3%	0	22.4%	0	13.3%	1	12.8%	1
9/2	Circulating East Ahead Right	78.9%	5	82.5%	6	74.9%	5	64.2%	5
10/1+10/2	Circulating South Ahead Right	69.9%	5	70.2%	7	81.4%	11	84.2%	11
11/1+11/2	Circulating West Ahead Right	84.1%	3	85.4%	18	75.3%	18	79.0%	6
12/1	Circulating North Ahead Right	83.1%	3	82.8%	6	74.7%	4	80.4%	5
12/2	Circulating North Right	20.0%	5	28.4%	7	19.9%	5	20.7%	4
Practical Reserve Capacity (PRC)		PRC: 7.0%		PRC: 5.4%		PRC: 2.9%		PRC: 1.7%	
Cycle Time (s)		60		60		60		60	
Total Delay (pcu Hr)		24.06		28.27		29.11		29.01	

DoS = Degree of Saturation MMQ = Mean Maximum Queue PCUs = Passenger Car Units

3.6 Pedestrian, Cyclist and Equestrian Desire Lines

3.6.1 A small number of pedestrian and cycle movements (e.g staff trips) can be expected between M62J11 and the MSA as a result of the development.

3.6.2 The proposed access road incorporates 2m wide footways into the site from M62J11 on both sides of the carriageway. As part of the proposed signalisation scheme at M62 pedestrian improvements are proposed to provide controlled pedestrian crossings in the following locations:

- M62 Westbound Off-Slip
- Eastern Circulatory to tie into the existing footway over the bridge
- Northern Circulatory to connect to the site access
- The ingress and egress on the site access arm

3.6.3 In addition to the above controlled pedestrian crossings, the existing footway on the overbridge is proposed to be extended northwards, to provide a footway connection from the site to the existing walking and cycling network to the south of the M62. The proposed layout is shown on Drawing No ITM12377-SK-024 included within **Appendix B.** There are no known Bridleways in the vicinity of M62J11.

3.7 Environmental Constraints

3.7.1 There is a declared Air Quality Management Area (AQMA) forming a 50m continuous strip on both sides of the M62 motorway corridor in the vicinity of the site, due to potential exceedances of the annual nitrogen dioxide objective. A map showing the AQMA within Warrington is included in **Appendix G**.

3.7.2 An Environmental Statement will be included as part of the planning application suite of documents.

SECTION 4 Locality

4.1 Description of Locality

4.1.1 The application site extends to approximately 15.33 hectares (38.33 acres). The site is a greenfield site, currently with agricultural (arable) use. The site lies within the Green Belt and is designated as such in the Warrington Local Plan (parcel WR14).

4.1.2 The site is set at a lower level than the M62 Junction 11 but is higher than the M62 Motorway itself. The M62 Motorway Corridor and Junction 11 is lit in the vicinity of the Site.

4.1.3 A post and rail fence marks the southern boundary. The Site is bounded to the east, north and part of the western boundary by a water course that is a non-main river. To the western boundary is another water course, known as Silver Lane Brook, that extends into part of the Site as a 'dog leg'. It is identified by the Environment Agency as a main river. The Site is within Flood Risk Zone 1 and as such at low risk of flooding.

4.1.4 A Public Right of Way (Footpath number 13) runs along the western boundary of the Site and leads north to Silver Lane Pools, and west around the adjacent restored landfill site, before heading north to Culcheth and east to Holcroft Lane. Footpath number 28 continues around the north of the restored landfill site, connecting to Footpath 14a to the western boundary, which connects to Footpath 25 to the southern boundary, before reconnecting with Footpath 13 adjacent to the Application Site. This also links to a footway at the spur of the Junction 11 roundabout and around the roundabout, before linking to footpath 25 to the south eastern quadrant of the Junction 11 roundabout in Birchwood. A plan showing PROWs in the vicinity of the site is included in **Appendix H**.

4.1.5 The HS2 Safeguarded Land corridor arcs around the north eastern corner of the Site and is located outside the Redline Site Boundary. A plan showing the Safeguarded Land in the vicinity of the site is included in **Appendix I**.

4.1.6 A 50m Buffer Motorway Air Quality Management Area (MAQMA) runs along the Motorway corridor.

4.1.7 There is a high pressure gas main that runs north to south through the eastern extent of the Site and comprises an inner, middle and outer PADHIZone. Consultation has been undertaken with the HSE (Health and Safety Executive) to discuss the proposals and the extent of development that is acceptable within each of these zones. The exact location of the gas main has been confirmed by National Grid.

4.2 General Description

4.2.1 The site access connects to the northern side of M62J11, which is on the section of the M62 between the M6 and M60. It is located approximately 8km (5 miles) from Warrington town centre.

4.2.2 Immediately to the west of the Site is a former landfill site (Risley Landfill), where landfilling began in 1979, but which has since ceased and the site has been restored and planted. To the east and north is arable farmland. A disused railway line dissects the farmland, and arches to the east and north approximately 0.6km (0.4 miles) from the Site boundary. The settlement of Culcheth lies to the north west of the Site, with its centre approximately 2km (1.2 miles) from the Site.

4.3 Relevant Factors Which May Affect Road Safety

4.3.1 Footpath 13 adjacent to the Application Site links to a footway at the northern spur of the Junction 11 roundabout which runs around the roundabout before linking to footpath 25 at the south eastern quadrant of the roundabout. There is therefore potential for non-motorised users to use the existing

crossing points at the tops of the east-facing slip roads as part of a leisure trip. There are no figures available for the number of these users, however it is considered to be small.

SECTION 5 Analysis

5.1 Collision Data

5.1.1 Accident data covering the five-year period to July 2018 is included at **Appendix J**.

5.2 Departures From Standards

5.2.1 The proposed new access and signalisation scheme have been designed in accordance with TD 22/06 and TD 50/04 of the DMRB, with no known departures from standards.

5.3 List of Included Documents and Drawings

5.4 Documents

Reference	Title	Date
Traffic Flow Diagrams	2018 Baseline flows 2022 + Committed Development Flows 2022 + Committed Development + MSA Flows	April 2019
Arcady Reports	2018 Baseline flows 2022 + Committed Development Flows	April 2019
Linsig Reports	2022 + Committed Development + MSA Flows	April 2019
Accident Data	Birchwood Way Casualty Report Birchwood Way Collision Plots	November 2018

5.5 Drawings

Reference	Title
ITM12377-SK-024	Proposed Signals Scheme at Junction 11 M62
ITM12377-SK-025	Preliminary Site Access Layout

Reference	Title
39268-MMD-00-XX-DR-C-0003	Warrington East Phase 3, A574 Dualling General Arrangement Sheet 3 of 3
HE549341-WSP-HGN-S0_ZZ_ZZ_Z	Smart Motorways M62 Design & Build J10-12

Extra MSA Group

M62 J11 Warrington

Proposed Motorway Service Area

Walking, Cycling & Horse-Riding Assessment

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Report No. A114088/WC&HRA

Date: June 2019

REPORT CONTROL

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5			

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USER OPPORTUNITIES 11
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SCHEME DESCRIPTION AND BACKGROUND

Background

1.1. The scheme is a proposed 'new concept' motorway service area (MSA) immediately north of Junction 11 on the M62, near Warrington. The scheme will have a permanent impact on the Strategic Road Network and local highway networks, therefore the HD 42/17 Walking, Cycling & Horse-Riding Assessment and Review guidance in DMRB applies. In accordance with HD 42/17, the scale of the scheme has been assessed (by the Lead Assessor) and is considered to qualify as a 'large' scheme for the purposes of this assessment. Therefore the scheme will be subject to a Walking, Cycling & Horse-Riding Assessment (this document) during the options stage of the proposed scheme; this will then be followed by a Walking, Cycling & Horse-Riding Review at the detailed design stage.

Proposed Scheme

1.2. The scheme is for a new motorway service area which will include a facilities building (incorporating a food court, retail, washing facilities), a 100-bed hotel, fuel filling station (with HGV forecourt and shop), and parking for all uses and vehicle types. Access to the MSA will be via an existing fourth arm to the north of the roundabout. The scheme involves major changes to the M62 J11 which include signalising the roundabout, providing signalled-controlled pedestrian crossings, extending the existing footway along the overbridge and providing 2m footways into the site.

Scheme Objectives

1.3. The scheme objectives include improving conditions for walking, cycling and horse-riding as some parts of the current routes and junctions have limited facilities and connections for users, notably staff. However, no specific improvements are proposed for horse riders as that travel mode is predicted to be non-existent to this kind of development and has not been observed on site or highlighted during the design and consultation process in the areas subject to assessment. In addition, there are no bridleways or permissive bridleways that would be affected by the development proposals. Nevertheless, the current centres for horse riding activities are listed for information in section 2.

Study Area

1.4. Figure 1 shows the approximate study area for this Assessment Report. The assessment area covering a 5km radius has been determined applying the advice in HD 42/17 and covers Birchwood, the northeast of Warrington, and the west of Irlam..

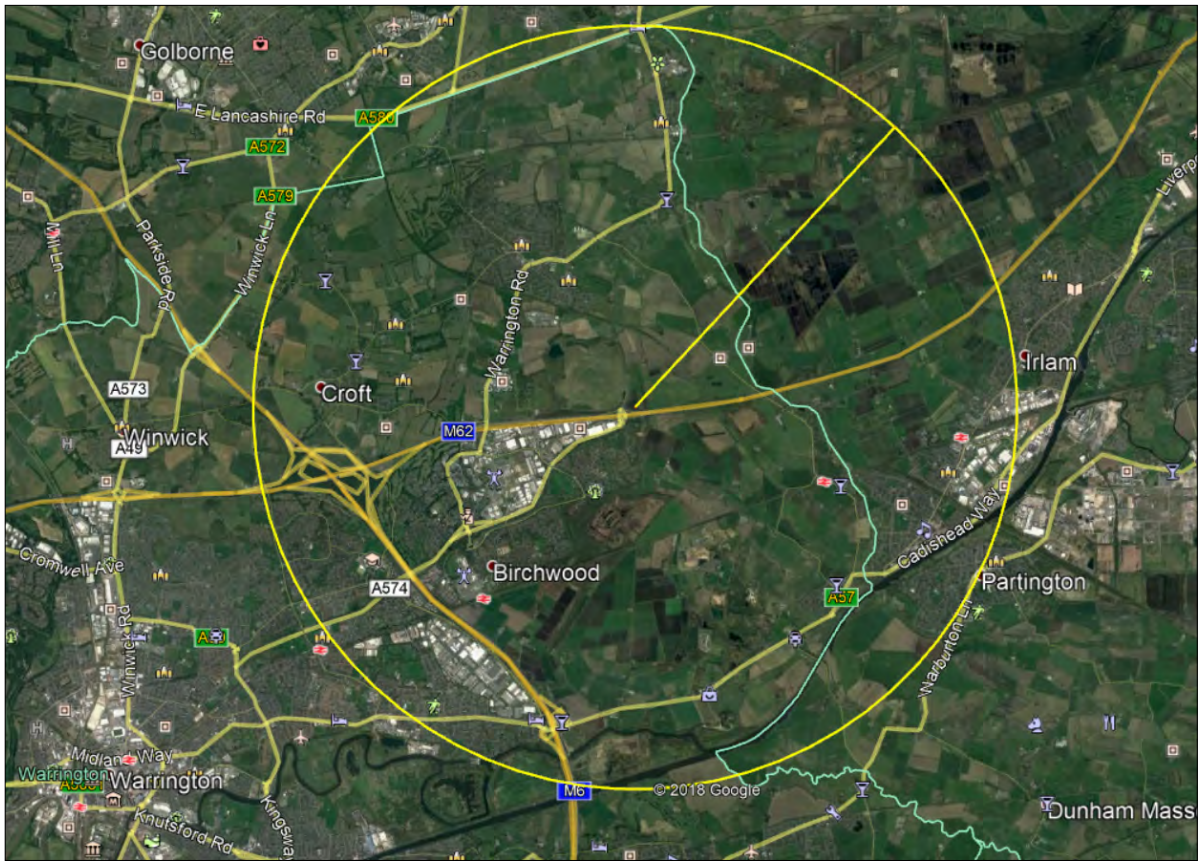

Figure 1: Study Area

WALKING, CYCLING & HORSE-RIDING ASSESSMENT

2.1. This chapter summarises the findings of the assessment as set out in Chapter 4 of HD 42/17. The findings under each topic area are summarised in an individual table and any potential opportunities for improvements are noted in each table and then summarised in Chapter 3.

Review of Walking, Cycling & Horse-Riding Policies and Strategies

2.2. The following documents have been reviewed as part of the Assessment and will continue to be utilised where relevant to pedestrians and cyclists as the detailed design progresses:

- National Planning Policy Framework - 2019;
- Planning Practice Guidance, 2014;
- Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development', 2013;
- Highways England's 'The Strategic Road Network: Planning for the future. A Guide to working with Highways England on planning matters', 2015;
- Warrington Local Plan, July 2014;
- Warrington Local Transport Plan, March 2011;
- Manual for Streets.

Collision Data

2.3. Personal injury collision data has been provided for the M62 J11 and the A574/Birchwood Way (J11 to Daten Avenue) in order to establish any current collision clusters that could be exacerbated by the development proposal. In this instance, a cluster is identified as a closely defined area of five or more accidents over a five-year period. Data provided by Warrington BC and from the website Crashmap has been interrogated to provide accident statistics in the five-year period upto July 2018. During this time a total of 16 personal injury collisions occurred on the M62 and J11 and Birchwood Avenue. These included 1 collision involving serious injury and 15 involving slight injury. Figure 2 shows the locations and severities of the collisions.

2.4. The collisions involving vulnerable user groups comprised a collision involving a pedal cyclist and a car. The cyclist was a 14-year-old child travelling from school. This collision resulted in serious injury to the cyclist. There were no other collisions involving children or cyclist, and none involving pedestrian or equestrians.

2.5. There was a single cluster of collisions, at the J11 roundabout itself, where there were 7 incidents. The collisions all occurred between 2014 and 2018 and all resulted in slight

injury.

2.6. None of the incidents involved pedestrians or cyclists and the cluster is not considered to be significant in the context of this assessment.

2.7. Figure 2 shows the locations and severities of the collisions.

Figure 2: Collisions 2014-2018 – M62 J11

Public Transport Services and Interchange Information

2.8. Existing bus provision in the immediate vicinity of the site north of the M62 J11 is limited but there are several bus routes in the Birchwood area. There are a number of bus routes which operate along Daten Avenue within Birchwood Park; the 17C service operates a 30-minute frequency to Warrington Town centre whilst the 28E offers an hourly evening service to Warrington and Leigh. The nearest bus stop to the site is located on Gorse Covert Road, immediately south of J11, approximately 1.6 miles walking distance.

2.9. The nearest train station is Birchwood Railway Station, located some 3km southwest of the development site. It lies on the Manchester to Liverpool line and can be accessed via multi-modal trips.

Key Trip Generators and Local Amenities

2.10. The scale of the proposed MSA adheres to the principles of Circular 02/2013. It will meet the needs of the travelling public and by its very nature will not be a destination in its own right. The vast majority of trips generated to/from the MSA will be by non-local

motorists travelling by private car. There may be a small number of walking or cycling trips made from local residential areas by staff at the proposed MSA, and some of these may also utilise public transport as the first stage in a multi-modal journey to work. The propensity for walking/cycling trips to/from the MSA by users other than staff is low. However, the proposed improvements at the M62 J11 will provide opportunities for increased walking/cycling for leisure and recreational purposes. Figure 3 shows the locations of a number of the local attractions that may to generate walking and cycling journeys from the site.

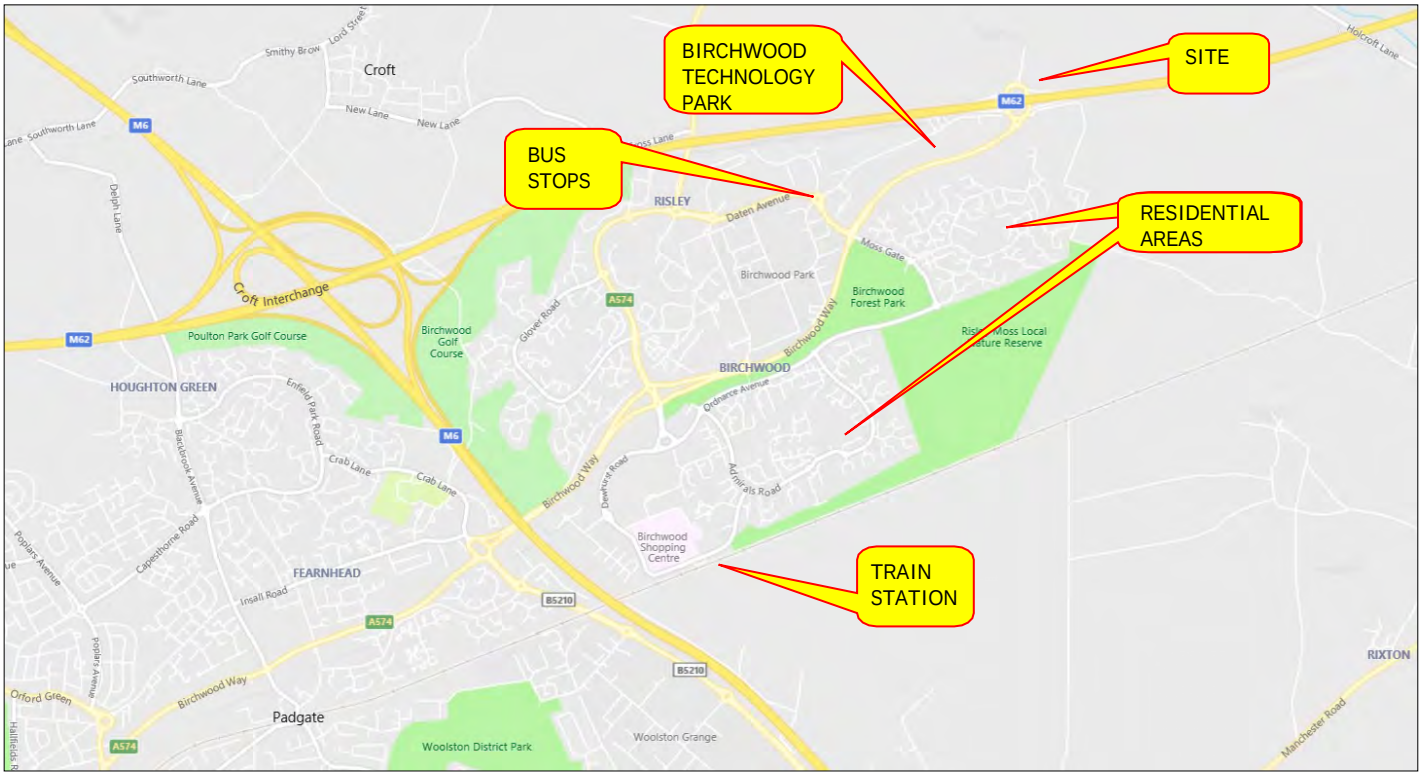

Figure 3: Local Trip Generators and Bus Stops

2.11. Overall it is concluded that there will be very few walk and cycle trips to and from the proposed site. No horse trips are anticipated.

Future Trip Generators

2.12. There are a number of highway improvement schemes within the local area. These include improvements at J11 and Birchwood Way, known as Warrington East Phase 3. This scheme is fully funded and under construction. When complete it will provide dualled carriageway in both directions along Birchwood Way from Daten Avenue to J11, resurfacing the carriageway on the J11 roundabout along with new road markings. The scheme will provide a two-lane exit from J11 onto Birchwood Way, increasing the capacity and flow on the roundabout.

2.13. There are also improvement schemes in the wider area. The Smart Motorway Scheme will reduce congestion and smooth the flow of traffic on the motorway and associated junctions.

2.14. The proposed scheme includes for provision of traffic signals with pedestrian facilities on all arms of the M62 J11. In addition, the Public Right of Way running through the site would be diverted to run southward along the western side of the access road. These improvements will provide direct links to footpaths 00097/25 and 000324/25. Toucan crossings could be provided to make the route more attractive to cyclist, however, as these routes are not on a national or local designated cycle route, this is not considered to be appropriate.

2.15. It is concluded that future walking, cycling and horse-riding trips to and from the site will remain very low.

Site Visits

2.16. A site visit was carried out by Andy Green (Lead Assessor) and Eleanor Bunn (Assessor) during the afternoon of Wednesday 5 June between 17:00 and 18:00 in daylight hours. The Assessment Team walked the available pedestrian and cyclist routes within the vicinity of the site. The level of use and condition/suitability of each route during the site visit were recorded and potential improvements, repairs and connections were noted. The weather during the site visit was dry and cloudy. The road and path surfaces were dry and traffic was light and free flowing. There were road works on the westbound on-slip road and on Birchwood Way (A574), and a temporary speed limit of 30mph was in place in the southern section of the roundabout gyratory.

2.17. No pedestrian, equestrian or cyclist movements were recorded during the site visit.

2.18. The primary findings of the site visits are as listed below:

2.19. Stub arm: There are dropped kerbs and tactile paving provided on the access and egress lanes and on the central splitter island. There was some car parking on the site access stub arm noted during the site visit.

2.20. Eastbound on-slip: The footway is narrow with overgrown vegetation present. There are no dropped kerbs or tactile paving present.

2.21. Westbound off-slip: Where the footway ends there is poor visibility for pedestrians wishing to cross the westbound off-slip and access the footway over the bridge. Additionally there are no dropped kerbs or tactile paving provided here.

2.22. Main gyratory: The nearside footway over both bridges has vegetation growing along the carriageway edge and in cracks in the pavement surfacing. There is damage to the edge of the footway and kerbing evident on the offside footway on the eastern bridge.

Consultation with Key Stakeholders

2.23. Consultation has been ongoing with key stakeholders throughout the design process, in particular:

- Initial pre-application discussions have been held with officers at Warrington Borough Council and Highways England.
- Public consultations have been undertaken with local residents, businesses, and stakeholder groups. Public exhibitions were held at Croft Village Memorial Hall (4th April 2019), Gorse Covert Primary School (6th April 2019), and Birchwood Business Park (12th April 2019).
- A Statement of Community Involvement (SCI) which sets out all the pre-application work that was completed with all the stakeholders will be submitted alongside the planing application.

2.24. It is intended that consultations continue as required as the detailed design progresses.

Existing pedestrian, cyclist and equestrian facilities within the local area

2.25. A public right of way (Footpath 25, converted to bridleway in 2015) runs along Silver Lane (north), roughly parallel to the M62 eastbound carriageway. The bridleway can be accessed from the J11 roundabout via a short path connecting the stub arm to Silver Lane (north). The route is marked with a Public Footpath sign attached to a road sign on the roundabout. There is also a wooden signpost at the start of the bridleway with waymarkers in the form of Public Footpath signplates.

2.26. There is a public right of way (Footpath 13) which runs north along the site's western boundary. The footpath can be accessed from the stub arm of the roundabout and is waymarked by a wooden post with Public Footpath signplate.

2.27. On the main gyratory of the roundabout there are sections of footway over the bridges, measuring some 70m in length, and 2m wide on the offside and 3.5m on the nearside. On the eastbound on-slip road there is a footway of approx. 1.2m in width which connects the access to Footpath 13 to the footway over the bridge.

2.28. There is a public right of way (number 000325/25) which runs along Silver Lane (south), parallel to the westbound off-slip road, then south towards Pestfurlong Moss and the residential areas of Gorse Covert. Silver Lane (south) is tarmacked, there is a Dead-End road sign and the footpath is waymarked by a metal signpost. Silver Lane (south) has an access/egress from the roundabout and there is a 1.2m wide footway around the access which continues down the slip road for some 20m.

2.29. A plan showing the local public rights of way is shown below at Figure 4.

Figure 4: Local Public Rights of Way Map

2.30. There are no dedicated cycling routes in the assessment area, as indicated by the Sustrans website. The closest route is Route 62, some 5.6km south of the site. An extract of Sustrans' Map of the National cycle Network is shown in Figure 5 below.

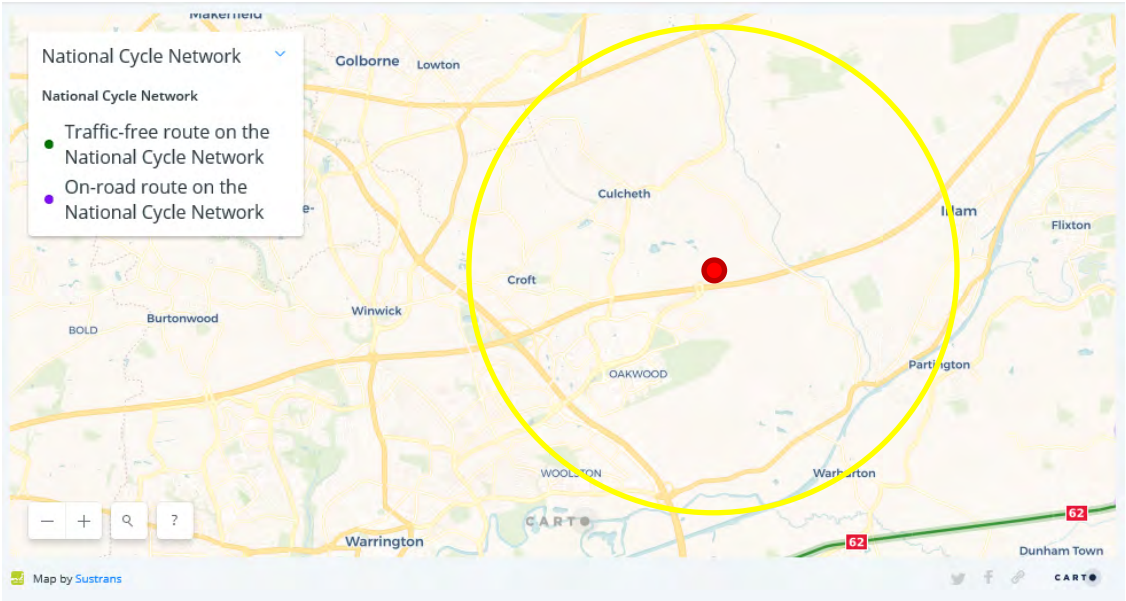

Figure 5: National Cycle Network Map

2.31. There are no dedicated equestrian facilities within the immediate vicinity of the site. However, three centres for equestrian activity are available within the assessment area

as follows:

- Heathcroft Stud, situated about 3.5km to the northwest of the site;
- Mosslands Farm – Equine Livery, situated about 4.5km to the east of the site;
- Pocket Nook Farm Stables situated about 5km to the north of the site.

Summary of Provision

2.32. As the proposed MSA is to meet the needs of the travelling public, the potential for the development to generate pedestrian/cycle by users other than staff is considered to be very low. Some trips from the Birchwood Technology Park may be generated, but there are existing facilities providing food in the Technology Park. Nearby residential areas south of the M62 could also generate trips, although the facilities in the Technology Park will provide an alternative destination. Should pedestrian trips be generated, there is an existing route utilising footpath 000325/25 and the proposed pedestrian facilities at J11.

USER OPPORTUNITIES

3.1 Opportunity 1: The existing public right of way that runs north through the site can be either diverted or accommodated within the footways and shared surfaces within the development.

3.2 Opportunity 2: Provide proper signage to the bridleway. The current signpost is a Footpath sign and is attached to a road sign that will be removed.

3.3 Opportunity 3: Pedestrian/cycle links at Leacroft Road/Birchwood Way could provide opportunities for increased walking/cycling for leisure and recreational trips in the local area, including for employees at the Birchwood Technology Park and from local residential areas. This could be desirable as the improvements proposed to Birchwood Way do not include cycling facilities. Deliverability would however be potentially affected by land ownership issues as a link through to Birchwood Way would be required.

3.4 Opportunity 4: Provide dropped kerbs and tactile paving on existing footway on Silver Lane (south).

3.5 Opportunity 5: Widen existing nearside footway over eastern bridge as this will become the pedestrian route between the signalised crossings.

3.6 Figure 6 below shows a plan with the locations of the opportunities listed.

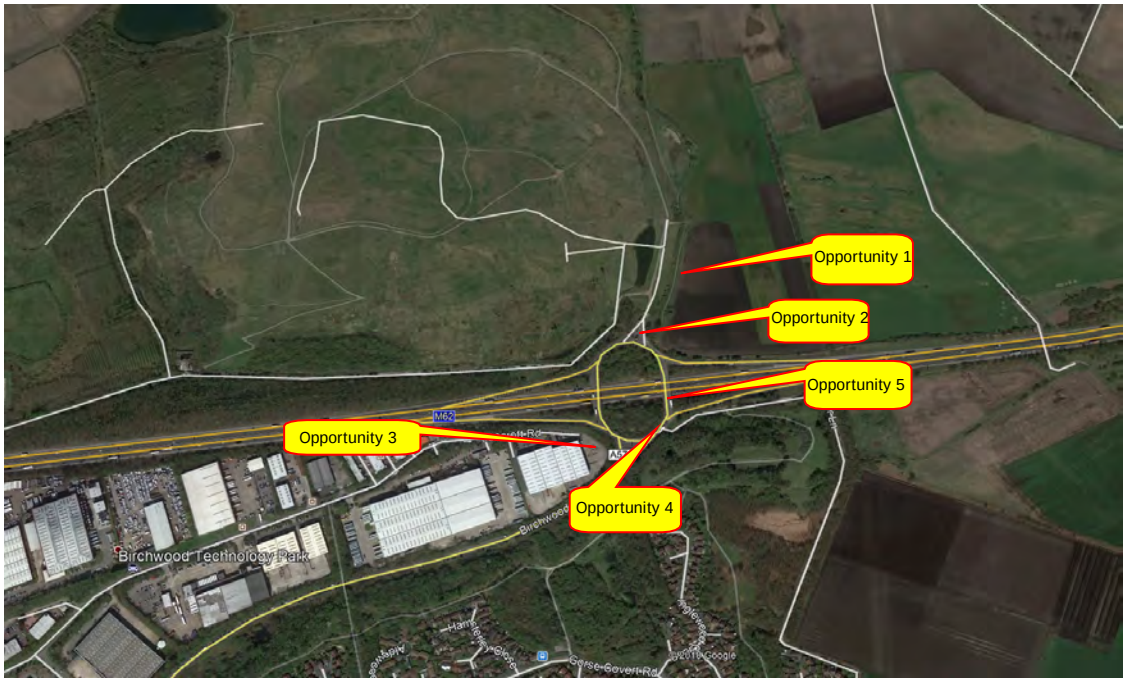

Figure 6: Opportunities Plan

WALKING, CYCLING & HORSE-RIDING ASSESSMENT TEAM STATEMENT

As Lead Assessor, I confirm that this Walking, Cycling & Horse-Riding Assessment Report has been compiled in accordance with DMRB HD 42/17 and thus contains the appropriate information for the wider design team. The Walking, Cycling & Horse-Riding Assessment was undertaken by the following Assessment and Review Team:

Walking, Cycling & Horse-Riding Lead Assessor

Andy Green BSc (Hons), MSc, MCIHT — Signed:

Principal, WYG — Date: 28 June 2019

4th Floor Rotterdam House,

116 Quayside

Newcastle upon Tyne

Walking, Cycling & Horse-Riding Assessor

Eleanor Bunn BSc (Hons), MCIHT — Signed:

Transport Planner, WYG — Date: 28 June 2019

Lakeland Business Park,

Cockermouth, Cumbria

As design team leader I confirm that the assessment has been undertaken at the appropriate stage of scheme development and that the wider design team has been involved in the process.

I confirm that in my professional opinion the appointed Lead Assessor has the appropriate experience for the role making reference to the expected competencies contained in HD 42/17.

Design team leader

Signed:

.....

i-Transport — Date: 28 June 2019

APPENDIX 7.D. Road Safety Audit

i-Transport LLP
Grove House, Lutyens Close, Chineham Court
Basingstoke, RG24 8AG

Tel: 01256 338640

Technical Note

Project No: ITM12377
Project Title: Warrington MSA
Title: Proposed Site Access and Improvements to M62J11: Stage 1 Road Safety Audit Brief
Ref: SEE/JH/ML/ITM12377-005 TN
Date: 15 May 2019

SECTION 1 Project Summary

Project Summary	
Date:	15/05/2019
Document Reference:	ITM12377
Prepared By:	i-Transport LLP
On behalf of:	Extra MSA Group
AUTHORISATION SHEET	
Project:	Proposed Site Access and Improvements to M62J11: M62 J11
Report Title	Stage 1 Road Safety Audit Brief
Name	SEE/JH/ML
Signed:	
Organisation:	i-Transport LLP
Date:	

Project Summary	
I APPROVE THE RSA BRIEF AND INSTRUCT THE RSA TO TAKE PLACE ON BEHALF OF THE OVERSEEING ORGANISATION	
Name:	**Robert Heywood**
Signed:	
Organisation:	Highways England
Date:	15/05/2019

SECTION 2 General Details

2.1 Type of Scheme

2.1.1 This Road Safety Audit (RSA) brief has been prepared in respect of a new direct signal-controlled connection to the M62 Motorway Junction 11 (M62J11) to serve a new Motorway Service Area (MSA) to be operated by Extra MSA Group. The audit should also include the proposed signalisation of M62J11. The site access arrangements are shown on i-Transport Drawing No. ITM12377-SK-024A and ITM12377-SK-025 contained within **Appendix A.**

2.1.2 The proposed site access arrangements have been designed to a preliminary feasibility level suitable for the purposes of planning and cognisant of committed improvements at:

- M62J11 and Birchwood Way which are to be implemented by Warrington Borough Council (WBC), due to be completed by January 2020 as part of its 'Warrington East Phase 3' Scheme;. and
- Highways England's (HE) Smart Motorway Scheme for which works began in summer 2018 and are due to be completed by Spring 2020.

2.1.3 WBC's Warrington East Phase 3 Scheme is shown on Drawing No 392681-MMD-00-XX-DR-C-0003 and HE's Smart Motorway scheme is shown on Drawing HE549341-WSP-HGN-S0_ZZ_ZZ_Z-DR-CH-0105, both drawings are included at **Appendix B.**

2.1.4 This brief is for a Stage 1 RSA, for the preliminary design of the scheme, regarding the proposed access layout and signalisation scheme and has been produced in accordance with 'GG 119 Road Safety Audit'.

2.2 Overseeing Organisation

2.2.1 The overseeing organisation for this scheme and contact details are as follows:

Robert Heywood
Highways England
Piccadilly Gate
Store Street
Manchester
M1 2WD

2.3 Design Organisation

2.3.1 The Design Organisation of this scheme, with contact details, is as follows:

i-Transport
Centurion House
129 Deansgate
Manchester
M3 3WR

2.4 Police Contact Details

2.4.1 Police contact details are only required for a Stage 3 RSA and are therefore not needed for this Stage 1 RSA.

2.5 Maintaining Agent

2.5.1 The Maintaining Agent for this scheme and contact details are as follows:

Highways England
Atlantic House
Birchwood Boulevard
Birchwood
Warrington
WA3 7WE

2.6 Road Safety Audit Team

2.6.1 The RSA Team will be agreed with the Project Sponsor.

2.6.2 The RSA Team should visit the site during daylight hours.

2.7 Terms of Reference

2.7.1 The proposed new access and signalisation of M62J11 have been designed in accordance with TD 22/06 and TD 50/04 of the DMRB.

SECTION 3 Scheme Details

3.1 General

3.1.1 The scheme will provide access to a new MSA to be operated by Extra, the MSA proposals comprise:

- Facilities Building (max 5,000sqm GIA) incorporating a food court and ancillary retail floor space, up to 100 bedroom hotel, toilet, shower and washing facilities.
- Fuel Filling Station (FFS) with a forecourt for use by private vehicles and an HGV forecourt and a forecourt shop of approximately 500m^2.
- Parking spaces for all vehicle types will be provided on the site, in line with the requirements of Schedule 1 of Circular 02/2013.

3.1.2 Vehicular access to the site is proposed via a direct signal-controlled connection to Junction 11 of the M62 Motorway. It is proposed to signalise the motorway junction as part of the scheme.

3.1.3 The site access carriageway will provide two lanes of ingress and two lanes of egress. A central reserve is proposed between the inbound and outbound lanes. Footways are proposed on both sides of the carriageway, with crossing facilities at appropriate locations.

3.1.4 WBC have developed an improvement scheme at M62J11 and Birchwood Way, known as Warrington East Phase 3, as shown on the plan in Appendix B. The scheme is fully funded, construction began in December 2018, and the works are due to be completed by January 2020.

3.1.5 The Warrington East Phase 3 scheme involves the dualling of Birchwood Way from the Daten Avenue / Moss Gate junction to the M62J11, the resurfacing of the circulatory carriageway of M62J11, and provision of new road markings. The scheme will provide a 2-lane exit from M62J11, which will increase capacity enabling 2 lanes of traffic to turn right from the eastbound off-slip onto Birchwood Way, and 2 lanes to turn left from the westbound off-slip onto Birchwood Way.

3.2 Design Standards Applied to the Scheme

3.2.1 The proposed new access and signalisation of M62J11 have been designed in accordance with TD 22/06 and TD 50/04 of the DMRB.

3.3 Design Speeds / Speed Limits

3.3.1 The proposed site access road would be subject to a speed limit of 30mph.

3.4 Existing Traffic Flows / Queues

3.4.1 A comprehensive series of traffic surveys was undertaken in November 2018. These comprised:

i Manual Classified Counts (MCC) at the following locations on Tuesday 13th November:

- Junction 11 M62 Motorway (07:00 – 19:00)
- M62 Motorway mainline at Junction 11 (07:00 – 19:00)
- Birchwood Way (A574 / Daten Avenue / Moss Gate (07:00 – 10:00 and 16:00 – 19:00)

ii An additional MCC at Junction 11 M62 Motorway on Saturday 17th November between the hours of 10:00 and 17:00.

iii Queue length surveys at the above junctions on the same dates. Queue length data were recorded at one-minute intervals.

iv An Automatic Traffic Count (ATC) for a continuous 14-day period on the A574 Birchwood Way, between Daten Avenue and Junction 11 of the M62 Motorway (6th November to and including 20th November).

3.4.2 The survey results were combined with average traffic flows recorded at the Highways England MIDAS counters on the slip roads to establish baseline traffic flows for a typical weekday, further details of this will be included in the Transport Assessment for the proposals.

3.4.3 The following peak hours have been identified for the M62J11:

Table 3.1 Peak Hours Identified from Baseline Traffic Flows

	M62 Mainline and Sliproads	M62 Sliproads Only (Roundabout Flows)
AM Peak Hour	07:00-08:00	07:30-08:30
PM Peak Hour	16:00-17:00	16:30-17:30

3.4.4 Base 2018 traffic flows derived from the above are presented in **Appendix C.**

3.4.5 Surveyed Queue data is provided at **Appendix D**.

3.5 Forecast Traffic Flows

3.5.1 Forecast traffic flows for the highway network in the vicinity of the site have been calculated based on: the expected turn-in rates for the proposed MSA; forecast traffic levels generated by committed developments local to the site; and forecast background traffic growth on the M62 mainline. Further details of the calculation of these traffic flows will be included in the Transport Assessment for the proposals.

3.5.2 Forecast traffic flows for the following scenarios are provided at **Appendix E**.

- 2022 + Committed Development
- 2022 + Committed Development + MSA

3.5.3 Additional scenarios will be presented in the Transport Assessment to be submitted with the planning application.

3.5.4 Capacity assessments of the M62J11 / site access are included at **Appendix F**, and results summaries are presented in the tables below:

Table 3.1: 2018 Assessment Results

Arm / Movement	AM Peak (0700-0800)		AM Peak (0730-0830)		PM Peak (1600-1700)		PM Peak (1630-1730)	
	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)
M62 East	0.76	3	0.90	9	0.42	1	0.44	1
Birchwood Way South	0.77	4	0.49	2	0.86	9	0.87	8
M62 West	0.64	1	0.73	3	0.42	1	0.38	1
Birchwood Way North	0.00	0	0.00	0	0.00	0	0.00	0

Table 3.2: 2022 + Committed Development – Assessment Results

Arm / Movement	(0700-0800)		(0730-0830)		(1600-1700)		(1630-1730)	
	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)	Max RFC	Max Q (PCUs)
M62 East	0.39	1	0.49	2	0.21	1	0.22	1
Birchwood Way South	0.67	3	0.61	2	0.83	6	0.90	10
M62 West	0.25	1	0.37	1	0.21	0	0.21	1
Birchwood Way North	0.00	0	0.00	0	0.01	0	0.01	0
Junction Delay (s)	4.81		4.86		7.97		11.92	

RFC = Ratio of Flow to Capacity Max Q = maximum average queue PCUs = Passenger Car Unit

Table 3.3: 2022 + Committed Development + MSA and Proposed Signalisation Scheme – Assessment Results

Link	Arm/Movement	Scenario C: 2022 Base + Committed + MSA							
		0700-0800		0730-0830		1600-1700		1630-1730	
		DoS	MMQ (PCUs)	DoS	MMQ (PCUs)	DoS	MMQ (PCUs)	DoS	MMQ (PCUs)
1/1 + 1/2	M62 WB Off-Slip	55.3%	6	60.6%	8	36.3%	4	35.7%	4
2/1	Birchwood Way South Left	29.5%	3	30.9%	3	87.5%	19	88.5%	20
2/2	Birchwood Way South Ahead Left	79.9%	15	75.1%	13	81.9%	16	82.8%	17
3/2+3/1	M62 EB Off-Slip Left Ahead	77.6%	6	82.8%	9	66.1%	5	51.3%	4
4/1	Birchwood Way North Left Ahead	54.5%	4	58.9%	5	46.6%	4	37.8%	4
4/2	Birchwood Way North Ahead	50.7%	4	55.0%	5	45.6%	4	36.0%	4
9/1	Circulating East Ahead	12.3%	0	22.4%	0	13.3%	1	12.8%	1
9/2	Circulating East Ahead Right	78.9%	5	82.5%	6	74.9%	5	64.2%	5
10/1+10/2	Circulating South Ahead Right	69.9%	5	70.2%	7	81.4%	11	84.2%	11
11/1+11/2	Circulating West Ahead Right	84.1%	3	85.4%	18	75.3%	18	79.0%	6
12/1	Circulating North Ahead Right	83.1%	3	82.8%	6	74.7%	4	80.4%	5
12/2	Circulating North Right	20.0%	5	28.4%	7	19.9%	5	20.7%	4
Practical Reserve Capacity (PRC)		PRC: 7.0%		PRC: 5.4%		PRC: 2.9%		PRC: 1.7%	
Cycle Time (s)		60		60		60		60	
Total Delay (pcu Hr)		24.06		28.27		29.11		29.01	

DoS = Degree of Saturation MMQ = Mean Maximum Queue PCUs = Passenger Car Units

3.6 Pedestrian, Cyclist and Equestrian Desire Lines

3.6.1 A small number of pedestrian and cycle movements (e.g staff trips) can be expected between M62J11 and the MSA as a result of the development.

3.6.2 The proposed access road incorporates 2m wide footways into the site from M62J11 on both sides of the carriageway. As part of the proposed signalisation scheme at M62 pedestrian improvements are proposed to provide controlled pedestrian crossings in the following locations:

- M62 Westbound Off-Slip
- Eastern Circulatory to tie into the existing footway over the bridge
- Northern Circulatory to connect to the site access
- The ingress and egress on the site access arm

3.6.3 In addition to the above controlled pedestrian crossings, the existing footway on the overbridge is proposed to be extended northwards, to provide a footway connection from the site to the existing walking and cycling network to the south of the M62. The proposed layout is shown on Drawing No ITM12377-SK-024 included within **Appendix A.**

3.7 Environmental Constraints

3.7.1 There is a declared Air Quality Management Area (AQMA) forming a 50m continuous strip on both sides of the M62 motorway corridor in the vicinity of the site, due to potential exceedances of the annual nitrogen dioxide objective. A map showing the AQMA within Warrington is included in **Appendix G**.

3.7.2 An Environmental Statement will be included as part of the planning application suite of documents.

SECTION 4 Locality

4.1 Description of Locality

4.1.1 The application site extends to approximately 15.33 hectares (38.33 acres). The site is a greenfield site, currently with agricultural (arable) use. The site lies within the Green Belt and is designated as such in the Warrington Local Plan (parcel WR14).

4.1.2 The site is set at a lower level than the M62 Junction 11 but is higher than the M62 Motorway itself. The M62 Motorway Corridor and Junction 11 is lit in the vicinity of the Site.

4.1.3 A post and rail fence marks the southern boundary. The Site is bounded to the east, north and part of the western boundary by a water course that is a non-main river. To the western boundary is another water course, known as Silver Lane Brook, that extends into part of the Site as a 'dog leg'. It is identified by the Environment Agency as a main river. The Site is within Flood Risk Zone 1 and as such at low risk of flooding.

4.1.4 A Public Right of Way (Footpath number 13) runs along the western boundary of the Site and leads north to Silver Lane Pools, and west around the adjacent restored landfill site, before heading north to Culcheth and east to Holcroft Lane. Footpath number 28 continues around the north of the restored landfill site, connecting to Footpath 14a to the western boundary, which connects to Footpath 25 to the southern boundary, before reconnecting with Footpath 13 adjacent to the Application Site. This also links to a footway at the spur of the Junction 11 roundabout and around the roundabout, before linking to footpath 25 to the south eastern quadrant of the Junction 11 roundabout in Birchwood. A plan showing PROWs in the vicinity of the site is included in **Appendix H**.

4.1.5 The HS2 Safeguarded Land corridor arcs around the north eastern corner of the Site and is located outside the Redline Site Boundary. A plan showing the Safeguarded Land in the vicinity of the site is included in **Appendix I**.

4.1.6 A 50m Buffer Motorway Air Quality Management Area (MAQMA) runs along the Motorway corridor.

4.1.7 There is a high pressure gas main that runs north to south through the eastern extent of the Site and comprises an inner, middle and outer PADHIZone. Consultation has been undertaken with the HSE (Health and Safety Executive) to discuss the proposals and the extent of development that is acceptable within each of these zones. The exact location of the gas main has been confirmed by National Grid.

4.2 General Description

4.2.1 The site access connects to the northern side of M62J11, which is on the section of the M62 between the M6 and M60. It is located approximately 8km (5 miles) from Warrington town centre.

4.2.2 Immediately to the west of the Site is a former landfill site (Risley Landfill), where landfilling began in 1979, but which has since ceased and the site has been restored and planted. To the east and north is arable farmland. A disused railway line dissects the farmland, and arches to the east and north approximately 0.6km (0.4 miles) from the Site boundary. The settlement of Culcheth lies to the north west of the Site, with its centre approximately 2km (1.2 miles) from the Site.

4.3 Relevant Factors Which May Affect Road Safety

4.3.1 Footpath 13 adjacent to the Application Site links to a footway at the northern spur of the Junction 11 roundabout which runs around the roundabout before linking to footpath 25 at the south eastern quadrant of the roundabout. There is therefore potential for non-motorised users to use the existing

crossing points at the tops of the east-facing slip roads as part of a leisure trip. There are no figures available for the number of these users, however it is considered to be small.

SECTION 5 Analysis

5.1 Collision Data

5.1.1 Accident data covering the five-year period to July 2018 is included at **Appendix J**.

5.2 Departures From Standards

5.2.1 The proposed new access and signalisation scheme have been designed in accordance with TD 22/06 and TD 50/04 of the DMRB, with no known departures from standards.

5.3 Previous Road Safety Audit Stage Reports, Road Safety Response Reports and Evidence of Agreed Actions

5.3.1 [HE to confirm any RSAs previously undertaken at M62J11]

5.4 Strategic Decisions

5.4.1 There are no additional items outside the scope of this RSA for consideration.

5.5 List of Included Documents and Drawings

5.6 Documents

Reference	Title	Date
MHC-704-18 Site 1	Surveyed Queue Lengths	November 2018
Traffic Flow Diagrams	2018 Baseline flows 2022 + Committed Development Flows 2022 + Committed Development + MSA Flows	April 2019
Arcady Reports	2018 Baseline flows 2022 + Committed Development Flows	April 2019

Reference	Title	Date
Linsig Reports	2022 + Committed Development + MSA Flows	April 2019
Accident Data	Birchwood Way Casualty Report Birchwood Way Collision Plots	November 2018

5.7 Drawings

Reference	Title
ITM12377-SK-024	Proposed Signals Scheme at Junction 11 M62
ITM12377-SK-025	Preliminary Site Access Layout
39268-MMD-00-XX-DR-C-0003	Warrington East Phase 3, A574 Dualling General Arrangement Sheet 3 of 3
HE549341-WSP-HGN-S0_ZZ_ZZ_Z	Smart Motorways M62 Design & Build J10-12

5.8 Checklist

Item	Checklist
Site Location Plan	√
Scale Layout Plans	√
Departures and Relaxations from Standards	√
Construction / typical details	Preliminary design, details not needed at this stage
Previous RSA reports	TBC
Previous RSA response reports and evidence of agreed actions	TBC
Collision Data and Collision Data Analysis	√
Road Traffic Collision Plot	√
Traffic Signal Staging	Please refer to LinSig model outputs supplied for M62 J11
Traffic Counts	√
Speed Surveys	No speed surveys available as site access link road not constructed
Pedestrian, cyclist and horse riding desire lines and volumes	√

Item	Checklist
Walking, cycling and horse riding assessment and reviews	√
Other factors that may impact on road safety	√
Design Speeds / Speed Limit	√
Design Standards Used	√
Adjacent Land Uses	√

WYG Transport

Extra MSA Group

Proposed Motorway Service Area - M62 Junction 11
Site Access and Associated Highway Improvements

Stage 1 Road Safety Audit

WYG
4th Floor, Rotterdam House
116 Quayside
Newcastle upon Tyne
NE1 3DY

Report No. A11TBC/RSA1

Date: June 2019

REPORT CONTROL

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2			

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1. INTRODUCTION

1.1. This report results from a Stage 1 Road Safety Audit carried out on potential highway improvements associated with a proposed 'new concept' Motorway Service Area (MSA) immediately north of Junction 11 of the M62 motorway. The development will be known as Warrington Services and will comprise the following elements: -

- A facilities building incorporating a food court and ancillary retail floor space, up to 100 bedroom hotel, toilet, shower and washing facilities;
- A fuel filling station with forecourts for use by private vehicles and HGV's together with a shop;
- Parking spaces for all vehicle types visiting the site.

1.2. Vehicular access to the site is proposed via a direct signal-controlled connection to the northern side of the grade-separated Junction 11 of the M62 Motorway and is on the line of an existing disused access road. The site access road will be subject to a 30mph speed limit and will provide two inbound and outbound lanes separated by a central reservation. Footways are proposed on both sides of the carriageway, with crossing facilities at appropriate locations. The motorway junction is street-lit.

1.3. In addition to the access works, it is proposed to signalise the full motorway junction as part of the scheme. There are also adjacent works under way, by Warrington Borough Council, to dual Birchwood Way between M62 Junction 11 and the Daten Avenue/Moss Gate roundabout about 1.2 km to the southwest. Also under construction is the scheme to upgrade the M62 to Smart Motorway status between Junctions 10 and 12.

1.4. Briefly, the works subject to Audit comprise the following: -

- The MSA access road junction with Junction 11 including the new footways;
- The traffic signals at the access and around the remainder of the junction;
- Proposed controlled pedestrian crossing points in the vicinity of the access road and the junction of the roundabout with the M62 westbound off slip road;
- A regrading of the slope on the east side of the access road;
- Amendments to the roundabout entry and exit lanes on Birchwood Way.

1.5. The Road Safety Audit was carried out in accordance with the Road Safety Audit Brief issued by Greg Jones of i-Transport (the Design Organisation) on behalf of the client, Extra MSA Group

and included layout drawings, existing and forecast traffic flows, existing queue data, signals information including predicted mean maximum queues and saturation flows, public rights of way, collision data and environmental constraints.

1.6. The audit took place in the offices of WYG and on-site during June 2019. The Audit Team visited the site together on the afternoon of Wednesday 5 June during which the weather was overcast and cool and the road surfaces were dry. Traffic was steady and free flowing through the junction (although the M62 eastbound main carriageway was queued) and no pedestrians or cyclists were observed.

1.7. The Audit Team membership, as approved by Robert Heywood of Highways England (the Overseeing Organisation) was as follows: -

Kevin Nicholson	Associate Director, WYG (RSA Team Leader)
Nancy Sloan	Senior Consultant, WYG (RSA Team Member)

1.8. The terms of reference for this audit are as described in GG 119 in the Design Manual for Roads and Bridges. The Team has reported only on the road safety implications of the proposals and has not examined or verified the compliance of the design to any other criteria. However, and without being prescriptive, the Audit Team might refer to a design standard or technical guidance where this would help to clarify a safety problem or recommendation. In addition, there may be alternative methods of addressing a problem that would be equally acceptable in achieving the elimination or mitigation of a problem, and these should be considered in the light of the recommendations in this report.

1.9. The detail provided for the audit is shown in Section 5. All comments and recommendations are referenced to the design drawings and related documents and the locations of the items raised by the audit are shown on the plan in Section 6.

1.10. Where relevant within this report traffic signs will be described either by their reference numbers on the drawings or by their diagram number within the Traffic Signs Regulations and General Directions 2016 (TSRGD).

1.11. Within this report the generic term "pedestrians" can include walking pedestrians, wheelchair users, mobility scooter users, dismounted cyclists, the blind, partially sighted and mobility impaired. Reference may be made to specific groups where appropriate.

2. ITEMS RAISED BY PREVIOUS ROAD SAFETY AUDITS

2.1 The Audit Team have not been made aware of any previous Road Safety Audits for the proposals.

3. ITEMS RAISED BY THIS STAGE 1 ROAD SAFETY AUDIT

3.1. PROBLEM

Location: The access road entry to the site from the roundabout.

Summary: The absence of road markings could increase the risk of side on collisions.

Motorists exiting the roundabout will do so from the nearside lane, and on entering the access road they will have the choice of two lanes to take. However, there are no arrowed markings to inform motorists of the lane to take (even if they both show straight-ahead movements). The absence of arrows could confuse motorists and lead to lane drift with the attendant risk of side on collisions.

RECOMMENDATION

It is recommended that arrowed markings to Diagram 1038 are laid in the lanes immediately to the north of the roundabout exit.

3.2. PROBLEM

Location: The footway on the eastern side of the motorway bridge.

Summary: Pedestrians could follow a desire line and cross the uncontrolled slip road exit.

Pedestrians might use the footway on the eastern side of the bridge to travel between the public footpaths to the south and north of the roundabout and to the service area. This would result in them crossing the eastbound exit to the M62 with the attendant risk of collisions with vehicles entering the slip road, whose drivers might expect to encounter pedestrians only at the controlled crossing points.

RECOMMENDATION

It is recommended that traffic signs are provided to guide pedestrians to and from the public footpaths and the service area via the controlled crossing points.

Existing footway at the slip road

3.3. PROBLEM

Location: The public footpaths to the east and west of the access road.

Summary: Pedestrians could cross the access road via the existing crossing line.

Pedestrians travelling between the footpaths might do so via the shortest route using the existing crossing line, with the attendant risk of collisions with vehicles.

RECOMMENDATION

It is recommended that pedestrian guardrail is installed to block the existing crossing line and guide pedestrians towards the controlled crossing points. If this recommendation is not taken up, it is recommended that the existing dropped kerbs are replaced with full height units and that the tactile paving is removed on both the boundary footways and the splitter island.

Existing shortest route across the island

3.4. PROBLEM

Location: The access road entry to the site from the roundabout.

Summary: Vehicles backed up onto the circulatory carriageway could increase the risk of collisions.

The traffic signals controlling the pedestrian crossing on the MSA entry arm are encountered by motorists shortly after entering the arm. While the predicted mean maximum queues for the arm are less than 0.5 pcu, the estimated peak hour entry flows are in excess of 250 vehicles. It is accepted that pedestrian flows (and hence crossing demand) will be low, but pedestrian demands coinciding with short platoons within the traffic entry flow could result in vehicles queueing back onto the roundabout circulatory carriageway when the signals show red to traffic. In turn, this could increase the risk of side on or tail end strikes with circulating vehicles.

RECOMMENDATION

It is recommended that the entry arm is monitored following completion and, if required, the crossing point is moved further into the access road.

3.5. PROBLEM

Location: The south-east section of the roundabout.

Summary: The absence of forward visibility could increase the risk of tail end collisions.

While perhaps a draughting omission, the vegetation on the southern side of the roundabout is not specified for removal within the visibility splay. If the drawings are not correctly annotated, the vegetation might be retained with the attendant risks of restricted forward visibility and of tail end collisions.

RECOMMENDATION

It is recommended that the vegetation is specified for removal within the visibility splay.

Vegetation within the visibility splay

3.6. PROBLEM

Location: The M62 westbound off slip road.

Summary: Restricted visibility could increase the risk of collisions between pedestrians and vehicles.

Mutual visibility between motorists on the slip road and pedestrians crossing the slip road in a northerly direction is restricted due to a combination of the horizontal alignment and the presence of trees and other vegetation. Although the crossing will be signal controlled, some pedestrians might attempt to cross in gaps in traffic with the attendant risk of collisions. In addition, the forward visibility of the nearside primary signal could be compromised for approaching motorists, which could increase the risk of overshoot and restart type collisions.

RECOMMENDATION

It is recommended that the vegetation is specified for removal within the visibility splay.

Restricted mutual visibility at the slip road

4. AUDIT TEAM STATEMENT

We certify that this Road Safety Audit has been carried out in accordance with GG 119.

ROAD SAFETY AUDIT TEAM LEADER

Kevin Nicholson
Associate Director
WYG
116 Quayside
Newcastle upon Tyne

Signed:

Date: 08/06/19

ROAD SAFETY AUDIT TEAM MEMBER

Nancy Sloan
Senior Consultant
WYG
116 Quayside
Newcastle upon Tyne

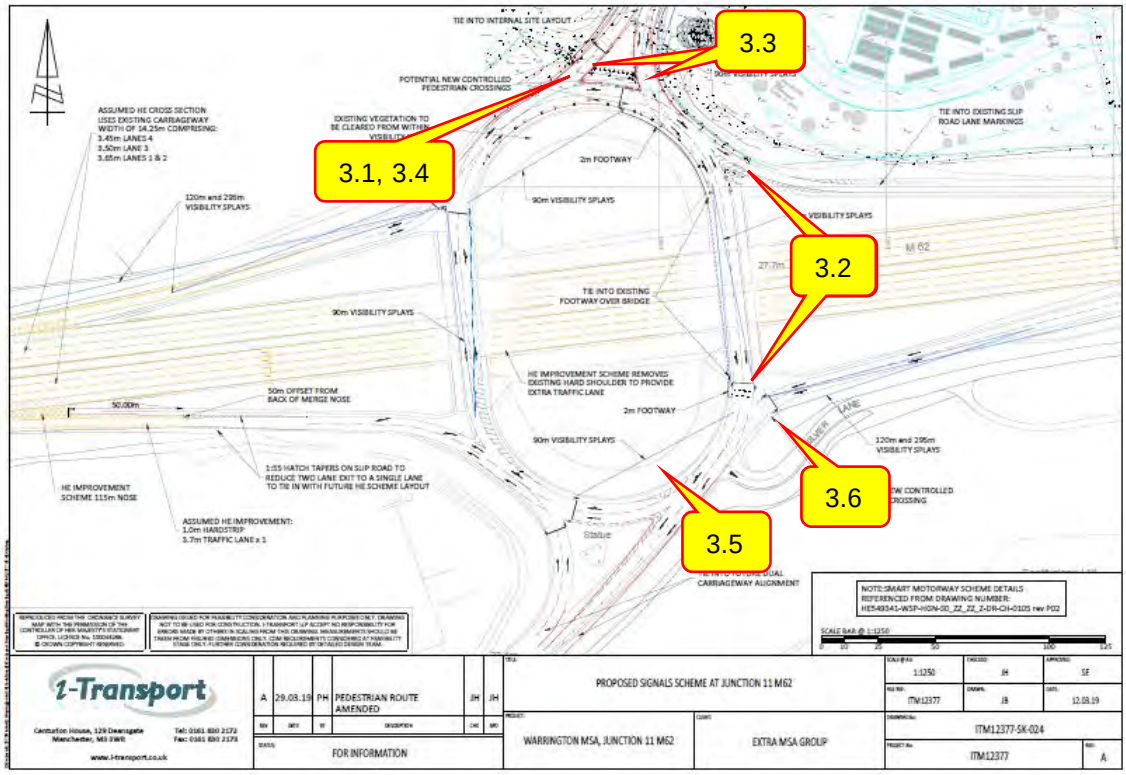
Signed:

Date: 08/06/19

5. DRAWINGS AND DOCUMENTS SUBMITTED FOR AUDIT

DRAWING OR DOCUMENT NUMBER	PROJECT AND DRAWING TITLE	DATE
SEE/JH/ML/ITM12377-005 TN	TECHNICAL NOTE - WARRINGTON MSA PROPOSED SITE ACCESS AND IMPROVEMENTS TO M62 J11: STAGE 1 ROAD SAFETY AUDIT BRIEF	15.05.19
ITM12377-SK-024 REVISION B	WARRINGTON MSA, JUNCTION 11 M62 PROPOSED SIGNALS SCHEME AT JUNCTION 11 M62	16.05.19
ITM12377-SK-025 REVISION A	WARRINGTON MSA, JUNCTION 11 M62 PRELIMINARY SITE ACCESS LAYOUT	05.06.19
392681-MMD-00-XX-DR-C-0003 REVISION B	WARRINGTON EAST PHASE 3 A574 DUALLING - GENERAL ARRANGEMENT SHEET 3 OF 3	07.01.19
HE549341-WSP-HGN-S0_ZZ_ZZ_Z DR-CH-0105 REVISION P02	SMART MOTORWAYS M62 DESIGN & BUILD - J10-12 GENERAL ARRANGEMENT SHEET 5 OF 5	02.11.18
TRAFFIC FLOW DIAGRAMS	2018 BASELINE FLOWS 2022 + COMMITTED DEVELOPMENT FLOWS 2022 + COMMITTED DEVELOPMENT + MSA FLOWS	APRIL 2019
MHC-704-18 SITE 1	SURVEYED QUEUE LENGTHS	NOVEMBER 2018
ARCADY REPORTS	2018 BASELINE FLOWS 2022 + COMMITTED DEVELOPMENT FLOWS	APRIL 2019
LINSIG REPORTS	2022 + COMMITTED DEVELOPMENT + MSA FLOWS	APRIL 2019
ACCIDENT DATA	BIRCHWOOD WAY CASUALTY REPORT BIRCHWOOD WAY COLLISION PLOTS	NOVEMBER 2018

6. LOCATION PLAN OF ITEMS RAISED BY THIS AUDIT



i-Transport LLP
Centurion House, 129 Deansgate, Manchester, M3 3WR

Tel: 0161 830 2172

Technical Note

Project No: ITM12377
Project Title: Warrington MSA, M62 Junction 11
Title: Stage 1 Road Safety Audit - Design Team Response
Ref: SE/GJ/dc/ITM12377-009 TN
Date: 25 July 2019

SECTION 1 Introduction

1.1 This Stage 1 Road Safety Audit response has been prepared with reference to GG119 Road Safety Audit (Revision 1) and takes the form of the suggested template set out at Appendix F of the guidance.

SECTION 2 Project Details

Table 2.1: Project Details

Report title:	Stage 1 Road Safety Audit Response
Date:	22 July 2019
Document reference and revision	ITM12377-009 TN
Prepared by:	i-Transport LLP
On behalf of:	Extra MSA Group

Table 2.2: Authorisation Sheet

Project:	Proposed Site Access and Improvements to M62 Junction 11
Report title:	Stage 1 Road Safety Audit Response
Prepared by:	
Name	Greg Jones
Position	Associate Partner
Signed	
Organisation	i-Transport LLP
Date	22 July 2019
Approved by:	
Name	Robert Heywood
Position	Route Manager
Signed	
Organisation	Highways England
Date	TBA

SECTION 3 Overview

3.1 This Road Safety Audit response relates to a new direct signal-controlled connection to the M62 Motorway Junction 11 (M62J11) to serve a new Motorway Service Area (MSA) to be operated by Extra MSA Group. The audit also covers the proposed signalisation of M62J11.

3.2 The proposed site access arrangements have been designed to a preliminary feasibility level suitable for the purposes of planning and cognisant of committed development at:

- M62J11 and Birchwood Way which are to be implemented by Warrington Borough Council (WBC) and which are due to be completed by January 2020 as part of the Council's 'Warrington East Phase 3' scheme; and
- Highways England's (HE) Smart Motorway Scheme for which works began in Summer 2018 and are due to be completed by Spring 2020.

3.3 The RSA Brief is dated 15 May 2019 (i-Transport ref: ITM12377-005 TN).

3.4 The resultant audit report, prepared by WYG, is dated July 2019.

SECTION 4 Key Personnel

Table 4.1: Key Personnel

Overseeing Organisation:	Robert Heywood and Benjamin Laverick, Highways England
RSA Team:	Kevin Nicholson, Associate Director, WYG (RSA Team Leader) Nancy Sloan, Senior Consultant, WYG (RSA Team Member)
Design Organisation:	i-Transport LLP

SECTION 5 Road Safety Audit Decision Log

Table 5.1: Road Safety Audit Decision Log

RSA Ref	Location	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
3.1	The access road entry to the site from the roundabout.	The absence of road markings could increase the risk of side on collisions. Motorists exiting the roundabout will do so from the nearside lane, and on entering the access road they will have the choice of two lanes to take. However, there are no arrowed markings to inform motorists of the lane to take (even if they both show straight-ahead movements). The absence of arrows could confuse motorists and lead to lane drift with the attendant risk of side on collisions.	It is recommended that arrowed markings to Diagram 1038 are laid in the lanes immediately north of the roundabout exit.	The recommendation is accepted and will be addressed at the detailed design stage.		

RSA Ref	Location	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
3.2	The footway on the eastern side of the motorway bridge.	Pedestrians could follow a desire line and cross the uncontrolled slip road exit. Pedestrians might use the footway on the eastern side of the bridge to travel between the public footpaths to the south and north of the roundabout and to the service area. This would result in them crossing the eastbound exit to the M62 with the attendant risk of collisions with vehicles entering the slip road, whose drivers might expect to encounter pedestrians only at controlled crossings.	It is recommended that traffic signs are provided to guide pedestrians to and from the public footpaths and the service area via controlled crossing points.	The recommendation is accepted and will be addressed at the detailed design stage.		
3.3	The public footpaths to the east and west of the access road.	Pedestrians could cross the access road via the existing crossing line. Pedestrians travelling between the footpaths might do so via the shortest route using the existing crossing line, with the attendant risk of collisions with vehicles.	It is recommended that pedestrian guardrail is installed to block the existing crossing line and guide pedestrians towards the controlled crossing points. If this recommendation is not taken up, it is recommended that the existing dropped kerbs are replaced with full height units and that the tactile paving is removed on both the boundary footways and the splitter island.	The recommendation is accepted. Guardrail is shown on updated Drawing No. ITM12377-SK-024 Rev C.		

RSA Ref	Location	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
3.4	The access road entry to the site from the roundabout.	Vehicles backed up on the circulatory carriageway could increase the risk of collisions. The traffic signals controlling the pedestrian crossing on the MSA entry arm are encountered by motorists shortly after entering the arm. While the predicted mean maximum queues for the arm are less than 0.5 pcu, the estimated peak hour entry flows are in excess of 250 vehicles. It is accepted that pedestrian flows (and hence crossing demand) will be low, but pedestrian demands coinciding with short platoons within the traffic entry flow could result in vehicles queuing back onto the roundabout circulatory carriageway when the signals show red to traffic. In turn, this could increase the risk of side on or tail end strikes with circulating vehicles.	It is recommended that the entry arm is monitored following completion and, if required, the crossing point is moved further into the access road.	The arrangement has been updated to move the crossing point on the site entry arm further northwards – as shown on updated Drawing No. ITM12377-SK-024 Rev C. Given the predicted queue lengths monitoring is not considered necessary.		

RSA Ref	Location	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
3.5	The south-east section of the roundabout.	The absence of forward visibility could increase the tail end collisions. Whilst perhaps a drafting omission, the vegetation on the southern side of the roundabout is not specified for removal within the visibility splay. If the drawings are not correctly annotated, the vegetation might be retained with the attendant risks of restricted forward visibility and of tail end collisions.	It is recommended that the vegetation is specified for removal within the visibility splay.	The recommendation is accepted and the removal of vegetation is annotated on updated Drawing No. ITM12377-SK-024 Rev C.		

RSA Ref	Location	RSA Problem	RSA Recommendation	Design Organisation Response	Overseeing Organisation Response	Agreed RSA Action
3.6	The M62 westbound off-slip.	Restricted visibility could increase the risk of collisions between pedestrians and vehicles. Mutual visibility between motorists on the slip road and pedestrians crossing the slip road in a northerly direction is restricted due to a combination of the horizontal alignment and the presence of trees and other vegetation. Although the crossing will be signal-controlled, some pedestrians might attempt to cross in gaps in traffic with the attendant risks of collisions. In addition, the forward visibility of the nearside primary signal could be compromised for approaching motorists, which could increase the risk of overshoot and restart type collisions.	It is recommended that the vegetation is specified for removal within the visibility splay.	The recommendation is accepted and the removal of vegetation is annotated on updated Drawing No. ITM12377-SK-024 Rev C.		

SECTION 6 Design Organisation and Overseeing Organisation Statements

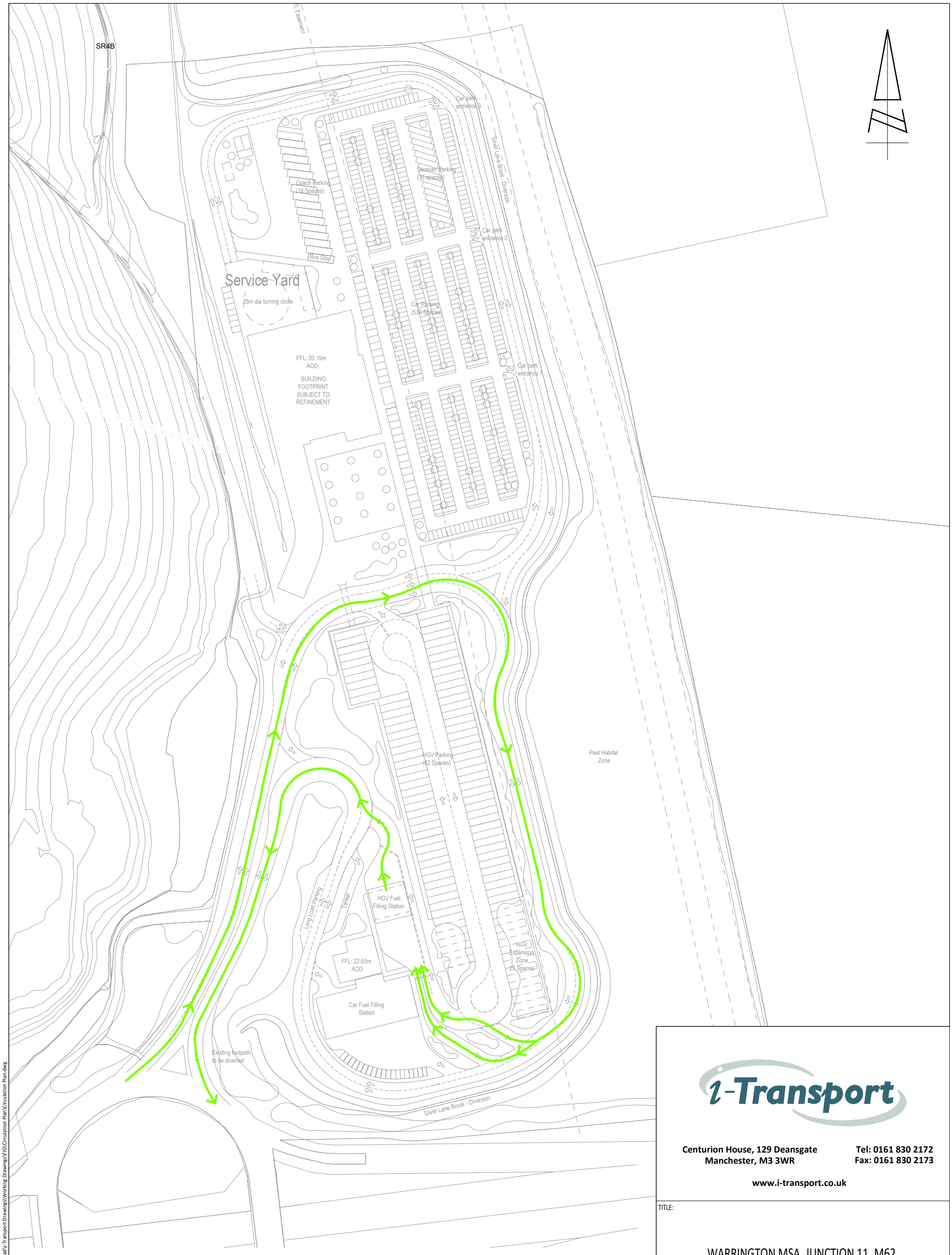
Table 6.1: Design Organisation Statement

On behalf of the design organisation I certify that: **The RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the Overseeing Organisation.**	
Name:	Greg Jones
Signed:	
Position:	Associate Partner
Organisation:	i-Transport LLP
Date:	25 July 2019

Table 6.2: Overseeing Organisation Statement

On behalf of the Overseeing Organisation I certify that: **1) The RSA actions identified in response to the road safety audit problems in this road safety audit have been discussed and agreed with the design organisation; and** **2) The agreed RSA actions will be progressed.**	
Name:	Robert Heywood
Signed:	
Position:	Route Manager
Organisation:	Highways England
Date:	TBA

APPENDIX 7.E. Circulation Plans



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TITLE:

WARRINGTON MSA, JUNCTION 11, M62
ARTICULATED VEHICLE TO FUEL FILLING STATION
CIRCULATION PLAN

FIGURE No:

APPENDIX 7D (i)

FILE REF: ITM12377

REV:

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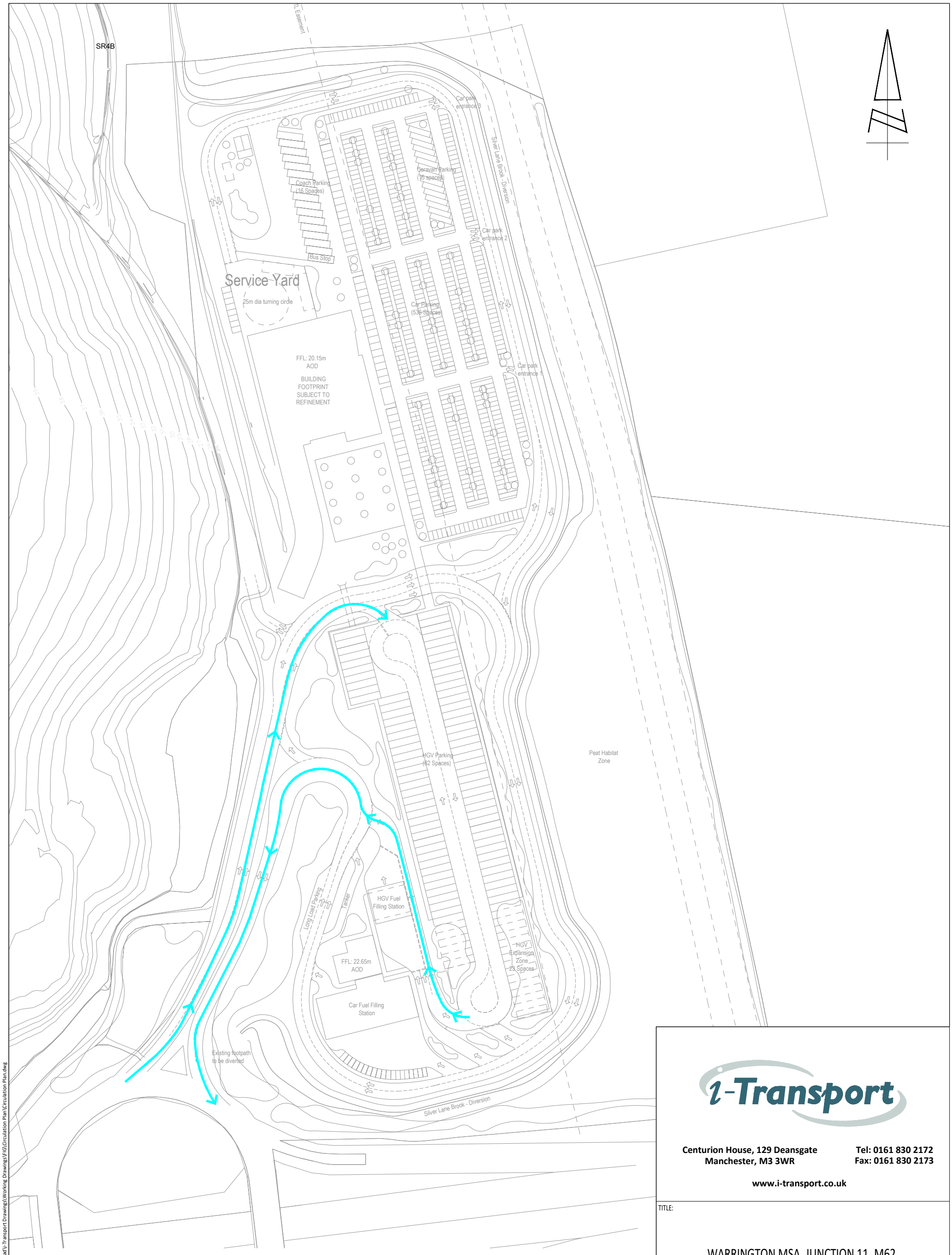

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TITLE:

WARRINGTON MSA, JUNCTION 11, M62
ARTICULATED VEHICLE TO PARKING AREA CIRCULATION PLAN

FILE REF: ITM12377

REV:

FIGURE No: APPENDIX 7D (ii)

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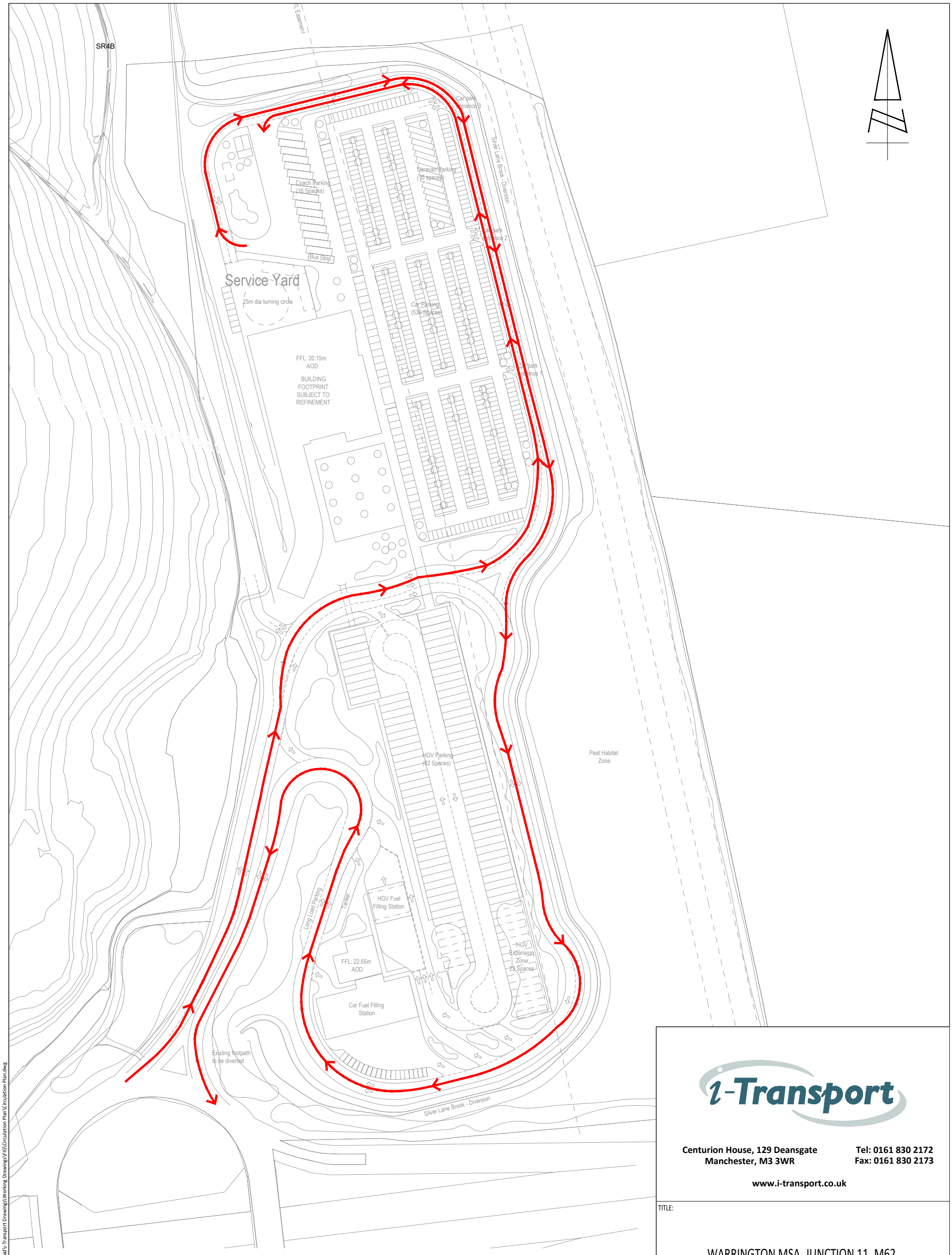

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TITLE:

WARRINGTON MSA, JUNCTION 11, M62
LUXURY COACH TO PARKING
CIRCULATION PLAN

FIGURE No:

APPENDIX 7D (iii)

FILE REF: ITM12377

REV:

2:\Projects\12377ITM M62 Warrington MSA\Tech\Acad\i-Transport Drawings\Working Drawings\FIG\Circulation Plan\Circulation Plan.dwg

SR4B

Car park entrance 3

Silver Lane Brook - Diversion

Caravan Parking (15 spaces)

Coach Parking (16 Spaces)

Car park entrance 2

Bus Stop

Service Yard

25m dia turning circle

Car Parking (536 Spaces)

FFL: 20.15m AOD

BUILDING FOOTPRINT SUBJECT TO REFINEMENT

Car park entrance 1

HGV Parking (82 Spaces)

Peat Habitat Zone

Long Load Parking

Tanker

HGV Fuel Filling Station

HGV Expansion Zone 23 Spaces

FFL: 22.65m AOD

Car Fuel Filling Station

Existing footpath to be diverted

Silver Lane Brook - Diversion

i-Transport

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Fax: 0161 830 2173

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TITLE:

WARRINGTON MSA, JUNCTION 11, M62
OIL TANKER TO LOADING BAY
CIRCULATION PLAN

FIGURE No:

APPENDIX 7D (iv)

FILE REF: ITM12377

REV:

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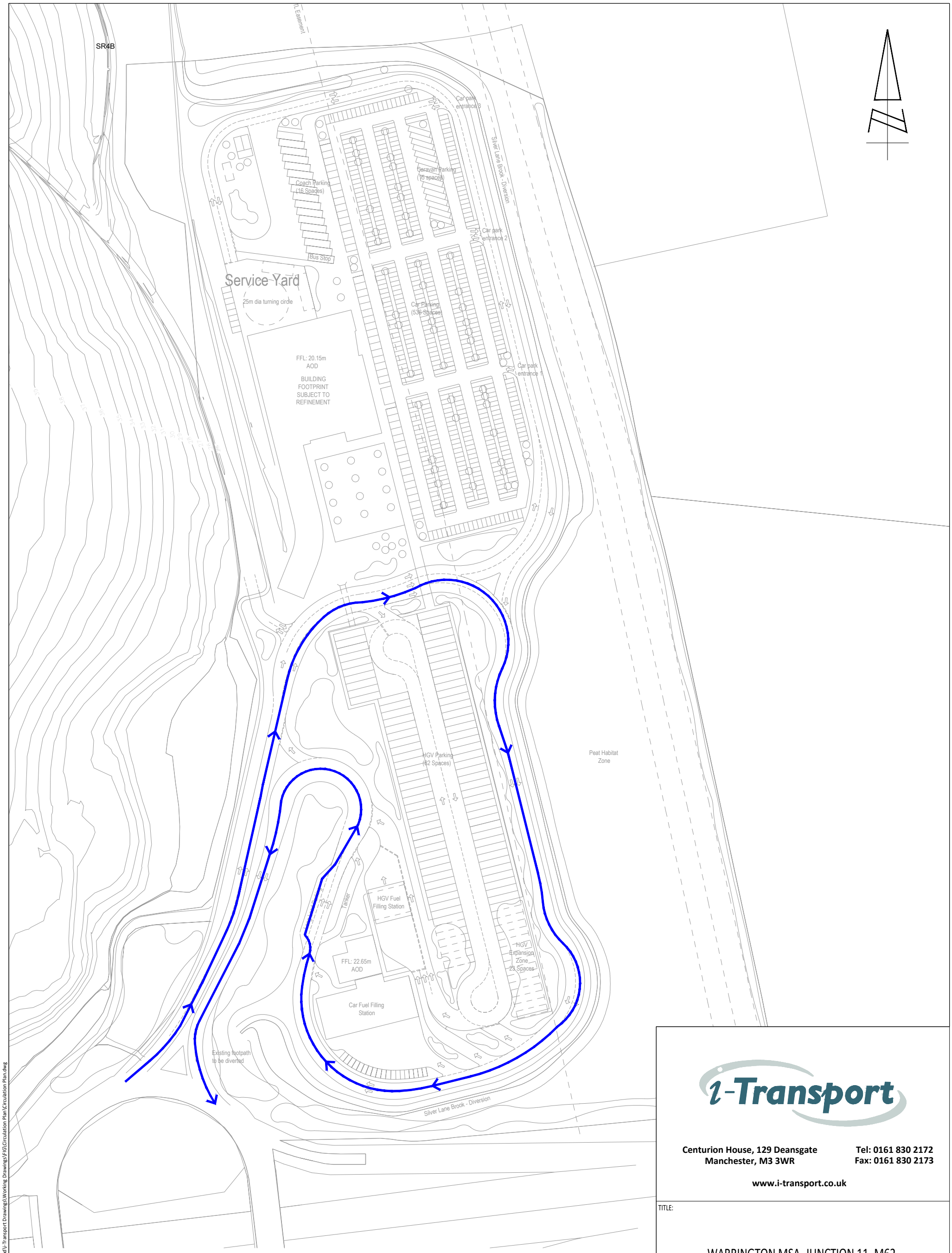

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TITLE:

WARRINGTON MSA, JUNCTION 11, M62
ABNORMAL LOAD TO LOADING BAY
CIRCULATION PLAN

FILE REF: ITM12377

REV:

FIGURE No: APPENDIX 7D (v)

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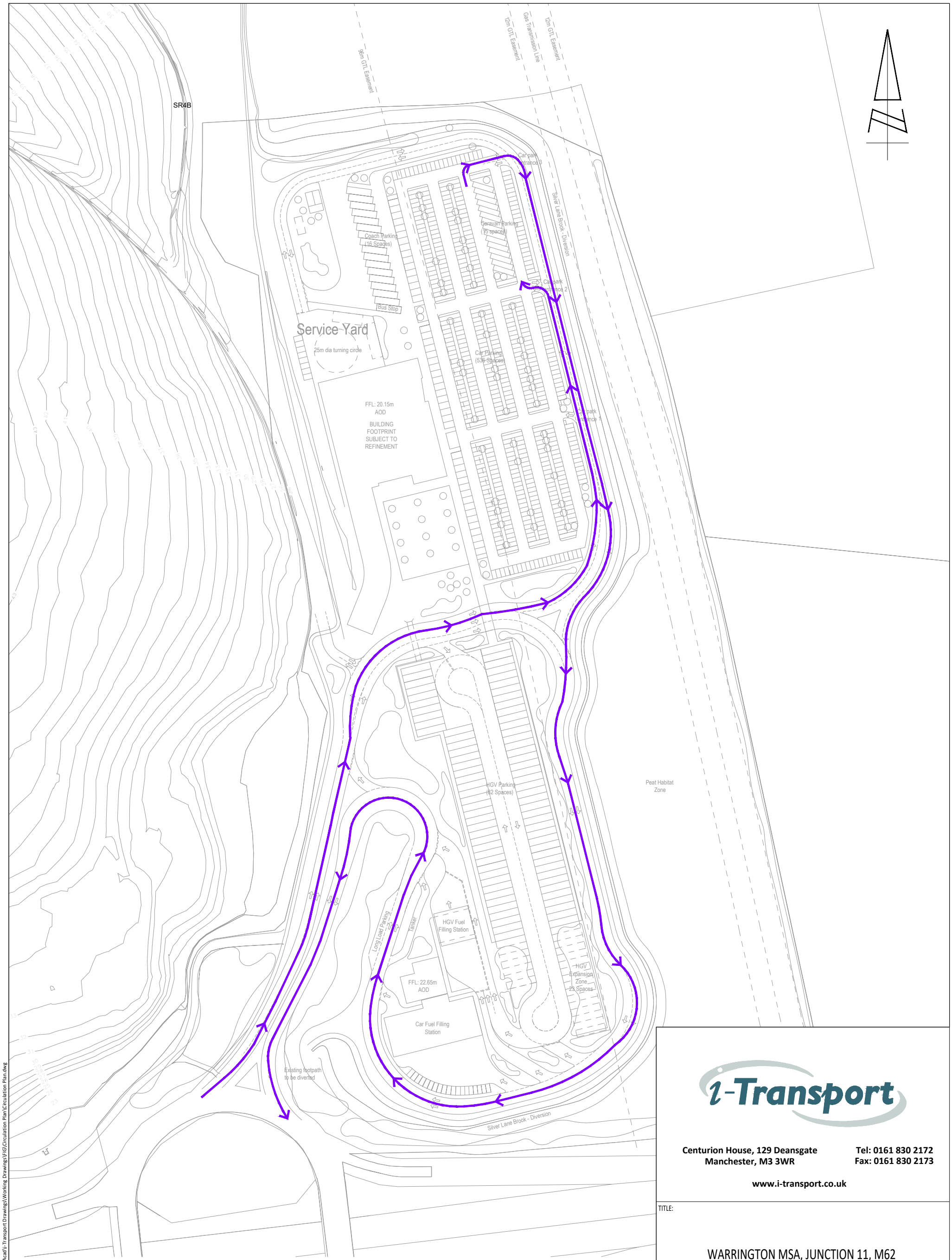

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TITLE:

WARRINGTON MSA, JUNCTION 11, M62
MOTORHOME AND CAR & CARAVAN PARKING
CIRCULATION PLAN

FIGURE No:

APPENDIX 7D (vi)

FILE REF:	REV:
ITM12377	

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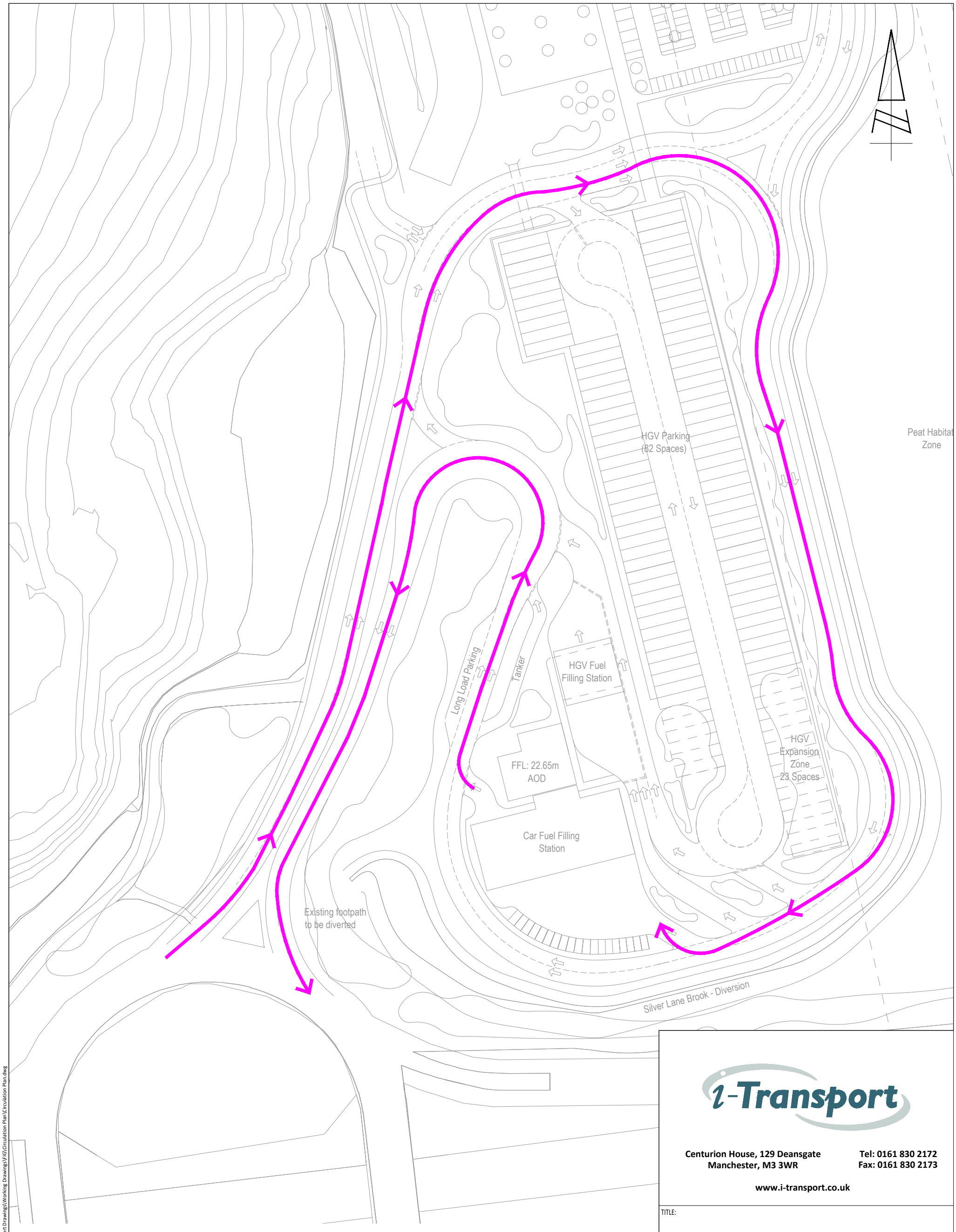

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TITLE:

WARRINGTON MSA, JUNCTION 11, M62
LIGHT VEHICLES TO FUEL FILLING STATION
CIRCULATION PLAN

FIGURE No:

APPENDIX 7D (vii)

FILE REF: ITM12377

REV:

2:\Projects\12377ITM M62 Warrington MSA\Tech\Acad\i-Transport Drawings\Working Drawings\FIG\Circulation Plan\Circulation Plan.dwg

APPENDIX 7.F. Swept Paths

FTA Design Articulated Vehicle (1998) - including wing mirror

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.550m

REV	DATE	BY	DESCRIPTION	CHK	APD
B	11.07.19	JB	UPDATED SITE LAYOUT	SE	SE
A	08.05.19	JB	UPDATED SITE LAYOUT	JH	SE

DRAWING ISSUED FOR FEASIBILITY CONSIDERATION AND PLANNING PURPOSES ONLY. DRAWING NOT TO BE USED FOR CONSTRUCTION. I-TRANSPORT LLP ACCEPT NO RESPONSIBILITY FOR ERRORS MADE BY OTHERS IN SCALING FROM THIS DRAWING. MEASUREMENTS SHOULD BE TAKEN FROM FIGURED DIMENSIONS ONLY. CDM REQUIREMENTS CONSIDERED AT FEASIBILITY STAGE ONLY. FURTHER CONSIDERATION REQUIRED BY DETAILED DESIGN TEAM.

CLIENT: EXTRA MSA GROUP

STATUS: FOR INFORMATION

i-Transport
Centurion House, 129 Deansgate
Manchester, M3 3WR
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Fax: 0161 830 2173
www.i-transport.co.uk

TITLE: SWEPT PATH ANALYSIS - 16.5m ARTICULATED VEHICLE TO FUEL FILLING STATION

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

SCALE @ A3:	CHECKED:	APPROVED:
1:2000	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	10.04.19

DRAWING No: ITM12377-SK-026A

PROJECT No: ITM12377 REV: B

Z:\Projects\12377\ITM M62 Warrington MSA\Tech\Acad\i-Transport Drawings\Working Drawings\SK\ITM12377-SK-026B.dwg

Coach Parking (16 Spaces)

Caravan Parking (75 spaces)

Silver Lane Brook - Diversion

Car park entrance 2

Bus Stop

Service Yard

25m dia turning circle

Car Parking (536 Spaces)

FFL: 20.15m AOD

BUILDING FOOTPRINT SUBJECT TO REFINEMENT

Car park entrance 1

HGV Parking (82 Spaces)

Peat Habitat Zone

Long Load Parking

Tanker

HGV Fuel Filling Station

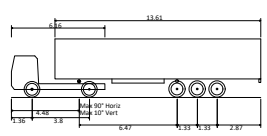
FFL: 22.65m AOD

HGV Expansion Zone 23 Spaces

Car Fuel Filling Station

Existing footpath to be diverted

Silver Lane Brook - Diversion



FTA Design Articulated Vehicle (1998) - including wing mirror

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.550m

REV	DATE	BY	DESCRIPTION	CHK	APD
A	11.07.19	JB	UPDATED SITE LAYOUT	SE	SE

DRAWING ISSUED FOR FEASIBILITY CONSIDERATION AND PLANNING PURPOSES ONLY. DRAWING NOT TO BE USED FOR CONSTRUCTION. I-TRANSPORT LLP ACCEPT NO RESPONSIBILITY FOR ERRORS MADE BY OTHERS IN SCALING FROM THIS DRAWING. MEASUREMENTS SHOULD BE TAKEN FROM FIGURED DIMENSIONS ONLY. CDM REQUIREMENTS CONSIDERED AT FEASIBILITY STAGE ONLY. FURTHER CONSIDERATION REQUIRED BY DETAILED DESIGN TEAM.

CLIENT: EXTRA MSA GROUP

STATUS: FOR INFORMATION

i-Transport

Centurion House, 129 Deansgate
Manchester, M3 3WR

Tel: 0161 830 2172
Fax: 0161 830 2173

www.i-transport.co.uk

TITLE: SWEPT PATH ANALYSIS - 16.5m ARTICULATED VEHICLE TO PARKING AREA

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

SCALE @ A3:	CHECKED:	APPROVED:
1:2000	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	10.04.19

DRAWING No: ITM12377-SK-027

PROJECT No: ITM12377

REV: A

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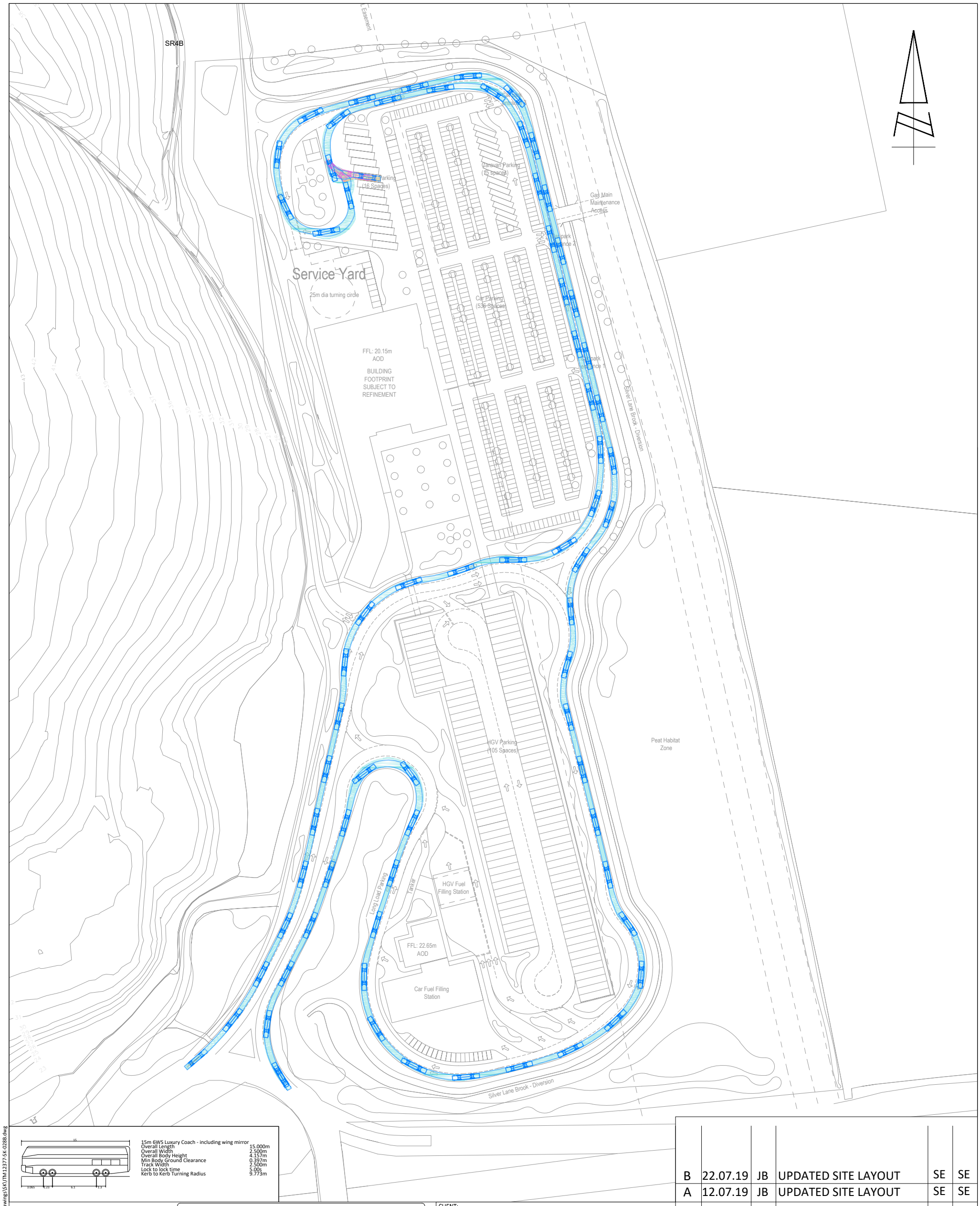

15m 6WS Luxury Coach - including wing mirror

Overall Length	15.000m
Overall Width	2.500m
Overall Body Height	4.157m
Min Body Ground Clearance	0.397m
Track Width	2.500m
Lock to lock time	5.00s
Kerb to Kerb Turning Radius	9.773m

REV	DATE	BY	DESCRIPTION	CHK	APD
B	22.07.19	JB	UPDATED SITE LAYOUT	SE	SE
A	12.07.19	JB	UPDATED SITE LAYOUT	SE	SE

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CLIENT: EXTRA MSA GROUP

STATUS: FOR INFORMATION

i-Transport
Centurion House, 129 Deansgate
Manchester, M3 3WR
Tel: 0161 830 2172
Fax: 0161 830 2173
www.i-transport.co.uk

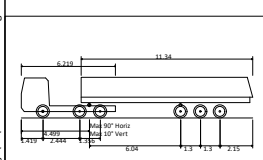
TITLE: SWEPT PATH ANALYSIS - 15m LUXURY COACH TO PARKING AREA

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

SCALE @ A3:	CHECKED:	APPROVED:
1:2000	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	10.04.19

DRAWING No: ITM12377-SK-028

PROJECT No: ITM12377 REV: B



Oil Tanker	
Overall Length	15.289m
Overall Width	2.500m
Overall Body Height	2.704m
Min Body Ground Clearance	0.419m
Track Width	2.445m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.670m

REV	DATE	BY	DESCRIPTION	CHK	APD
B	22.07.19	JB	UPDATED SITE LAYOUT	SE	SE
A	12.07.19	JB	UPDATED SITE LAYOUT	SE	SE

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CLIENT: EXTRA MSA GROUP

STATUS: FOR INFORMATION

i-Transport

Centurion House, 129 Deansgate
Manchester, M3 3WR

Tel: 0161 830 2172
Fax: 0161 830 2173

www.i-transport.co.uk

TITLE: SWEPT PATH ANALYSIS - OIL TANKER TO LOADING AREA

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

SCALE @ A3:	CHECKED:	APPROVED:
1:2000	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	10.04.19

DRAWING No: ITM12377-SK-029

PROJECT No: ITM12377

REV: B

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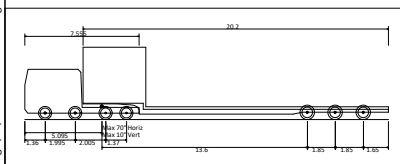
Coach Parking (16 Spaces)
Caravan Parking (75 spaces)
Silver Lane Brook - Diversion
Car park entrance 2
Bus Stop
Service Yard
25m dia turning circle
Car Parking (536 Spaces)
FFL: 20.15m AOD
BUILDING FOOTPRINT SUBJECT TO REFINEMENT
Car park entrance 1
HGV Parking (82 Spaces)
Peat Habitat Zone
Tanker
HGV Fuel Filling Station
FFL: 22.65m AOD
HGV Expansion Zone 23 Spaces
Car Fuel Filling Station
Existing footpath to be diverted
Silver Lane Brook - Diversion



Volvo FH16 8x4 + Broshuis Blade Trailer

Overall Length	24.045m
Overall Width	2.550m
Overall Body Height	4.800m
Min Body Ground Clearance	0.375m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	9.800m

REV	DATE	BY	DESCRIPTION	CHK	APD
A	12.07.19	JB	UPDATED SITE LAYOUT	SE	SE

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CLIENT: EXTRA MSA GROUP

STATUS: FOR INFORMATION

i-Transport
Centurion House, 129 Deansgate
Manchester, M3 3WR
Tel: 0161 830 2172
Fax: 0161 830 2173
www.i-transport.co.uk

TITLE: SWEPT PATH ANALYSIS - ABNORMAL LOAD TO LOADING AREA

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

SCALE @ A3:	CHECKED:	APPROVED:
1:2000	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	10.04.19

DRAWING No: ITM12377-SK-030

PROJECT No: ITM12377 REV: A

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SR4B

Car park Entrance 3

Silver Lane Brook - Diversion

Caravan Parking (4 spaces)

Coach Parking (16 Spaces)

Car park Entrance 2

Bus Stop

Service Yard

25m dia turning circle

Car Parking (536 Spaces)

Car park Entrance 1

FFL: 20.15m AOD

BUILDING FOOTPRINT SUBJECT TO REFINEMENT

HGV Parking (82 Spaces)

Peat Habitat Zone

Long Load Parking

Tanker

HGV Fuel Filling Station

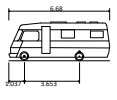
HGV Expansion Zone 23 Spaces

FFL: 22.65m AOD

Car Fuel Filling Station

Existing footpath to be diverted

Silver Lane Brook - Diversion



Motorhome with wingmirrors	
Overall Length	6.680m
Overall Width	2.220m
Overall Body Height	2.571m
Min Body Ground Clearance	0.242m
Max Track Width	1.690m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m

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CLIENT: EXTRA MSA GROUP

REV	DATE	BY	DESCRIPTION	CHK	APD
A	12.07.19	JB	UPDATED SITE LAYOUT	SE	SE

STATUS: FOR INFORMATION

i-Transport
Centurion House, 129 Deansgate
Manchester, M3 3WR
Tel: 0161 830 2172
Fax: 0161 830 2173
www.i-transport.co.uk

TITLE: SWEPT PATH ANALYSIS - MOTORHOME TO PARKING AREA

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

SCALE @ A3:	CHECKED:	APPROVED:
1:2000	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	10.04.19

DRAWING No: ITM12377-SK-031

PROJECT No: ITM12377

REV: A

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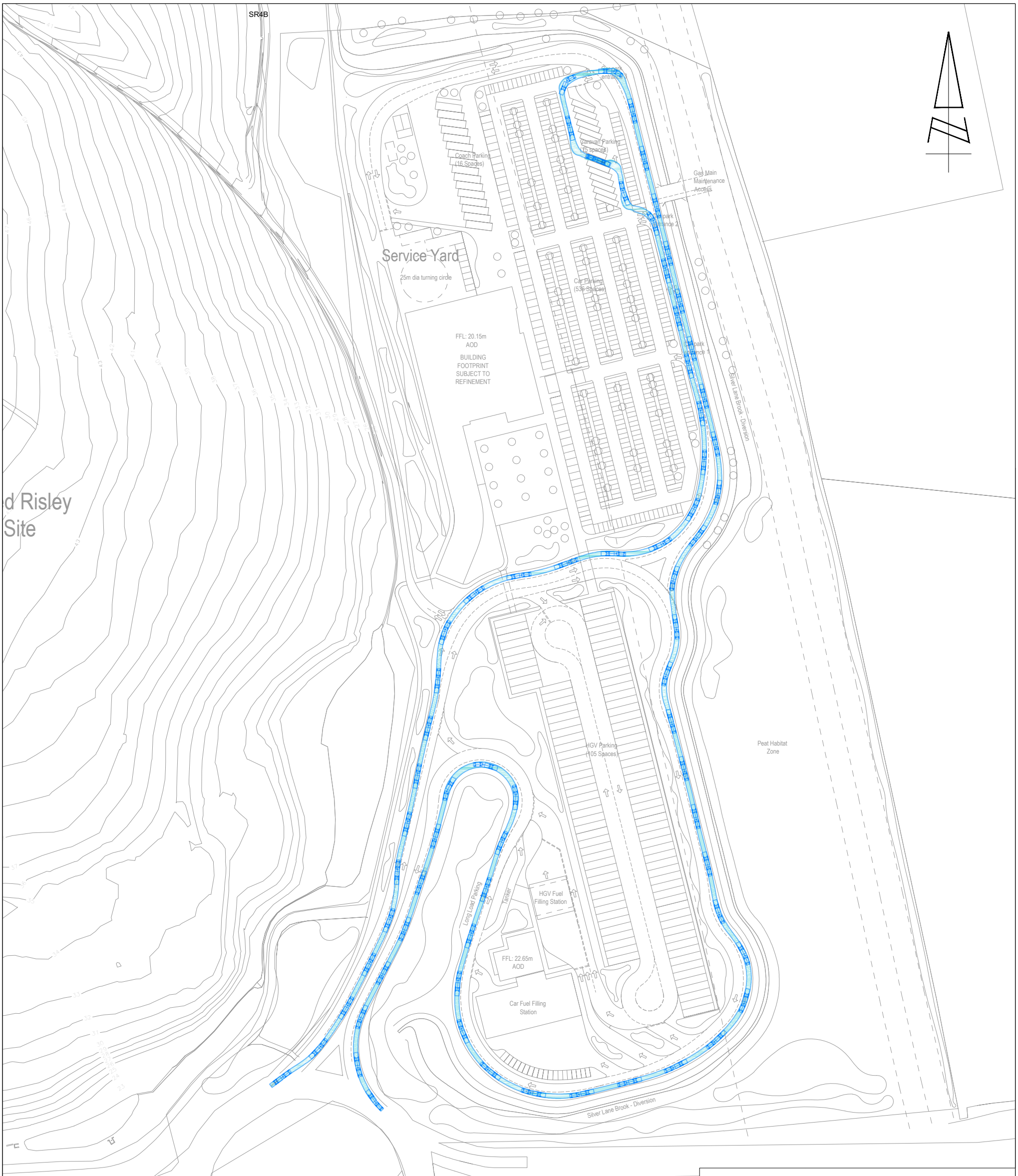

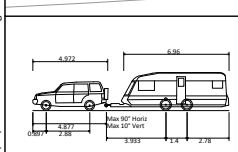

Luxury 4x4 +Twin Axle Caravan (2006)	
Overall Length	12.990m
Overall Width	2.286m
Overall Body Height	2.524m
Min Body Ground Clearance	0.251m
Max Track Width	2.130m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.800m

REV	DATE	BY	DESCRIPTION	CHK	APD
B	22.07.19	JB	UPDATED SITE LAYOUT	SE	SE
A	12.07.19	JB	UPDATED SITE LAYOUT	SE	SE

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CLIENT:
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STATUS:
FOR INFORMATION

i-Transport
Centurion House, 129 Deansgate
Manchester, M3 3WR
Tel: 0161 830 2172
Fax: 0161 830 2173
www.i-transport.co.uk

TITLE:
SWEPT PATH ANALYSIS - CAR & CARAVAN TO PARKING AREA

PROJECT:
WARRINGTON MSA, JUNCTION 11 M62

SCALE @ A3:	CHECKED:	APPROVED:
1:250	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	10.04.19

DRAWING No: ITM12377-SK-032

PROJECT No: ITM12377

REV: B

2:\Projects\12377\ITM M62 Warrington MSA\Tech\Acad\i-Transport Drawings\Working Drawings\SK\ITM12377-SK-032B.dwg

Estate Car including wing mirrors	
Overall Length	4.710m
Overall Width	1.804m
Overall Body Height	1.442m
Min Body Ground Clearance	0.207m
Max Track Width	1.756m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.950m

REV	DATE	BY	DESCRIPTION	CHK	APD
A	12.07.19	JB	UPDATED SITE LAYOUT	SE	SE

DRAWING ISSUED FOR FEASIBILITY CONSIDERATION AND PLANNING PURPOSES ONLY. DRAWING NOT TO BE USED FOR CONSTRUCTION. I-TRANSPORT LLP ACCEPT NO RESPONSIBILITY FOR ERRORS MADE BY OTHERS IN SCALING FROM THIS DRAWING. MEASUREMENTS SHOULD BE TAKEN FROM FIGURED DIMENSIONS ONLY. CDM REQUIREMENTS CONSIDERED AT FEASIBILITY STAGE ONLY. FURTHER CONSIDERATION REQUIRED BY DETAILED DESIGN TEAM.

CLIENT: EXTRA MSA GROUP

STATUS: FOR INFORMATION

i-Transport
Centurion House, 129 Deansgate
Manchester, M3 3WR
Tel: 0161 830 2172
Fax: 0161 830 2173
www.i-transport.co.uk

TITLE: SWEPT PATH ANALYSIS - ESTATE CAR TO FUEL FILLING STATION

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

SCALE @ A3:	CHECKED:	APPROVED:
1:250	JH	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	10.04.19

DRAWING No: ITM12377-SK-033

PROJECT No: ITM12377 REV: A

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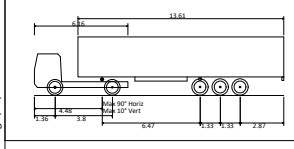

FTA Design Articulated Vehicle (1998) - including wing mirror

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	6.550m

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CLIENT: EXTRA MSA GROUP

REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: FOR INFORMATION

i-Transport
Centurion House, 129 Deansgate
Manchester, M3 3WR
Tel: 0161 830 2172
Fax: 0161 830 2173
www.i-transport.co.uk

TITLE: SWEPT PATH ANALYSIS - 16.5m ARTICULATED VEHICLE TO SERVICE YARD

PROJECT: WARRINGTON MSA, JUNCTION 11 M62

SCALE @ A3:	CHECKED:	APPROVED:
1:2000	GJ	SE
FILE REF:	DRAWN:	DATE:
ITM12377	JB	22.07.19

DRAWING No: ITM12377-SK-037

PROJECT No: ITM12377 REV:

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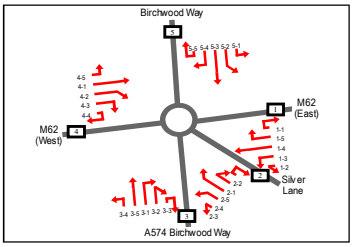
APPENDIX 8.A. Traffic Survey Data

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 1-1: U-Turn from M62 (East) to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	3	0	0	0	1	0	4	5.30
0715 - 0730	0	0	3	0	2	0	0	0	5	5.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**8**	**0**	**2**	**0**	**1**	**0**	11	12.30
Hourly Average	**0.00**	**0.00**	**2.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	2.75	3.08
0800 - 0815	0	0	5	0	0	0	0	0	5	5.00
0815 - 0830	0	0	3	0	1	0	1	0	5	6.30
0830 - 0845	0	0	3	0	2	0	0	0	5	5.00
0845 - 0900	0	0	3	0	0	0	2	0	5	7.60
Hourly Total	**0**	**0**	**14**	**0**	**3**	**0**	**3**	**0**	20	23.90
Hourly Average	**0.00**	**0.00**	**3.50**	**0.00**	**0.75**	**0.00**	**0.75**	**0.00**	5.00	5.98
0900 - 0915	0	0	5	0	1	2	0	0	8	10.60
0915 - 0930	0	0	6	1	1	0	1	0	9	10.30
0930 - 0945	0	0	6	0	3	0	1	0	10	11.30
0945 - 1000	0	0	7	0	4	1	1	0	13	15.60
Hourly Total	**0**	**0**	**24**	**1**	**9**	**3**	**3**	**0**	40	47.80
Hourly Average	**0.00**	**0.00**	**6.00**	**0.25**	**2.25**	**0.75**	**0.75**	**0.00**	10.00	11.95
1000 - 1015	0	0	5	0	2	0	2	0	9	11.60
1015 - 1030	0	0	5	0	3	0	1	0	9	10.30
1030 - 1045	0	0	3	1	3	1	1	0	9	11.60
1045 - 1100	0	0	3	0	1	0	0	1	5	6.00
Hourly Total	**0**	**0**	**16**	**1**	**9**	**1**	**4**	**1**	32	39.50
Hourly Average	**0.00**	**0.00**	**4.00**	**0.25**	**2.25**	**0.25**	**1.00**	**0.25**	8.00	9.88
1100 - 1115	0	0	9	0	1	0	0	0	10	10.00
1115 - 1130	0	0	2	0	0	0	2	0	4	6.60
1130 - 1145	0	0	3	0	2	0	1	0	6	7.30
1145 - 1200	0	0	2	0	2	0	0	0	4	4.00
Hourly Total	**0**	**0**	**16**	**0**	**5**	**0**	**3**	**0**	24	27.90
Hourly Average	**0.00**	**0.00**	**4.00**	**0.00**	**1.25**	**0.00**	**0.75**	**0.00**	6.00	6.98
1200 - 1215	0	0	3	0	1	0	0	0	4	4.00
1215 - 1230	0	0	3	0	1	2	1	0	7	10.90
1230 - 1245	0	0	7	0	2	0	3	0	12	15.90
1245 - 1300	0	0	3	0	1	1	1	0	6	8.60
Hourly Total	**0**	**0**	**16**	**0**	**5**	**3**	**5**	**0**	29	39.40
Hourly Average	**0.00**	**0.00**	**4.00**	**0.00**	**1.25**	**0.75**	**1.25**	**0.00**	7.25	9.85
1300 - 1315	0	0	5	0	0	0	0	0	5	5.00
1315 - 1330	0	0	5	0	2	1	0	0	8	9.30
1330 - 1345	0	0	3	0	2	0	1	0	6	7.30
1345 - 1400	0	0	6	0	0	0	2	0	8	10.60
Hourly Total	**0**	**0**	**19**	**0**	**4**	**1**	**3**	**0**	27	32.20
Hourly Average	**0.00**	**0.00**	**4.75**	**0.00**	**1.00**	**0.25**	**0.75**	**0.00**	6.75	8.05
1400 - 1415	0	0	3	0	2	0	0	0	5	5.00
1415 - 1430	0	0	2	0	1	0	1	0	4	5.30
1430 - 1445	0	0	5	0	2	0	2	0	9	11.60
1445 - 1500	0	0	2	0	1	0	0	0	3	3.00
Hourly Total	**0**	**0**	**12**	**0**	**6**	**0**	**3**	**0**	21	24.90
Hourly Average	**0.00**	**0.00**	**3.00**	**0.00**	**1.50**	**0.00**	**0.75**	**0.00**	5.25	6.23
1500 - 1515	0	0	4	0	1	0	0	0	5	5.00
1515 - 1530	0	0	6	0	0	0	2	0	8	10.60
1530 - 1545	0	0	7	0	4	0	0	0	11	11.00
1545 - 1600	0	0	6	0	3	0	1	0	10	11.30
Hourly Total	**0**	**0**	**23**	**0**	**8**	**0**	**3**	**0**	34	37.90
Hourly Average	**0.00**	**0.00**	**5.75**	**0.00**	**2.00**	**0.00**	**0.75**	**0.00**	8.50	9.48
1600 - 1615	0	0	2	0	0	0	0	0	2	2.00
1615 - 1630	0	0	1	0	0	0	0	0	1	1.00
1630 - 1645	0	0	5	0	2	0	0	0	7	7.00
1645 - 1700	0	0	8	0	0	0	0	0	8	8.00
Hourly Total	**0**	**0**	**16**	**0**	**2**	**0**	**0**	**0**	18	18.00
Hourly Average	**0.00**	**0.00**	**4.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	4.50	4.50
1700 - 1715	0	0	2	0	4	0	0	0	6	6.00
1715 - 1730	0	0	3	0	2	0	0	0	5	5.00
1730 - 1745	0	0	5	0	0	0	0	0	5	5.00
1745 - 1800	0	0	5	0	2	0	1	0	8	9.30
Hourly Total	**0**	**0**	**15**	**0**	**8**	**0**	**1**	**0**	24	25.30
Hourly Average	**0.00**	**0.00**	**3.75**	**0.00**	**2.00**	**0.00**	**0.25**	**0.00**	6.00	6.33
1800 - 1815	0	0	3	0	1	0	1	0	5	6.30
1815 - 1830	0	0	5	0	1	0	0	0	6	6.00
1830 - 1845	0	0	3	0	0	0	0	0	3	3.00
1845 - 1900	0	0	2	0	0	0	1	0	3	4.30
Hourly Total	**0**	**0**	**13**	**0**	**2**	**0**	**2**	**0**	17	19.60
Hourly Average	**0.00**	**0.00**	**3.25**	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	4.25	4.90

Session Total	**0**	**0**	**192**	**2**	**63**	**8**	**31**	**1**	297	348.70
Session Average	**0.00**	**0.00**	**4.00**	**0.04**	**1.31**	**0.17**	**0.65**	**0.02**	6.19	7.26

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

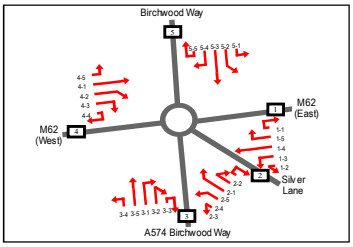
1000 - 1700 (Saturday 7h Session)

	Movement 1-1: U-Turn from M62 (East) to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	8	0	0	1	0	0	9	10.30
1015 - 1030	0	0	4	0	1	0	0	0	5	5.00
1030 - 1045	0	0	3	0	0	0	0	0	3	3.00
1045 - 1100	0	0	4	0	0	0	0	0	4	4.00
Hourly Total	**0**	**0**	**19**	**0**	**1**	**1**	**0**	**0**	21	22.30
Hourly Average	**0.00**	**0.00**	**4.75**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	5.25	5.58
1100 - 1115	0	0	7	0	2	0	0	0	9	9.00
1115 - 1130	0	0	6	0	1	0	0	0	7	7.00
1130 - 1145	0	0	4	0	0	0	0	0	4	4.00
1145 - 1200	0	0	4	0	1	0	0	0	5	5.00
Hourly Total	**0**	**0**	**21**	**0**	**4**	**0**	**0**	**0**	25	25.00
Hourly Average	**0.00**	**0.00**	**5.25**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	6.25	6.25
1200 - 1215	0	0	4	0	0	0	0	0	4	4.00
1215 - 1230	0	0	5	0	0	0	0	0	5	5.00
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	5	0	0	0	0	0	5	5.00
Hourly Total	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	15	15.00
Hourly Average	**0.00**	**0.00**	**3.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	3.75	3.75
1300 - 1315	0	0	1	0	1	0	0	0	2	2.00
1315 - 1330	0	0	6	0	3	0	0	0	9	9.00
1330 - 1345	0	0	11	0	0	0	0	0	11	11.00
1345 - 1400	0	0	10	0	0	0	0	0	10	10.00
Hourly Total	**0**	**0**	**28**	**0**	**4**	**0**	**0**	**0**	32	32.00
Hourly Average	**0.00**	**0.00**	**7.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	8.00	8.00
1400 - 1415	0	0	6	0	0	0	0	0	6	6.00
1415 - 1430	0	0	4	0	0	0	0	0	4	4.00
1430 - 1445	0	0	6	0	2	0	0	0	8	8.00
1445 - 1500	0	0	11	0	0	0	0	0	11	11.00
Hourly Total	**0**	**0**	**27**	**0**	**2**	**0**	**0**	**0**	29	29.00
Hourly Average	**0.00**	**0.00**	**6.75**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	7.25	7.25
1500 - 1515	0	0	2	0	0	0	0	0	2	2.00
1515 - 1530	0	0	8	0	2	0	0	0	10	10.00
1530 - 1545	0	0	3	0	1	0	0	0	4	4.00
1545 - 1600	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**14**	**0**	**3**	**0**	**0**	**0**	17	17.00
Hourly Average	**0.00**	**0.00**	**3.50**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	4.25	4.25
1600 - 1615	0	0	3	0	0	0	0	0	3	3.00
1615 - 1630	0	0	1	0	0	0	0	0	1	1.00
1630 - 1645	0	0	7	0	0	0	0	0	7	7.00
1645 - 1700	0	0	4	0	0	0	0	0	4	4.00
Hourly Total	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	15	15.00
Hourly Average	**0.00**	**0.00**	**3.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	3.75	3.75

Session Total	**0**	**0**	**139**	**0**	**14**	**1**	**0**	**0**	154	155.30
Session Average	**0.00**	**0.00**	**4.96**	**0.00**	**0.50**	**0.04**	**0.00**	**0.00**	5.50	5.55

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 1-2: Left from M62 (East) to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	1	0	0	0	0	0	1	1.00
0745 - 0800	0	0	4	0	1	0	0	0	5	5.00
Hourly Total	**0**	**0**	**5**	**0**	**1**	**0**	**0**	**0**	**6**	**6.00**
Hourly Average	**0.00**	**0.00**	**1.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**1.50**	**1.50**
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	1	0	0	0	1	1.00
0930 - 0945	0	0	0	0	0	1	0	0	1	2.30
0945 - 1000	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**3**	**4.30**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	**0.75**	**1.08**
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	1	0	0	0	1	1.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1100 - 1115	0	0	1	0	0	0	0	0	1	1.00
1115 - 1130	0	0	2	0	0	0	0	0	2	2.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1200 - 1215	0	0	2	0	0	0	0	0	2	2.00
1215 - 1230	0	0	1	0	0	0	0	0	1	1.00
1230 - 1245	0	0	0	0	1	0	0	0	1	1.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1300 - 1315	0	0	1	0	0	0	0	0	1	1.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	1	0	1	0	0	0	2	2.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1700 - 1715	0	0	1	0	1	0	0	0	2	2.00
1715 - 1730	0	0	1	0	0	0	0	0	1	1.00
1730 - 1745	0	0	1	0	0	0	0	0	1	1.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	1	0	0	0	0	0	1	1.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**

Session Total	**0**	**0**	**21**	**0**	**6**	**1**	**0**	**0**	**28**	**29.30**
Session Average	**0.00**	**0.00**	**0.44**	**0.00**	**0.13**	**0.02**	**0.00**	**0.00**	**0.58**	**0.61**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

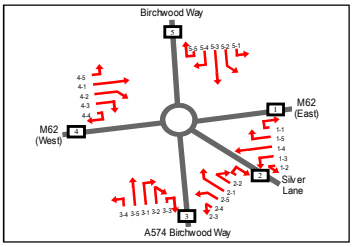
1000 - 1700 (Saturday 7h Session)

	Movement 1-2: Left from M62 (East) to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	1	0	0	0	0	0	0	0	1	0.20
1145 - 1200	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**2.20**
Hourly Average	**0.25**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.55**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	1	0	0	0	0	0	1	1.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	1	0	0	0	0	0	1	1.00
1330 - 1345	0	0	1	0	0	0	0	0	1	1.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	1	0	0	0	0	0	1	1.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1500 - 1515	0	0	2	0	0	0	0	0	2	2.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	1	0	0	0	1	1.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**

Session Total	**1**	**0**	**10**	**0**	**1**	**0**	**0**	**0**	**12**	**11.20**
Session Average	**0.04**	**0.00**	**0.36**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.43**	**0.40**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 1-3: Left from M62 (East) to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	1	141	0	24	3	1	0	170	174.60
0715 - 0730	0	1	168	0	14	3	3	0	189	196.20
0730 - 0745	0	0	150	0	15	1	8	0	174	185.70
0745 - 0800	0	1	202	0	26	5	2	0	236	244.50
Hourly Total	**0**	**3**	**661**	**0**	**79**	**12**	**14**	**0**	**769**	**801.00**
Hourly Average	**0.00**	**0.75**	**165.25**	**0.00**	**19.75**	**3.00**	**3.50**	**0.00**	**192.25**	**200.25**
0800 - 0815	0	0	188	0	19	5	3	0	215	225.40
0815 - 0830	0	1	215	0	22	3	3	0	244	251.20
0830 - 0845	0	0	181	0	18	2	6	0	207	217.40
0845 - 0900	0	2	148	0	11	1	2	0	164	166.70
Hourly Total	**0**	**3**	**732**	**0**	**70**	**11**	**14**	**0**	**830**	**860.70**
Hourly Average	**0.00**	**0.75**	**183.00**	**0.00**	**17.50**	**2.75**	**3.50**	**0.00**	**207.50**	**215.18**
0900 - 0915	0	0	163	0	18	5	2	0	188	197.10
0915 - 0930	0	1	121	0	14	3	3	0	142	149.20
0930 - 0945	0	0	122	0	15	2	5	0	144	153.10
0945 - 1000	0	0	98	0	20	3	4	0	125	134.10
Hourly Total	**0**	**1**	**504**	**0**	**67**	**13**	**14**	**0**	**599**	**633.50**
Hourly Average	**0.00**	**0.25**	**126.00**	**0.00**	**16.75**	**3.25**	**3.50**	**0.00**	**149.75**	**158.38**
1000 - 1015	0	0	67	0	16	0	6	0	89	96.80
1015 - 1030	0	0	48	1	12	3	4	0	68	77.10
1030 - 1045	0	0	44	0	13	4	5	0	66	77.70
1045 - 1100	0	0	39	0	22	3	4	0	68	77.10
Hourly Total	**0**	**0**	**198**	**1**	**63**	**10**	**19**	**0**	**291**	**328.70**
Hourly Average	**0.00**	**0.00**	**49.50**	**0.25**	**15.75**	**2.50**	**4.75**	**0.00**	**72.75**	**82.18**
1100 - 1115	0	0	40	0	17	1	4	0	62	68.50
1115 - 1130	0	0	46	0	17	4	3	1	71	81.10
1130 - 1145	0	0	38	0	18	2	3	0	61	67.50
1145 - 1200	0	0	56	1	19	1	4	0	81	87.50
Hourly Total	**0**	**0**	**180**	**1**	**71**	**8**	**14**	**1**	**275**	**304.60**
Hourly Average	**0.00**	**0.00**	**45.00**	**0.25**	**17.75**	**2.00**	**3.50**	**0.25**	**68.75**	**76.15**
1200 - 1215	0	0	41	0	11	6	5	0	63	77.30
1215 - 1230	0	1	43	0	14	2	4	0	64	71.20
1230 - 1245	0	0	47	0	14	0	3	0	64	67.90
1245 - 1300	0	0	59	0	18	1	4	0	82	88.50
Hourly Total	**0**	**1**	**190**	**0**	**57**	**9**	**16**	**0**	**273**	**304.90**
Hourly Average	**0.00**	**0.25**	**47.50**	**0.00**	**14.25**	**2.25**	**4.00**	**0.00**	**68.25**	**76.23**
1300 - 1315	0	1	36	0	14	3	6	0	60	71.10
1315 - 1330	0	0	43	1	13	4	9	0	70	96.90
1330 - 1345	0	0	49	0	15	3	0	0	67	70.90
1345 - 1400	0	0	51	2	20	2	2	0	77	82.20
Hourly Total	**0**	**1**	**179**	**3**	**62**	**12**	**17**	**0**	**274**	**311.10**
Hourly Average	**0.00**	**0.25**	**44.75**	**0.75**	**15.50**	**3.00**	**4.25**	**0.00**	**68.50**	**77.78**
1400 - 1415	0	0	32	0	16	3	2	0	53	59.50
1415 - 1430	0	0	53	0	17	0	3	0	73	76.90
1430 - 1445	0	0	49	0	19	4	4	0	76	86.40
1445 - 1500	0	0	49	0	24	4	2	0	79	86.80
Hourly Total	**0**	**0**	**183**	**0**	**76**	**11**	**11**	**0**	**281**	**309.60**
Hourly Average	**0.00**	**0.00**	**45.75**	**0.00**	**19.00**	**2.75**	**2.75**	**0.00**	**70.25**	**77.40**
1500 - 1515	0	0	62	0	18	3	3	0	86	93.80
1515 - 1530	0	0	57	0	10	3	0	0	70	73.90
1530 - 1545	0	0	77	0	15	2	3	0	97	103.50
1545 - 1600	0	0	66	0	24	4	2	0	96	103.80
Hourly Total	**0**	**0**	**262**	**0**	**67**	**12**	**8**	**0**	**349**	**375.00**
Hourly Average	**0.00**	**0.00**	**65.50**	**0.00**	**16.75**	**3.00**	**2.00**	**0.00**	**87.25**	**93.75**
1600 - 1615	0	1	72	0	16	1	2	0	92	95.30
1615 - 1630	0	0	70	0	13	1	4	0	88	94.50
1630 - 1645	0	0	72	0	14	0	1	0	87	88.30
1645 - 1700	0	0	86	0	10	0	0	0	96	96.00
Hourly Total	**0**	**1**	**300**	**0**	**53**	**2**	**7**	**0**	**363**	**374.10**
Hourly Average	**0.00**	**0.25**	**75.00**	**0.00**	**13.25**	**0.50**	**1.75**	**0.00**	**90.75**	**93.53**
1700 - 1715	0	2	92	0	10	0	3	0	107	109.70
1715 - 1730	0	0	71	0	10	0	1	0	82	83.30
1730 - 1745	0	0	97	0	13	1	3	0	114	119.20
1745 - 1800	0	0	95	0	8	3	2	0	108	114.50
Hourly Total	**0**	**2**	**355**	**0**	**41**	**4**	**9**	**0**	**411**	**426.70**
Hourly Average	**0.00**	**0.50**	**88.75**	**0.00**	**10.25**	**1.00**	**2.25**	**0.00**	**102.75**	**106.68**
1800 - 1815	0	0	92	0	11	1	4	0	108	114.50
1815 - 1830	0	2	98	0	8	1	3	0	112	116.00
1830 - 1845	0	1	63	0	9	0	2	0	75	77.00
1845 - 1900	0	0	67	0	7	1	2	0	77	80.90
Hourly Total	**0**	**3**	**320**	**0**	**35**	**3**	**11**	**0**	**372**	**388.40**
Hourly Average	**0.00**	**0.75**	**80.00**	**0.00**	**8.75**	**0.75**	**2.75**	**0.00**	**93.00**	**97.10**

Session Total	**0**	**15**	**4064**	**5**	**741**	**107**	**154**	**1**	**5087**	**5418.30**
Session Average	**0.00**	**0.31**	**84.67**	**0.10**	**15.44**	**2.23**	**3.21**	**0.02**	**105.98**	**112.88**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

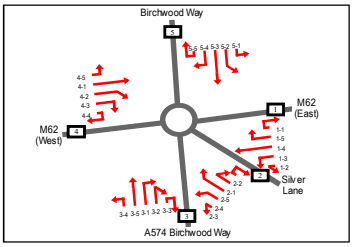
1000 - 1700 (Saturday 7h Session)

	Movement 1-3: Left from M62 (East) to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	20	0	7	0	3	0	30	33.90
1015 - 1030	0	0	27	1	9	0	3	0	40	43.90
1030 - 1045	0	0	22	0	7	0	1	0	30	31.30
1045 - 1100	0	0	26	0	7	0	3	0	36	39.90
Hourly Total	**0**	**0**	**95**	**1**	**30**	**0**	**10**	**0**	**136**	**149.00**
Hourly Average	**0.00**	**0.00**	**23.75**	**0.25**	**7.50**	**0.00**	**2.50**	**0.00**	**34.00**	**37.25**
1100 - 1115	0	0	40	0	5	0	0	0	45	45.00
1115 - 1130	0	0	45	0	1	0	1	0	47	48.30
1130 - 1145	0	0	53	0	1	0	5	0	59	65.50
1145 - 1200	0	0	35	0	9	1	1	0	46	48.60
Hourly Total	**0**	**0**	**173**	**0**	**16**	**1**	**7**	**0**	**197**	**207.40**
Hourly Average	**0.00**	**0.00**	**43.25**	**0.00**	**4.00**	**0.25**	**1.75**	**0.00**	**49.25**	**51.85**
1200 - 1215	0	0	54	1	5	0	3	0	63	66.90
1215 - 1230	0	1	40	0	4	0	2	0	47	49.00
1230 - 1245	0	0	39	0	1	0	2	0	41	43.60
1245 - 1300	0	1	44	0	5	0	2	0	52	54.00
Hourly Total	**0**	**2**	**176**	**1**	**15**	**0**	**9**	**0**	**203**	**213.50**
Hourly Average	**0.00**	**0.50**	**44.00**	**0.25**	**3.75**	**0.00**	**2.25**	**0.00**	**50.75**	**53.38**
1300 - 1315	0	0	39	0	5	0	0	0	44	44.00
1315 - 1330	0	1	44	0	2	1	1	0	49	51.00
1330 - 1345	0	0	48	0	9	1	1	0	59	61.60
1345 - 1400	0	0	44	0	2	0	2	0	48	50.60
Hourly Total	**0**	**1**	**175**	**0**	**18**	**2**	**4**	**0**	**200**	**207.20**
Hourly Average	**0.00**	**0.25**	**43.75**	**0.00**	**4.50**	**0.50**	**1.00**	**0.00**	**50.00**	**51.80**
1400 - 1415	0	0	51	1	3	0	2	0	57	59.60
1415 - 1430	0	1	42	0	4	0	1	0	48	48.70
1430 - 1445	0	0	49	0	8	0	1	0	58	59.30
1445 - 1500	0	1	45	0	1	0	2	0	49	51.00
Hourly Total	**0**	**2**	**187**	**1**	**16**	**0**	**6**	**0**	**212**	**218.60**
Hourly Average	**0.00**	**0.50**	**46.75**	**0.25**	**4.00**	**0.00**	**1.50**	**0.00**	**53.00**	**54.65**
1500 - 1515	0	0	41	0	2	0	1	0	44	45.30
1515 - 1530	0	0	51	0	7	0	2	0	60	62.60
1530 - 1545	0	0	51	0	6	0	3	0	60	63.90
1545 - 1600	0	1	56	0	1	0	3	0	61	64.30
Hourly Total	**0**	**1**	**199**	**0**	**16**	**0**	**9**	**0**	**225**	**236.10**
Hourly Average	**0.00**	**0.25**	**49.75**	**0.00**	**4.00**	**0.00**	**2.25**	**0.00**	**56.25**	**59.03**
1600 - 1615	0	1	49	0	5	0	1	0	56	56.70
1615 - 1630	0	0	50	1	2	0	0	0	53	53.00
1630 - 1645	0	0	62	0	2	0	1	0	65	66.30
1645 - 1700	0	1	42	0	4	0	3	0	50	53.30
Hourly Total	**0**	**2**	**203**	**1**	**13**	**0**	**5**	**0**	**224**	**229.30**
Hourly Average	**0.00**	**0.50**	**50.75**	**0.25**	**3.25**	**0.00**	**1.25**	**0.00**	**56.00**	**57.33**

Session Total	**0**	**8**	**1208**	**4**	**124**	**3**	**50**	**0**	**1397**	**1461.10**
Session Average	**0.00**	**0.29**	**43.14**	**0.14**	**4.43**	**0.11**	**1.79**	**0.00**	**49.89**	**52.18**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 1-4: Westbound from M62 (East) to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	1	0	1	2.30
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2.30**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.58**
0800 - 0815	0	0	0	0	1	0	0	0	1	1.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	1	0	1	2.30
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**2**	**3.30**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.50**	**0.83**
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	1	0	0	0	0	0	1	1.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	1	0	0	0	1	0	2	3.30
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	1	0	0	0	1	0	2	3.30
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**4**	**6.60**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.50**	**0.00**	**1.00**	**1.65**
1100 - 1115	0	0	1	0	0	0	0	0	1	1.00
1115 - 1130	0	0	0	0	0	0	1	0	1	2.30
1130 - 1145	0	0	1	0	0	0	0	0	1	1.00
1145 - 1200	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**4**	**5.30**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**1.00**	**1.33**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	1	0	1	2.30
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	**4.30**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.75**	**1.08**
1300 - 1315	0	0	2	0	0	0	0	0	2	2.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	1	0	0	0	0	0	1	1.00
1345 - 1400	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	1	0	0	0	0	0	1	1.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	1	0	0	0	0	0	1	1.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1600 - 1615	0	0	1	0	0	0	0	0	1	1.00
1615 - 1630	0	0	1	0	0	0	1	0	2	3.30
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	**4.30**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.75**	**1.08**
1700 - 1715	0	0	2	0	0	0	0	0	2	2.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	1	0	0	0	0	0	1	1.00
1745 - 1800	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1800 - 1815	0	0	3	0	0	0	0	0	3	3.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	1	0	0	0	0	0	1	1.00
1845 - 1900	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**5**	**5.00**
Hourly Average	**0.00**	**0.00**	**1.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.25**	**1.25**

Session Total	**0**	**0**	**28**	**0**	**1**	**0**	**7**	**0**	**36**	**45.10**
Session Average	**0.00**	**0.00**	**0.58**	**0.00**	**0.02**	**0.00**	**0.15**	**0.00**	**0.75**	**0.94**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

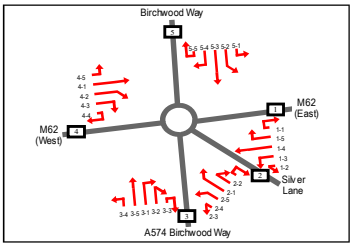
1000 - 1700 (Saturday 7h Session)

	Movement 1-4: Westbound from M62 (East) to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	1	0	0	0	0	0	1	1.00
1015 - 1030	0	0	1	0	0	0	0	0	1	1.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1100 - 1115	0	0	0	0	1	0	0	0	1	1.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	1	0	0	1	2.30
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**2**	**3.30**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	**0.50**	**0.83**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	1	0	0	0	0	0	1	1.00
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1300 - 1315	0	0	1	0	0	0	0	0	1	1.00
1315 - 1330	0	0	1	0	0	0	0	0	1	1.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1400 - 1415	0	0	2	0	0	0	0	0	2	2.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	1	0	0	0	0	1	2	3.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**4**	**5.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**1.00**	**1.25**
1500 - 1515	0	0	2	0	0	0	0	0	2	2.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1600 - 1615	0	0	1	0	0	0	0	0	1	1.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**

Session Total	**0**	**0**	**16**	**0**	**1**	**1**	**0**	**1**	**19**	**21.30**
Session Average	**0.00**	**0.00**	**0.57**	**0.00**	**0.04**	**0.04**	**0.00**	**0.04**	**0.68**	**0.76**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 1-5: Right from M62 (East) to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	1	0	0	0	0	0	1	1.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	1	0	0	0	0	0	1	1.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
0900 - 0915	0	0	1	0	0	0	0	0	1	1.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	1	0	0	0	1	1.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	1	0	0	0	0	0	1	1.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	1	0	0	0	0	0	1	1.00
1130 - 1145	0	0	1	0	0	0	0	0	1	1.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1200 - 1215	0	0	0	0	0	0	1	0	1	2.30
1215 - 1230	0	0	1	0	0	0	1	0	2	3.30
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**3**	**5.60**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.50**	**0.00**	**0.75**	**1.40**
1300 - 1315	0	0	0	0	1	0	0	0	1	1.00
1315 - 1330	0	0	1	0	0	0	0	0	1	1.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1500 - 1515	0	0	0	0	0	0	1	0	1	2.30
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	1	0	0	1	2.30
Hourly Total	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**	**4.60**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**	**0.00**	**0.50**	**1.15**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1700 - 1715	0	0	1	0	0	0	0	0	1	1.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**

Session Total	**0**	**0**	**14**	**0**	**2**	**1**	**3**	**0**	**20**	**25.20**
Session Average	**0.00**	**0.00**	**0.29**	**0.00**	**0.04**	**0.02**	**0.06**	**0.00**	**0.42**	**0.53**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

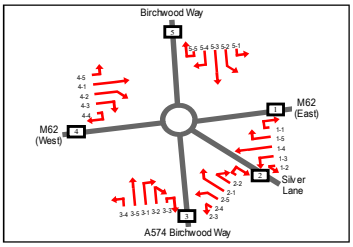
1000 - 1700 (Saturday 7h Session)

	Movement 1-5: Right from M62 (East) to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	1	0	0	0	0	0	1	1.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	2	0	1	0	0	0	3	3.00
Hourly Total	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	2	0	0	0	0	0	2	2.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1300 - 1315	0	0	1	0	1	0	0	0	2	2.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	1	0	0	0	0	0	1	1.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Session Total	**0**	**0**	**9**	**0**	**2**	**0**	**0**	**0**	**11**	**11.00**
Session Average	**0.00**	**0.00**	**0.32**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**	**0.39**	**0.39**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 2-1: Right from Silver Lane to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	0	0	1	0	0	0	0	0	1	1.00
Hourly Average	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.25
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Session Total	0	0	1	0	0	0	0	0	1	1.00
Session Average	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.02	0.02

Date
Saturday 17 November 2018

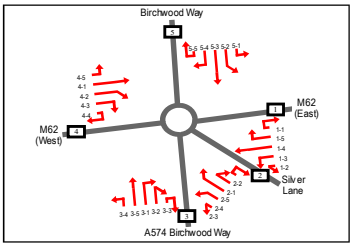
Weather
Cloudy
Temp: 12°C

1000 - 1700 (Saturday 7h Session)

	Movement 2-1: Right from Silver Lane to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	1	0	0	0	0	0	1	1.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	2	0	0	0	0	0	2	2.00
Hourly Average	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50	0.50
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	0	0	1	0	0	0	0	0	1	1.00
Hourly Average	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.25
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	1	0	0	0	0	0	1	1.00
Hourly Average	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.25
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	1	0	0	0	0	0	1	1.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	1	0	0	0	0	0	1	1.00
Hourly Average	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.25
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	1	0	0	0	0	0	1	1.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	2	0	0	0	0	0	2	2.00
Hourly Average	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.50	0.50
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	1	0	0	0	0	0	1	1.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	1	0	0	0	0	0	1	1.00
Hourly Average	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.25
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	1	0	1	0	0	0	2	2.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	1	0	1	0	0	0	2	2.00
Hourly Average	0.00	0.00	0.25	0.00	0.25	0.00	0.00	0.00	0.50	0.50
Session Total	0	0	9	0	1	0	0	0	10	10.00
Session Average	0.00	0.00	0.32	0.00	0.04	0.00	0.00	0.00	0.36	0.36

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 2-2: U-Turn from Silver Lane to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Session Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Session Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

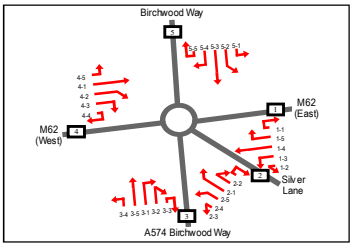
1000 - 1700 (Saturday 7h Session)

	Movement 2-2: U-Turn from Silver Lane to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Session Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Session Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 2-3: Left from Silver Lane to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	1	0	0	0	0	0	1	1.00
0745 - 0800	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.75	0.75
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	1	0	0	0	0	0	1	1.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	1	0	0	0	1	1.00
0945 - 1000	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.50	0.50
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	1	0	0	0	1	1.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.25	0.25
1100 - 1115	0	0	1	0	0	0	0	0	1	1.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
1200 - 1215	0	0	1	0	0	0	0	0	1	1.00
1215 - 1230	0	0	2	0	0	0	0	0	2	2.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.75	0.75
1300 - 1315	0	0	1	0	0	0	0	0	1	1.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	1	0	1	0	0	0	2	2.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.50	0.50
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.25	0.25
1600 - 1615	0	0	1	0	0	0	0	0	1	1.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
1700 - 1715	0	0	0	0	1	0	0	0	1	1.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.50	0.50
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00

Session Total	**0**	**0**	**13**	**0**	**5**	**0**	**0**	**0**	18	18.00
Session Average	**0.00**	**0.00**	**0.27**	**0.00**	**0.10**	**0.00**	**0.00**	**0.00**	0.38	0.38

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

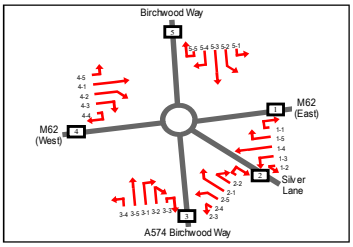
1000 - 1700 (Saturday 7h Session)

	Movement 2-3: Left from Silver Lane to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1100 - 1115	1	0	0	0	0	0	0	0	1	0.20
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	2	0	0	0	0	0	0	0	2	0.40
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3	0.60
Hourly Average	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.75	0.15
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	2	0	0	0	0	0	0	0	2	0.40
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2	0.40
Hourly Average	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.50	0.10
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00

Session Total	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5	1.00
Session Average	**0.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.18	0.04

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 2-4: Left from Silver Lane to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	1	0	0	0	0	0	1	1.00
0715 - 0730	0	0	1	0	0	0	0	0	1	1.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.75	0.75
0800 - 0815	0	0	2	0	0	0	0	0	2	2.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.50	0.50
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	1	0	0	0	1	1.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.25	0.25
1000 - 1015	0	0	0	0	1	0	0	0	1	1.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	1	0	2	0	0	0	3	3.00
1045 - 1100	0	0	0	0	0	1	0	0	1	2.30
Hourly Total	**0**	**0**	**1**	**0**	**3**	**1**	**0**	**0**	5	6.30
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.75**	**0.25**	**0.00**	**0.00**	1.25	1.58
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	2	0	0	0	0	0	2	2.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.50	0.50
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1300 - 1315	0	0	1	0	0	0	0	0	1	1.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	1	0	0	0	1	1.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.50	0.50
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	1	0	0	0	1	1.00
1445 - 1500	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.75	0.75
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	3	0	0	0	0	0	3	3.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.75	0.75
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.25	0.25
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	3	0	0	0	0	0	3	3.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.75	0.75
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	1	0	0	0	0	0	1	1.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.50	0.50

Session Total	**0**	**0**	**18**	**0**	**8**	**1**	**0**	**0**	27	28.30
Session Average	**0.00**	**0.00**	**0.38**	**0.00**	**0.17**	**0.02**	**0.00**	**0.00**	0.56	0.59

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

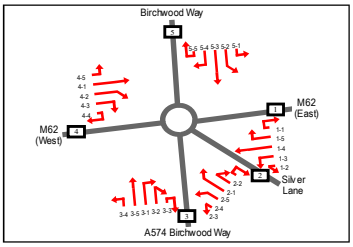
1000 - 1700 (Saturday 7h Session)

	Movement 2-4: Left from Silver Lane to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00

Session Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Session Average	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.04	0.04

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 2-5: Right from Silver Lane to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Session Total	0	0	0	0	0	0	0	0	0	0.00
Session Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Date
Saturday 17 November 2018

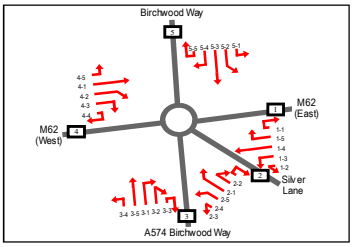
Weather
Cloudy
Temp: 12°C

1000 - 1700 (Saturday 7h Session)

	Movement 2-5: Right from Silver Lane to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	1	0	0	0	0	0	1	1.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	1	0	0	0	0	0	1	1.00
Hourly Average	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.25
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1500 - 1515	0	0	1	0	0	0	0	0	1	1.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	1	0	0	0	0	0	1	1.00
Hourly Average	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.25
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Session Total	0	0	2	0	0	0	0	0	2	2.00
Session Average	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.07	0.07

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 3-1: Right from A574 Birchwood Way to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	230	0	41	1	2	0	274	277.90
0715 - 0730	0	2	279	0	52	3	6	0	342	352.50
0730 - 0745	0	2	278	0	48	2	8	0	338	349.80
0745 - 0800	0	2	286	0	54	3	5	0	350	359.20
Hourly Total	**0**	**6**	**1073**	**0**	**195**	**9**	**21**	**0**	**1304**	**1339.40**
Hourly Average	**0.00**	**1.50**	**268.25**	**0.00**	**48.75**	**2.25**	**5.25**	**0.00**	**326.00**	**334.85**
0800 - 0815	0	0	238	0	42	4	7	1	292	307.30
0815 - 0830	0	1	170	0	25	6	3	0	205	216.10
0830 - 0845	0	1	112	0	17	3	3	0	136	143.20
0845 - 0900	0	3	103	0	16	8	2	0	132	143.20
Hourly Total	**0**	**5**	**623**	**0**	**100**	**21**	**15**	**1**	**765**	**809.80**
Hourly Average	**0.00**	**1.25**	**155.75**	**0.00**	**25.00**	**5.25**	**3.75**	**0.25**	**191.25**	**202.45**
0900 - 0915	0	0	92	0	18	3	2	0	115	121.50
0915 - 0930	0	0	69	0	23	2	4	0	98	105.80
0930 - 0945	0	0	60	0	19	4	4	1	88	99.40
0945 - 1000	0	0	45	0	14	2	4	0	65	72.80
Hourly Total	**0**	**0**	**266**	**0**	**74**	**11**	**14**	**1**	**366**	**399.50**
Hourly Average	**0.00**	**0.00**	**66.50**	**0.00**	**18.50**	**2.75**	**3.50**	**0.25**	**91.50**	**99.88**
1000 - 1015	0	0	67	1	28	2	2	0	100	105.20
1015 - 1030	0	0	49	0	25	2	4	0	80	87.80
1030 - 1045	0	0	58	0	16	3	3	0	80	87.80
1045 - 1100	0	0	46	0	12	4	1	0	63	69.50
Hourly Total	**0**	**0**	**220**	**1**	**81**	**11**	**10**	**0**	**323**	**350.30**
Hourly Average	**0.00**	**0.00**	**55.00**	**0.25**	**20.25**	**2.75**	**2.50**	**0.00**	**80.75**	**87.58**
1100 - 1115	0	1	51	0	21	3	4	0	80	88.50
1115 - 1130	0	0	46	0	24	4	2	0	76	83.80
1130 - 1145	0	0	50	0	25	4	0	0	79	84.20
1145 - 1200	0	0	49	1	28	2	2	0	82	87.20
Hourly Total	**0**	**1**	**196**	**1**	**98**	**13**	**8**	**0**	**317**	**343.70**
Hourly Average	**0.00**	**0.25**	**49.00**	**0.25**	**24.50**	**3.25**	**2.00**	**0.00**	**79.25**	**85.93**
1200 - 1215	0	0	49	0	6	6	2	0	63	73.40
1215 - 1230	0	0	57	0	17	9	3	0	86	101.60
1230 - 1245	0	1	50	0	17	7	3	0	78	90.40
1245 - 1300	0	0	42	0	20	4	8	0	74	89.60
Hourly Total	**0**	**1**	**198**	**0**	**60**	**26**	**16**	**0**	**301**	**355.00**
Hourly Average	**0.00**	**0.25**	**49.50**	**0.00**	**15.00**	**6.50**	**4.00**	**0.00**	**75.25**	**88.75**
1300 - 1315	0	0	76	0	19	2	9	0	106	120.30
1315 - 1330	0	1	48	0	20	5	2	0	76	84.50
1330 - 1345	0	0	35	0	12	1	0	0	48	49.30
1345 - 1400	0	0	50	1	25	1	1	0	78	80.60
Hourly Total	**0**	**1**	**209**	**1**	**76**	**9**	**12**	**0**	**308**	**334.70**
Hourly Average	**0.00**	**0.25**	**52.25**	**0.25**	**19.00**	**2.25**	**3.00**	**0.00**	**77.00**	**83.68**
1400 - 1415	0	0	68	0	14	7	4	0	93	107.30
1415 - 1430	0	0	61	0	15	3	3	0	82	89.80
1430 - 1445	0	0	59	0	16	8	2	0	85	98.00
1445 - 1500	0	0	63	1	15	3	3	0	85	92.80
Hourly Total	**0**	**0**	**251**	**1**	**60**	**21**	**12**	**0**	**345**	**387.90**
Hourly Average	**0.00**	**0.00**	**62.75**	**0.25**	**15.00**	**5.25**	**3.00**	**0.00**	**86.25**	**96.98**
1500 - 1515	0	0	107	0	11	8	2	0	128	141.00
1515 - 1530	0	0	87	0	27	6	1	0	121	130.10
1530 - 1545	0	0	101	0	22	0	1	0	124	125.30
1545 - 1600	0	0	143	0	23	2	2	0	170	175.20
Hourly Total	**0**	**0**	**438**	**0**	**83**	**16**	**6**	**0**	**543**	**571.60**
Hourly Average	**0.00**	**0.00**	**109.50**	**0.00**	**20.75**	**4.00**	**1.50**	**0.00**	**135.75**	**142.90**
1600 - 1615	0	1	180	0	23	0	1	0	205	205.70
1615 - 1630	0	2	195	0	21	1	2	0	221	223.70
1630 - 1645	0	0	166	0	19	0	1	0	186	187.30
1645 - 1700	0	0	160	0	12	0	0	0	172	172.00
Hourly Total	**0**	**3**	**701**	**0**	**75**	**1**	**4**	**0**	**784**	**788.70**
Hourly Average	**0.00**	**0.75**	**175.25**	**0.00**	**18.75**	**0.25**	**1.00**	**0.00**	**196.00**	**197.18**
1700 - 1715	0	0	171	0	9	0	0	0	180	180.00
1715 - 1730	0	1	170	0	10	1	2	0	184	187.30
1730 - 1745	0	1	164	0	10	0	1	0	176	176.70
1745 - 1800	0	0	158	0	5	0	4	0	167	172.20
Hourly Total	**0**	**2**	**663**	**0**	**34**	**1**	**7**	**0**	**707**	**716.20**
Hourly Average	**0.00**	**0.50**	**165.75**	**0.00**	**8.50**	**0.25**	**1.75**	**0.00**	**176.75**	**179.05**
1800 - 1815	0	0	170	0	7	2	0	0	179	181.60
1815 - 1830	0	0	117	0	9	1	0	0	127	128.30
1830 - 1845	0	0	84	0	6	0	2	0	92	94.60
1845 - 1900	0	0	73	0	5	0	0	0	78	78.00
Hourly Total	**0**	**0**	**444**	**0**	**27**	**3**	**2**	**0**	**476**	**482.50**
Hourly Average	**0.00**	**0.00**	**111.00**	**0.00**	**6.75**	**0.75**	**0.50**	**0.00**	**119.00**	**120.63**

Session Total	**0**	**19**	**5282**	**4**	**963**	**142**	**127**	**2**	**6539**	**6879.30**
Session Average	**0.00**	**0.40**	**110.04**	**0.08**	**20.06**	**2.96**	**2.65**	**0.04**	**136.23**	**143.32**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

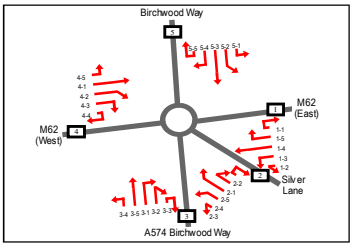
1000 - 1700 (Saturday 7h Session)

	Movement 3-1: Right from A574 Birchwood Way to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	2	52	0	5	1	2	0	62	64.70
1015 - 1030	0	0	50	0	4	0	3	0	57	60.90
1030 - 1045	0	0	64	0	6	1	4	0	75	81.50
1045 - 1100	0	1	54	0	13	1	1	0	70	72.00
Hourly Total	**0**	**3**	**220**	**0**	**28**	**3**	**10**	**0**	**264**	**279.10**
Hourly Average	**0.00**	**0.75**	**55.00**	**0.00**	**7.00**	**0.75**	**2.50**	**0.00**	**66.00**	**69.78**
1100 - 1115	0	0	54	0	4	0	1	0	59	60.30
1115 - 1130	0	0	45	0	4	0	2	0	51	53.60
1130 - 1145	0	0	44	0	9	0	0	0	53	53.00
1145 - 1200	0	1	56	0	6	0	1	0	64	64.70
Hourly Total	**0**	**1**	**199**	**0**	**23**	**0**	**4**	**0**	**227**	**231.60**
Hourly Average	**0.00**	**0.25**	**49.75**	**0.00**	**5.75**	**0.00**	**1.00**	**0.00**	**56.75**	**57.90**
1200 - 1215	0	0	71	0	3	0	2	0	76	78.60
1215 - 1230	0	1	62	0	5	1	3	0	72	76.60
1230 - 1245	0	0	53	0	1	0	0	0	54	54.00
1245 - 1300	0	0	68	0	5	0	1	0	74	75.30
Hourly Total	**0**	**1**	**254**	**0**	**14**	**1**	**6**	**0**	**276**	**284.50**
Hourly Average	**0.00**	**0.25**	**63.50**	**0.00**	**3.50**	**0.25**	**1.50**	**0.00**	**69.00**	**71.13**
1300 - 1315	0	0	66	0	4	0	2	0	72	74.60
1315 - 1330	0	1	72	0	5	0	1	0	79	79.70
1330 - 1345	0	0	57	0	4	0	4	0	65	70.20
1345 - 1400	0	0	59	0	5	0	0	0	64	64.00
Hourly Total	**0**	**1**	**254**	**0**	**18**	**0**	**7**	**0**	**280**	**288.50**
Hourly Average	**0.00**	**0.25**	**63.50**	**0.00**	**4.50**	**0.00**	**1.75**	**0.00**	**70.00**	**72.13**
1400 - 1415	0	0	43	0	3	0	3	0	49	52.90
1415 - 1430	0	0	52	0	4	0	1	0	57	58.30
1430 - 1445	0	0	55	0	2	0	0	0	57	57.00
1445 - 1500	0	0	37	0	3	0	0	0	40	40.00
Hourly Total	**0**	**0**	**187**	**0**	**12**	**0**	**4**	**0**	**203**	**208.20**
Hourly Average	**0.00**	**0.00**	**46.75**	**0.00**	**3.00**	**0.00**	**1.00**	**0.00**	**50.75**	**52.05**
1500 - 1515	0	0	42	0	4	0	1	0	47	48.30
1515 - 1530	0	0	46	0	3	0	0	0	49	49.00
1530 - 1545	0	0	48	0	2	1	3	0	54	59.20
1545 - 1600	0	0	74	0	5	0	0	0	79	79.00
Hourly Total	**0**	**0**	**210**	**0**	**14**	**1**	**4**	**0**	**229**	**235.50**
Hourly Average	**0.00**	**0.00**	**52.50**	**0.00**	**3.50**	**0.25**	**1.00**	**0.00**	**57.25**	**58.88**
1600 - 1615	0	0	61	0	8	0	4	0	73	78.20
1615 - 1630	0	0	57	0	5	0	1	0	63	64.30
1630 - 1645	0	1	39	1	8	0	3	0	52	55.30
1645 - 1700	0	0	43	0	5	0	2	0	50	52.60
Hourly Total	**0**	**1**	**200**	**1**	**26**	**0**	**10**	**0**	**238**	**250.40**
Hourly Average	**0.00**	**0.25**	**50.00**	**0.25**	**6.50**	**0.00**	**2.50**	**0.00**	**59.50**	**62.60**

Session Total	**0**	**7**	**1524**	**1**	**135**	**5**	**45**	**0**	**1717**	**1777.80**
Session Average	**0.00**	**0.25**	**54.43**	**0.04**	**4.82**	**0.18**	**1.61**	**0.00**	**61.32**	**63.49**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 3-2: Right from A574 Birchwood Way to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	1	0	1	0	0	0	2	2.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	1	0	0	0	1	1.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	1	0	0	0	1	1.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1400 - 1415	0	0	0	0	1	0	0	0	1	1.00
1415 - 1430	0	0	0	0	1	0	0	0	1	1.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1500 - 1515	0	0	2	0	0	0	0	0	2	2.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1600 - 1615	0	0	1	0	0	0	0	0	1	1.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	1	0	0	0	0	0	1	1.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	1	0	0	0	0	0	1	1.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1800 - 1815	0	0	1	0	0	0	0	0	1	1.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**

Session Total	**0**	**0**	**8**	**0**	**5**	**0**	**0**	**0**	**13**	**13.00**
Session Average	**0.00**	**0.00**	**0.17**	**0.00**	**0.10**	**0.00**	**0.00**	**0.00**	**0.27**	**0.27**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

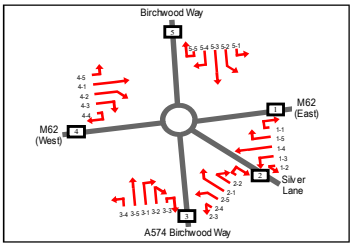
1000 - 1700 (Saturday 7h Session)

	Movement 3-2: Right from A574 Birchwood Way to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	1	0	0	0	0	0	1	1.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1300 - 1315	0	0	1	0	0	0	0	0	1	1.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Session Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Session Average	**0.00**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.07**	**0.07**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 3-3: U-Turn from A574 Birchwood Way to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	0	0	1	0	1	2.30
0945 - 1000	0	0	0	0	0	0	2	0	2	4.60
Hourly Total	0	0	0	0	0	0	3	0	3	6.90
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.75	1.72
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	1	0	0	1	2.30
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	1	0	0	1	2.30
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.25	0.58
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1200 - 1215	0	0	0	0	0	1	0	0	1	2.30
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	1	0	1	2.30
Hourly Total	0	0	0	0	0	1	1	0	2	4.60
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.00	0.50	1.15
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	1	1	2	4.30
Hourly Total	0	0	0	0	0	0	1	1	2	4.30
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.50	1.08
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Session Total	0	0	0	0	0	2	5	1	8	18.10
Session Average	0.00	0.00	0.00	0.00	0.00	0.04	0.10	0.02	0.17	0.38

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

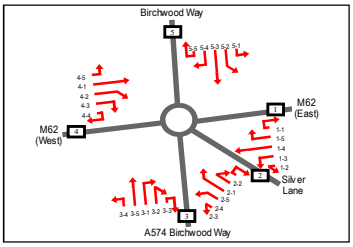
1000 - 1700 (Saturday 7h Session)

	Movement 3-3: U-Turn from A574 Birchwood Way to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Session Total	0	0	0	0	0	0	0	0	0	0.00
Session Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 3-4: Left from A574 Birchwood Way to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	1	48	0	12	2	3	0	66	71.90
0715 - 0730	0	0	57	0	10	5	2	0	74	83.10
0730 - 0745	0	0	54	0	20	3	7	0	84	97.00
0745 - 0800	0	1	49	0	12	6	0	0	68	75.20
Hourly Total	**0**	**2**	**208**	**0**	**54**	**16**	**12**	**0**	**292**	**327.20**
Hourly Average	**0.00**	**0.50**	**52.00**	**0.00**	**13.50**	**4.00**	**3.00**	**0.00**	**73.00**	**81.80**
0800 - 0815	0	0	59	0	12	1	7	0	79	89.40
0815 - 0830	0	0	62	0	16	6	4	0	88	101.00
0830 - 0845	0	0	63	0	26	4	3	0	96	105.10
0845 - 0900	0	0	57	0	28	2	6	0	93	103.40
Hourly Total	**0**	**0**	**241**	**0**	**82**	**13**	**20**	**0**	**356**	**398.90**
Hourly Average	**0.00**	**0.00**	**60.25**	**0.00**	**20.50**	**3.25**	**5.00**	**0.00**	**89.00**	**99.73**
0900 - 0915	0	0	52	0	20	5	0	0	77	83.50
0915 - 0930	0	0	48	0	27	2	6	0	83	93.40
0930 - 0945	0	0	51	0	24	6	3	0	84	95.70
0945 - 1000	0	0	41	0	21	2	4	0	68	75.80
Hourly Total	**0**	**0**	**192**	**0**	**92**	**15**	**13**	**0**	**312**	**348.40**
Hourly Average	**0.00**	**0.00**	**48.00**	**0.00**	**23.00**	**3.75**	**3.25**	**0.00**	**78.00**	**87.10**
1000 - 1015	0	0	52	0	21	8	4	0	85	100.60
1015 - 1030	0	0	33	0	17	9	6	0	65	84.50
1030 - 1045	0	0	43	0	16	3	6	0	68	79.70
1045 - 1100	0	0	42	0	22	5	8	0	77	93.90
Hourly Total	**0**	**0**	**170**	**0**	**76**	**25**	**24**	**0**	**295**	**358.70**
Hourly Average	**0.00**	**0.00**	**42.50**	**0.00**	**19.00**	**6.25**	**6.00**	**0.00**	**73.75**	**89.68**
1100 - 1115	0	0	45	1	27	4	6	0	83	96.00
1115 - 1130	0	1	33	0	24	4	9	0	71	87.30
1130 - 1145	0	0	51	0	17	2	7	0	77	88.70
1145 - 1200	0	0	39	0	21	0	8	0	68	78.40
Hourly Total	**0**	**1**	**168**	**1**	**89**	**10**	**30**	**0**	**299**	**350.40**
Hourly Average	**0.00**	**0.25**	**42.00**	**0.25**	**22.25**	**2.50**	**7.50**	**0.00**	**74.75**	**87.60**
1200 - 1215	0	0	59	0	16	3	7	0	85	98.00
1215 - 1230	0	1	55	0	15	2	4	0	77	84.20
1230 - 1245	0	0	66	0	15	3	3	0	87	94.80
1245 - 1300	0	0	55	0	15	3	4	0	77	86.10
Hourly Total	**0**	**1**	**235**	**0**	**61**	**11**	**18**	**0**	**326**	**363.10**
Hourly Average	**0.00**	**0.25**	**58.75**	**0.00**	**15.25**	**2.75**	**4.50**	**0.00**	**81.50**	**90.78**
1300 - 1315	0	0	59	0	15	3	6	0	83	94.70
1315 - 1330	0	0	51	0	8	2	7	0	68	79.70
1330 - 1345	0	0	58	0	7	4	4	0	73	83.40
1345 - 1400	0	0	51	0	18	5	5	0	79	92.00
Hourly Total	**0**	**0**	**219**	**0**	**48**	**14**	**22**	**0**	**303**	**349.80**
Hourly Average	**0.00**	**0.00**	**54.75**	**0.00**	**12.00**	**3.50**	**5.50**	**0.00**	**75.75**	**87.45**
1400 - 1415	0	0	80	1	20	4	5	0	110	121.70
1415 - 1430	0	0	66	0	14	2	5	0	87	96.10
1430 - 1445	0	0	93	0	13	2	4	0	112	119.80
1445 - 1500	0	0	66	0	11	4	5	0	86	97.70
Hourly Total	**0**	**0**	**305**	**1**	**58**	**12**	**19**	**0**	**395**	**435.30**
Hourly Average	**0.00**	**0.00**	**76.25**	**0.25**	**14.50**	**3.00**	**4.75**	**0.00**	**98.75**	**108.83**
1500 - 1515	0	1	119	0	18	4	4	0	146	155.80
1515 - 1530	0	1	114	0	16	1	4	1	137	143.90
1530 - 1545	0	0	157	1	20	0	6	1	185	193.80
1545 - 1600	0	1	164	1	20	3	5	0	194	203.80
Hourly Total	**0**	**3**	**554**	**2**	**74**	**8**	**19**	**2**	**662**	**697.30**
Hourly Average	**0.00**	**0.75**	**138.50**	**0.50**	**18.50**	**2.00**	**4.75**	**0.50**	**165.50**	**174.33**
1600 - 1615	0	0	236	0	20	1	1	0	258	260.60
1615 - 1630	0	1	215	0	20	3	2	0	241	246.90
1630 - 1645	0	0	252	0	11	1	2	0	266	269.90
1645 - 1700	0	0	254	0	6	2	6	0	268	278.40
Hourly Total	**0**	**1**	**957**	**0**	**57**	**7**	**11**	**0**	**1033**	**1055.80**
Hourly Average	**0.00**	**0.25**	**239.25**	**0.00**	**14.25**	**1.75**	**2.75**	**0.00**	**258.25**	**263.95**
1700 - 1715	0	0	249	0	7	1	3	0	260	265.20
1715 - 1730	0	0	240	0	10	0	4	0	254	259.20
1730 - 1745	0	0	228	0	7	0	5	0	240	246.50
1745 - 1800	0	1	240	0	13	3	3	0	260	267.20
Hourly Total	**0**	**1**	**957**	**0**	**37**	**4**	**15**	**0**	**1014**	**1038.10**
Hourly Average	**0.00**	**0.25**	**239.25**	**0.00**	**9.25**	**1.00**	**3.75**	**0.00**	**253.50**	**259.53**
1800 - 1815	0	0	205	0	4	3	3	0	215	222.80
1815 - 1830	0	0	155	0	8	0	1	0	162	163.30
1830 - 1845	0	1	98	0	4	0	3	0	106	109.30
1845 - 1900	0	0	67	0	6	0	7	1	81	91.10
Hourly Total	**0**	**1**	**525**	**0**	**20**	**3**	**14**	**1**	**564**	**586.50**
Hourly Average	**0.00**	**0.25**	**131.25**	**0.00**	**5.00**	**0.75**	**3.50**	**0.25**	**141.00**	**146.63**

Session Total	**0**	**10**	**4731**	**4**	**748**	**138**	**217**	**3**	**5851**	**6309.50**
Session Average	**0.00**	**0.21**	**98.56**	**0.08**	**15.58**	**2.88**	**4.52**	**0.06**	**121.90**	**131.45**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

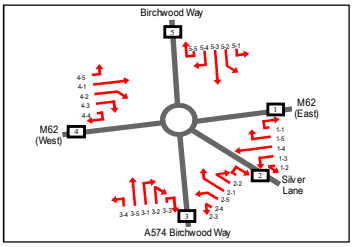
1000 - 1700 (Saturday 7h Session)

	Movement 3-4: Left from A574 Birchwood Way to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	41	0	8	0	1	0	50	51.30
1015 - 1030	0	0	21	0	11	0	6	0	38	45.80
1030 - 1045	0	0	37	0	9	2	2	0	50	55.20
1045 - 1100	0	0	39	0	14	1	1	0	55	57.60
Hourly Total	**0**	**0**	**138**	**0**	**42**	**3**	**10**	**0**	**193**	**209.90**
Hourly Average	**0.00**	**0.00**	**34.50**	**0.00**	**10.50**	**0.75**	**2.50**	**0.00**	**48.25**	**52.48**
1100 - 1115	0	0	49	1	9	1	2	0	62	65.90
1115 - 1130	0	0	52	0	11	0	0	0	63	63.00
1130 - 1145	0	2	63	1	14	0	4	0	84	88.00
1145 - 1200	0	0	46	0	6	0	1	0	53	54.30
Hourly Total	**0**	**2**	**210**	**2**	**40**	**1**	**7**	**0**	**262**	**271.20**
Hourly Average	**0.00**	**0.50**	**52.50**	**0.50**	**10.00**	**0.25**	**1.75**	**0.00**	**65.50**	**67.80**
1200 - 1215	0	0	58	0	8	0	2	0	68	70.60
1215 - 1230	0	0	52	0	9	0	1	0	62	63.30
1230 - 1245	0	0	48	0	6	0	0	0	54	54.00
1245 - 1300	0	0	62	0	3	0	0	0	65	65.00
Hourly Total	**0**	**0**	**220**	**0**	**26**	**0**	**3**	**0**	**249**	**252.90**
Hourly Average	**0.00**	**0.00**	**55.00**	**0.00**	**6.50**	**0.00**	**0.75**	**0.00**	**62.25**	**63.23**
1300 - 1315	0	0	62	0	5	1	1	0	69	71.60
1315 - 1330	0	0	58	0	8	0	2	0	68	70.60
1330 - 1345	0	0	45	1	3	2	2	0	53	58.20
1345 - 1400	0	2	47	0	9	0	2	0	60	61.40
Hourly Total	**0**	**2**	**212**	**1**	**25**	**3**	**7**	**0**	**250**	**261.80**
Hourly Average	**0.00**	**0.50**	**53.00**	**0.25**	**6.25**	**0.75**	**1.75**	**0.00**	**62.50**	**65.45**
1400 - 1415	0	0	49	0	4	0	0	0	53	53.00
1415 - 1430	0	0	38	0	2	0	1	0	41	42.30
1430 - 1445	0	1	55	0	4	1	0	0	61	61.70
1445 - 1500	0	0	43	0	2	0	0	0	45	45.00
Hourly Total	**0**	**1**	**185**	**0**	**12**	**1**	**1**	**0**	**200**	**202.00**
Hourly Average	**0.00**	**0.25**	**46.25**	**0.00**	**3.00**	**0.25**	**0.25**	**0.00**	**50.00**	**50.50**
1500 - 1515	0	0	61	0	5	0	1	0	67	68.30
1515 - 1530	0	0	44	0	6	0	1	0	51	52.30
1530 - 1545	0	0	51	0	6	1	0	0	58	59.30
1545 - 1600	0	0	55	0	4	1	1	0	61	63.60
Hourly Total	**0**	**0**	**211**	**0**	**21**	**2**	**3**	**0**	**237**	**243.50**
Hourly Average	**0.00**	**0.00**	**52.75**	**0.00**	**5.25**	**0.50**	**0.75**	**0.00**	**59.25**	**60.88**
1600 - 1615	0	0	57	0	4	0	2	0	63	65.60
1615 - 1630	0	0	46	0	5	0	1	0	52	53.30
1630 - 1645	0	0	45	0	2	0	0	0	47	47.00
1645 - 1700	0	0	42	0	4	1	0	0	47	48.30
Hourly Total	**0**	**0**	**190**	**0**	**15**	**1**	**3**	**0**	**209**	**214.20**
Hourly Average	**0.00**	**0.00**	**47.50**	**0.00**	**3.75**	**0.25**	**0.75**	**0.00**	**52.25**	**53.55**

Session Total	**0**	**5**	**1366**	**3**	**181**	**11**	**34**	**0**	**1600**	**1655.50**
Session Average	**0.00**	**0.18**	**48.79**	**0.11**	**6.46**	**0.39**	**1.21**	**0.00**	**57.14**	**59.13**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 3-5: Northbound from A574 Birchwood Way to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0800 - 0815	0	0	1	0	0	0	0	0	1	1.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
0900 - 0915	0	0	2	0	0	0	0	0	2	2.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	1	0	0	0	0	0	1	1.00
0945 - 1000	0	0	1	0	1	1	0	0	3	4.30
Hourly Total	**0**	**0**	**4**	**0**	**1**	**1**	**0**	**0**	**6**	**7.30**
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	**1.50**	**1.83**
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	1	0	0	0	0	0	1	1.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1200 - 1215	0	0	1	0	1	0	0	0	2	2.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	1	0	1	0	0	0	2	2.00
1245 - 1300	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**5**	**5.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**1.25**	**1.25**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	2	0	0	0	0	0	2	2.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	1	0	0	0	0	0	1	1.00
1445 - 1500	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1600 - 1615	0	0	1	0	0	0	0	0	1	1.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	1	0	0	0	0	0	1	1.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1800 - 1815	0	0	1	0	1	0	0	0	2	2.00
1815 - 1830	0	0	2	0	1	0	0	0	3	3.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**2**	**0**	**0**	**0**	**5**	**5.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**1.25**	**1.25**

Session Total	**0**	**0**	**18**	**0**	**7**	**1**	**0**	**0**	**26**	**27.30**
Session Average	**0.00**	**0.00**	**0.38**	**0.00**	**0.15**	**0.02**	**0.00**	**0.00**	**0.54**	**0.57**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

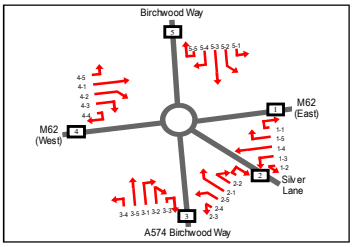
1000 - 1700 (Saturday 7h Session)

	Movement 3-5: Northbound from A574 Birchwood Way to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	1	0	0	0	0	0	1	1.00
1015 - 1030	0	0	1	0	0	0	0	0	1	1.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1100 - 1115	0	0	2	0	0	0	0	0	2	2.00
1115 - 1130	0	0	3	0	0	0	0	0	3	3.00
1130 - 1145	0	0	1	0	0	0	0	0	1	1.00
1145 - 1200	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**8**	**8.00**
Hourly Average	**0.00**	**0.00**	**2.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.00**	**2.00**
1200 - 1215	0	0	1	0	1	0	0	0	2	2.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	2	0	0	0	0	0	2	2.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	1	0	0	0	0	0	1	1.00
1445 - 1500	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	1	0	0	0	0	0	1	1.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	1	0	0	0	0	0	1	1.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**

Session Total	**0**	**0**	**23**	**0**	**1**	**0**	**0**	**0**	**24**	**24.00**
Session Average	**0.00**	**0.00**	**0.82**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.86**	**0.86**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 4-1: Eastbound from M62 (West) to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	1	0	0	0	0	0	1	1.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	1	0	0	0	1	1.00
0830 - 0845	0	0	3	0	0	0	0	0	4	4.00
0845 - 0900	0	0	0	0	0	0	1	0	1	2.30
Hourly Total	**0**	**0**	**3**	**0**	**2**	**0**	**1**	**0**	6	7.30
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	1.50	1.83
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	2	0	0	0	0	0	2	2.00
0930 - 0945	0	0	1	0	0	0	0	0	1	1.00
0945 - 1000	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	4	4.00
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	1.00	1.00
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.50	0.50
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	1	1	0	2	4.60
1130 - 1145	0	0	0	0	0	1	1	0	2	4.60
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	4	9.20
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**	**0.00**	1.00	2.30
1200 - 1215	0	0	1	0	0	1	0	0	2	3.30
1215 - 1230	0	0	0	0	0	0	1	0	1	2.30
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	4	6.60
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.25**	**0.25**	**0.00**	1.00	1.65
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	1	0	0	0	0	0	1	1.00
1445 - 1500	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.50	0.50
1500 - 1515	0	0	1	0	0	0	0	0	1	1.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	1	0	0	1	2.30
1545 - 1600	0	0	0	0	2	0	0	0	2	2.00
Hourly Total	**0**	**0**	**1**	**0**	**2**	**1**	**0**	**0**	4	5.30
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.50**	**0.25**	**0.00**	**0.00**	1.00	1.33
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1800 - 1815	0	0	0	0	1	0	0	0	1	1.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.25	0.25

Session Total	**0**	**0**	**14**	**0**	**6**	**4**	**4**	**0**	28	38.40
Session Average	**0.00**	**0.00**	**0.29**	**0.00**	**0.13**	**0.08**	**0.08**	**0.00**	0.58	0.80

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

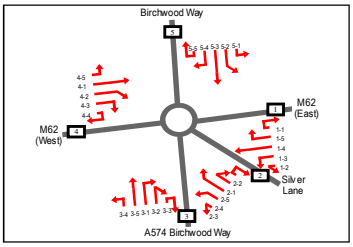
1000 - 1700 (Saturday 7h Session)

	Movement 4-1: Eastbound from M62 (West) to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	1	0	0	0	1	1.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.75	0.75
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	1	0	0	0	0	0	1	1.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
1400 - 1415	0	0	2	0	0	0	0	0	2	2.00
1415 - 1430	0	0	1	0	0	0	0	0	1	1.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.75	0.75
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	1	0	0	0	0	0	1	1.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	1	0	0	0	1	1.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.25	0.25

Session Total	**0**	**0**	**7**	**0**	**2**	**0**	**0**	**0**	9	9.00
Session Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**	0.32	0.32

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 4-2: Right from M62 (West) to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	1	0	0	0	1	1.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Session Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.00**
Session Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.02**	**0.00**	**0.00**	**0.00**	**0.02**	**0.02**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

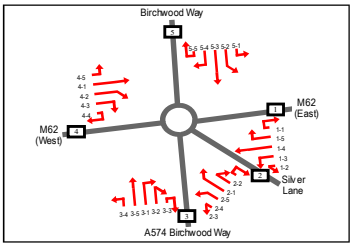
1000 - 1700 (Saturday 7h Session)

	Movement 4-2: Right from M62 (West) to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Session Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Session Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 4-3: Right from M62 (West) to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	43	0	1	2	4	0	50	57.80
0715 - 0730	0	0	22	0	3	1	3	0	29	34.20
0730 - 0745	0	0	41	0	11	0	5	0	57	63.50
0745 - 0800	0	0	53	0	16	3	5	0	77	87.40
Hourly Total	**0**	**0**	**159**	**0**	**31**	**6**	**17**	**0**	**213**	**242.90**
Hourly Average	**0.00**	**0.00**	**39.75**	**0.00**	**7.75**	**1.50**	**4.25**	**0.00**	**53.25**	**60.73**
0800 - 0815	0	0	87	0	12	1	5	0	105	112.80
0815 - 0830	0	1	116	0	8	1	3	0	129	133.60
0830 - 0845	0	1	117	0	4	2	4	0	128	135.20
0845 - 0900	0	0	126	0	3	4	4	0	137	147.40
Hourly Total	**0**	**2**	**446**	**0**	**27**	**8**	**16**	**0**	**499**	**529.00**
Hourly Average	**0.00**	**0.50**	**111.50**	**0.00**	**6.75**	**2.00**	**4.00**	**0.00**	**124.75**	**132.25**
0900 - 0915	0	1	148	0	14	3	4	0	170	178.50
0915 - 0930	0	0	126	0	14	2	4	0	146	153.80
0930 - 0945	0	0	110	0	11	2	5	0	128	137.10
0945 - 1000	0	1	97	0	7	2	9	0	116	129.70
Hourly Total	**0**	**2**	**481**	**0**	**46**	**9**	**22**	**0**	**560**	**599.10**
Hourly Average	**0.00**	**0.50**	**120.25**	**0.00**	**11.50**	**2.25**	**5.50**	**0.00**	**140.00**	**149.78**
1000 - 1015	0	0	74	0	6	6	1	0	87	96.10
1015 - 1030	0	0	59	0	4	2	13	0	78	97.50
1030 - 1045	0	0	52	0	13	5	2	1	73	83.10
1045 - 1100	0	0	49	0	11	1	4	0	65	71.50
Hourly Total	**0**	**0**	**234**	**0**	**34**	**14**	**20**	**1**	**303**	**348.20**
Hourly Average	**0.00**	**0.00**	**58.50**	**0.00**	**8.50**	**3.50**	**5.00**	**0.25**	**75.75**	**87.05**
1100 - 1115	0	0	32	0	11	4	5	0	52	63.70
1115 - 1130	0	0	40	1	5	3	7	0	56	69.00
1130 - 1145	0	0	60	0	7	1	5	0	73	80.80
1145 - 1200	0	0	44	0	7	2	4	0	57	64.80
Hourly Total	**0**	**0**	**176**	**1**	**30**	**10**	**21**	**0**	**238**	**278.30**
Hourly Average	**0.00**	**0.00**	**44.00**	**0.25**	**7.50**	**2.50**	**5.25**	**0.00**	**59.50**	**69.58**
1200 - 1215	0	0	35	0	15	2	5	0	57	66.10
1215 - 1230	0	0	48	0	10	4	5	0	67	78.70
1230 - 1245	0	0	54	0	13	3	8	0	78	92.30
1245 - 1300	0	2	75	0	11	0	1	0	89	89.10
Hourly Total	**0**	**2**	**212**	**0**	**49**	**9**	**19**	**0**	**291**	**326.20**
Hourly Average	**0.00**	**0.50**	**53.00**	**0.00**	**12.25**	**2.25**	**4.75**	**0.00**	**72.75**	**81.55**
1300 - 1315	0	0	44	0	10	5	1	0	60	67.80
1315 - 1330	0	0	51	0	11	5	5	0	72	85.00
1330 - 1345	0	0	35	0	11	3	1	0	50	55.20
1345 - 1400	0	0	50	0	11	3	4	0	68	77.10
Hourly Total	**0**	**0**	**180**	**0**	**43**	**16**	**11**	**0**	**250**	**285.10**
Hourly Average	**0.00**	**0.00**	**45.00**	**0.00**	**10.75**	**4.00**	**2.75**	**0.00**	**62.50**	**71.28**
1400 - 1415	0	0	28	0	13	3	3	1	48	56.80
1415 - 1430	0	0	34	0	5	1	5	0	45	52.80
1430 - 1445	0	0	44	0	4	2	5	0	55	64.10
1445 - 1500	0	0	31	0	18	1	8	0	58	69.70
Hourly Total	**0**	**0**	**137**	**0**	**40**	**7**	**21**	**1**	**206**	**243.40**
Hourly Average	**0.00**	**0.00**	**34.25**	**0.00**	**10.00**	**1.75**	**5.25**	**0.25**	**51.50**	**60.85**
1500 - 1515	0	0	33	0	16	2	4	0	55	62.80
1515 - 1530	0	0	28	1	11	0	5	0	45	51.50
1530 - 1545	0	1	39	0	12	2	3	0	57	62.90
1545 - 1600	0	1	32	0	8	0	6	0	47	54.20
Hourly Total	**0**	**2**	**132**	**1**	**47**	**4**	**18**	**0**	**204**	**231.40**
Hourly Average	**0.00**	**0.50**	**33.00**	**0.25**	**11.75**	**1.00**	**4.50**	**0.00**	**51.00**	**57.85**
1600 - 1615	0	0	28	0	14	1	3	0	46	51.20
1615 - 1630	0	1	25	1	15	2	7	0	51	62.10
1630 - 1645	0	1	36	0	17	2	4	0	60	67.20
1645 - 1700	0	0	38	0	19	0	5	0	62	68.50
Hourly Total	**0**	**2**	**127**	**1**	**65**	**5**	**19**	**0**	**219**	**249.00**
Hourly Average	**0.00**	**0.50**	**31.75**	**0.25**	**16.25**	**1.25**	**4.75**	**0.00**	**54.75**	**62.25**
1700 - 1715	0	0	38	0	9	0	0	0	47	47.00
1715 - 1730	0	0	49	0	14	0	3	0	66	69.90
1730 - 1745	0	0	48	0	5	1	3	0	57	62.20
1745 - 1800	0	0	44	0	10	2	3	0	59	65.50
Hourly Total	**0**	**0**	**179**	**0**	**38**	**3**	**9**	**0**	**229**	**244.60**
Hourly Average	**0.00**	**0.00**	**44.75**	**0.00**	**9.50**	**0.75**	**2.25**	**0.00**	**57.25**	**61.15**
1800 - 1815	0	0	38	0	4	1	1	0	44	46.60
1815 - 1830	0	0	29	0	3	0	3	0	35	38.90
1830 - 1845	0	0	42	0	2	1	2	0	47	50.90
1845 - 1900	0	0	39	0	2	1	1	0	43	45.60
Hourly Total	**0**	**0**	**148**	**0**	**11**	**3**	**7**	**0**	**169**	**182.00**
Hourly Average	**0.00**	**0.00**	**37.00**	**0.00**	**2.75**	**0.75**	**1.75**	**0.00**	**42.25**	**45.50**

Session Total	**0**	**10**	**2611**	**3**	**461**	**94**	**200**	**2**	**3381**	**3759.20**
Session Average	**0.00**	**0.21**	**54.40**	**0.06**	**9.60**	**1.96**	**4.17**	**0.04**	**70.44**	**78.32**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

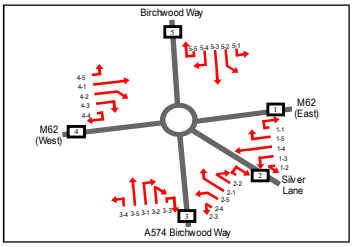
1000 - 1700 (Saturday 7h Session)

	Movement 4-3: Right from M62 (West) to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	31	0	9	0	1	0	41	42.30
1015 - 1030	0	1	32	0	10	0	0	0	43	42.40
1030 - 1045	0	0	40	0	5	2	1	0	48	51.90
1045 - 1100	0	0	42	0	2	0	0	0	44	44.00
Hourly Total	**0**	**1**	**145**	**0**	**26**	**2**	**2**	**0**	**176**	**180.60**
Hourly Average	**0.00**	**0.25**	**36.25**	**0.00**	**6.50**	**0.50**	**0.50**	**0.00**	**44.00**	**45.15**
1100 - 1115	0	0	41	0	5	0	9	0	55	66.70
1115 - 1130	0	0	41	0	7	0	3	0	51	54.90
1130 - 1145	0	0	39	0	0	0	1	0	40	41.30
1145 - 1200	0	0	36	0	4	0	0	0	40	40.00
Hourly Total	**0**	**0**	**157**	**0**	**16**	**0**	**13**	**0**	**186**	**202.90**
Hourly Average	**0.00**	**0.00**	**39.25**	**0.00**	**4.00**	**0.00**	**3.25**	**0.00**	**46.50**	**50.73**
1200 - 1215	0	0	37	0	1	1	0	0	39	40.30
1215 - 1230	0	0	26	1	3	0	2	0	32	34.60
1230 - 1245	0	0	31	0	2	0	3	0	36	39.90
1245 - 1300	0	0	38	0	3	0	1	0	42	43.30
Hourly Total	**0**	**0**	**132**	**1**	**9**	**1**	**6**	**0**	**149**	**158.10**
Hourly Average	**0.00**	**0.00**	**33.00**	**0.25**	**2.25**	**0.25**	**1.50**	**0.00**	**37.25**	**39.53**
1300 - 1315	0	0	32	0	4	0	2	0	38	40.60
1315 - 1330	0	0	35	0	2	0	1	0	38	39.30
1330 - 1345	0	0	32	1	7	1	1	0	42	44.60
1345 - 1400	0	0	44	0	3	0	0	0	47	47.00
Hourly Total	**0**	**0**	**143**	**1**	**16**	**1**	**4**	**0**	**165**	**171.50**
Hourly Average	**0.00**	**0.00**	**35.75**	**0.25**	**4.00**	**0.25**	**1.00**	**0.00**	**41.25**	**42.88**
1400 - 1415	0	0	37	0	6	0	0	0	43	43.00
1415 - 1430	0	0	37	0	6	1	0	0	44	45.30
1430 - 1445	0	1	37	0	5	0	1	0	44	44.70
1445 - 1500	0	0	43	0	5	0	2	0	50	52.60
Hourly Total	**0**	**1**	**154**	**0**	**22**	**1**	**3**	**0**	**181**	**185.60**
Hourly Average	**0.00**	**0.25**	**38.50**	**0.00**	**5.50**	**0.25**	**0.75**	**0.00**	**45.25**	**46.40**
1500 - 1515	0	0	36	0	3	1	0	0	40	41.30
1515 - 1530	0	0	34	0	10	1	2	0	47	50.90
1530 - 1545	0	0	34	0	9	0	0	0	43	43.00
1545 - 1600	0	0	22	2	5	0	0	0	29	29.00
Hourly Total	**0**	**0**	**126**	**2**	**27**	**2**	**2**	**0**	**159**	**164.20**
Hourly Average	**0.00**	**0.00**	**31.50**	**0.50**	**6.75**	**0.50**	**0.50**	**0.00**	**39.75**	**41.05**
1600 - 1615	0	0	14	0	4	1	4	0	23	29.50
1615 - 1630	0	0	31	0	4	1	1	0	37	39.60
1630 - 1645	0	0	31	0	7	0	1	0	39	40.30
1645 - 1700	0	0	33	1	5	1	0	0	40	41.30
Hourly Total	**0**	**0**	**109**	**1**	**20**	**3**	**6**	**0**	**139**	**150.70**
Hourly Average	**0.00**	**0.00**	**27.25**	**0.25**	**5.00**	**0.75**	**1.50**	**0.00**	**34.75**	**37.68**

Session Total	**0**	**2**	**966**	**5**	**136**	**10**	**36**	**0**	**1155**	**1213.60**
Session Average	**0.00**	**0.07**	**34.50**	**0.18**	**4.86**	**0.36**	**1.29**	**0.00**	**41.25**	**43.34**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 4-4: U-Turn from M62 (West) to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	1	0	0	0	0	0	1	1.00
0715 - 0730	0	0	2	0	2	0	0	0	4	4.00
0730 - 0745	0	0	1	0	0	0	0	0	1	1.00
0745 - 0800	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**6**	**0**	**2**	**0**	**0**	**0**	8	8.00
Hourly Average	**0.00**	**0.00**	**1.50**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**2.00**	**2.00**
0800 - 0815	0	0	4	0	3	3	0	0	10	13.90
0815 - 0830	0	0	16	0	4	0	1	0	21	22.30
0830 - 0845	0	0	22	0	6	0	3	0	31	34.90
0845 - 0900	0	0	20	0	8	1	2	0	31	34.90
Hourly Total	**0**	**0**	**62**	**0**	**21**	**4**	**6**	**0**	93	106.00
Hourly Average	**0.00**	**0.00**	**15.50**	**0.00**	**5.25**	**1.00**	**1.50**	**0.00**	**23.25**	**26.50**
0900 - 0915	0	0	6	0	1	0	1	0	8	9.30
0915 - 0930	0	0	5	0	1	1	0	0	7	8.30
0930 - 0945	0	0	4	0	2	1	0	0	7	8.30
0945 - 1000	0	0	6	0	4	0	2	0	12	14.60
Hourly Total	**0**	**0**	**21**	**0**	**8**	**2**	**3**	**0**	34	40.50
Hourly Average	**0.00**	**0.00**	**5.25**	**0.00**	**2.00**	**0.50**	**0.75**	**0.00**	**8.50**	**10.13**
1000 - 1015	0	0	3	0	4	0	2	0	9	11.60
1015 - 1030	0	0	7	0	4	0	0	0	11	11.00
1030 - 1045	0	0	7	1	4	1	1	0	14	16.60
1045 - 1100	0	0	3	0	1	0	2	0	6	8.60
Hourly Total	**0**	**0**	**20**	**1**	**13**	**1**	**5**	**0**	40	47.80
Hourly Average	**0.00**	**0.00**	**5.00**	**0.25**	**3.25**	**0.25**	**1.25**	**0.00**	**10.00**	**11.95**
1100 - 1115	0	0	6	0	1	0	0	0	7	7.00
1115 - 1130	0	0	2	0	0	0	1	0	3	4.30
1130 - 1145	0	0	4	0	2	3	0	0	9	12.90
1145 - 1200	0	0	2	0	2	0	0	0	4	4.00
Hourly Total	**0**	**0**	**14**	**0**	**5**	**3**	**1**	**0**	23	28.20
Hourly Average	**0.00**	**0.00**	**3.50**	**0.00**	**1.25**	**0.75**	**0.25**	**0.00**	**5.75**	**7.05**
1200 - 1215	0	0	2	0	1	0	0	0	3	3.00
1215 - 1230	0	0	4	0	1	1	1	0	7	9.60
1230 - 1245	0	0	5	0	2	0	0	0	7	7.00
1245 - 1300	0	0	2	0	0	2	2	0	6	11.20
Hourly Total	**0**	**0**	**13**	**0**	**4**	**3**	**3**	**0**	23	30.80
Hourly Average	**0.00**	**0.00**	**3.25**	**0.00**	**1.00**	**0.75**	**0.75**	**0.00**	**5.75**	**7.70**
1300 - 1315	0	0	5	0	2	0	1	0	8	9.30
1315 - 1330	0	0	5	0	2	1	0	0	8	9.30
1330 - 1345	0	0	1	0	4	0	0	0	5	5.00
1345 - 1400	0	0	5	0	1	0	1	0	7	8.30
Hourly Total	**0**	**0**	**16**	**0**	**9**	**1**	**2**	**0**	28	31.90
Hourly Average	**0.00**	**0.00**	**4.00**	**0.00**	**2.25**	**0.25**	**0.50**	**0.00**	**7.00**	**7.98**
1400 - 1415	0	0	6	0	1	0	0	0	7	7.00
1415 - 1430	0	0	4	0	3	0	0	0	7	7.00
1430 - 1445	0	0	6	0	2	1	1	0	10	12.60
1445 - 1500	0	0	4	0	0	0	0	0	4	4.00
Hourly Total	**0**	**0**	**20**	**0**	**6**	**1**	**1**	**0**	28	30.60
Hourly Average	**0.00**	**0.00**	**5.00**	**0.00**	**1.50**	**0.25**	**0.25**	**0.00**	**7.00**	**7.65**
1500 - 1515	0	0	4	0	0	0	0	0	4	4.00
1515 - 1530	0	0	8	0	1	0	1	0	10	11.30
1530 - 1545	0	0	6	1	0	0	0	0	7	7.00
1545 - 1600	0	0	7	0	2	1	0	0	10	11.30
Hourly Total	**0**	**0**	**25**	**1**	**3**	**1**	**1**	**0**	31	33.60
Hourly Average	**0.00**	**0.00**	**6.25**	**0.25**	**0.75**	**0.25**	**0.25**	**0.00**	**7.75**	**8.40**
1600 - 1615	0	0	4	0	0	0	0	0	4	4.00
1615 - 1630	0	0	2	0	0	0	0	0	2	2.00
1630 - 1645	0	0	8	0	1	0	1	0	10	11.30
1645 - 1700	0	0	8	0	0	0	0	0	8	8.00
Hourly Total	**0**	**0**	**22**	**0**	**1**	**0**	**1**	**0**	24	25.30
Hourly Average	**0.00**	**0.00**	**5.50**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**6.00**	**6.33**
1700 - 1715	0	0	2	0	4	0	0	0	6	6.00
1715 - 1730	0	0	2	0	1	0	1	0	4	5.30
1730 - 1745	0	0	3	0	0	0	1	0	4	5.30
1745 - 1800	0	0	4	0	0	0	0	0	4	4.00
Hourly Total	**0**	**0**	**11**	**0**	**5**	**0**	**2**	**0**	18	20.60
Hourly Average	**0.00**	**0.00**	**2.75**	**0.00**	**1.25**	**0.00**	**0.50**	**0.00**	**4.50**	**5.15**
1800 - 1815	0	0	2	0	0	0	0	0	2	2.00
1815 - 1830	0	0	4	0	0	0	0	0	4	4.00
1830 - 1845	0	0	0	0	0	0	1	0	1	2.30
1845 - 1900	0	0	2	0	0	0	2	0	4	6.60
Hourly Total	**0**	**0**	**8**	**0**	**0**	**0**	**3**	**0**	11	14.90
Hourly Average	**0.00**	**0.00**	**2.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.00**	**2.75**	**3.73**

Session Total	**0**	**0**	**238**	**2**	**77**	**16**	**28**	**0**	361	418.20
Session Average	**0.00**	**0.00**	**4.96**	**0.04**	**1.60**	**0.33**	**0.58**	**0.00**	**7.52**	**8.71**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

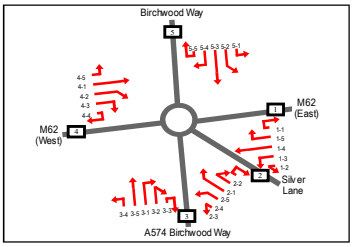
1000 - 1700 (Saturday 7h Session)

	Movement 4-4: U-Turn from M62 (West) to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	8	0	2	0	0	0	10	10.00
1015 - 1030	0	0	6	0	0	0	1	0	7	8.30
1030 - 1045	0	0	6	0	1	0	1	0	8	9.30
1045 - 1100	0	0	6	0	3	0	0	0	9	9.00
Hourly Total	**0**	**0**	**26**	**0**	**6**	**0**	**2**	**0**	34	36.60
Hourly Average	**0.00**	**0.00**	**6.50**	**0.00**	**1.50**	**0.00**	**0.50**	**0.00**	**8.50**	**9.15**
1100 - 1115	0	0	8	0	0	1	0	0	9	10.30
1115 - 1130	0	0	2	0	0	0	0	0	2	2.00
1130 - 1145	0	0	8	0	2	0	0	0	10	10.00
1145 - 1200	0	0	11	0	0	0	0	0	11	11.00
Hourly Total	**0**	**0**	**29**	**0**	**2**	**1**	**0**	**0**	32	33.30
Hourly Average	**0.00**	**0.00**	**7.25**	**0.00**	**0.50**	**0.25**	**0.00**	**0.00**	**8.00**	**8.33**
1200 - 1215	0	0	6	0	1	0	0	0	7	7.00
1215 - 1230	0	0	12	0	0	1	1	0	14	16.60
1230 - 1245	0	1	4	0	1	0	0	0	6	5.40
1245 - 1300	0	0	8	0	2	0	0	0	10	10.00
Hourly Total	**0**	**1**	**30**	**0**	**4**	**1**	**1**	**0**	37	39.00
Hourly Average	**0.00**	**0.25**	**7.50**	**0.00**	**1.00**	**0.25**	**0.25**	**0.00**	**9.25**	**9.75**
1300 - 1315	0	0	11	0	1	0	0	0	12	12.00
1315 - 1330	0	0	4	0	2	0	0	0	6	6.00
1330 - 1345	0	1	16	0	3	0	0	0	20	19.40
1345 - 1400	0	0	5	1	2	0	0	0	8	8.00
Hourly Total	**0**	**1**	**36**	**1**	**8**	**0**	**0**	**0**	46	45.40
Hourly Average	**0.00**	**0.25**	**9.00**	**0.25**	**2.00**	**0.00**	**0.00**	**0.00**	**11.50**	**11.35**
1400 - 1415	0	0	4	0	1	0	0	0	5	5.00
1415 - 1430	0	0	3	0	0	0	0	0	3	3.00
1430 - 1445	0	0	10	0	1	0	0	0	11	11.00
1445 - 1500	0	0	5	0	1	0	0	0	6	6.00
Hourly Total	**0**	**0**	**22**	**0**	**3**	**0**	**0**	**0**	25	25.00
Hourly Average	**0.00**	**0.00**	**5.50**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**6.25**	**6.25**
1500 - 1515	0	0	4	0	0	0	1	0	5	6.30
1515 - 1530	0	0	13	0	0	0	0	0	13	13.00
1530 - 1545	0	0	10	0	1	1	0	0	12	13.30
1545 - 1600	0	0	6	0	0	1	0	0	7	8.30
Hourly Total	**0**	**0**	**33**	**0**	**1**	**2**	**1**	**0**	37	40.90
Hourly Average	**0.00**	**0.00**	**8.25**	**0.00**	**0.25**	**0.50**	**0.25**	**0.00**	**9.25**	**10.23**
1600 - 1615	0	0	5	0	1	0	0	0	6	6.00
1615 - 1630	0	0	8	0	2	0	0	0	10	10.00
1630 - 1645	0	0	5	0	1	0	0	0	6	6.00
1645 - 1700	0	0	2	0	1	0	1	0	4	5.30
Hourly Total	**0**	**0**	**20**	**0**	**5**	**0**	**1**	**0**	26	27.30
Hourly Average	**0.00**	**0.00**	**5.00**	**0.00**	**1.25**	**0.00**	**0.25**	**0.00**	**6.50**	**6.83**

Session Total	**0**	**2**	**196**	**1**	**29**	**4**	**5**	**0**	237	247.50
Session Average	**0.00**	**0.07**	**7.00**	**0.04**	**1.04**	**0.14**	**0.18**	**0.00**	**8.46**	**8.84**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 4-5: Left from M62 (West) to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	1	0	0	0	0	0	1	1.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.75	0.75
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.25	0.25
0900 - 0915	0	0	1	0	1	0	0	0	2	2.00
0915 - 0930	0	0	1	0	0	0	0	0	1	1.00
0930 - 0945	0	0	1	0	0	0	0	0	1	1.00
0945 - 1000	0	0	3	0	0	0	0	0	3	3.00
Hourly Total	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**0**	7	7.00
Hourly Average	**0.00**	**0.00**	**1.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	1.75	1.75
1000 - 1015	0	0	0	0	2	0	0	0	2	2.00
1015 - 1030	0	0	2	0	0	0	1	0	3	4.30
1030 - 1045	0	0	0	0	0	1	0	0	1	2.30
1045 - 1100	0	0	0	0	0	0	1	0	1	2.30
Hourly Total	**0**	**0**	**2**	**0**	**2**	**1**	**2**	**0**	7	10.90
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.50**	**0.25**	**0.50**	**0.00**	1.75	2.73
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	2	0	1	0	1	0	4	5.30
1145 - 1200	0	0	1	0	2	1	0	0	4	5.30
Hourly Total	**0**	**0**	**3**	**0**	**3**	**1**	**1**	**0**	8	10.60
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.75**	**0.25**	**0.25**	**0.00**	2.00	2.65
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	1	0	0	0	1	1.00
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	4	4.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	1.00	1.00
1300 - 1315	0	0	0	0	1	0	0	0	1	1.00
1315 - 1330	0	0	0	0	0	1	0	0	1	2.30
1330 - 1345	0	0	0	0	0	1	0	0	1	2.30
1345 - 1400	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**2**	**0**	**0**	4	6.60
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.50**	**0.00**	**0.00**	1.00	1.65
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	1	1	0	0	2	3.30
1445 - 1500	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**1**	**0**	**0**	4	5.30
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	1.00	1.33
1500 - 1515	0	0	1	0	0	0	0	0	1	1.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	2	0	0	0	0	0	2	2.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.75	0.75
1600 - 1615	0	0	0	0	1	0	0	0	1	1.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	1	0	0	0	0	0	1	1.00
1645 - 1700	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	4	4.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	1.00	1.00
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25

Session Total	**0**	**0**	**27**	**0**	**11**	**5**	**3**	**0**	46	56.40
Session Average	**0.00**	**0.00**	**0.56**	**0.00**	**0.23**	**0.10**	**0.06**	**0.00**	0.96	1.18

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

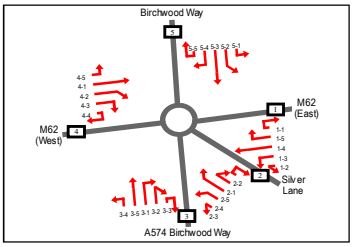
1000 - 1700 (Saturday 7h Session)

	Movement 4-5: Left from M62 (West) to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	1	0	0	0	0	0	1	1.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	1	0	1	0	0	0	2	2.00
Hourly Total	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	4	4.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	1.00	1.00
1100 - 1115	0	0	3	0	0	1	0	0	4	5.30
1115 - 1130	0	0	2	0	0	0	0	0	2	2.00
1130 - 1145	0	0	1	0	0	0	0	0	1	1.00
1145 - 1200	0	0	3	0	0	0	0	0	3	3.00
Hourly Total	**0**	**0**	**9**	**0**	**0**	**1**	**0**	**0**	10	11.30
Hourly Average	**0.00**	**0.00**	**2.25**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	2.50	2.83
1200 - 1215	0	0	1	0	0	0	0	0	1	1.00
1215 - 1230	0	0	1	0	0	0	0	0	1	1.00
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	4	4.00
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	1.00	1.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
1400 - 1415	0	0	2	0	0	0	0	0	2	2.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.50	0.50
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	1	0	0	0	0	0	1	1.00
1530 - 1545	0	0	1	0	0	0	0	0	1	1.00
1545 - 1600	0	0	1	0	1	0	0	0	2	2.00
Hourly Total	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	4	4.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	1.00	1.00
1600 - 1615	0	0	3	0	0	0	0	0	3	3.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	3	0	0	0	0	0	3	3.00
1645 - 1700	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	7	7.00
Hourly Average	**0.00**	**0.00**	**1.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	1.75	1.75

Session Total	**0**	**0**	**29**	**0**	**2**	**1**	**0**	**0**	32	33.30
Session Average	**0.00**	**0.00**	**1.04**	**0.00**	**0.07**	**0.04**	**0.00**	**0.00**	1.14	1.19

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 5-1: Left from Birchwood Way to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	1	0	0	0	0	0	1	1.00
0745 - 0800	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.50	0.50
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
0900 - 0915	0	0	1	0	0	0	0	0	1	1.00
0915 - 0930	0	0	1	0	0	0	0	0	1	1.00
0930 - 0945	0	0	1	0	1	0	0	0	2	2.00
0945 - 1000	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**4**	**0**	**1**	**0**	**0**	**0**	5	5.00
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	1.25	1.25
1000 - 1015	0	0	0	0	1	0	0	0	1	1.00
1015 - 1030	0	0	0	0	0	0	1	0	1	2.30
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	1	0	2	0	1	0	4	5.30
Hourly Total	**0**	**0**	**2**	**0**	**3**	**0**	**2**	**0**	7	9.60
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.75**	**0.00**	**0.50**	**0.00**	1.75	2.40
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	1	0	1	0	0	0	2	2.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	2	2.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.50	0.50
1200 - 1215	0	0	1	0	0	0	0	0	1	1.00
1215 - 1230	0	0	0	0	1	1	0	0	2	3.30
1230 - 1245	0	0	0	0	2	0	0	0	2	2.00
1245 - 1300	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**3**	**1**	**0**	**0**	6	7.30
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.75**	**0.25**	**0.00**	**0.00**	1.50	1.83
1300 - 1315	0	0	1	0	1	0	0	0	2	2.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	1	1	0	0	2	3.30
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**2**	**1**	**0**	**0**	4	5.30
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.50**	**0.25**	**0.00**	**0.00**	1.00	1.33
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	2	0	0	0	0	0	2	2.00
1445 - 1500	0	0	0	0	2	0	0	0	2	2.00
Hourly Total	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	4	4.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	1.00	1.00
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	2	0	0	0	0	0	2	2.00
1545 - 1600	0	0	0	0	0	1	0	0	1	2.30
Hourly Total	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	3	4.30
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	0.75	1.08
1600 - 1615	0	0	0	0	1	0	0	0	1	1.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	1	0	0	0	0	0	1	1.00
1645 - 1700	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.75	0.75
1700 - 1715	0	0	1	0	0	0	0	0	1	1.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	1	1.00
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.25	0.25
1800 - 1815	0	0	0	0	1	0	0	0	1	1.00
1815 - 1830	0	0	1	0	0	0	0	0	1	1.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.75	0.75

Session Total	**0**	**0**	**21**	**0**	**14**	**3**	**2**	**0**	40	46.50
Session Average	**0.00**	**0.00**	**0.44**	**0.00**	**0.29**	**0.06**	**0.04**	**0.00**	0.83	0.97

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

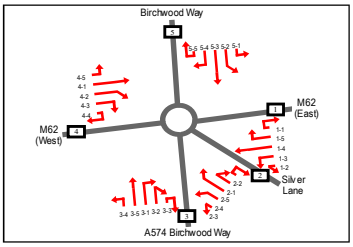
1000 - 1700 (Saturday 7h Session)

	Movement 5-1: Left from Birchwood Way to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	1	0	0	0	0	0	1	1.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	1	0	1	0	0	0	2	2.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.75	0.75
1100 - 1115	0	0	3	0	0	0	0	0	3	3.00
1115 - 1130	0	0	1	0	0	0	0	0	1	1.00
1130 - 1145	0	0	1	0	0	0	0	0	1	1.00
1145 - 1200	0	0	3	0	0	0	0	0	3	3.00
Hourly Total	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	8	8.00
Hourly Average	**0.00**	**0.00**	**2.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	2.00	2.00
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	2	0	0	0	0	0	2	2.00
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	4	4.00
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	1.00	1.00
1300 - 1315	0	0	0	0	1	0	0	0	1	1.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	1	0	0	0	0	0	1	1.00
1345 - 1400	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	0.75	0.75
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0	0.00
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.00	0.00
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	1	0	0	0	0	0	1	1.00
1545 - 1600	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	3	3.00
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	0.75	0.75
1600 - 1615	0	0	1	0	1	0	0	0	2	2.00
1615 - 1630	0	0	1	0	0	0	0	0	1	1.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	3	0	0	0	0	0	3	3.00
Hourly Total	**0**	**0**	**5**	**0**	**1**	**0**	**0**	**0**	6	6.00
Hourly Average	**0.00**	**0.00**	**1.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	1.50	1.50

Session Total	**0**	**0**	**24**	**0**	**3**	**0**	**0**	**0**	27	27.00
Session Average	**0.00**	**0.00**	**0.86**	**0.00**	**0.11**	**0.00**	**0.00**	**0.00**	0.96	0.96

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 5-2: Left from Birchwood Way to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	0	0	0	0	1	0	0	0	1	1.00
Hourly Average	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.25	0.25
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	0	0	1	0	0	0	0	0	1	1.00
Hourly Average	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.25	0.25
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Session Total	0	0	1	0	1	0	0	0	2	2.00
Session Average	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.04	0.04

Date
Saturday 17 November 2018

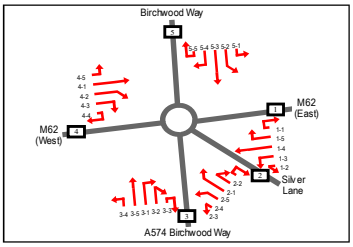
Weather
Cloudy
Temp: 12°C

1000 - 1700 (Saturday 7h Session)

	Movement 5-2: Left from Birchwood Way to Silver Lane								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	1	0	0	0	0	0	0	0	1	0.20
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	1	0	0	0	0	0	0	0	1	0.20
Hourly Average	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.05
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	1	0	0	0	0	0	0	0	1	0.20
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	1	0	0	0	0	0	0	0	1	0.20
Hourly Average	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.05
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	0	0	0	0	0	0	0	0	0	0.00
Hourly Average	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Session Total	2	0	0	0	0	0	0	0	2	0.40
Session Average	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.01

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 5-3: Southbound from Birchwood Way to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	0	0	0	0	0	0.00
0945 - 1000	0	0	1	0	0	0	1	0	2	3.30
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**3.30**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.50**	**0.83**
1000 - 1015	0	0	0	0	0	1	0	0	1	2.30
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**3**	**4.30**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.75**	**1.08**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	1	0	0	0	0	0	1	1.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1300 - 1315	0	0	0	0	0	0	1	0	1	2.30
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	2	0	0	1	0	0	3	4.30
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**4**	**6.60**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.25**	**0.25**	**0.00**	**1.00**	**1.65**
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	1	0	0	0	0	0	1	1.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	1	0	0	1	0	0	2	3.30
Hourly Total	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**4**	**5.30**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**1.00**	**1.33**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	1	0	0	0	1	1.00
1530 - 1545	0	0	1	0	0	0	0	0	1	1.00
1545 - 1600	0	0	1	1	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**2**	**1**	**1**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.25**	**0.25**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	1	0	0	0	0	0	1	1.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	1	0	0	0	0	0	1	1.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**

Session Total	**0**	**0**	**15**	**1**	**2**	**3**	**2**	**0**	**23**	**29.50**
Session Average	**0.00**	**0.00**	**0.31**	**0.02**	**0.04**	**0.06**	**0.04**	**0.00**	**0.48**	**0.61**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

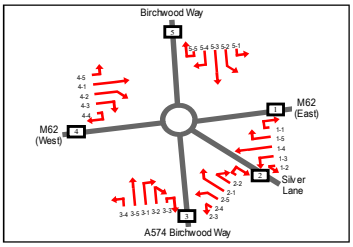
1000 - 1700 (Saturday 7h Session)

	Movement 5-3: Southbound from Birchwood Way to A574 Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	2	0	0	0	0	0	2	2.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**5**	**5.00**
Hourly Average	**0.00**	**0.00**	**1.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.25**	**1.25**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	2	0	0	0	0	0	2	2.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	2	0	0	0	0	0	2	2.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1300 - 1315	0	0	0	0	1	0	0	0	1	1.00
1315 - 1330	0	0	1	0	0	0	0	0	1	1.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	2	0	0	0	0	0	2	2.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	2	0	0	0	0	0	2	2.00
1545 - 1600	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1600 - 1615	0	0	1	0	0	0	0	0	1	1.00
1615 - 1630	0	0	1	0	0	0	0	0	1	1.00
1630 - 1645	0	0	4	0	0	0	0	0	4	4.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**6**	**6.00**
Hourly Average	**0.00**	**0.00**	**1.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.50**	**1.50**

Session Total	**0**	**0**	**23**	**0**	**2**	**0**	**0**	**0**	**25**	**25.00**
Session Average	**0.00**	**0.00**	**0.82**	**0.00**	**0.07**	**0.00**	**0.00**	**0.00**	**0.89**	**0.89**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 5-4: Right from Birchwood Way to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0800 - 0815	0	0	1	0	0	0	0	0	1	1.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	2	0	2	0	0	0	4	4.00
0930 - 0945	0	0	2	0	0	0	0	0	2	2.00
0945 - 1000	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**4**	**0**	**2**	**0**	**0**	**0**	**6**	**6.00**
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**1.50**	**1.50**
1000 - 1015	0	0	3	0	0	0	0	0	3	3.00
1015 - 1030	0	0	1	0	0	0	0	0	1	1.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	1	0	0	0	0	0	1	1.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1200 - 1215	0	0	1	0	0	0	0	0	1	1.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	1	0	0	0	1	1.00
1245 - 1300	0	0	2	0	0	0	1	0	3	4.30
Hourly Total	**0**	**0**	**3**	**0**	**1**	**0**	**1**	**0**	**5**	**6.30**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	**0.25**	**0.00**	**1.25**	**1.58**
1300 - 1315	0	0	0	0	1	0	0	0	1	1.00
1315 - 1330	0	0	1	0	0	0	0	0	1	1.00
1330 - 1345	0	0	1	0	0	0	0	0	1	1.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1400 - 1415	0	0	2	0	0	0	1	0	3	4.30
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	1	0	0	0	0	0	1	1.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**4**	**5.30**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**1.00**	**1.33**
1500 - 1515	0	0	1	0	0	0	1	0	2	3.30
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	**4.30**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.75**	**1.08**
1600 - 1615	0	0	1	0	0	1	0	0	2	3.30
1615 - 1630	0	0	1	0	1	0	0	0	2	2.00
1630 - 1645	0	0	0	0	1	0	0	0	1	1.00
1645 - 1700	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**2**	**0**	**3**	**1**	**0**	**0**	**6**	**7.30**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.75**	**0.25**	**0.00**	**0.00**	**1.50**	**1.83**
1700 - 1715	0	0	2	0	1	0	0	0	3	3.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.50**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	2	0	0	0	0	0	2	2.00
1845 - 1900	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**

Session Total	**0**	**0**	**27**	**0**	**9**	**1**	**3**	**0**	**40**	**45.20**
Session Average	**0.00**	**0.00**	**0.56**	**0.00**	**0.19**	**0.02**	**0.06**	**0.00**	**0.83**	**0.94**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

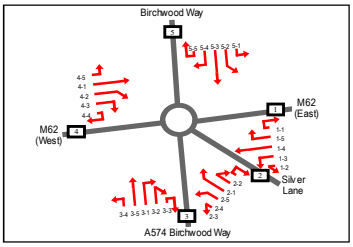
1000 - 1700 (Saturday 7h Session)

	Movement 5-4: Right from Birchwood Way to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	1	0	0	0	0	0	1	1.00
1030 - 1045	0	0	1	0	0	0	0	0	1	1.00
1045 - 1100	0	0	1	0	0	1	0	0	2	3.30
Hourly Total	**0**	**0**	**3**	**0**	**0**	**1**	**0**	**0**	**4**	**5.30**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**1.00**	**1.33**
1100 - 1115	0	0	1	0	0	0	0	0	1	1.00
1115 - 1130	0	0	3	0	0	0	0	0	3	3.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**4**	**4.00**
Hourly Average	**0.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	**1.00**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	2	0	0	0	0	0	2	2.00
1230 - 1245	0	0	1	0	0	0	0	0	1	1.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	1	0	0	0	0	0	1	1.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1400 - 1415	0	0	1	0	0	0	0	0	1	1.00
1415 - 1430	0	0	1	0	0	0	0	0	1	1.00
1430 - 1445	0	0	1	0	0	0	0	0	1	1.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1500 - 1515	0	0	1	0	0	0	0	0	1	1.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	2	0	0	0	0	0	2	2.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**3.00**
Hourly Average	**0.00**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.75**	**0.75**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	1	0	0	0	0	0	1	1.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**

Session Total	**0**	**0**	**18**	**0**	**0**	**1**	**0**	**0**	**19**	**20.30**
Session Average	**0.00**	**0.00**	**0.64**	**0.00**	**0.00**	**0.04**	**0.00**	**0.00**	**0.68**	**0.73**

Warrington
Classified Junction Count

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12h Session)

	Movement 5-5: U-Turn from Birchwood Way to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	0	0	0	0	0	0	0	0.00
0715 - 0730	0	0	0	0	0	0	0	0	0	0.00
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0800 - 0815	0	0	0	0	0	0	0	0	0	0.00
0815 - 0830	0	0	0	0	0	0	0	0	0	0.00
0830 - 0845	0	0	0	0	0	0	0	0	0	0.00
0845 - 0900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
0900 - 0915	0	0	0	0	0	0	0	0	0	0.00
0915 - 0930	0	0	0	0	0	0	0	0	0	0.00
0930 - 0945	0	0	0	0	1	0	0	0	1	1.00
0945 - 1000	0	0	0	0	1	0	0	0	1	1.00
Hourly Total	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**2.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	**0.50**	**0.50**
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1200 - 1215	0	0	0	0	1	0	0	0	1	1.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	**0.25**	**0.25**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	0	0	0	0	0	0	0	0.00
1730 - 1745	0	0	0	0	0	0	0	0	0	0.00
1745 - 1800	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1800 - 1815	0	0	0	0	0	0	0	0	0	0.00
1815 - 1830	0	0	0	0	0	0	0	0	0	0.00
1830 - 1845	0	0	0	0	0	0	0	0	0	0.00
1845 - 1900	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Session Total	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**3.00**
Session Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.06**	**0.06**

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

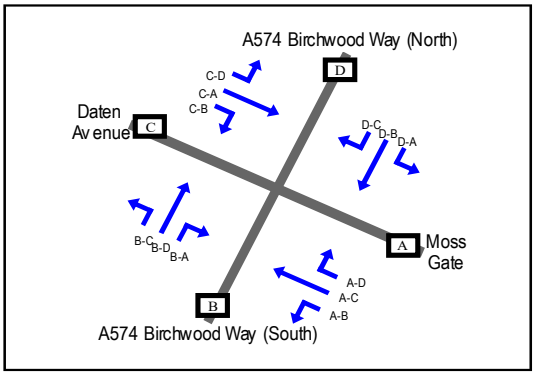
1000 - 1700 (Saturday 7h Session)

	Movement 5-5: U-Turn from Birchwood Way to Birchwood Way								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1000 - 1015	0	0	0	0	0	0	0	0	0	0.00
1015 - 1030	0	0	0	0	0	0	0	0	0	0.00
1030 - 1045	0	0	0	0	0	0	0	0	0	0.00
1045 - 1100	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1100 - 1115	0	0	0	0	0	0	0	0	0	0.00
1115 - 1130	0	0	0	0	0	0	0	0	0	0.00
1130 - 1145	0	0	0	0	0	0	0	0	0	0.00
1145 - 1200	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1200 - 1215	0	0	0	0	0	0	0	0	0	0.00
1215 - 1230	0	0	0	0	0	0	0	0	0	0.00
1230 - 1245	0	0	0	0	0	0	0	0	0	0.00
1245 - 1300	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1300 - 1315	0	0	0	0	0	0	0	0	0	0.00
1315 - 1330	0	0	0	0	0	0	0	0	0	0.00
1330 - 1345	0	0	0	0	0	0	0	0	0	0.00
1345 - 1400	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1400 - 1415	0	0	0	0	0	0	0	0	0	0.00
1415 - 1430	0	0	0	0	0	0	0	0	0	0.00
1430 - 1445	0	0	0	0	0	0	0	0	0	0.00
1445 - 1500	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1500 - 1515	0	0	0	0	0	0	0	0	0	0.00
1515 - 1530	0	0	0	0	0	0	0	0	0	0.00
1530 - 1545	0	0	0	0	0	0	0	0	0	0.00
1545 - 1600	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
1600 - 1615	0	0	0	0	0	0	0	0	0	0.00
1615 - 1630	0	0	0	0	0	0	0	0	0	0.00
1630 - 1645	0	0	0	0	0	0	0	0	0	0.00
1645 - 1700	0	0	0	0	0	0	0	0	0	0.00
Hourly Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Hourly Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Session Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.00**
Session Average	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement A-B: Left from Moss Gate to A574 Birchwood Way (South)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	11	0	0	0	0	0	11	11.00
0715 - 0730	0	0	16	0	3	0	0	0	19	19.00
0730 - 0745	0	0	14	0	0	0	0	0	14	14.00
0745 - 0800	0	0	21	0	1	0	0	0	22	22.00
Hourly Total	**0**	**0**	**62**	**0**	**4**	**0**	**0**	**0**	66	66.00
Hourly Average	**0.00**	**0.00**	**15.50**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	16.50	16.50
0800 - 0815	0	0	14	0	1	0	0	0	15	15.00
0815 - 0830	0	0	19	0	2	0	0	0	21	21.00
0830 - 0845	0	0	11	0	1	0	0	0	12	12.00
0845 - 0900	0	0	11	0	3	0	0	0	14	14.00
Hourly Total	**0**	**0**	**55**	**0**	**7**	**0**	**0**	**0**	62	62.00
Hourly Average	**0.00**	**0.00**	**13.75**	**0.00**	**1.75**	**0.00**	**0.00**	**0.00**	15.50	15.50
0900 - 0915	0	0	22	0	3	0	0	0	25	25.00
0915 - 0930	0	0	6	0	1	0	0	0	7	7.00
0930 - 0945	0	0	11	0	1	1	0	0	13	14.30
0945 - 1000	0	0	16	0	2	0	2	0	20	22.60
Hourly Total	**0**	**0**	**55**	**0**	**7**	**1**	**2**	**0**	65	68.90
Hourly Average	**0.00**	**0.00**	**13.75**	**0.00**	**1.75**	**0.25**	**0.50**	**0.00**	16.25	17.23

Session Total	**0**	**0**	**172**	**0**	**18**	**1**	**2**	**0**	193	196.90
Session Average	**0.00**	**0.00**	**14.33**	**0.00**	**1.50**	**0.08**	**0.17**	**0.00**	16.08	16.41

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

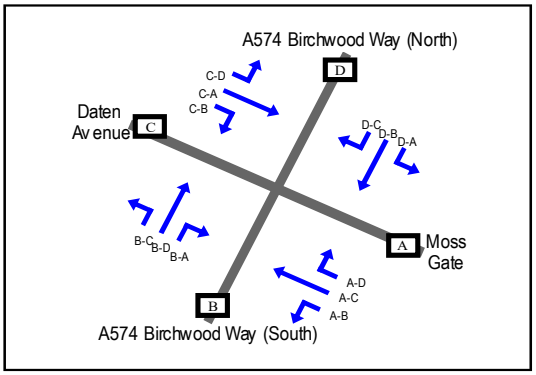
1600 - 1900 (Weekday PM Peak)

	Movement A-B: Left from Moss Gate to A574 Birchwood Way (South)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	4	0	4	0	0	0	8	8.00
1615 - 1630	0	0	7	0	0	0	0	0	7	7.00
1630 - 1645	0	0	8	0	1	0	0	0	9	9.00
1645 - 1700	0	0	9	0	2	0	0	0	11	11.00
Hourly Total	**0**	**0**	**28**	**0**	**7**	**0**	**0**	**0**	35	35.00
Hourly Average	**0.00**	**0.00**	**7.00**	**0.00**	**1.75**	**0.00**	**0.00**	**0.00**	8.75	8.75
1700 - 1715	0	0	2	0	0	0	0	0	2	2.00
1715 - 1730	0	0	4	0	1	1	0	0	6	7.30
1730 - 1745	0	0	10	0	0	0	0	0	10	10.00
1745 - 1800	0	0	5	0	0	0	0	0	5	5.00
Hourly Total	**0**	**0**	**21**	**0**	**1**	**1**	**0**	**0**	23	24.30
Hourly Average	**0.00**	**0.00**	**5.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.00**	5.75	6.08
1800 - 1815	0	0	6	0	0	0	0	0	6	6.00
1815 - 1830	0	0	13	0	1	0	0	0	14	14.00
1830 - 1845	0	0	14	0	1	0	0	0	15	15.00
1845 - 1900	0	0	17	0	2	0	0	0	19	19.00
Hourly Total	**0**	**0**	**50**	**0**	**4**	**0**	**0**	**0**	54	54.00
Hourly Average	**0.00**	**0.00**	**12.50**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	13.50	13.50

Session Total	**0**	**0**	**99**	**0**	**12**	**1**	**0**	**0**	112	113.30
Session Average	**0.00**	**0.00**	**8.25**	**0.00**	**1.00**	**0.08**	**0.00**	**0.00**	9.33	9.44

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement A-C: Westbound from Moss Gate to Daten Avenue								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	1	15	0	1	0	0	0	17	16.40
0715 - 0730	0	1	17	0	0	0	0	0	18	17.40
0730 - 0745	0	0	16	0	3	0	0	0	19	19.00
0745 - 0800	0	0	25	0	3	0	0	0	28	28.00
Hourly Total	**0**	**2**	**73**	**0**	**7**	**0**	**0**	**0**	82	80.80
Hourly Average	**0.00**	**0.50**	**18.25**	**0.00**	**1.75**	**0.00**	**0.00**	**0.00**	20.50	20.20
0800 - 0815	0	1	26	0	1	0	0	1	29	29.40
0815 - 0830	0	0	30	0	2	0	0	0	32	32.00
0830 - 0845	0	0	28	0	1	0	0	1	30	31.00
0845 - 0900	0	0	34	0	3	0	0	0	37	37.00
Hourly Total	**0**	**1**	**118**	**0**	**7**	**0**	**0**	**2**	128	129.40
Hourly Average	**0.00**	**0.25**	**29.50**	**0.00**	**1.75**	**0.00**	**0.00**	**0.50**	32.00	32.35
0900 - 0915	0	0	37	0	2	0	0	0	39	39.00
0915 - 0930	0	0	12	0	2	0	0	0	14	14.00
0930 - 0945	0	0	15	0	1	0	0	0	16	16.00
0945 - 1000	0	0	16	0	3	0	0	0	19	19.00
Hourly Total	**0**	**0**	**80**	**0**	**8**	**0**	**0**	**0**	88	88.00
Hourly Average	**0.00**	**0.00**	**20.00**	**0.00**	**2.00**	**0.00**	**0.00**	**0.00**	22.00	22.00

Session Total	**0**	**3**	**271**	**0**	**22**	**0**	**0**	**2**	298	298.20
Session Average	**0.00**	**0.25**	**22.58**	**0.00**	**1.83**	**0.00**	**0.00**	**0.17**	24.83	24.85

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

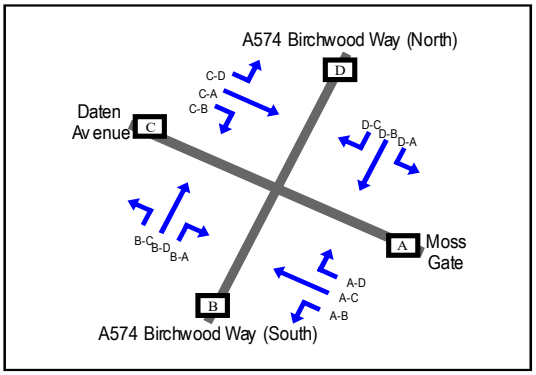
1600 - 1900 (Weekday PM Peak)

	Movement A-C: Westbound from Moss Gate to Daten Avenue								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	18	0	4	0	1	0	23	24.30
1615 - 1630	0	0	24	0	2	0	0	0	26	26.00
1630 - 1645	0	0	12	0	0	0	0	0	12	12.00
1645 - 1700	0	0	22	0	2	1	0	0	25	26.30
Hourly Total	**0**	**0**	**76**	**0**	**8**	**1**	**1**	**0**	86	88.60
Hourly Average	**0.00**	**0.00**	**19.00**	**0.00**	**2.00**	**0.25**	**0.25**	**0.00**	21.50	22.15
1700 - 1715	0	0	16	0	0	0	0	0	16	16.00
1715 - 1730	0	0	17	0	1	0	0	0	18	18.00
1730 - 1745	0	0	15	0	1	0	0	0	16	16.00
1745 - 1800	0	0	27	0	1	0	0	0	28	28.00
Hourly Total	**0**	**0**	**75**	**0**	**3**	**0**	**0**	**0**	78	78.00
Hourly Average	**0.00**	**0.00**	**18.75**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	19.50	19.50
1800 - 1815	0	0	11	0	1	0	0	0	12	12.00
1815 - 1830	0	0	12	0	0	0	0	0	12	12.00
1830 - 1845	0	0	13	0	0	0	0	0	13	13.00
1845 - 1900	0	0	12	0	0	0	0	0	12	12.00
Hourly Total	**0**	**0**	**48**	**0**	**1**	**0**	**0**	**0**	49	49.00
Hourly Average	**0.00**	**0.00**	**12.00**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	12.25	12.25

Session Total	**0**	**0**	**199**	**0**	**12**	**1**	**1**	**0**	213	215.60
Session Average	**0.00**	**0.00**	**16.58**	**0.00**	**1.00**	**0.08**	**0.08**	**0.00**	17.75	17.97

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement A-D: Right from Moss Gate to A574 Birchwood Way (North)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	1	50	0	9	0	0	0	60	59.40
0715 - 0730	0	0	53	0	10	0	0	0	63	63.00
0730 - 0745	0	1	59	0	8	0	0	0	68	67.40
0745 - 0800	0	1	49	0	6	0	0	0	56	55.40
Hourly Total	**0**	**3**	**211**	**0**	**33**	**0**	**0**	**0**	247	245.20
Hourly Average	**0.00**	**0.75**	**52.75**	**0.00**	**8.25**	**0.00**	**0.00**	**0.00**	61.75	61.30
0800 - 0815	0	0	52	0	10	0	0	0	62	62.00
0815 - 0830	0	0	48	0	4	0	0	0	52	52.00
0830 - 0845	0	0	33	0	2	0	0	0	35	35.00
0845 - 0900	0	0	18	0	3	0	0	0	21	21.00
Hourly Total	**0**	**0**	**151**	**0**	**19**	**0**	**0**	**0**	170	170.00
Hourly Average	**0.00**	**0.00**	**37.75**	**0.00**	**4.75**	**0.00**	**0.00**	**0.00**	42.50	42.50
0900 - 0915	0	0	35	0	1	0	0	0	36	36.00
0915 - 0930	0	0	15	0	2	0	0	0	17	17.00
0930 - 0945	0	0	20	0	2	0	0	0	22	22.00
0945 - 1000	0	0	13	0	1	0	0	0	14	14.00
Hourly Total	**0**	**0**	**83**	**0**	**6**	**0**	**0**	**0**	89	89.00
Hourly Average	**0.00**	**0.00**	**20.75**	**0.00**	**1.50**	**0.00**	**0.00**	**0.00**	22.25	22.25

Session Total	**0**	**3**	**445**	**0**	**58**	**0**	**0**	**0**	506	504.20
Session Average	**0.00**	**0.25**	**37.08**	**0.00**	**4.83**	**0.00**	**0.00**	**0.00**	42.17	42.02

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

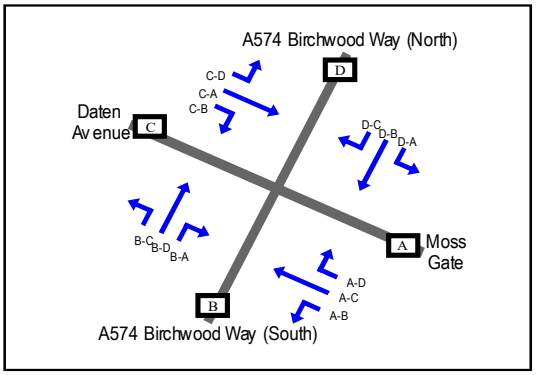
1600 - 1900 (Weekday PM Peak)

	Movement A-D: Right from Moss Gate to A574 Birchwood Way (North)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	53	0	10	0	0	0	63	63.00
1615 - 1630	0	0	64	0	6	0	0	0	70	70.00
1630 - 1645	0	0	56	0	3	0	0	0	59	59.00
1645 - 1700	0	0	58	0	2	0	0	0	60	60.00
Hourly Total	**0**	**0**	**231**	**0**	**21**	**0**	**0**	**0**	252	252.00
Hourly Average	**0.00**	**0.00**	**57.75**	**0.00**	**5.25**	**0.00**	**0.00**	**0.00**	63.00	63.00
1700 - 1715	0	0	48	0	5	0	0	0	53	53.00
1715 - 1730	0	0	77	0	7	0	0	0	84	84.00
1730 - 1745	0	0	69	0	4	0	0	0	73	73.00
1745 - 1800	0	0	37	0	2	0	0	0	39	39.00
Hourly Total	**0**	**0**	**231**	**0**	**18**	**0**	**0**	**0**	249	249.00
Hourly Average	**0.00**	**0.00**	**57.75**	**0.00**	**4.50**	**0.00**	**0.00**	**0.00**	62.25	62.25
1800 - 1815	0	0	27	0	0	0	0	0	27	27.00
1815 - 1830	0	0	23	0	4	1	0	0	28	29.30
1830 - 1845	0	1	21	0	1	0	0	0	23	22.40
1845 - 1900	0	0	25	0	4	0	0	0	29	29.00
Hourly Total	**0**	**1**	**96**	**0**	**9**	**1**	**0**	**0**	107	107.70
Hourly Average	**0.00**	**0.25**	**24.00**	**0.00**	**2.25**	**0.25**	**0.00**	**0.00**	26.75	26.93

Session Total	**0**	**1**	**558**	**0**	**48**	**1**	**0**	**0**	608	608.70
Session Average	**0.00**	**0.08**	**46.50**	**0.00**	**4.00**	**0.08**	**0.00**	**0.00**	50.67	50.73

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement B-A: Right from A574 Birchwood Way (South) to Moss Gate								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	1	0	0	1	0	0	2	3.30
0715 - 0730	0	0	4	0	1	1	0	1	7	9.30
0730 - 0745	0	0	0	0	0	0	0	0	0	0.00
0745 - 0800	0	0	2	0	1	0	0	0	3	3.00
Hourly Total	**0**	**0**	**7**	**0**	**2**	**2**	**0**	**1**	12	15.60
Hourly Average	**0.00**	**0.00**	**1.75**	**0.00**	**0.50**	**0.50**	**0.00**	**0.25**	3.00	3.90
0800 - 0815	0	0	1	0	3	0	0	0	4	4.00
0815 - 0830	0	0	4	0	0	0	0	0	4	4.00
0830 - 0845	0	0	11	0	2	0	0	0	13	13.00
0845 - 0900	0	0	9	0	0	0	0	0	9	9.00
Hourly Total	**0**	**0**	**25**	**0**	**5**	**0**	**0**	**0**	30	30.00
Hourly Average	**0.00**	**0.00**	**6.25**	**0.00**	**1.25**	**0.00**	**0.00**	**0.00**	7.50	7.50
0900 - 0915	0	0	3	0	1	1	0	0	5	6.30
0915 - 0930	0	0	4	0	0	0	0	0	4	4.00
0930 - 0945	0	0	11	0	1	0	0	0	12	12.00
0945 - 1000	0	0	7	0	2	1	0	0	10	11.30
Hourly Total	**0**	**0**	**25**	**0**	**4**	**2**	**0**	**0**	31	33.60
Hourly Average	**0.00**	**0.00**	**6.25**	**0.00**	**1.00**	**0.50**	**0.00**	**0.00**	7.75	8.40

Session Total	**0**	**0**	**57**	**0**	**11**	**4**	**0**	**1**	73	79.20
Session Average	**0.00**	**0.00**	**4.75**	**0.00**	**0.92**	**0.33**	**0.00**	**0.08**	6.08	6.60

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

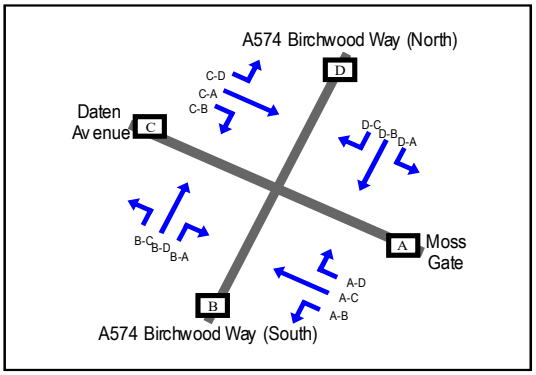
1600 - 1900 (Weekday PM Peak)

	Movement B-A: Right from A574 Birchwood Way (South) to Moss Gate								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	6	0	0	0	0	0	6	6.00
1615 - 1630	0	0	4	0	1	0	0	0	5	5.00
1630 - 1645	0	0	9	0	0	0	0	0	9	9.00
1645 - 1700	0	0	11	0	1	0	0	0	12	12.00
Hourly Total	**0**	**0**	**30**	**0**	**2**	**0**	**0**	**0**	32	32.00
Hourly Average	**0.00**	**0.00**	**7.50**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	8.00	8.00
1700 - 1715	0	0	4	0	1	0	0	0	5	5.00
1715 - 1730	0	0	10	0	0	0	0	0	10	10.00
1730 - 1745	0	0	8	0	0	0	0	0	8	8.00
1745 - 1800	0	0	11	0	0	0	0	0	11	11.00
Hourly Total	**0**	**0**	**33**	**0**	**1**	**0**	**0**	**0**	34	34.00
Hourly Average	**0.00**	**0.00**	**8.25**	**0.00**	**0.25**	**0.00**	**0.00**	**0.00**	8.50	8.50
1800 - 1815	0	0	10	0	1	0	0	0	11	11.00
1815 - 1830	0	0	12	0	0	0	0	0	12	12.00
1830 - 1845	0	0	24	0	3	0	0	0	27	27.00
1845 - 1900	0	1	13	0	1	0	0	0	15	14.40
Hourly Total	**0**	**1**	**59**	**0**	**5**	**0**	**0**	**0**	65	64.40
Hourly Average	**0.00**	**0.25**	**14.75**	**0.00**	**1.25**	**0.00**	**0.00**	**0.00**	16.25	16.10

Session Total	**0**	**1**	**122**	**0**	**8**	**0**	**0**	**0**	131	130.40
Session Average	**0.00**	**0.08**	**10.17**	**0.00**	**0.67**	**0.00**	**0.00**	**0.00**	10.92	10.87

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement B-C: Left from A574 Birchwood Way (South) to Daten Avenue								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	13	0	4	0	0	0	17	17.00
0715 - 0730	0	1	17	0	2	0	0	0	20	19.40
0730 - 0745	0	0	8	0	4	0	0	0	12	12.00
0745 - 0800	0	1	25	0	2	2	0	0	30	32.00
Hourly Total	**0**	**2**	**63**	**0**	**12**	**2**	**0**	**0**	79	80.40
Hourly Average	**0.00**	**0.50**	**15.75**	**0.00**	**3.00**	**0.50**	**0.00**	**0.00**	19.75	20.10
0800 - 0815	0	0	15	0	1	0	2	0	18	20.60
0815 - 0830	0	0	19	0	3	0	0	0	22	22.00
0830 - 0845	0	0	21	0	2	0	0	0	23	23.00
0845 - 0900	0	0	22	0	3	0	1	0	26	27.30
Hourly Total	**0**	**0**	**77**	**0**	**9**	**0**	**3**	**0**	89	92.90
Hourly Average	**0.00**	**0.00**	**19.25**	**0.00**	**2.25**	**0.00**	**0.75**	**0.00**	22.25	23.23
0900 - 0915	0	1	19	0	3	0	0	0	23	22.40
0915 - 0930	0	0	13	0	2	1	0	0	16	17.30
0930 - 0945	0	0	7	0	4	0	1	0	12	13.30
0945 - 1000	0	0	6	0	1	2	0	0	9	11.60
Hourly Total	**0**	**1**	**45**	**0**	**10**	**3**	**1**	**0**	60	64.60
Hourly Average	**0.00**	**0.25**	**11.25**	**0.00**	**2.50**	**0.75**	**0.25**	**0.00**	15.00	16.15

Session Total	**0**	**3**	**185**	**0**	**31**	**5**	**4**	**0**	228	237.90
Session Average	**0.00**	**0.25**	**15.42**	**0.00**	**2.58**	**0.42**	**0.33**	**0.00**	19.00	19.83

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

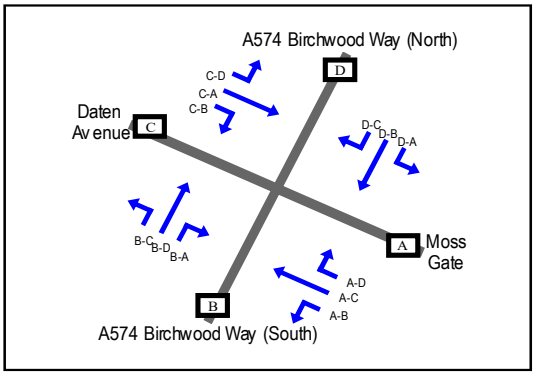
1600 - 1900 (Weekday PM Peak)

	Movement B-C: Left from A574 Birchwood Way (South) to Daten Avenue								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	0	0	0	1	0	0	1	2.30
1615 - 1630	0	0	2	0	2	0	0	0	4	4.00
1630 - 1645	0	0	2	0	0	0	0	0	2	2.00
1645 - 1700	0	0	1	0	0	0	0	0	1	1.00
Hourly Total	**0**	**0**	**5**	**0**	**2**	**1**	**0**	**0**	8	9.30
Hourly Average	**0.00**	**0.00**	**1.25**	**0.00**	**0.50**	**0.25**	**0.00**	**0.00**	2.00	2.33
1700 - 1715	0	0	0	0	0	0	0	0	0	0.00
1715 - 1730	0	0	4	0	1	0	1	0	6	7.30
1730 - 1745	0	0	1	0	0	0	0	0	1	1.00
1745 - 1800	0	0	2	0	2	0	0	0	4	4.00
Hourly Total	**0**	**0**	**7**	**0**	**3**	**0**	**1**	**0**	11	12.30
Hourly Average	**0.00**	**0.00**	**1.75**	**0.00**	**0.75**	**0.00**	**0.25**	**0.00**	2.75	3.08
1800 - 1815	0	0	2	0	0	1	0	0	3	4.30
1815 - 1830	0	0	3	0	2	1	0	0	6	7.30
1830 - 1845	0	0	2	0	3	0	0	0	5	5.00
1845 - 1900	0	0	2	0	1	0	0	0	3	3.00
Hourly Total	**0**	**0**	**9**	**0**	**6**	**2**	**0**	**0**	17	19.60
Hourly Average	**0.00**	**0.00**	**2.25**	**0.00**	**1.50**	**0.50**	**0.00**	**0.00**	4.25	4.90

Session Total	**0**	**0**	**21**	**0**	**11**	**3**	**1**	**0**	36	41.20
Session Average	**0.00**	**0.00**	**1.75**	**0.00**	**0.92**	**0.25**	**0.08**	**0.00**	3.00	3.43

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement B-D: Northbound from A574 Birchwood Way (South) to A574 Birchwood Way (North)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	1	167	0	37	1	1	0	207	209.00
0715 - 0730	0	2	187	0	35	3	3	0	230	236.60
0730 - 0745	0	0	161	0	34	2	5	0	202	211.10
0745 - 0800	0	1	154	0	28	1	3	0	187	191.60
Hourly Total	**0**	**4**	**669**	**0**	**134**	**7**	**12**	**0**	**826**	**848.30**
Hourly Average	**0.00**	**1.00**	**167.25**	**0.00**	**33.50**	**1.75**	**3.00**	**0.00**	**206.50**	**212.08**
0800 - 0815	0	0	98	0	9	2	4	0	113	120.80
0815 - 0830	0	0	90	0	11	1	3	0	105	110.20
0830 - 0845	0	0	62	0	7	10	3	0	82	98.90
0845 - 0900	0	3	63	0	15	2	2	0	85	88.40
Hourly Total	**0**	**3**	**313**	**0**	**42**	**15**	**12**	**0**	**385**	**418.30**
Hourly Average	**0.00**	**0.75**	**78.25**	**0.00**	**10.50**	**3.75**	**3.00**	**0.00**	**96.25**	**104.58**
0900 - 0915	0	0	63	0	13	1	2	0	79	82.90
0915 - 0930	0	0	64	0	18	4	5	0	91	102.70
0930 - 0945	0	0	52	0	13	1	0	1	67	69.30
0945 - 1000	0	0	33	0	15	1	2	0	51	54.90
Hourly Total	**0**	**0**	**212**	**0**	**59**	**7**	**9**	**1**	**288**	**309.80**
Hourly Average	**0.00**	**0.00**	**53.00**	**0.00**	**14.75**	**1.75**	**2.25**	**0.25**	**72.00**	**77.45**

Session Total	**0**	**7**	**1194**	**0**	**235**	**29**	**33**	**1**	**1499**	**1576.40**
Session Average	**0.00**	**0.58**	**99.50**	**0.00**	**19.58**	**2.42**	**2.75**	**0.08**	**124.92**	**131.37**

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

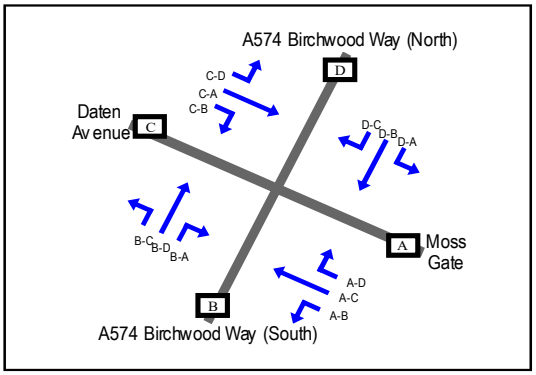
1600 - 1900 (Weekday PM Peak)

	Movement B-D: Northbound from A574 Birchwood Way (South) to A574 Birchwood Way (North)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	2	183	0	16	0	0	0	201	199.80
1615 - 1630	0	2	209	0	21	0	1	0	233	233.10
1630 - 1645	0	0	165	0	12	0	1	0	178	179.30
1645 - 1700	0	0	200	0	8	0	1	0	209	210.30
Hourly Total	**0**	**4**	**757**	**0**	**57**	**0**	**3**	**0**	**821**	**822.50**
Hourly Average	**0.00**	**1.00**	**189.25**	**0.00**	**14.25**	**0.00**	**0.75**	**0.00**	**205.25**	**205.63**
1700 - 1715	0	0	203	0	10	0	0	0	213	213.00
1715 - 1730	0	1	195	0	6	1	2	0	205	208.30
1730 - 1745	0	1	187	0	8	1	1	0	198	200.00
1745 - 1800	0	1	214	0	7	0	1	0	223	223.70
Hourly Total	**0**	**3**	**799**	**0**	**31**	**2**	**4**	**0**	**839**	**845.00**
Hourly Average	**0.00**	**0.75**	**199.75**	**0.00**	**7.75**	**0.50**	**1.00**	**0.00**	**209.75**	**211.25**
1800 - 1815	0	0	143	0	6	2	0	0	151	153.60
1815 - 1830	0	0	114	0	6	0	0	0	120	120.00
1830 - 1845	0	0	92	0	4	0	0	0	96	96.00
1845 - 1900	0	0	58	0	4	0	1	0	63	64.30
Hourly Total	**0**	**0**	**407**	**0**	**20**	**2**	**1**	**0**	**430**	**433.90**
Hourly Average	**0.00**	**0.00**	**101.75**	**0.00**	**5.00**	**0.50**	**0.25**	**0.00**	**107.50**	**108.48**

Session Total	**0**	**7**	**1963**	**0**	**108**	**4**	**8**	**0**	**2090**	**2101.40**
Session Average	**0.00**	**0.58**	**163.58**	**0.00**	**9.00**	**0.33**	**0.67**	**0.00**	**174.17**	**175.12**

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement C-A: Eastbound from Daten Avenue to Moss Gate								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	7	0	0	0	0	0	7	7.00
0715 - 0730	0	0	0	0	2	0	0	0	2	2.00
0730 - 0745	0	0	7	0	1	0	0	0	8	8.00
0745 - 0800	0	0	4	0	1	0	0	0	5	5.00
Hourly Total	**0**	**0**	**18**	**0**	**4**	**0**	**0**	**0**	22	22.00
Hourly Average	**0.00**	**0.00**	**4.50**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	5.50	5.50
0800 - 0815	0	0	9	0	2	0	0	0	11	11.00
0815 - 0830	0	0	9	0	1	0	0	0	10	10.00
0830 - 0845	0	0	11	0	2	0	0	0	13	13.00
0845 - 0900	0	0	20	0	5	0	0	0	25	25.00
Hourly Total	**0**	**0**	**49**	**0**	**10**	**0**	**0**	**0**	59	59.00
Hourly Average	**0.00**	**0.00**	**12.25**	**0.00**	**2.50**	**0.00**	**0.00**	**0.00**	14.75	14.75
0900 - 0915	0	0	13	0	2	0	0	0	15	15.00
0915 - 0930	0	0	15	0	3	1	0	0	19	20.30
0930 - 0945	0	0	12	0	4	0	0	0	16	16.00
0945 - 1000	0	0	7	0	5	0	0	0	12	12.00
Hourly Total	**0**	**0**	**47**	**0**	**14**	**1**	**0**	**0**	62	63.30
Hourly Average	**0.00**	**0.00**	**11.75**	**0.00**	**3.50**	**0.25**	**0.00**	**0.00**	15.50	15.83

Session Total	**0**	**0**	**114**	**0**	**28**	**1**	**0**	**0**	143	144.30
Session Average	**0.00**	**0.00**	**9.50**	**0.00**	**2.33**	**0.08**	**0.00**	**0.00**	11.92	12.03

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

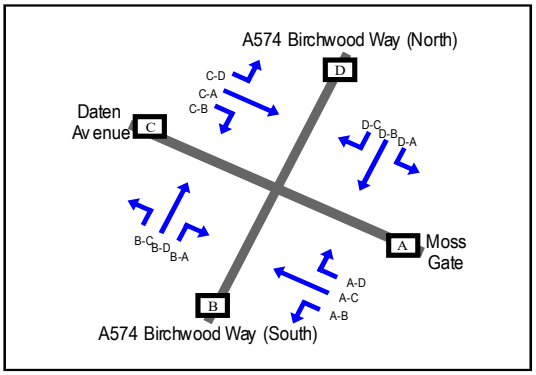
1600 - 1900 (Weekday PM Peak)

	Movement C-A: Eastbound from Daten Avenue to Moss Gate								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	8	0	1	0	0	0	9	9.00
1615 - 1630	0	0	8	0	2	0	0	0	10	10.00
1630 - 1645	0	0	5	0	2	0	0	0	7	7.00
1645 - 1700	0	0	5	0	1	0	0	0	6	6.00
Hourly Total	**0**	**0**	**26**	**0**	**6**	**0**	**0**	**0**	32	32.00
Hourly Average	**0.00**	**0.00**	**6.50**	**0.00**	**1.50**	**0.00**	**0.00**	**0.00**	8.00	8.00
1700 - 1715	0	0	16	0	3	0	0	0	19	19.00
1715 - 1730	0	0	6	0	0	0	0	0	6	6.00
1730 - 1745	0	0	8	0	0	0	0	0	8	8.00
1745 - 1800	0	0	7	0	0	0	0	0	7	7.00
Hourly Total	**0**	**0**	**37**	**0**	**3**	**0**	**0**	**0**	40	40.00
Hourly Average	**0.00**	**0.00**	**9.25**	**0.00**	**0.75**	**0.00**	**0.00**	**0.00**	10.00	10.00
1800 - 1815	0	0	12	0	0	0	0	0	12	12.00
1815 - 1830	0	0	23	0	2	0	0	0	25	25.00
1830 - 1845	0	0	12	0	1	0	0	0	13	13.00
1845 - 1900	0	0	15	0	2	0	0	0	17	17.00
Hourly Total	**0**	**0**	**62**	**0**	**5**	**0**	**0**	**0**	67	67.00
Hourly Average	**0.00**	**0.00**	**15.50**	**0.00**	**1.25**	**0.00**	**0.00**	**0.00**	16.75	16.75

Session Total	**0**	**0**	**125**	**0**	**14**	**0**	**0**	**0**	139	139.00
Session Average	**0.00**	**0.00**	**10.42**	**0.00**	**1.17**	**0.00**	**0.00**	**0.00**	11.58	11.58

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement C-B: Right from Daten Avenue to A574 Birchwood Way (South)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	2	0	1	1	0	0	4	5.30
0715 - 0730	0	0	2	0	2	0	0	0	4	4.00
0730 - 0745	0	0	3	0	0	0	1	0	4	5.30
0745 - 0800	0	0	2	0	2	0	0	0	4	4.00
Hourly Total	**0**	**0**	**9**	**0**	**5**	**1**	**1**	**0**	16	18.60
Hourly Average	**0.00**	**0.00**	**2.25**	**0.00**	**1.25**	**0.25**	**0.25**	**0.00**	4.00	4.65
0800 - 0815	0	0	0	0	2	0	0	0	2	2.00
0815 - 0830	0	0	4	0	2	0	0	0	6	6.00
0830 - 0845	0	0	2	0	1	0	0	0	3	3.00
0845 - 0900	0	0	3	0	1	0	0	0	4	4.00
Hourly Total	**0**	**0**	**9**	**0**	**6**	**0**	**0**	**0**	15	15.00
Hourly Average	**0.00**	**0.00**	**2.25**	**0.00**	**1.50**	**0.00**	**0.00**	**0.00**	3.75	3.75
0900 - 0915	0	0	2	0	4	0	0	0	6	6.00
0915 - 0930	0	0	2	0	3	0	0	0	5	5.00
0930 - 0945	0	0	0	0	2	0	0	0	2	2.00
0945 - 1000	0	0	2	0	2	0	0	0	4	4.00
Hourly Total	**0**	**0**	**6**	**0**	**11**	**0**	**0**	**0**	17	17.00
Hourly Average	**0.00**	**0.00**	**1.50**	**0.00**	**2.75**	**0.00**	**0.00**	**0.00**	4.25	4.25

Session Total	**0**	**0**	**24**	**0**	**22**	**1**	**1**	**0**	48	50.60
Session Average	**0.00**	**0.00**	**2.00**	**0.00**	**1.83**	**0.08**	**0.08**	**0.00**	4.00	4.22

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

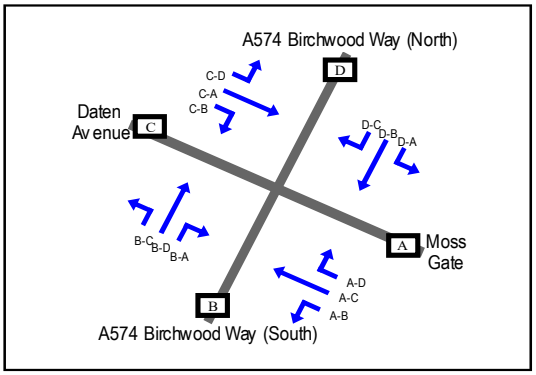
1600 - 1900 (Weekday PM Peak)

	Movement C-B: Right from Daten Avenue to A574 Birchwood Way (South)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	4	0	0	0	0	0	4	4.00
1615 - 1630	0	0	1	0	0	0	0	0	1	1.00
1630 - 1645	0	0	5	0	0	0	0	0	5	5.00
1645 - 1700	0	0	12	0	0	0	0	0	12	12.00
Hourly Total	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	22	22.00
Hourly Average	**0.00**	**0.00**	**5.50**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	5.50	5.50
1700 - 1715	0	0	4	0	0	0	0	0	4	4.00
1715 - 1730	0	0	4	0	0	0	0	0	4	4.00
1730 - 1745	0	0	5	0	2	0	0	0	7	7.00
1745 - 1800	0	0	2	0	0	0	0	0	2	2.00
Hourly Total	**0**	**0**	**15**	**0**	**2**	**0**	**0**	**0**	17	17.00
Hourly Average	**0.00**	**0.00**	**3.75**	**0.00**	**0.50**	**0.00**	**0.00**	**0.00**	4.25	4.25
1800 - 1815	0	0	26	0	1	0	0	0	27	27.00
1815 - 1830	0	0	47	0	2	0	0	0	49	49.00
1830 - 1845	0	0	38	0	3	0	0	0	41	41.00
1845 - 1900	0	0	7	0	2	0	0	0	9	9.00
Hourly Total	**0**	**0**	**118**	**0**	**8**	**0**	**0**	**0**	126	126.00
Hourly Average	**0.00**	**0.00**	**29.50**	**0.00**	**2.00**	**0.00**	**0.00**	**0.00**	31.50	31.50

Session Total	**0**	**0**	**155**	**0**	**10**	**0**	**0**	**0**	165	165.00
Session Average	**0.00**	**0.00**	**12.92**	**0.00**	**0.83**	**0.00**	**0.00**	**0.00**	13.75	13.75

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement C-D: Left from Daten Avenue to A574 Birchwood Way (North)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	63	0	12	3	4	0	82	91.10
0715 - 0730	0	0	102	0	20	3	6	0	131	142.70
0730 - 0745	0	1	115	0	23	6	6	0	151	166.00
0745 - 0800	0	0	117	0	27	6	5	0	155	169.30
Hourly Total	**0**	**1**	**397**	**0**	**82**	**18**	**21**	**0**	519	569.10
Hourly Average	**0.00**	**0.25**	**99.25**	**0.00**	**20.50**	**4.50**	**5.25**	**0.00**	129.75	142.28
0800 - 0815	0	0	122	0	31	3	7	1	164	178.00
0815 - 0830	0	1	81	0	26	5	5	0	118	130.40
0830 - 0845	0	1	83	0	33	4	5	0	126	137.10
0845 - 0900	0	0	73	0	28	7	6	0	114	130.90
Hourly Total	**0**	**2**	**359**	**0**	**118**	**19**	**23**	**1**	522	576.40
Hourly Average	**0.00**	**0.50**	**89.75**	**0.00**	**29.50**	**4.75**	**5.75**	**0.25**	130.50	144.10
0900 - 0915	0	0	42	0	24	6	1	0	73	82.10
0915 - 0930	0	0	48	0	32	5	7	0	92	107.60
0930 - 0945	0	0	48	0	22	5	7	0	82	97.60
0945 - 1000	0	0	39	0	26	4	6	0	75	88.00
Hourly Total	**0**	**0**	**177**	**0**	**104**	**20**	**21**	**0**	322	375.30
Hourly Average	**0.00**	**0.00**	**44.25**	**0.00**	**26.00**	**5.00**	**5.25**	**0.00**	80.50	93.83

Session Total	**0**	**3**	**933**	**0**	**304**	**57**	**65**	**1**	1363	1520.80
Session Average	**0.00**	**0.25**	**77.75**	**0.00**	**25.33**	**4.75**	**5.42**	**0.08**	113.58	126.73

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

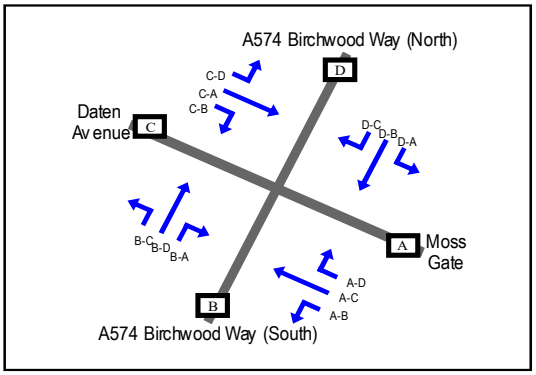
1600 - 1900 (Weekday PM Peak)

	Movement C-D: Left from Daten Avenue to A574 Birchwood Way (North)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	192	0	13	1	1	0	207	209.60
1615 - 1630	0	0	140	0	14	4	3	0	161	170.10
1630 - 1645	0	0	175	0	14	1	3	0	193	198.20
1645 - 1700	0	0	164	0	12	2	5	0	183	192.10
Hourly Total	**0**	**0**	**671**	**0**	**53**	**8**	**12**	**0**	744	770.00
Hourly Average	**0.00**	**0.00**	**167.75**	**0.00**	**13.25**	**2.00**	**3.00**	**0.00**	186.00	192.50
1700 - 1715	0	0	185	0	10	1	4	0	200	206.50
1715 - 1730	0	0	178	0	11	0	2	0	191	193.60
1730 - 1745	0	0	182	0	6	1	5	0	194	201.80
1745 - 1800	0	0	172	0	8	2	7	0	189	200.70
Hourly Total	**0**	**0**	**717**	**0**	**35**	**4**	**18**	**0**	774	802.60
Hourly Average	**0.00**	**0.00**	**179.25**	**0.00**	**8.75**	**1.00**	**4.50**	**0.00**	193.50	200.65
1800 - 1815	0	0	176	0	5	3	3	0	187	194.80
1815 - 1830	0	0	121	0	4	0	2	0	127	129.60
1830 - 1845	0	0	59	0	1	0	4	0	64	69.20
1845 - 1900	0	0	58	0	4	0	6	1	69	77.80
Hourly Total	**0**	**0**	**414**	**0**	**14**	**3**	**15**	**1**	447	471.40
Hourly Average	**0.00**	**0.00**	**103.50**	**0.00**	**3.50**	**0.75**	**3.75**	**0.25**	111.75	117.85

Session Total	**0**	**0**	**1802**	**0**	**102**	**15**	**45**	**1**	1965	2044.00
Session Average	**0.00**	**0.00**	**150.17**	**0.00**	**8.50**	**1.25**	**3.75**	**0.08**	163.75	170.33

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement D-A: Left from A574 Birchwood Way (North) to Moss Gate								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	9	0	2	0	0	0	11	11.00
0715 - 0730	0	0	7	0	0	0	0	0	7	7.00
0730 - 0745	0	0	7	0	1	0	0	0	8	8.00
0745 - 0800	0	0	16	0	1	1	0	0	18	19.30
Hourly Total	**0**	**0**	**39**	**0**	**4**	**1**	**0**	**0**	44	45.30
Hourly Average	**0.00**	**0.00**	**9.75**	**0.00**	**1.00**	**0.25**	**0.00**	**0.00**	11.00	11.33
0800 - 0815	0	0	21	0	3	0	0	0	24	24.00
0815 - 0830	0	0	16	0	0	0	0	0	16	16.00
0830 - 0845	0	0	14	0	0	0	0	0	14	14.00
0845 - 0900	0	0	18	0	1	0	0	0	19	19.00
Hourly Total	**0**	**0**	**69**	**0**	**4**	**0**	**0**	**0**	73	73.00
Hourly Average	**0.00**	**0.00**	**17.25**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	18.25	18.25
0900 - 0915	0	0	18	0	1	1	0	0	20	21.30
0915 - 0930	0	0	23	0	4	0	0	0	27	27.00
0930 - 0945	0	0	13	0	3	1	0	0	17	18.30
0945 - 1000	0	0	9	0	2	0	1	0	12	13.30
Hourly Total	**0**	**0**	**63**	**0**	**10**	**2**	**1**	**0**	76	79.90
Hourly Average	**0.00**	**0.00**	**15.75**	**0.00**	**2.50**	**0.50**	**0.25**	**0.00**	19.00	19.98

Session Total	**0**	**0**	**171**	**0**	**18**	**3**	**1**	**0**	193	198.20
Session Average	**0.00**	**0.00**	**14.25**	**0.00**	**1.50**	**0.25**	**0.08**	**0.00**	16.08	16.52

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

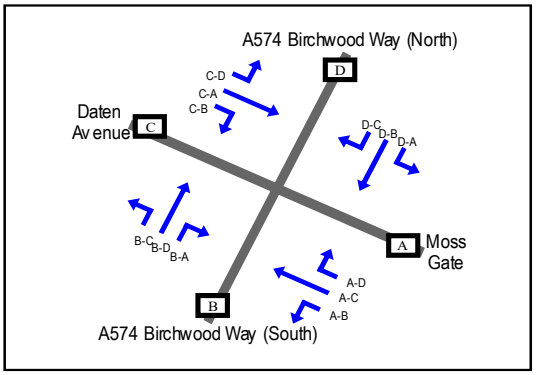
1600 - 1900 (Weekday PM Peak)

	Movement D-A: Left from A574 Birchwood Way (North) to Moss Gate								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	1	28	0	5	1	0	0	35	35.70
1615 - 1630	0	1	24	1	4	0	0	0	30	29.40
1630 - 1645	0	0	28	0	7	0	0	0	35	35.00
1645 - 1700	0	0	32	0	6	0	0	0	38	38.00
Hourly Total	**0**	**2**	**112**	**1**	**22**	**1**	**0**	**0**	138	138.10
Hourly Average	**0.00**	**0.50**	**28.00**	**0.25**	**5.50**	**0.25**	**0.00**	**0.00**	34.50	34.53
1700 - 1715	0	0	33	0	4	0	0	0	37	37.00
1715 - 1730	0	0	42	0	6	0	0	0	48	48.00
1730 - 1745	0	0	38	0	2	0	0	0	40	40.00
1745 - 1800	0	0	31	0	2	0	0	0	33	33.00
Hourly Total	**0**	**0**	**144**	**0**	**14**	**0**	**0**	**0**	158	158.00
Hourly Average	**0.00**	**0.00**	**36.00**	**0.00**	**3.50**	**0.00**	**0.00**	**0.00**	39.50	39.50
1800 - 1815	0	0	34	0	1	0	0	0	35	35.00
1815 - 1830	0	0	39	0	1	0	0	0	40	40.00
1830 - 1845	0	0	39	0	0	0	0	0	39	39.00
1845 - 1900	0	0	28	0	2	0	0	0	30	30.00
Hourly Total	**0**	**0**	**140**	**0**	**4**	**0**	**0**	**0**	144	144.00
Hourly Average	**0.00**	**0.00**	**35.00**	**0.00**	**1.00**	**0.00**	**0.00**	**0.00**	36.00	36.00

Session Total	**0**	**2**	**396**	**1**	**40**	**1**	**0**	**0**	440	440.10
Session Average	**0.00**	**0.17**	**33.00**	**0.08**	**3.33**	**0.08**	**0.00**	**0.00**	36.67	36.68

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement D-B: Southbound from A574 Birchwood Way (North) to A574 Birchwood Way (South)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	0	80	0	11	2	1	0	94	97.90
0715 - 0730	0	1	86	0	7	0	3	0	97	100.30
0730 - 0745	0	0	63	0	10	1	5	0	79	86.80
0745 - 0800	0	0	135	0	22	4	2	0	163	170.80
Hourly Total	**0**	**1**	**364**	**0**	**50**	**7**	**11**	**0**	433	455.80
Hourly Average	**0.00**	**0.25**	**91.00**	**0.00**	**12.50**	**1.75**	**2.75**	**0.00**	108.25	113.95
0800 - 0815	0	0	129	0	16	3	5	0	153	163.40
0815 - 0830	0	1	163	0	19	0	1	0	184	184.70
0830 - 0845	0	0	138	0	15	1	4	0	158	164.50
0845 - 0900	0	1	139	0	5	3	2	0	150	155.90
Hourly Total	**0**	**2**	**569**	**0**	**55**	**7**	**12**	**0**	645	668.50
Hourly Average	**0.00**	**0.50**	**142.25**	**0.00**	**13.75**	**1.75**	**3.00**	**0.00**	161.25	167.13
0900 - 0915	0	1	125	0	13	5	1	0	145	152.20
0915 - 0930	0	1	114	0	14	2	2	0	133	137.60
0930 - 0945	0	0	102	0	11	2	2	0	117	122.20
0945 - 1000	0	1	114	0	9	0	2	0	126	128.00
Hourly Total	**0**	**3**	**455**	**0**	**47**	**9**	**7**	**0**	521	540.00
Hourly Average	**0.00**	**0.75**	**113.75**	**0.00**	**11.75**	**2.25**	**1.75**	**0.00**	130.25	135.00
Session Total	**0**	**6**	**1388**	**0**	**152**	**23**	**30**	**0**	1599	1664.30
Session Average	**0.00**	**0.50**	**115.67**	**0.00**	**12.67**	**1.92**	**2.50**	**0.00**	133.25	138.69

Date
Tuesday 13 November 2018

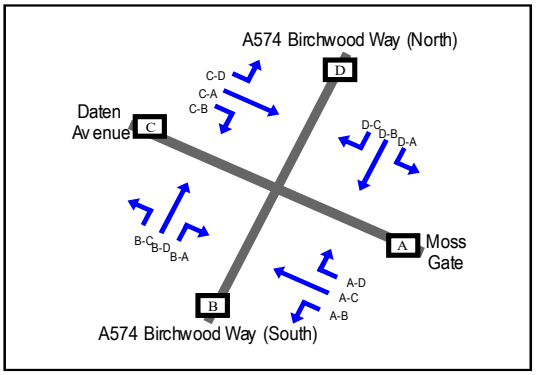
Weather
Cloudy
Temp: 12°C

1600 - 1900 (Weekday PM Peak)

	Movement D-B: Southbound from A574 Birchwood Way (North) to A574 Birchwood Way (South)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	43	0	10	0	0	0	53	53.00
1615 - 1630	0	0	37	0	13	0	2	0	52	54.60
1630 - 1645	0	0	52	0	9	0	1	0	62	63.30
1645 - 1700	0	0	43	0	6	0	0	0	49	49.00
Hourly Total	**0**	**0**	**175**	**0**	**38**	**0**	**3**	**0**	216	219.90
Hourly Average	**0.00**	**0.00**	**43.75**	**0.00**	**9.50**	**0.00**	**0.75**	**0.00**	54.00	54.98
1700 - 1715	0	1	55	0	10	0	0	0	66	65.40
1715 - 1730	0	0	56	0	7	0	0	0	63	63.00
1730 - 1745	0	0	45	0	8	0	0	0	53	53.00
1745 - 1800	0	0	65	0	8	3	0	0	76	79.90
Hourly Total	**0**	**1**	**221**	**0**	**33**	**3**	**0**	**0**	258	261.30
Hourly Average	**0.00**	**0.25**	**55.25**	**0.00**	**8.25**	**0.75**	**0.00**	**0.00**	64.50	65.33
1800 - 1815	0	0	66	0	7	1	0	0	74	75.30
1815 - 1830	0	2	54	0	6	1	3	0	66	70.00
1830 - 1845	0	1	39	0	6	0	0	0	46	45.40
1845 - 1900	0	0	40	0	6	1	0	0	47	48.30
Hourly Total	**0**	**3**	**199**	**0**	**25**	**3**	**3**	**0**	233	239.00
Hourly Average	**0.00**	**0.75**	**49.75**	**0.00**	**6.25**	**0.75**	**0.75**	**0.00**	58.25	59.75
Session Total	**0**	**4**	**595**	**0**	**96**	**6**	**6**	**0**	707	720.20
Session Average	**0.00**	**0.33**	**49.58**	**0.00**	**8.00**	**0.50**	**0.50**	**0.00**	58.92	60.02

Warrington
Classified Junction Count

Site 2 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Daten Avenue



Lat/Long
lat 53.428586° lon -2.513303°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)

	Movement D-C: Right from A574 Birchwood Way (North) to Daten Avenue								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	1	91	0	10	5	7	0	114	129.00
0715 - 0730	0	0	98	0	12	2	4	0	116	123.80
0730 - 0745	0	0	94	0	11	1	4	0	110	116.50
0745 - 0800	0	1	121	0	22	2	5	0	151	159.50
Hourly Total	**0**	**2**	**404**	**0**	**55**	**10**	**20**	**0**	491	528.80
Hourly Average	**0.00**	**0.50**	**101.00**	**0.00**	**13.75**	**2.50**	**5.00**	**0.00**	122.75	132.20
0800 - 0815	0	0	111	0	13	2	3	0	129	135.50
0815 - 0830	0	1	160	0	12	3	5	0	181	190.80
0830 - 0845	0	1	144	0	8	4	6	0	163	175.40
0845 - 0900	0	1	137	0	6	3	4	0	151	159.50
Hourly Total	**0**	**3**	**552**	**0**	**39**	**12**	**18**	**0**	624	661.20
Hourly Average	**0.00**	**0.75**	**138.00**	**0.00**	**9.75**	**3.00**	**4.50**	**0.00**	156.00	165.30
0900 - 0915	0	0	166	0	18	2	6	0	192	202.40
0915 - 0930	0	0	119	0	10	4	8	0	141	156.60
0930 - 0945	0	0	105	0	10	2	7	0	124	135.70
0945 - 1000	0	0	89	0	19	3	11	0	122	140.20
Hourly Total	**0**	**0**	**479**	**0**	**57**	**11**	**32**	**0**	579	634.90
Hourly Average	**0.00**	**0.00**	**119.75**	**0.00**	**14.25**	**2.75**	**8.00**	**0.00**	144.75	158.73

Session Total	**0**	**5**	**1435**	**0**	**151**	**33**	**70**	**0**	1694	1824.90
Session Average	**0.00**	**0.42**	**119.58**	**0.00**	**12.58**	**2.75**	**5.83**	**0.00**	141.17	152.08

Date
Tuesday 13 November 2018

Weather
Cloudy
Temp: 12°C

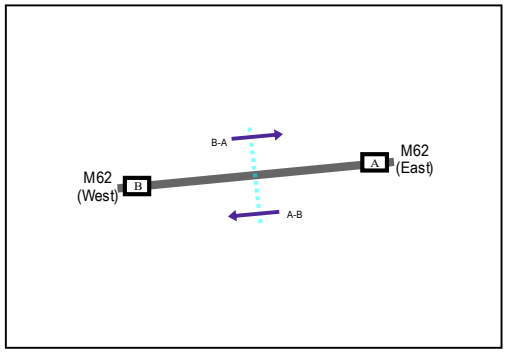
1600 - 1900 (Weekday PM Peak)

	Movement D-C: Right from A574 Birchwood Way (North) to Daten Avenue								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
1600 - 1615	0	0	32	0	14	1	5	0	52	59.80
1615 - 1630	0	0	30	0	13	3	5	0	51	61.40
1630 - 1645	0	1	36	0	15	0	8	0	60	69.80
1645 - 1700	0	0	36	0	16	2	5	0	59	68.10
Hourly Total	**0**	**1**	**134**	**0**	**58**	**6**	**23**	**0**	222	259.10
Hourly Average	**0.00**	**0.25**	**33.50**	**0.00**	**14.50**	**1.50**	**5.75**	**0.00**	55.50	64.78
1700 - 1715	0	1	46	0	9	0	5	0	61	66.90
1715 - 1730	0	0	35	0	14	3	3	0	55	62.80
1730 - 1745	0	0	49	0	4	0	6	0	59	66.80
1745 - 1800	0	0	39	0	6	1	4	0	50	56.50
Hourly Total	**0**	**1**	**169**	**0**	**33**	**4**	**18**	**0**	225	253.00
Hourly Average	**0.00**	**0.25**	**42.25**	**0.00**	**8.25**	**1.00**	**4.50**	**0.00**	56.25	63.25
1800 - 1815	0	0	32	0	6	0	4	0	42	47.20
1815 - 1830	0	0	37	0	3	1	3	0	44	49.20
1830 - 1845	0	0	32	0	3	1	4	0	40	46.50
1845 - 1900	0	0	26	0	5	1	4	0	36	42.50
Hourly Total	**0**	**0**	**127**	**0**	**17**	**3**	**15**	**0**	162	185.40
Hourly Average	**0.00**	**0.00**	**31.75**	**0.00**	**4.25**	**0.75**	**3.75**	**0.00**	40.50	46.35

Session Total	**0**	**2**	**430**	**0**	**108**	**13**	**56**	**0**	609	697.50
Session Average	**0.00**	**0.17**	**35.83**	**0.00**	**9.00**	**1.08**	**4.67**	**0.00**	50.75	58.13

Warrington
Classified Junction Count

Site 5 of 5
M62 (East)
M62 (West)



Lat/Long
lat 53.435001° lon -2.500063°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

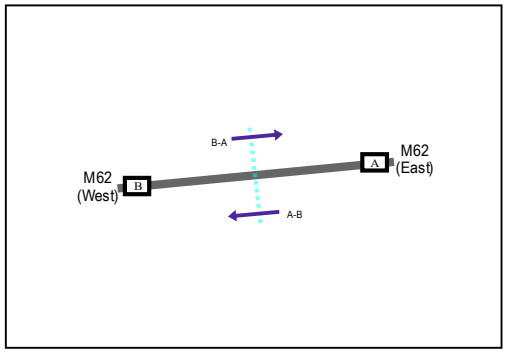
0700 - 1900 (Weekday 12h Session)

	Movement A-B: Westbound from M62 (East) to M62 (West)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	2	698	0	103	65	63	0	931	1096.20
0715 - 0730	0	1	689	0	144	70	55	1	960	1122.90
0730 - 0745	0	1	627	0	165	62	55	0	910	1061.50
0745 - 0800	0	3	574	0	162	49	43	1	832	950.80
Hourly Total	0	7	2640	0	504	246	216	2	3633	4231.40
Hourly Average	0.00	1.75	660.00	0.00	126.00	61.50	54.00	0.50	908.25	1057.85
0800 - 0815	0	1	574	1	143	54	58	1	832	978.00
0815 - 0830	0	1	566	0	166	64	39	1	837	971.30
0830 - 0845	0	2	550	0	127	59	43	1	782	914.40
0845 - 0900	0	0	490	0	144	60	52	2	748	895.60
Hourly Total	0	4	2180	1	580	237	192	5	3199	3759.30
Hourly Average	0.00	1.00	545.00	0.25	145.00	59.25	48.00	1.25	799.75	939.83
0900 - 0915	0	1	476	0	169	56	64	2	768	925.40
0915 - 0930	0	1	476	0	153	53	67	0	750	905.40
0930 - 0945	0	2	480	0	130	51	77	2	742	909.20
0945 - 1000	0	0	393	0	123	50	74	4	644	809.20
Hourly Total	0	4	1825	0	575	210	282	8	2904	3549.20
Hourly Average	0.00	1.00	456.25	0.00	143.75	52.50	70.50	2.00	726.00	887.30
1000 - 1015	0	3	447	1	132	44	72	1	700	850.00
1015 - 1030	0	0	433	0	140	60	82	0	715	899.60
1030 - 1045	0	1	519	0	135	73	73	1	802	992.20
1045 - 1100	0	1	482	0	135	60	81	3	762	947.70
Hourly Total	0	5	1881	1	542	237	308	5	2979	3689.50
Hourly Average	0.00	1.25	470.25	0.25	135.50	59.25	77.00	1.25	744.75	922.38
1100 - 1115	0	1	400	0	143	51	75	2	672	837.20
1115 - 1130	0	0	406	0	137	68	68	1	680	857.80
1130 - 1145	0	0	407	0	148	83	54	0	692	870.10
1145 - 1200	0	2	408	0	165	63	82	1	721	909.30
Hourly Total	0	3	1621	0	593	265	279	4	2765	3474.40
Hourly Average	0.00	0.75	405.25	0.00	148.25	66.25	69.75	1.00	691.25	868.60
1200 - 1215	0	0	433	0	153	69	95	2	752	967.20
1215 - 1230	0	0	453	0	149	37	96	1	736	909.90
1230 - 1245	0	0	468	0	168	64	76	1	777	960.00
1245 - 1300	0	1	448	1	146	76	73	2	747	942.10
Hourly Total	0	1	1802	1	616	246	340	6	3012	3779.20
Hourly Average	0.00	0.25	450.50	0.25	154.00	61.50	85.00	1.50	753.00	944.80
1300 - 1315	0	1	463	0	150	60	90	0	764	958.40
1315 - 1330	0	0	491	0	166	53	94	0	804	995.10
1330 - 1345	0	0	511	0	149	23	104	0	787	952.10
1345 - 1400	0	1	517	1	175	47	103	0	844	1038.40
Hourly Total	0	2	1982	1	640	183	391	0	3199	3944.00
Hourly Average	0.00	0.50	495.50	0.25	160.00	45.75	97.75	0.00	799.75	986.00
1400 - 1415	0	0	505	0	168	27	107	0	807	981.20
1415 - 1430	0	0	587	1	169	21	122	0	900	1085.90
1430 - 1445	0	1	565	0	168	19	124	0	877	1062.30
1445 - 1500	0	0	561	0	188	24	110	0	883	1057.20
Hourly Total	0	1	2218	1	693	91	463	0	3467	4186.60
Hourly Average	0.00	0.25	554.50	0.25	173.25	22.75	115.75	0.00	866.75	1046.65
1500 - 1515	0	0	565	1	217	30	93	0	906	1065.90
1515 - 1530	0	1	706	1	220	20	93	0	1041	1187.30
1530 - 1545	0	2	714	0	204	63	48	0	1031	1174.10
1545 - 1600	0	1	779	0	192	58	51	1	1082	1224.10
Hourly Total	0	4	2764	2	833	171	285	1	4060	4651.40
Hourly Average	0.00	1.00	691.00	0.50	208.25	42.75	71.25	0.25	1015.00	1162.85
1600 - 1615	0	3	804	1	208	19	67	0	1102	1212.00
1615 - 1630	0	8	763	0	163	12	68	0	1014	1113.20
1630 - 1645	0	1	830	0	149	18	37	0	1035	1105.90
1645 - 1700	0	2	870	0	119	26	45	0	1062	1153.10
Hourly Total	0	14	3267	1	639	75	217	0	4213	4584.20
Hourly Average	0.00	3.50	816.75	0.25	159.75	18.75	54.25	0.00	1053.25	1146.05
1700 - 1715	0	8	829	0	94	15	45	0	991	1064.20
1715 - 1730	0	1	891	0	109	14	24	0	1039	1087.80
1730 - 1745	0	7	691	0	55	12	22	0	787	827.00
1745 - 1800	0	2	629	0	35	17	14	0	697	736.10
Hourly Total	0	18	3040	0	293	58	105	0	3514	3715.10
Hourly Average	0.00	4.50	760.00	0.00	73.25	14.50	26.25	0.00	878.50	928.78
1800 - 1815	0	9	631	0	50	11	24	0	725	765.10
1815 - 1830	0	3	793	0	68	31	48	0	943	1043.90
1830 - 1845	0	3	820	0	65	28	43	0	959	1049.50
1845 - 1900	0	2	768	0	61	35	65	0	931	1059.80
Hourly Total	0	17	3012	0	244	105	180	0	3558	3918.30
Hourly Average	0.00	4.25	753.00	0.00	61.00	26.25	45.00	0.00	889.50	979.58

Session Total	0	80	28180	8	6822	2124	3258	31	40503	47482.60
Session Average	0.00	1.67	587.08	0.17	142.13	44.25	67.88	0.65	843.81	989.22

Warrington
Classified Junction Count

Site 5 of 5
M62 (East)
M62 (West)



Lat/Long
lat 53.435001° lon -2.500063°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

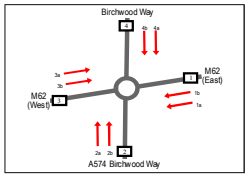
0700 - 1900 (Weekday 12h Session)

	Movement A-B: Eastbound from M62 (West) to M62 (East)								Original Data	
TIME	P/CYCLE	M/CYCLE	CAR	TAXI	LGV	OGV1	OGV2	BUS/COACH	TOTAL	PCU TOTAL
0700 - 0715	0	2	710	0	98	48	28	1	887	985.60
0715 - 0730	0	0	720	0	121	85	29	0	955	1103.20
0730 - 0745	0	5	657	0	136	71	12	1	882	987.90
0745 - 0800	0	4	658	1	133	82	18	0	896	1023.60
Hourly Total	0	11	2791	1	466	286	87	2	3620	4100.30
Hourly Average	0.00	2.75	697.75	0.25	116.50	71.50	21.75	0.50	905.00	1025.08
0800 - 0815	0	1	637	0	154	79	24	0	895	1028.30
0815 - 0830	0	4	565	1	127	71	33	1	802	935.80
0830 - 0845	0	2	522	1	133	77	40	0	775	925.90
0845 - 0900	0	3	566	0	127	62	63	0	821	981.70
Hourly Total	0	10	2290	2	541	289	160	1	3293	3871.70
Hourly Average	0.00	2.50	572.50	0.50	135.25	72.25	40.00	0.25	823.25	967.93
0900 - 0915	0	2	550	0	122	82	92	0	848	1073.00
0915 - 0930	0	2	668	1	124	45	88	0	928	1099.70
0930 - 0945	0	2	698	0	137	39	93	3	972	1145.40
0945 - 1000	0	0	621	0	110	52	100	0	883	1080.60
Hourly Total	0	6	2537	1	493	218	373	3	3631	4398.70
Hourly Average	0.00	1.50	634.25	0.25	123.25	54.50	93.25	0.75	907.75	1099.68
1000 - 1015	0	1	585	0	136	66	76	2	866	1052.00
1015 - 1030	0	0	504	1	136	62	94	3	800	1005.80
1030 - 1045	0	0	480	0	131	56	89	4	760	952.50
1045 - 1100	0	2	424	0	135	49	95	1	706	893.00
Hourly Total	0	3	1993	1	538	233	354	10	3132	3903.30
Hourly Average	0.00	0.75	498.25	0.25	134.50	58.25	88.50	2.50	783.00	975.83
1100 - 1115	0	1	361	0	99	38	77	0	576	724.90
1115 - 1130	0	1	369	0	140	45	97	1	653	838.00
1130 - 1145	0	0	436	1	151	38	147	0	773	1013.50
1145 - 1200	0	3	425	1	124	34	105	2	694	874.90
Hourly Total	0	5	1591	2	514	155	426	2	2696	3451.30
Hourly Average	0.00	1.25	397.75	0.50	128.50	38.75	106.50	0.50	674.00	862.83
1200 - 1215	0	0	428	0	123	74	115	1	741	987.70
1215 - 1230	0	0	405	0	140	86	99	0	730	970.50
1230 - 1245	0	2	407	0	111	70	94	0	684	896.00
1245 - 1300	0	0	462	0	160	126	110	0	858	1164.80
Hourly Total	0	2	1702	0	534	90	0	0	3013	4019.00
Hourly Average	0.00	0.50	425.50	0.00	133.50	22.50	0.00	0.00	753.25	1004.75
1300 - 1315	0	0	415	1	154	81	86	0	737	954.10
1315 - 1330	0	0	461	1	137	77	93	0	769	990.00
1330 - 1345	0	1	422	0	127	82	102	0	734	972.60
1345 - 1400	0	0	414	0	147	101	84	0	746	986.50
Hourly Total	0	1	1712	2	565	0	0	0	2986	3903.20
Hourly Average	0.00	0.25	428.00	0.50	141.25	0.00	0.00	0.00	746.50	975.80
1400 - 1415	0	0	426	1	158	70	90	1	746	955.00
1415 - 1430	0	3	430	0	162	41	90	2	728	898.50
1430 - 1445	0	0	440	0	142	47	42	1	672	788.70
1445 - 1500	0	0	471	0	189	38	80	4	782	939.40
Hourly Total	0	3	1767	1	651	196	302	8	2928	3581.60
Hourly Average	0.00	0.75	441.75	0.25	162.75	49.00	75.50	2.00	732.00	895.40
1500 - 1515	0	1	517	0	216	42	134	0	910	1138.20
1515 - 1530	0	0	527	0	209	55	92	1	884	1076.10
1530 - 1545	0	0	556	0	205	52	83	2	898	1075.50
1545 - 1600	0	0	560	0	186	36	96	1	879	1051.60
Hourly Total	0	1	2160	0	816	185	405	4	3571	4341.40
Hourly Average	0.00	0.25	540.00	0.00	204.00	46.25	101.25	1.00	892.75	1085.35
1600 - 1615	0	0	589	1	236	28	58	1	913	1025.80
1615 - 1630	0	0	663	0	195	47	36	0	941	1048.90
1630 - 1645	0	0	735	0	127	32	10	0	904	958.60
1645 - 1700	0	1	759	0	109	36	23	0	928	1004.10
Hourly Total	0	1	2746	1	667	143	127	1	3686	4037.40
Hourly Average	0.00	0.25	686.50	0.25	166.75	35.75	31.75	0.25	921.50	1009.35
1700 - 1715	0	1	623	0	66	32	24	0	746	818.20
1715 - 1730	0	1	701	0	68	16	47	0	833	914.30
1730 - 1745	0	0	695	0	74	19	20	1	809	860.70
1745 - 1800	0	2	687	0	65	23	24	1	802	862.90
Hourly Total	0	4	2706	0	273	90	115	2	3190	3456.10
Hourly Average	0.00	1.00	676.50	0.00	68.25	22.50	28.75	0.50	797.50	864.03
1800 - 1815	0	0	729	0	37	15	37	0	818	885.60
1815 - 1830	0	0	739	0	55	22	40	0	856	936.60
1830 - 1845	0	1	641	0	54	22	42	1	761	844.60
1845 - 1900	0	0	581	0	39	22	27	2	671	736.70
Hourly Total	0	1	2690	0	185	81	146	3	3106	3403.50
Hourly Average	0.00	0.25	672.50	0.00	46.25	20.25	36.50	0.75	776.50	850.88

Session Total	0	48	26639	11	6265	2573	3278	38	38852	46467.50
Session Average	0.00	1.00	554.98	0.23	130.52	53.60	68.29	0.79	809.42	968.07

Warrington
Queue Length Survey

Site 1 of 5
Birchwood Way
M62 (East)
A574 Birchwood Way
M62 (West)



Lat/Long
lat 53.434995° lon -2.500150°

Date
Tuesday 13 November 2018

Weather
Sunny Intervals
Temp: 13°C

0700 - 1900 (Weekday 12HR Session)

TIME	1a		1b		2a		2b		3a		3b		4a		4b	
	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies
0700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0701	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
0702	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0703	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0704	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0705	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0706	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0707	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
0708	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0709	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0710	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0711	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0712	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
0713	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0714	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0715	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0716	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0717	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0718	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0719	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0720	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0721	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0722	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0723	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0724	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0725	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0726	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
0727	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0728	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
0729	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
0730	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
0731	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0732	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0734	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
0735	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0736	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
0737	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
0738	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0739	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
0740	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
0741	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
0742	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0743	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
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0746	0	0	0	0	0	0	0	0	0	0	6	2	0	0	0	0
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0748	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0749	0	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0
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0751	1	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0
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0753	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0800	0	0	0	0	0	0	0	0	0	0	10	2	0	0	0	0
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0802	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0804	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0
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0806	1	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0
0807	17	1	0	0	0	0	0	0	0	0	7	0	0	0	0	0
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0810	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	0
0811	4	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0
0812	14	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0
0813	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0814	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
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0817	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
0818	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
0819	1	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
0820	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
0821	17	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0
0822	1	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0
0823	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0
0824	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0825	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0826	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0827	15	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
0828	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
0829	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0830	14	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
0831	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0836	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0837	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0838	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0839	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0840	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0845	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
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0847	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0900	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
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0905	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0910	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0911	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0912	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0913	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
0914	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0915	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
0916	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0917	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0919	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0921	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0930	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0931	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
0932	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0937	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0
0938	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0939	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0940	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0941	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0942	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0943	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0944	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0945	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0951	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0952	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0953	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1001	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1801	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1802	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1803	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1804	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1805	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1806	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
1807	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1808	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1809	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1810	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1811	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1812	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1813	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
1814	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
1815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1816	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1817	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1818	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1819	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1820	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1821	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1822	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1823	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1824	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1825	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1826	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1827	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1828	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1829	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1830	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1831	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1832	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1833	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1834	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1835	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1836	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1837	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1838	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1839	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1840	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1841	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1842	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1843	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1844	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1845	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1846	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1847	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1848	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1849	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1851	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1852	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1854	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1855	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1856	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1857	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1858	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1859	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Date
Saturday 17 November 2018

Weather
Cloudy
Temp: 12°C

1000 - 1700 (Saturday 7HR Session)

TIME	1a		1b		2a		2b		3a		3b		4a		4b	
	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies
1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1010	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1023	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1027	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1028	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1029	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1030	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1031	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1032	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1033	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1034	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1035	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1036	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1037	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1038	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1039	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1041	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1042	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1043	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1044	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1045	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1046	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
1047	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1048	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1049	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1050	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1051	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1052	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1053	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1054	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1056	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1057	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1058	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1059	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1113	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1117	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1123	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1124	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1126	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1127	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1128	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
1129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1132	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1138	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1142	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1143	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1146	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1148	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1152	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1201	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1203	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1206	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1207	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1209	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1214	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1215	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1216	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1217	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1218	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1219	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1220	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1221	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1222	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1223	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1226	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1227	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1228	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1231	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1232	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1609	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1610	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1611	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1612	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1613	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1614	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1615	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1616	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1617	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1618	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1619	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1620	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1621	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1622	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1623	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1624	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1625	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1626	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1627	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1628	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1629	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1630	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1631	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1632	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1633	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1636	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1637	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1638	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1639	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1640	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1641	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1642	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1643	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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1645	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1646	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
1647	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1648	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1649	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1651	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1652	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1653	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1654	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1655	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1656	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1657	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1658	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1659	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Warrington
Queue Length Survey

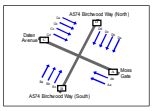
Site 3 of 5
A574 Birchwood Way (North)
Moss Gate
A574 Birchwood Way (South)
Dallam Avenue

Lat/Long
lat:53.426990° lon:-2.513333°

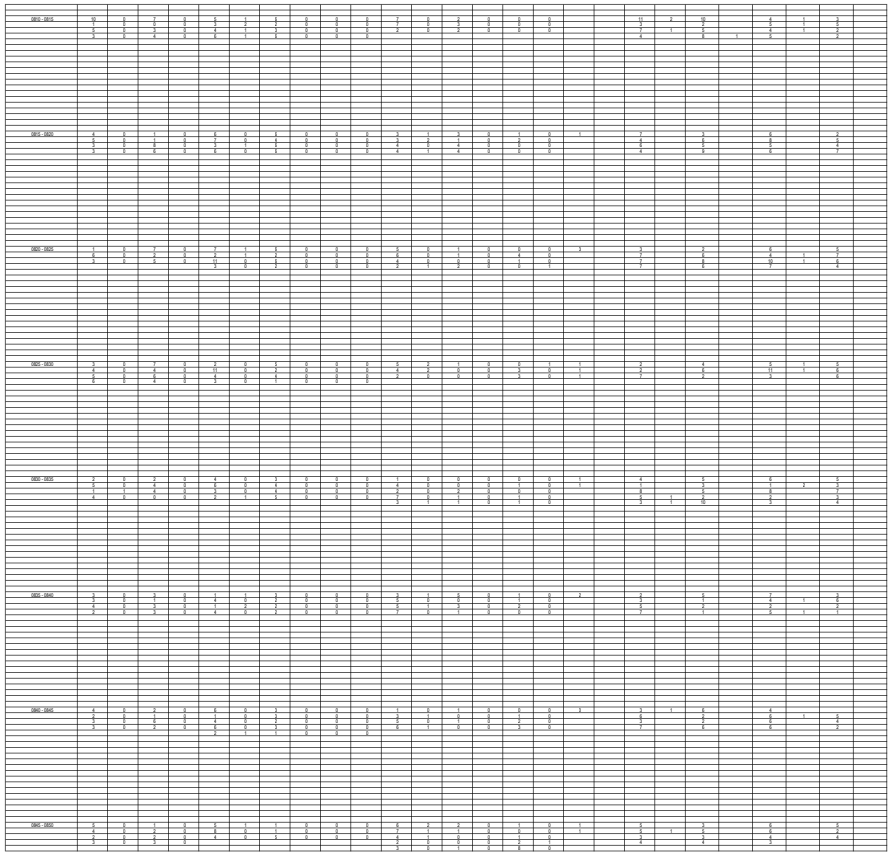
Date
Tuesday 13 November 2018

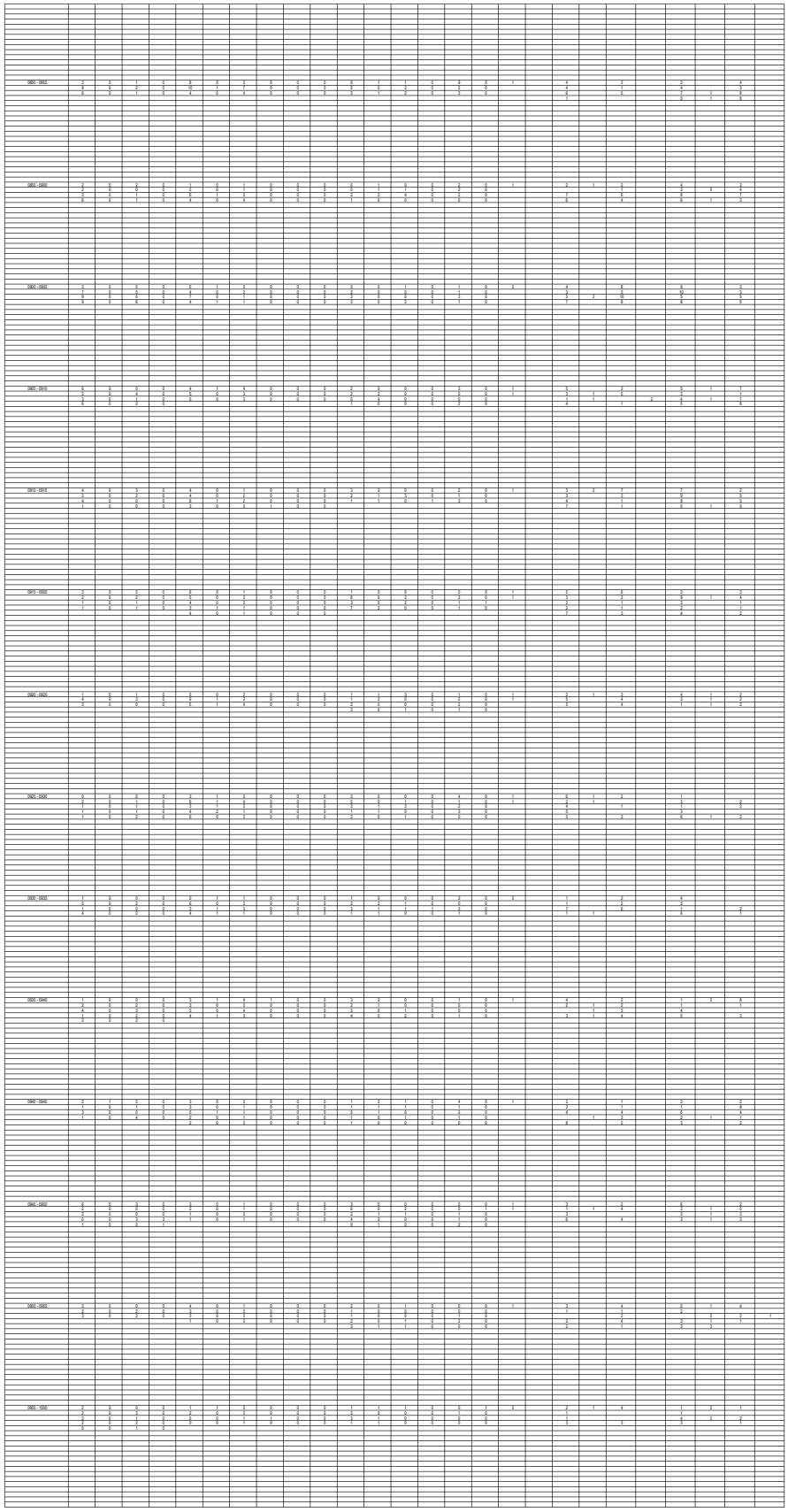
Weather
Sunny Intervals
Temp: 13°C

0700 - 1000 (Weekday AM Peak)



TIME	A1		A2		B1a		B2		B1		C1		C2		C3		C4		D1a		D1b		D2		D3	
	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies
0700 - 0705	1	0	4	0	0	0	1	0	0	0	0	0	0	0	1	0	1		2	2	4		4	2	3	
	3	0	5	0	0	0	1	0	0	0	1	0	0	0	0	0			2		2		2		4	
	1	0	5	1	1	0	3	0	0	0	0	0	0	0	0	0			3	1	3		3		1	
0705 - 0710	1	0	4	0	10	0	4	0	0	0	0	1	2	0	1	1	1		7		6		6			
	4	0	3	0	6	0	5	0	0	0	4	0	1	0	0	0	1		6		2		5		1	
	2	0	2	0	13	0	7	0	0	0	0	0	2	0	0	0			2		1	2	5		0	
	4	0	4	0	12	0	11	0	0	0	4	1	2	0	0	0			4		2		2	1	4	
0710 - 0715	1	0	4	0	9	0	4	0	0	0	4	0	2	0	0	0	1		4		3		1			
	2	0	6	0	7	0	4	0	0	0	1	0	0	0	1	0			4		1		1		2	
	2	0	4	0	8	0	5	0	0	0	4	1	3	0	4	1			2		1		1	2	1	
0715 - 0720	2	0	6	1	16	0	9	0	0	0	5	0	3	0	0	0			3	1	3		1			
	3	0	8	0	13	0	7	0	0	0	3	1	3	0	0	0			6		4		6		0	
	2	0	11	0	8	0	3	0	0	0	5	1	7	0	0	0			4		2		2	2	5	
0720 - 0725	3	0	5	0	14	0	11	0	0	0	10	2	6	0	1	0	1	2	4		3		6	2		
	4	0	6	0	16	0	7	0	0	0	1	2	4	0	0	0			4		4		5		2	
	2	0	7	0	12	0	3	0	0	0	9	1	7	0	2	0			3		4		4		3	
0725 - 0730	4	2	10	0	12	1	12	0	0	0	10	1	4	0	0	1			7		1		5		3	
	4	0	6	0	8	0	3	0	0	0	8	0	3	0	0	0			9		5		9	1	7	
	1	0	6	0							2	1	5	0	0	0			3	1	6		7		5	
											10	1	3	0	1	0							3		3	
0730 - 0735	3	0	8	0	21	1	6	0	0	0	10	2	12	0	0	0			4		2		7	1	5	
	4	0	7	0	20	1	10	0	0	0	10	1	8	0	0	0				1	4	1	5	1	3	
			5	0	20	1	10	0	0	0					0	0										
0735 - 0740	3	0	9	0	6	2	12	0	0	0	4	3	11	0	0	0	1		3		1		2	1	2	
	3	0	7	0	30	1	12	1	0	0	10	1	12	0	2	0	1		3		2		6	1	3	
	5	0	8	0					0	0	10	1	7	0	1	0			4	1	4		6		2	
0740 - 0745	4	0	5	0	20	1	9	0	0	0	9	1	5	0	2	1	1	1	6		3		6	1	7	
	3	0	11	0	21	2	6	0	0	0	10	1	10	0	3	0			11		6		5	2	2	
					19	0	11	0	0	0																
0745 - 0750	7	0	11	0	20	0	10	0	0	0	10	1	2	0	1	0	1		4		5		7		5	
	9	0	9	0	21	0	9	0	0	0	10	1	5	0	1	0	1		6	1	2		7	1	7	
											10	2	8	0	2	0			6		6		7		2	
0750 - 0755	7	0	9	0	13	3	12	0	0	0	10	3	4	0	5	0	1		6	1	4		4	1	5	
	7	0	10	0	20	2	12	0	0	0	10	1	11	0	1	0			9	1	7		5		6	
	7	0	11	0																						
0755 - 0800	7	0	3	0	17	0	11	0	0	0	10	0	13	0	1	0	1		13	1	3		8	1	4	
	2	0	8	1	20	1	10	0	0	0	11	1	7	0	0	0			11		5	2	7		2	1
					18	0	11	0	0	0	10	1	5	0	1	0			9		8		6		4	
0800 - 0805	6	1	8	0	9	1	3	0	0	0	10	2	7	0	3	0			4		6		8		6	
	4	0	7	0	9	0	2	0	0	0	11	2	8	0	0	0			4		4		5	2	6	
	1	0	2	0	5	1	5	0	0	0	11	1	3	0	0	0			3		4		2		3	
0805 - 0810	6	0	9	0	6	0	4	0	0	0	10	2	2	0	2	0	1		4	1	7		6		4	
	3	0	7	0	9	0	7	0	0	0	7	1	4	0	1	0			3	1	2		4		2	
	4	0	8	0	5	0	2	0	0	0	8	1	5	0	0	0			4	1	4		1		1	



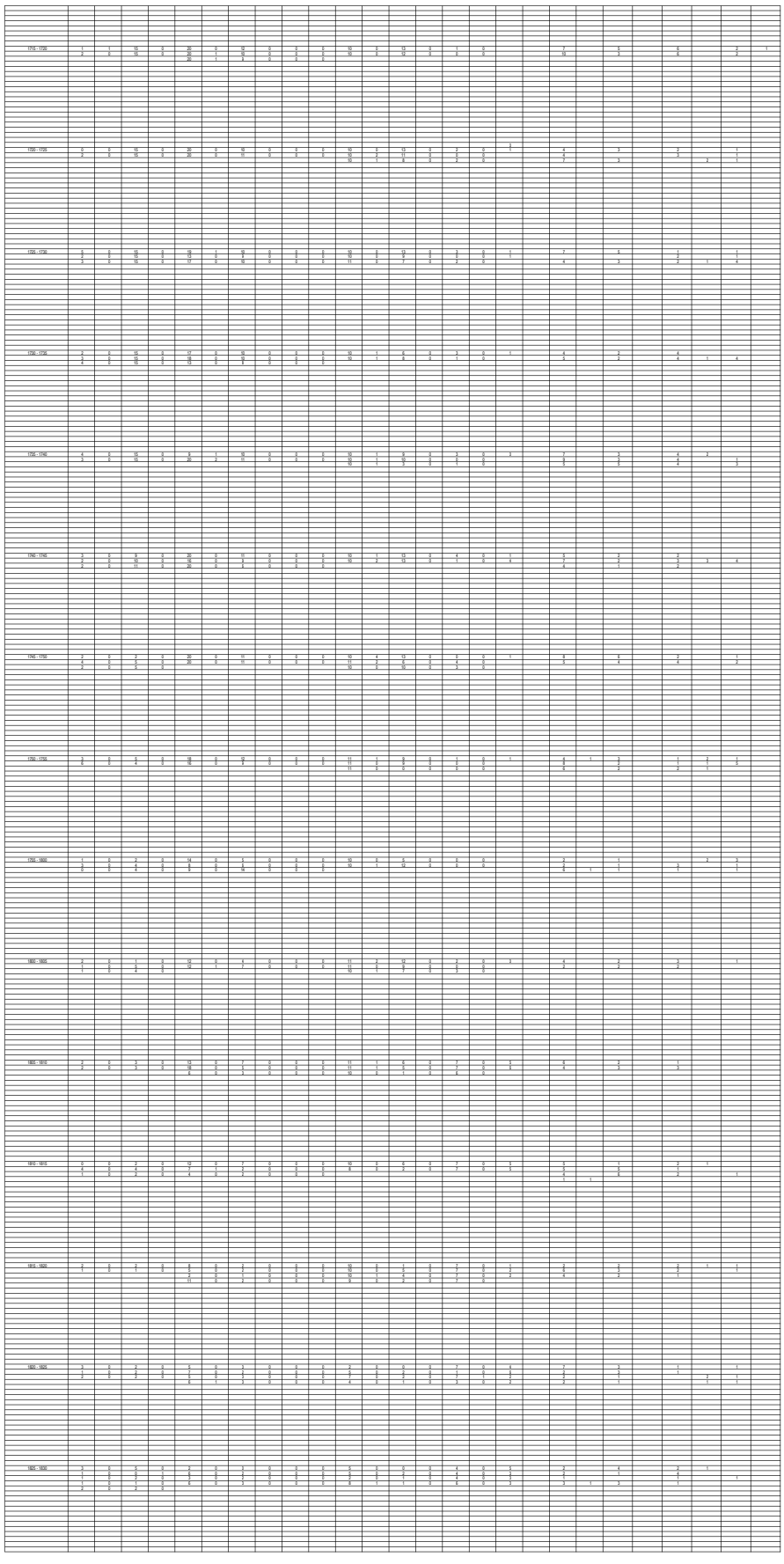


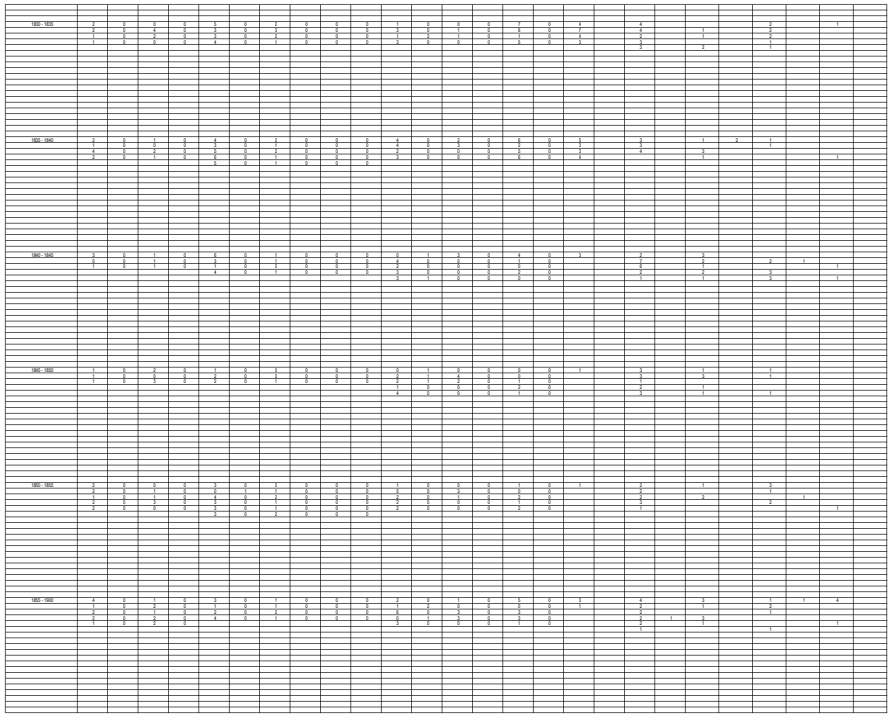
Date
Tuesday 13 November 2018

Weather
Cloud=
Temp.-13°C

1600 - 1900 (Weekday PM Peak)

TIME	A		A1		A2		A3		A4		A5		A6		A7		A8		A9		A10		A11		A12	
	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies	Lights	Heavies
1600 - 1605	3	1	9	0	19	1	13	0	3	0	0	0	4	0	1	0	2		3		1		3		1	
	2	0	3	0	20	0	18	0	4	1	10	1	7	0	1	0	2		1		1	1	3		2	
	4	0	6	0							10	0	11	0	2	0										
1605 - 1610	5	0	12	0	20	0	12	0	0	0	10	1	9	0	1	0	3		4		2		4		1	
	5	0	8	0	21	0	9	0	0	0	10	1	12	0	0	0			4		1		2		1	
					20	0	11	0	0	0									3		4		3		1	
1610 - 1615	2	0	11	0	20	0	14	0	0	0	10	0	8	0	2	0	1		8		2		1	1		
	2	1	11	0	18	0	13	0	0	0	11	0	12	0	0	0								1		
	4	0	10	0							11	0	10	0	1	0										
1615 - 1620	1	0	9	0	19	0	12	0	0	0	10	2	13	0	0	0			8		4		2	1	3	
	7	0	11	0	19	0	7	0	0	0	10	2	11	0	1	0			9				3		1	
					20	0	13	0	0	0									4	1	6		1			
1620 - 1625	2	0	12	0	20	0	13	0	0	0	11	2	12	0	1	0	1		6		2		3	2	1	
	4	0	15	0	20	0	10	0	0	0	11	0	7	0	1	0			3	1	4		2	1	1	
	4	0	13	0							10	0	13	0	0	0										
1625 - 1630	4	1	13	0	20	0	10	0	0	0	10	1	8	0	2	0			2		2		1	1	4	
	2	0	9	0	20	0	12	0	0	0	12	1	11	0	3	0			4	1	3		6	1		
					20	0	12	0	0	0																
1630 - 1635	2	0	6	0	20	0	8	0	0	0	11	0	7	0	0	0			2		1		2	1	1	
	4	0	3	0	20	0	8	0	0	0	11	1	9	0	0	0			1		2		3	1		
	0	0	6	0							10	1	5	0	0	0			2		2		6		3	
1635 - 1640	4	0	6	0	20	1	11	0	0	0	10	0	13	0	1	0	4		6		3		1		1	
	2	0	8	0	19	1	16	0	0	0	10	0	12	0	4	0			5				4			
					20	0	18	0	0	0									8		4		1			
1640 - 1645	2	0	13	0	20	0	8	0	0	0	10	0	7	0	1	0	1		4		5		4	1	2	
	3	0	11	0	20	0	9	0	0	0	10	1	12	0	0	0			6		3		2	1	4	
	2	0	15	0							10	2	11	0	0	0										
1645 - 1650	2	0	15	0	20	0	6	0	0	0	10	2	13	0	1	0	4		2		1		1		1	
	1	0	15	1	21	0	11	0	0	0	10	3	7	0	1	0			0		2		1			
					22	0	9	0	0	0									0		2		2	2	2	
1650 - 1655	0	0	14	0	19	0	13	0	0	0	11	2	6	0	1	0	2		8				1		1	
	2	0	15	0	20	0	13	0	0	0	11	2	13	0	0	0			4		6		4	2	4	
											11	1	9	0	0	0										
1655 - 1700	5	0	16	0	20	0	12	0	0	0	10	0	13	0	3	0	1		4		1		6		2	
	3	0	15	0	17	0	12	0	0	0	10	0	9	0	1	0	1		3		3		3		2	
	10	0	16	0	19	0	12	0	0	0							1									
1700 - 1705	1	0	15	0	20	0	10	0	0	0	11	1	12	0	4	0	1		5		4		5		3	
	2	0	15	0	17	0	12	0	0	0	11	0	9	0	1	0			2		2		3	1		
											10	1	12	0	4	0			6		3					
1705 - 1710	3	0	15	0	21	0	12	0	0	0	10	1	11	0	1	0	1		7		4		3		1	
	6	0	15	0	20	0	13	0	0	0	10	1	4	0	3	0	2		6		5		1	1	6	
	2	0	15	0	19	1	14	0	0	0																
1710 - 1715	0	0	15	0	16	0	13	0	0	0	10	1	8	0	1	0	1		4		3		2	1	3	
	7	0	15	0	19	0	15	0	0	0	10	0	13	0	1	0			4		3		4		1	
	0	0	15	0																						





Warrington, Cheshire

Report Id 704/16
Site Name Site 1 of 1
Description A574 Birchwood Way, 330m South West of Silver Lane
Direction Westbound

Tuesday 06 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	30	14	9	4	3	0	0	22	0	3	1	0	0	2	2	0	0	0	0	0	0	0	1	0	4	15	9	1	0	0	0	47.3	43.4	4.2
0100 - 0200	24	11	3	5	5	0	0	13	0	5	0	0	0	3	2	1	0	0	0	0	0	0	1	4	1	6	6	2	4	0	0	56.4	45.3	9.0
0200 - 0300	30	4	8	5	13	0	0	14	0	6	1	1	0	6	1	1	0	0	0	0	0	0	0	3	12	8	2	5	0	0	0	50.1	41.2	6.1
0300 - 0400	28	7	5	8	8	0	0	19	0	3	1	0	0	0	3	2	0	0	0	0	0	0	0	1	4	11	8	2	2	0	0	51.0	44.5	5.9
0400 - 0500	42	11	9	12	10	0	1	22	0	8	0	1	0	4	3	3	0	0	0	0	0	0	0	2	12	8	15	3	0	0	2	49.8	44.3	8.5
0500 - 0600	249	27	44	73	105	0	1	197	0	35	5	0	0	2	3	6	0	0	0	0	0	0	6	23	47	88	56	18	10	1	0	49.3	43.1	6.5
0600 - 0700	644	78	150	167	249	0	0	558	3	70	3	1	0	0	3	5	1	0	0	1	3	1	10	56	229	232	92	17	2	1	0	45.7	40.6	5.3
0700 - 0800	906	209	229	212	256	0	3	848	1	39	2	2	0	1	2	7	1	0	0	0	0	0	7	86	391	338	75	7	1	0	1	43.5	39.8	4.1
0800 - 0900	1412	295	333	377	407	0	2	1314	9	61	2	4	0	2	9	9	0	0	0	0	0	0	22	82	211	642	378	68	9	0	0	42.4	37.9	5.0
0900 - 1000	1102	340	286	258	218	0	2	999	2	71	1	3	1	4	8	11	0	0	0	0	0	0	0	19	115	416	391	141	19	0	0	1	44.9	40.2	4.7
1000 - 1100	591	172	151	143	125	0	1	474	0	83	5	3	1	5	9	8	1	1	0	0	0	0	8	6	49	205	239	65	12	5	2	0	44.9	40.3	5.2
1100 - 1200	512	130	118	139	125	0	0	417	0	73	2	2	0	4	5	8	1	0	0	0	0	0	0	0	47	170	177	84	26	6	1	1	46.7	41.5	5.3
1200 - 1300	516	108	127	142	139	0	1	418	1	68	2	2	1	11	6	5	0	1	0	0	0	0	3	29	173	199	88	17	5	2	0	46.5	41.6	4.8
1300 - 1400	573	122	148	164	139	0	0	471	4	74	0	1	0	12	10	1	0	0	0	0	0	0	5	35	161	244	107	15	4	2	0	46.4	41.7	4.7
1400 - 1500	541	121	141	145	134	0	2	422	4	82	3	1	2	9	6	9	0	1	0	0	0	0	7	25	174	192	114	24	1	3	1	47.3	42.0	5.3
1500 - 1600	587	129	158	145	155	0	0	510	1	57	2	1	1	3	7	4	0	1	0	0	0	0	4	47	159	230	119	21	5	1	1	47.0	42.0	5.3
1600 - 1700	511	130	153	117	111	0	3	458	1	38	0	0	0	3	3	4	1	0	0	0	0	0	9	24	130	220	93	30	4	0	1	47.4	42.2	5.3
1700 - 1800	522	112	119	124	167	0	2	476	0	38	0	0	0	2	1	1	1	1	0	0	0	0	1	50	162	210	73	22	2	2	0	45.8	41.3	4.8
1800 - 1900	596	146	160	165	125	0	5	539	3	38	0	0	0	5	3	3	0	0	0	0	0	0	4	66	202	202	91	22	3	5	1	46.3	41.1	5.6
1900 - 2000	306	99	77	72	58	0	1	266	1	21	0	0	0	7	4	5	1	0	0	0	0	0	1	0	26	91	94	60	24	7	0	3	48.6	42.5	6.3
2000 - 2100	205	49	47	55	54	0	2	178	0	16	0	0	0	3	3	3	0	0	0	0	0	0	0	0	18	55	53	46	24	7	1	1	50.8	43.5	7.0
2100 - 2200	179	44	49	38	48	0	2	153	1	11	0	0	0	6	3	3	0	0	0	0	0	0	1	20	41	59	36	12	8	2	0	48.9	42.7	6.5
2200 - 2300	140	39	41	33	27	0	0	120	0	6	0	0	0	6	5	3	0	0	0	0	0	0	1	13	36	42	33	12	1	0	2	48.3	42.7	6.8
2300 - 0000	78	28	21	17	12	0	1	60	1	7	1	0	0	3	5	0	0	0	0	0	0	0	2	2	20	21	18	8	5	0	2	51.9	44.4	7.9
0700 - 1900	**8369**	**2014**	**2123**	**2131**	**2101**	**0**	**21**	**7346**	**26**	**722**	**19**	**19**	**6**	**61**	**69**	**70**	**5**	**5**	**0**	**0**	**0**	**30**	**147**	**784**	**2985**	**3020**	**1118**	**224**	**36**	**18**	**7**	**45.5**	**40.5**	**5.1**
0600 - 2200	**9703**	**2284**	**2446**	**2463**	**2510**	**0**	**26**	**8501**	**31**	**840**	**22**	**20**	**6**	**77**	**82**	**86**	**7**	**5**	**0**	**1**	**3**	**32**	**158**	**904**	**3401**	**3458**	**1352**	**301**	**60**	**22**	**11**	**45.7**	**40.7**	**5.3**
0600 - 0000	**9921**	**2351**	**2508**	**2513**	**2549**	**0**	**27**	**8681**	**32**	**853**	**23**	**20**	**6**	**86**	**92**	**89**	**7**	**5**	**0**	**1**	**3**	**32**	**161**	**919**	**3457**	**3521**	**1403**	**321**	**66**	**22**	**15**	**45.8**	**40.8**	**5.4**
0000 - 0000	**10324**	**2425**	**2586**	**2620**	**2693**	**0**	**29**	**8968**	**32**	**913**	**31**	**22**	**6**	**103**	**106**	**102**	**7**	**5**	**0**	**1**	**3**	**32**	**169**	**952**	**3537**	**3657**	**1499**	**352**	**82**	**23**	**17**	**46.0**	**40.9**	**5.4**

Wednesday 07 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	32	8	8	8	8	0	0	22	0	2	0	1	0	1	5	1	0	0	0	0	0	0	0	6	6	8	4	4	2	1	1	51.9	43.9	9.3
0100 - 0200	27	7	6	6	8	0	0	16	0	6	0	0	0	2	2	1	0	0	0	0	0	0	0	6	4	11	3	2	1	0	0	48.7	42.0	6.4
0200 - 0300	38	5	9	11	13	0	0	20	0	6	0	0	0	8	3	1	0	0	0	0	0	0	1	5	11	7	7	4	0	2	1	51.2	43.1	8.9
0300 - 0400	35	6	10	9	10	0	0	23	0	5	0	0	0	2	5	0	0	0	0	0	0	0	0	3	6	17	7	0	2	0	0	46.9	42.7	5.4
0400 - 0500	65	17	10	17	21	0	1	46	0	11	0	2	0	2	3	0	0	0	0	0	0	0	1	3	16	19	18	4	3	0	1	49.3	43.7	7.1
0500 - 0600	207	20	39	71	77	0	0	160	0	33	0	0	0	4	4	6	0	0	0	0	0	0	0	14	53	80	43	12	4	1	0	47.8	42.6	5.7
0600 - 0700	634	77	120	187	250	0	1	551	3	59	4	0	0	0	8	8	0	0	0	0	0	0	2	7	94	211	225	70	22	2	1	0	45.0	40.2	5.1
0700 - 0800	1142	211	277	301	353	1	4	1076	3	46	0	2	1	2	1	3	0	3	1	0	0	0	21	163	623	279	46	7	1	1	0	42.1	38.4	4.0
0800 - 0900	1582	375	379	438	390	0	2	1492	11	53	1	5	0	4	13	1	0	0	0	0	0	20	116	480	680	259	26	1	0	0	0	40.4	36.0	4.4
0900 - 1000	1126	375	294	263	194	0	4	1011	4	74	2	2	0	3	14	11	1	0	0	0	0	10	35	261	417	291	90	18	4	0	0	43.5	38.3	5.3
1000 - 1100	528	153	136	126	113	0	0	424	1	72	2	3	1	5	6	11	2	1	0	0	0	0	11	64	151	184	91	20	5	2	0	46.2	41.0	5.5
1100 - 1200	484	124	113	119	128	0	1	371	1	77	3	3	1	9	8	10	0	0	0	0	0	0	6	3	32	173	173	79	16	2	0	0	46.3	41.0	5.0
1200 - 1300	502	127	118	136	121	0	3	405	0	68	3	1	0	6	10	6	0	0	0	0	0	0	6	41	139	200	88	24	2	1	1	46.5	41.7	5.1
1300 - 1400	620	142	168	155	155	0	2	502	1	84	1	3	2	13	8	4	0	0	0	0	0	0	4	48	214	263	77	8	3	2	1	44.9	40.8	4.6
1400 - 1500	526	128	125	133	140	1	2	420	1	73	2	2	0	4	15	5	0	1	0	0	0	0	4	31	203	180	75	27	4	1	1	46.4	41.4	5.1
1500 - 1600	517	138	114	118	147	0	2	429	0	67	1	2	0	6	2	6	0	2	0	0	0	0	0	33	168	205	73	33	4	1	0	46.3	41.6	5.0
1600 - 1700	536	126	132	136	142	0	1	481	1	37	3	2	1	2	0	5	1	2	0	0	7	6	12	57	180	185	65	20	4	0	0	45.2	40.0	6.0
1700 - 1800	564	135	141	142	146	0	2	519	0	29	2	3	0	1	0	7	1	0	0	1	1	7	16	87	228	159	52	9	4	0	0	44.6	38.9	5.6
1800 - 1900	522	125	117	154	126	0	3	475	2	31	1	0	0	4	3	2	0	1	0	0	0	6	13	69	165	171	81	15	2	0	0	45.8	40.1	5.7
1900 - 2000	383	119	112	88	64	0	1	325	0	32	2	1	1	6	5	8	1	1	0	0	0	2	10	43	123	119	63	15	4	3	1	46.4	41.0	6.2
2000 - 2100	255	57	63	83	52	0	2	223	0	17	2	1	0	3	3	3	0	1	0	0	0	0	0	14	59	91	58	22	10	1	0	49.1	43.4	5.8
2100 - 2200	185	46	48	44	47	0	1	158	0	12	0	1	1	7	4	1	0	0	0	0	0	0	4	18	55	48	40	11	9	0	0	48.5	42.0	6.5
2200 - 2300	181	46	49	45	41	0	0	169	0	5	0	0	0	2	3	2	0	0	0	0	0	0	3	4	51	65	35	14	5	4	0	49.6	43.3	6.3
2300 - 0000	93	34	20	22	17	0	0	75	0	10	1	0	0	2	3	2	0	0	0	0	0	0	0	5	16	41	21	4	2	3	1	48.6	43.7	6.4
0700 - 1900	**8649**	**2159**	**2114**	**2221**	**2155**	**2**	**26**	**7605**	**25**	**711**	**21**	**28**	**6**	**59**	**80**	**71**	**5**	**10**	**1**	**1**	**8**	**55**	**241**	**1366**	**3341**	**2549**	**843**	**198**	**35**	**8**	**3**	**44.4**	**39.2**	**5.4**
0600 - 2200	**10106**	**2458**	**2457**	**2623**	**2568**	**2**	**31**	**8862**	**28**	**831**	**29**	**31**	**8**	**75**	**100**	**91**	**6**	**12**	**1**	**1**	**8**	**59**	**262**	**1535**	**3789**	**3032**	**1074**	**268**	**60**	**13**	**4**	**44.8**	**39.5**	**5.5**
0600 - 0000	**10380**	**2538**	**2526**	**2690**	**2626**	**2**	**31**	**9106**	**28**	**846**	**30**	**31**	**8**	**79**	**106**	**95**	**6**	**12**	**1**	**1**	**8**	**59**	**265**	**1544**	**3856**	**3138**	**1130**	**286**	**67**	**20**	**5**	**44.9**	**39.6**	**5.5**
0000 - 0000	**10784**	**2601**	**2608**	**2812**	**2763**	**2**	**32**	**9393**	**28**	**909**	**30**	**34**	**8**	**98**	**128**	**104**	**6**	**12**	**1**	**1**	**8**	**59**	**267**	**1581**	**3952**	**3280**	**1212**	**312**	**79**	**24**	**8**	**45.0**	**39.7**	**5.6**

Thursday 08 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	39	16	6	5	12	0	0	26	0	3	0	0	0	7	3	0	0	0	0	0	0	1	3	10	9	10	3	3	0	0	50.2	42.9	6.7
0100 - 0200	22	8	5	2	7	0	0	17	0	1	0	0	0	1	1	2	0	0	0	0	0	1	1	5	5	6	3	0	1	0	51.7	44.3	7.8
0200 - 0300	33	8	8	8	9	0	0	21	0	7	0	0	0	0	3	2	0	0	0	0	0	0	4	7	6	5	9	1	1	0	51.4	45.1	7.7
0300 - 0400	41	10	8	14	9	0	2	22	0	6	0	0	0	7	4	0	0	0	0	0	0	1	0	4	5	17	12	0	0	2	47.7	43.6	9.6
0400 - 0500	47	8	9	17	13	0	0	33	0	6	0	0	0	3	2	3	0	0	0	0	0	0	0	3	7	21	9	4	3	0	0	50.0	43.5	5.8
0500 - 0600	218	25	43	70	80	0	0	170	0	35	1	0	0	5	2	3	1	1	0	0	0	0	0	8	36	85	57	20	7	5	0	50.0	44.6	5.7
0600 - 0700	654	71	146	199	238	0	0	589	3	42	4	1	0	3	3	6	1	2	0	0	0	0	3	17	61	249	219	72	25	7	1	0	45.4	40.3	5.4
0700 - 0800	1060	248	227	265	320	0	1	993	3	43	3	1	1	4	1	7	2	1	0	0	0	0	0	28	134	455	358	75	7	1	1	1	43.2	39.1	4.4
0800 - 0900	1410	294	371	367	378	0	3	1337	7	40	4	2	0	1	5	8	1	2	0	0	0	0	2	49	230	587	431	103	7	1	0	0	43.0	38.6	4.5
0900 - 1000	986	332	258	227	169	0	1	890	6	63	2	2	1	6	3	12	0	0	0	0	0	0	0	18	85	387	368	105	20	1	2	0	44.7	40.2	4.5
1000 - 1100	518	135	141	117	125	0	2	424	2	72	3	1	0	2	8	3	0	1	0	0	0	0	2	8	21	182	181	97	22	2	2	1	46.4	41.6	5.2
1100 - 1200	510	129	139	118	124	0	1	398	1	74	1	2	0	10	11	10	0	2	0	0	0	0	0	6	42	192	196	60	11	1	2	0	45.0	40.6	4.6
1200 - 1300	550	118	140	132	160	0	2	445	1	63	5	2	0	8	15	7	0	2	0	0	0	0	3	57	216	182	64	19	8	1	0	45.8	40.6	5.3
1300 - 1400	508	110	127	136	135	0	0	410	1	67	1	1	2	12	6	7	1	0	0	0	0	0	3	35	158	194	84	27	5	1	1	47.3	41.7	5.2
1400 - 1500	561	140	147	129	145	0	4	446	0	83	3	1	0	13	9	2	0	0	0	0	0	4	3	42	186	177	117	25	4	2	1	46.9	41.6	5.5
1500 - 1600	553	131	130	130	162	0	0	479	0	54	1	1	0	5	6	6	0	1	0	2	1	3	5	35	143	233	109	15	4	1	2	46.4	41.7	5.6
1600 - 1700	481	99	126	146	110	0	3	446	0	26	0	0	1	0	2	2	0	1	0	0	0	0	0	29	131	178	105	31	7	0	0	47.6	42.4	4.9
1700 - 1800	571	154	138	119	160	1	4	522	1	35	0	1	0	2	2	2	0	1	0	0	0	0	10	73	193	216	71	5	2	1	0	44.7	40.0	4.9
1800 - 1900	613	174	166	151	122	0	4	562	3	32	1	0	0	5	3	2	0	1	0	0	0	0	13	53	202	215	92	22	14	2	0	46.4	41.2	5.5
1900 - 2000	343	100	87	73	83	0	0	304	0	23	1	1	0	6	7	1	0	0	0	0	0	0	0	22	110	117	60	24	8	1	1	48.4	42.4	5.7
2000 - 2100	228	44	62	66	56	0	2	202	1	12	0	0	0	3	5	3	0	0	0	0	0	0	0	13	51	84	55	17	2	5	1	49.0	43.4	6.1
2100 - 2200	214	54	57	53	50	0	0	179	0	17	1	0	0	8	6	2	1	0	0	0	0	0	2	15	43	73	51	19	6	2	3	49.6	43.8	7.1
2200 - 2300	129	40	17	23	49	0	0	110	0	6	0	0	0	6	3	4	0	0	0	0	0	0	2	14	29	32	28	19	2	2	1	51.1	43.4	8.6
2300 - 0000	80	28	12	21	19	0	1	65	0	1	0	0	0	6	6	1	0	0	0	0	0	0	0	8	28	23	14	5	2	0	0	46.7	41.8	5.5
0700 - 1900	**8321**	**2064**	**2110**	**2037**	**2110**	**1**	**25**	**7352**	**25**	**652**	**24**	**14**	**5**	**68**	**71**	**68**	**4**	**12**	**0**	**2**	**1**	**11**	**146**	**836**	**3032**	**2929**	**1082**	**211**	**50**	**15**	**6**	**45.3**	**40.4**	**5.1**
0600 - 2200	**9760**	**2333**	**2462**	**2428**	**2537**	**1**	**27**	**8626**	**29**	**746**	**30**	**16**	**5**	**88**	**92**	**80**	**6**	**14**	**0**	**2**	**1**	**14**	**165**	**947**	**3485**	**3422**	**1320**	**296**	**73**	**24**	**11**	**45.6**	**40.6**	**5.2**
0600 - 0000	**9969**	**2401**	**2491**	**2472**	**2605**	**1**	**28**	**8801**	**29**	**753**	**30**	**16**	**5**	**100**	**101**	**85**	**6**	**14**	**0**	**2**	**1**	**14**	**167**	**969**	**3542**	**3477**	**1362**	**320**	**77**	**26**	**12**	**45.7**	**40.7**	**5.3**
0000 - 0000	**10369**	**2476**	**2570**	**2588**	**2735**	**1**	**30**	**9090**	**29**	**811**	**31**	**16**	**5**	**123**	**116**	**95**	**7**	**15**	**0**	**2**	**1**	**15**	**169**	**992**	**3612**	**3620**	**1461**	**359**	**91**	**33**	**14**	**45.9**	**40.8**	**5.4**

Friday 09 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	34	8	13	6	7	0	0	24	0	8	0	0	0	0	2	0	0	0	0	0	0	0	0	1	13	5	9	5	0	0	1	51.5	44.2	7.2
0100 - 0200	13	2	1	4	6	0	0	9	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	1	3	0	1	0	52.4	43.5	9.1
0200 - 0300	25	3	5	10	7	0	1	8	0	4	1	0	0	6	3	2	0	0	0	0	0	0	0	3	5	8	5	2	1	1	0	51.2	43.5	7.2
0300 - 0400	42	9	9	9	15	0	0	24	0	9	0	0	0	2	4	3	0	0	0	0	0	0	0	4	6	14	12	2	3	1	0	50.1	44.2	6.5
0400 - 0500	65	10	17	21	17	0	0	40	1	16	1	1	0	1	4	1	0	0	0	0	0	0	1	4	17	20	12	5	5	1	0	50.7	43.4	6.9
0500 - 0600	220	20	41	60	99	0	2	166	0	35	3	0	0	2	5	7	0	0	0	0	0	0	1	1	15	46	72	55	23	5	1	1	49.5	43.3	6.2
0600 - 0700	659	81	123	197	258	0	0	569	3	67	4	1	0	2	6	6	0	1	0	0	0	0	10	79	241	225	83	15	5	1	0	45.2	40.2	5.1
0700 - 0800	1294	257	295	365	377	0	1	1213	8	50	1	3	1	2	6	8	1	0	0	0	0	0	66	220	589	336	75	7	1	0	0	42.5	38.2	4.6
0800 - 0900	1565	423	438	391	313	0	2	1442	14	71	10	8	0	5	4	8	1	0	0	9	13	30	124	378	642	322	42	4	1	0	0	41.5	36.3	5.5
0900 - 1000	867	262	225	195	185	0	2	751	2	82	6	2	0	4	6	10	0	2	0	0	0	0	14	67	325	311	114	33	2	0	1	45.4	40.8	4.9
1000 - 1100	545	142	151	132	120	0	0	428	0	83	6	1	0	10	8	9	0	0	0	0	0	0	11	60	165	182	101	16	8	2	0	46.5	41.2	5.6
1100 - 1200	502	117	104	133	148	0	2	401	2	67	3	2	0	8	8	8	1	0	0	0	0	0	5	32	164	193	78	24	3	0	3	47.0	41.6	5.6
1200 - 1300	545	132	119	155	139	0	2	445	2	69	2	1	2	10	7	5	0	0	0	0	0	0	3	26	156	224	100	29	2	5	0	46.9	42.2	5.1
1300 - 1400	505	103	124	147	131	0	0	413	1	63	0	2	1	11	8	5	0	1	0	0	0	0	1	21	129	192	114	37	9	1	1	48.3	43.0	5.3
1400 - 1500	577	139	154	141	143	0	3	481	2	77	0	2	0	4	3	3	1	1	0	0	0	0	1	30	149	237	125	26	4	3	2	47.3	42.4	5.1
1500 - 1600	543	135	113	135	160	0	4	474	0	42	0	1	1	7	6	4	0	4	0	0	0	0	0	39	145	226	101	26	4	2	0	47.0	42.1	5.0
1600 - 1700	528	125	130	133	140	0	3	472	1	45	0	0	0	3	1	3	0	0	0	0	0	0	14	40	137	191	114	24	5	1	2	46.9	41.8	5.6
1700 - 1800	557	118	147	150	142	0	2	503	0	43	1	0	1	5	0	2	0	0	0	0	0	0	6	93	185	177	75	18	3	0	0	45.7	40.2	5.2
1800 - 1900	461	123	122	115	101	0	3	416	2	29	2	0	0	2	5	2	0	0	0	0	0	2	22	65	150	151	53	14	2	2	0	45.2	39.7	5.8
1900 - 2000	308	81	76	78	73	0	1	277	0	18	0	0	0	4	5	2	0	1	0	0	0	0	5	41	97	112	45	8	0	0	0	45.6	40.4	5.0
2000 - 2100	231	58	63	51	59	0	1	206	0	14	0	0	0	3	6	1	0	0	0	0	0	0	3	28	72	70	29	21	7	0	1	48.7	41.7	6.6
2100 - 2200	167	44	51	26	46	0	0	137	0	11	1	0	0	10	4	4	0	0	0	0	0	0	3	11	45	64	32	7	4	0	1	46.6	41.9	5.9
2200 - 2300	149	43	41	33	32	0	0	127	0	9	0	0	0	6	3	4	0	0	0	0	0	0	2	23	48	41	27	5	2	1	0	47.3	40.7	5.9
2300 - 0000	121	31	30	32	28	0	0	111	0	3	0	0	0	5	1	1	0	0	0	0	3	4	1	13	26	30	30	9	5	0	0	48.5	41.5	8.1
0700 - 1900	**8489**	**2076**	**2122**	**2192**	**2099**	**0**	**24**	**7439**	**34**	**721**	**31**	**22**	**6**	**71**	**62**	**67**	**4**	**8**	**0**	**9**	**13**	**32**	**267**	**1071**	**2936**	**2742**	**1092**	**258**	**44**	**16**	**9**	**45.4**	**40.0**	**5.7**
0600 - 2200	**9854**	**2340**	**2435**	**2534**	**2545**	**0**	**26**	**8628**	**37**	**831**	**36**	**23**	**6**	**90**	**83**	**80**	**4**	**10**	**0**	**9**	**13**	**32**	**288**	**1230**	**3391**	**3213**	**1281**	**309**	**60**	**17**	**11**	**45.5**	**40.1**	**5.7**
0600 - 0000	**10124**	**2414**	**2506**	**2599**	**2605**	**0**	**26**	**8866**	**37**	**843**	**36**	**23**	**6**	**101**	**87**	**85**	**4**	**10**	**0**	**9**	**16**	**36**	**291**	**1266**	**3465**	**3294**	**1338**	**323**	**67**	**18**	**11**	**45.6**	**40.1**	**5.7**
0000 - 0000	**10523**	**2466**	**2592**	**2709**	**2756**	**0**	**29**	**9137**	**38**	**918**	**42**	**24**	**6**	**112**	**105**	**98**	**4**	**10**	**0**	**9**	**16**	**37**	**293**	**1296**	**3553**	**3407**	**1432**	**363**	**81**	**23**	**13**	**45.8**	**40.3**	**5.8**

Saturday 10 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	71	22	25	13	11	0	0	57	0	6	0	0	0	3	4	1	0	0	0	0	0	0	9	23	22	11	3	1	0	2	48.8	42.0	7.5
0100 - 0200	37	10	10	6	11	0	0	30	0	2	1	0	0	1	2	1	0	0	0	0	0	1	1	13	6	13	3	0	0	0	48.6	42.4	5.8
0200 - 0300	39	12	11	5	11	0	0	19	0	6	1	0	0	11	1	1	0	0	0	0	0	0	3	11	16	6	3	0	0	0	47.4	41.6	5.6
0300 - 0400	34	2	11	7	14	0	0	24	0	5	0	0	0	3	2	0	0	0	0	0	0	0	3	9	10	4	3	3	2	0	54.9	44.1	8.6
0400 - 0500	32	2	7	17	6	0	0	27	0	3	0	0	0	2	0	0	0	0	0	0	0	0	2	8	8	9	3	1	1	0	52.6	44.3	6.7
0500 - 0600	116	14	22	44	36	0	0	87	0	26	0	0	0	1	1	1	0	0	0	0	0	1	0	1	26	37	31	16	2	1	1	50.1	44.3	6.3
0600 - 0700	159	21	26	45	67	1	0	118	0	33	0	0	0	1	1	5	0	0	0	1	0	0	0	11	32	52	39	12	8	4	0	50.0	43.9	7.0
0700 - 0800	183	47	39	39	58	0	0	144	1	28	1	1	0	2	4	1	0	1	0	0	0	0	2	8	29	80	40	17	6	1	0	49.4	43.8	5.4
0800 - 0900	292	54	65	91	82	0	1	253	1	26	2	1	0	2	2	4	0	0	0	0	0	0	2	22	69	90	70	24	9	4	2	49.1	43.6	6.5
0900 - 1000	277	58	74	73	72	0	0	258	2	10	0	0	0	2	4	1	0	0	0	0	0	0	1	12	78	81	62	35	5	3	0	50.1	43.5	6.0
1000 - 1100	332	77	83	79	93	0	0	292	0	23	2	0	0	6	5	4	0	0	0	0	0	0	3	21	99	97	88	22	2	0	0	48.0	42.3	5.4
1100 - 1200	402	80	105	96	121	0	0	361	1	24	0	1	0	12	1	2	0	0	0	0	0	0	0	23	100	153	80	33	9	3	1	48.4	43.0	5.6
1200 - 1300	397	80	90	110	117	0	3	365	0	18	0	2	0	6	1	2	0	0	0	0	0	0	0	11	104	135	111	27	9	0	0	48.5	43.4	5.1
1300 - 1400	454	116	124	100	114	0	1	404	3	29	1	1	0	8	5	1	1	0	0	0	0	0	3	35	117	150	98	40	7	2	2	48.9	42.8	5.9
1400 - 1500	397	92	100	97	108	0	0	360	0	26	1	0	0	7	2	0	0	1	0	0	0	0	1	15	93	170	86	23	7	2	0	48.1	43.0	5.0
1500 - 1600	409	105	97	107	100	0	2	369	0	28	1	1	0	6	2	0	0	0	0	0	0	0	3	8	77	168	110	32	4	4	3	48.5	43.9	5.4
1600 - 1700	408	70	116	121	101	0	2	370	3	28	0	0	0	4	1	0	0	0	0	0	0	0	0	23	111	154	86	26	6	1	1	47.5	42.6	5.6
1700 - 1800	320	77	86	74	83	0	0	294	0	20	0	0	0	2	2	2	0	0	0	0	0	0	2	20	102	105	57	25	5	3	1	48.7	42.4	5.9
1800 - 1900	297	72	92	66	67	0	1	279	1	11	0	1	0	1	1	2	0	0	0	0	0	0	6	23	76	97	68	17	6	1	3	48.5	42.7	6.4
1900 - 2000	202	56	45	54	47	0	0	185	0	8	0	0	0	3	4	2	0	0	0	0	0	0	2	11	54	69	40	18	4	4	0	48.9	43.1	6.3
2000 - 2100	195	43	53	53	46	0	0	176	1	7	1	0	1	3	4	2	0	0	0	0	0	0	0	10	55	58	42	19	10	1	0	50.6	43.3	6.2
2100 - 2200	161	38	44	41	38	0	0	148	0	6	0	0	0	4	1	2	0	0	0	0	0	0	2	8	51	56	29	7	7	0	1	48.1	42.5	6.3
2200 - 2300	142	33	47	32	30	0	1	135	0	2	0	0	0	3	1	0	0	0	0	0	0	0	0	8	36	37	40	9	7	5	0	50.2	44.2	6.8
2300 - 0000	124	33	41	24	26	0	1	111	0	4	1	0	0	4	3	0	0	0	0	0	0	0	6	9	42	23	29	7	4	3	1	49.1	42.2	7.5
0700 - 1900	**4168**	**928**	**1071**	**1053**	**1116**	**0**	**10**	**3749**	**12**	**271**	**8**	**8**	**0**	**58**	**30**	**19**	**1**	**2**	**0**	**0**	**0**	**0**	**23**	**221**	**1055**	**1480**	**956**	**321**	**75**	**24**	**13**	**48.5**	**43.0**	**5.7**
0600 - 2200	**4885**	**1086**	**1239**	**1246**	**1314**	**1**	**10**	**4376**	**13**	**325**	**9**	**8**	**1**	**69**	**40**	**30**	**1**	**2**	**0**	**1**	**0**	**0**	**27**	**261**	**1247**	**1715**	**1106**	**377**	**104**	**33**	**14**	**48.7**	**43.1**	**5.8**
0600 - 0000	**5151**	**1152**	**1327**	**1302**	**1370**	**1**	**12**	**4622**	**13**	**331**	**10**	**8**	**1**	**76**	**44**	**30**	**1**	**2**	**0**	**1**	**0**	**0**	**33**	**278**	**1325**	**1775**	**1175**	**393**	**115**	**41**	**15**	**48.7**	**43.1**	**5.9**
0000 - 0000	**5480**	**1214**	**1413**	**1394**	**1459**	**1**	**12**	**4866**	**13**	**379**	**12**	**8**	**1**	**97**	**54**	**34**	**1**	**2**	**0**	**1**	**0**	**1**	**34**	**297**	**1415**	**1874**	**1249**	**424**	**122**	**45**	**18**	**48.7**	**43.1**	**5.9**

Sunday 11 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	101	23	38	17	23	0	1	92	0	3	0	0	0	2	2	0	1	0	0	0	0	0	0	2	31	36	20	9	1	0	2	48.9	43.4	6.9
0100 - 0200	56	19	11	17	9	0	0	48	0	4	0	0	0	3	0	1	0	0	0	0	0	0	1	4	19	18	8	3	2	1	0	49.0	42.2	6.4
0200 - 0300	41	8	11	13	9	0	0	35	0	4	0	0	0	1	0	1	0	0	0	1	0	0	0	1	11	13	12	3	0	0	0	48.2	42.2	6.7
0300 - 0400	28	8	9	4	7	0	0	24	0	1	0	0	0	1	1	1	0	0	0	0	0	0	2	2	10	9	3	2	0	0	0	46.2	40.1	6.2
0400 - 0500	37	5	10	9	13	0	0	31	0	1	2	0	0	1	0	2	0	0	0	0	0	0	0	1	12	11	6	4	2	0	1	52.8	43.9	7.2
0500 - 0600	69	11	14	27	17	0	0	58	0	4	0	0	0	2	3	2	0	0	0	0	0	0	0	2	15	27	15	6	2	2	0	50.0	44.3	6.1
0600 - 0700	72	12	14	27	19	0	0	63	0	6	1	0	0	1	0	1	0	0	0	0	0	0	0	1	11	20	24	4	6	6	0	56.0	46.8	7.3
0700 - 0800	99	20	20	23	36	0	0	87	0	6	0	0	0	2	1	3	0	0	0	0	0	0	1	1	12	31	30	15	7	2	0	53.1	46.0	6.3
0800 - 0900	134	32	26	39	37	0	0	120	0	11	1	0	0	0	2	0	0	0	0	0	0	0	0	2	41	41	34	9	3	2	2	49.2	44.0	6.6
0900 - 1000	184	26	36	40	82	0	1	171	1	7	1	0	0	1	1	1	0	0	0	0	0	0	0	5	40	81	38	17	2	1	0	48.7	43.3	5.0
1000 - 1100	216	55	43	61	57	0	2	206	1	3	0	0	0	2	1	1	0	0	0	0	0	0	1	9	46	62	64	21	9	3	1	50.7	44.3	6.5
1100 - 1200	273	54	72	78	69	0	0	253	0	6	0	0	1	10	3	0	0	0	0	0	0	0	3	8	44	109	89	15	2	3	0	48.3	43.7	5.1
1200 - 1300	306	83	62	82	79	0	0	272	0	16	2	0	0	13	3	0	0	0	0	0	0	2	1	17	68	116	73	22	5	2	0	48.0	42.9	5.5
1300 - 1400	401	91	95	114	101	0	1	379	2	9	0	0	0	7	2	1	0	0	0	0	0	0	4	7	84	167	92	39	5	2	1	48.6	43.6	5.3
1400 - 1500	367	94	88	94	91	0	4	340	1	11	0	1	0	7	3	0	0	0	0	0	0	0	0	16	78	143	88	29	8	5	0	48.9	43.7	5.6
1500 - 1600	359	67	92	102	98	0	3	336	1	11	1	0	1	2	2	2	0	0	0	0	0	0	1	11	80	136	90	34	5	1	1	49.2	43.6	5.3
1600 - 1700	323	80	81	83	79	0	1	306	1	12	0	1	0	1	0	1	0	0	0	0	0	0	0	13	54	100	106	39	8	3	0	50.5	44.6	5.5
1700 - 1800	271	69	76	69	57	0	1	255	0	9	1	0	0	3	1	1	0	0	0	0	0	0	2	16	61	102	64	17	6	2	1	48.7	43.0	5.7
1800 - 1900	240	68	63	55	54	0	0	228	2	4	0	0	0	2	2	2	0	0	0	0	0	0	1	15	48	77	65	24	10	0	0	49.3	43.6	5.9
1900 - 2000	268	67	76	66	59	0	1	253	1	7	0	0	0	0	4	2	0	0	0	0	0	0	2	22	62	91	55	17	12	6	1	49.5	43.2	6.8
2000 - 2100	178	45	45	52	36	0	1	163	0	6	1	0	0	3	1	3	0	0	0	0	0	0	1	12	30	48	56	20	7	3	1	50.5	44.8	6.8
2100 - 2200	129	29	37	29	34	0	0	121	0	4	0	0	0	2	1	1	0	0	0	0	0	0	0	6	29	48	21	17	6	1	1	50.8	44.2	6.5
2200 - 2300	77	23	18	15	21	0	0	65	0	6	1	0	0	1	2	2	0	0	0	0	0	0	1	5	16	24	20	9	0	0	2	50.1	43.9	7.1
2300 - 0000	49	12	11	15	11	0	0	46	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	2	8	24	11	2	1	1	0	47.8	43.3	5.6
0700 - 1900	**3173**	**739**	**754**	**840**	**840**	**0**	**13**	**2953**	**9**	**105**	**6**	**2**	**2**	**50**	**21**	**12**	**0**	**0**	**0**	**0**	**0**	**2**	**14**	**120**	**656**	**1165**	**833**	**281**	**70**	**26**	**6**	**49.0**	**43.7**	**5.6**
0600 - 2200	**3820**	**892**	**926**	**1014**	**988**	**0**	**15**	**3553**	**10**	**128**	**8**	**2**	**2**	**56**	**27**	**19**	**0**	**0**	**0**	**0**	**0**	**2**	**17**	**161**	**788**	**1372**	**989**	**339**	**101**	**42**	**9**	**49.3**	**43.8**	**5.8**
0600 - 0000	**3946**	**927**	**955**	**1044**	**1020**	**0**	**15**	**3664**	**10**	**135**	**9**	**2**	**2**	**57**	**31**	**21**	**0**	**0**	**0**	**0**	**0**	**2**	**18**	**168**	**812**	**1420**	**1029**	**350**	**102**	**43**	**11**	**49.3**	**43.8**	**5.9**
0000 - 0000	**4278**	**1001**	**1048**	**1131**	**1098**	**0**	**16**	**3952**	**10**	**152**	**11**	**2**	**2**	**67**	**37**	**28**	**1**	**0**	**0**	**1**	**0**	**2**	**21**	**180**	**910**	**1534**	**1084**	**377**	**109**	**46**	**14**	**49.3**	**43.7**	**5.9**

Monday 12 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	38	11	16	5	6	0	1	26	0	4	0	0	0	4	3	0	0	0	0	0	0	0	0	8	7	13	7	1	0	0	2	47.8	42.1	8.7
0100 - 0200	16	2	2	6	6	0	0	6	0	4	0	0	0	3	2	1	0	0	0	0	0	0	0	2	8	2	2	2	0	0	0	48.4	40.5	5.8
0200 - 0300	30	4	12	7	7	0	0	20	0	5	0	0	0	0	3	2	0	0	0	0	0	0	1	4	12	5	5	2	1	0	0	48.5	40.8	7.0
0300 - 0400	25	5	5	2	13	0	1	16	0	4	0	0	0	3	1	0	0	0	0	0	0	0	1	4	6	5	2	4	2	1	0	52.4	43.0	8.7
0400 - 0500	48	10	13	11	14	0	0	28	0	11	0	1	0	4	4	0	0	0	0	0	0	0	0	2	15	12	11	7	0	0	1	50.5	43.8	7.3
0500 - 0600	221	23	30	70	98	0	1	172	0	37	1	1	0	2	3	4	0	0	0	0	0	0	1	14	45	80	59	11	3	3	5	48.3	43.7	6.8
0600 - 0700	608	73	111	188	236	0	0	536	3	53	4	0	0	4	3	5	0	0	0	0	0	0	0	73	220	199	93	20	3	0	0	45.8	40.7	4.9
0700 - 0800	1062	223	224	293	322	0	2	994	5	43	2	2	0	2	1	9	0	2	0	0	0	0	27	206	495	281	42	10	0	1	0	42.3	38.2	4.3
0800 - 0900	1442	301	356	370	415	0	3	1340	22	52	4	6	0	3	5	5	1	1	0	0	4	46	183	405	557	214	30	3	0	0	0	40.4	35.4	5.2
0900 - 1000	1162	371	293	270	228	0	1	1062	4	65	6	1	0	4	7	11	1	0	0	0	5	76	108	160	387	331	84	8	3	0	0	43.4	37.1	6.6
1000 - 1100	583	161	115	148	159	0	2	458	1	85	2	2	1	4	19	8	1	0	0	0	0	7	55	226	195	83	13	2	2	0	0	45.5	40.5	4.8
1100 - 1200	547	115	145	149	138	0	2	465	1	59	0	2	2	7	5	3	0	1	0	0	0	0	2	40	201	187	94	18	5	0	0	45.9	41.3	4.7
1200 - 1300	614	138	142	171	163	0	0	512	0	68	3	0	0	13	7	10	1	0	0	0	0	0	1	69	183	246	93	21	1	0	0	45.6	41.0	4.7
1300 - 1400	581	129	131	148	173	0	2	479	2	73	1	0	0	11	8	5	0	0	0	0	0	0	2	30	173	216	124	29	5	1	1	47.2	42.2	5.1
1400 - 1500	538	128	140	119	151	0	3	437	1	82	2	0	0	3	3	5	2	0	0	0	0	0	12	35	127	223	104	26	7	1	3	47.2	42.1	5.7
1500 - 1600	536	156	136	126	118	0	1	460	1	59	2	0	0	7	2	2	1	1	0	0	0	0	3	43	167	204	93	16	7	3	0	46.9	41.8	5.0
1600 - 1700	536	114	175	126	121	0	1	480	2	40	0	2	0	2	4	5	0	0	2	0	0	0	0	59	131	218	97	24	4	1	0	46.5	41.6	5.5
1700 - 1800	641	127	182	178	154	0	0	608	0	23	1	1	0	2	0	6	0	0	0	0	0	7	5	56	207	266	80	14	6	0	0	45.4	40.6	4.9
1800 - 1900	560	157	149	133	121	0	3	523	1	26	1	1	0	0	3	2	0	0	0	0	0	0	3	35	175	219	103	14	7	0	4	46.4	41.8	5.2
1900 - 2000	343	75	87	98	83	0	4	309	0	18	3	0	0	5	1	3	0	0	0	0	0	0	4	33	100	106	73	16	5	3	3	47.9	42.0	6.7
2000 - 2100	215	50	57	54	54	0	0	191	1	10	2	0	0	2	4	5	0	0	0	0	0	0	0	16	43	85	48	15	5	2	1	48.6	43.2	6.0
2100 - 2200	185	46	49	52	38	0	0	168	0	10	0	0	0	4	1	2	0	0	0	0	0	0	1	10	40	55	56	15	5	2	1	49.8	44.0	6.4
2200 - 2300	132	26	37	46	23	0	0	122	0	2	1	0	0	2	5	0	0	0	0	0	0	0	2	7	26	45	36	9	6	1	0	48.8	43.7	6.1
2300 - 0000	70	18	17	21	14	0	0	55	0	7	1	0	0	0	4	3	0	0	0	0	0	0	0	1	12	21	27	6	1	1	1	49.3	45.0	6.0
0700 - 1900	**8802**	**2120**	**2188**	**2231**	**2263**	**0**	**20**	**7818**	**40**	**675**	**24**	**17**	**3**	**58**	**64**	**71**	**7**	**5**	**2**	**0**	**9**	**129**	**353**	**1193**	**3029**	**2800**	**1027**	**196**	**47**	**9**	**8**	**44.9**	**39.5**	**5.8**
0600 - 2200	**10153**	**2364**	**2492**	**2623**	**2674**	**0**	**24**	**9022**	**44**	**766**	**33**	**17**	**3**	**73**	**73**	**86**	**7**	**5**	**2**	**0**	**9**	**129**	**358**	**1325**	**3432**	**3245**	**1297**	**262**	**65**	**16**	**13**	**45.3**	**39.8**	**5.9**
0600 - 0000	**10355**	**2408**	**2546**	**2690**	**2711**	**0**	**24**	**9199**	**44**	**775**	**35**	**17**	**3**	**75**	**82**	**89**	**7**	**5**	**2**	**0**	**9**	**129**	**360**	**1333**	**3470**	**3311**	**1360**	**277**	**72**	**18**	**14**	**45.5**	**39.9**	**5.9**
0000 - 0000	**10733**	**2463**	**2624**	**2791**	**2855**	**0**	**27**	**9467**	**44**	**840**	**36**	**19**	**3**	**91**	**98**	**96**	**7**	**5**	**2**	**0**	**9**	**129**	**363**	**1367**	**3563**	**3428**	**1446**	**304**	**78**	**22**	**22**	**45.6**	**40.0**	**6.0**

Tuesday 13 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	38	16	11	7	4	0	0	22	0	8	0	0	0	2	3	3	0	0	0	0	0	1	4	5	19	5	3	1	0	0	46.8	42.0	6.0
0100 - 0200	36	10	14	7	5	0	0	31	0	4	0	0	0	1	0	0	0	0	0	0	0	1	0	9	8	9	8	1	0	0	51.7	44.8	6.3
0200 - 0300	42	8	11	12	11	0	0	21	0	8	0	0	0	5	5	2	1	0	0	0	0	0	2	12	13	11	4	0	0	0	49.0	42.7	5.7
0300 - 0400	45	11	17	7	10	0	0	37	0	3	0	0	0	5	0	0	0	0	0	0	0	0	0	13	19	10	3	0	0	0	47.5	42.9	4.4
0400 - 0500	55	13	14	10	18	0	0	37	0	10	1	1	0	2	3	1	0	0	0	0	0	0	6	9	19	14	6	1	0	0	48.7	43.5	5.8
0500 - 0600	226	29	49	68	80	0	1	180	0	28	4	1	0	2	3	7	0	0	0	0	0	0	15	32	91	61	19	4	1	3	48.8	44.1	6.4
0600 - 0700	628	86	131	173	238	3	0	1	556	1	53	5	2	0	2	3	4	1	0	0	0	0	16	105	186	208	87	19	5	0	2	46.0	40.2	5.8
0700 - 0800	981	213	215	234	319	1	4	933	2	30	0	0	0	0	3	6	0	2	0	1	0	0	34	138	451	283	60	10	2	1	1	43.1	38.7	4.7
0800 - 0900	1403	314	403	364	322	2	2	1336	3	38	2	5	0	1	5	7	0	2	0	2	0	13	69	298	686	294	39	1	1	0	0	41.4	37.2	4.4
0900 - 1000	1239	388	296	288	267	0	3	1150	4	59	5	1	0	1	8	7	0	1	2	0	0	4	34	279	448	354	96	19	2	1	0	43.5	38.4	5.2
1000 - 1100	632	182	161	141	148	0	0	526	1	75	3	2	2	6	8	8	0	1	0	0	0	0	1	41	217	237	109	22	4	0	1	46.3	41.4	4.9
1100 - 1200	535	117	124	148	146	1	0	442	1	67	3	2	0	4	7	7	1	0	0	2	0	0	7	31	139	199	123	24	9	0	1	47.7	42.3	5.6
1200 - 1300	594	123	135	155	181	0	1	509	1	60	3	2	0	7	7	3	0	1	0	0	0	0	10	43	154	273	94	19	1	0	0	45.9	41.3	4.7
1300 - 1400	558	131	153	122	152	0	1	460	0	74	3	1	0	10	7	2	0	0	0	0	0	0	5	26	171	194	117	32	8	3	2	47.5	42.4	5.5
1400 - 1500	528	111	126	145	146	0	1	430	1	72	3	1	1	9	4	5	1	0	0	0	0	1	3	19	165	230	82	22	4	1	1	46.0	41.8	4.9
1500 - 1600	585	140	128	158	159	1	3	508	0	59	1	0	0	4	6	2	1	0	0	0	0	0	1	31	157	249	120	19	5	1	2	47.0	42.2	4.9
1600 - 1700	586	140	123	159	164	0	3	529	0	44	3	2	1	1	2	1	0	0	0	0	0	0	7	41	135	255	120	24	3	1	0	46.7	41.9	4.9
1700 - 1800	671	159	156	191	165	0	2	632	0	29	1	0	0	2	1	4	0	0	0	0	0	0	7	54	204	261	121	18	3	3	0	46.2	41.3	5.0
1800 - 1900	531	146	148	126	111	0	4	485	1	33	2	0	0	0	3	2	1	0	0	0	0	1	1	42	144	197	101	38	3	3	1	47.6	42.2	5.6
1900 - 2000	320	91	95	67	67	0	2	286	0	18	1	0	0	5	5	3	0	0	0	0	0	0	0	20	93	110	55	31	6	3	2	48.9	42.8	6.1
2000 - 2100	232	58	65	51	58	0	1	213	0	12	0	0	0	2	2	2	0	0	0	0	0	1	9	11	42	91	46	25	5	0	2	49.2	43.1	6.3
2100 - 2200	175	42	37	50	46	0	1	150	2	11	0	0	0	3	3	5	0	0	0	0	0	0	0	5	40	57	42	20	5	1	5	50.8	44.6	7.1
2200 - 2300	129	34	52	21	22	0	0	114	0	3	0	1	0	4	5	2	0	0	0	0	0	0	0	8	25	33	47	13	2	1	0	49.1	43.9	5.8
2300 - 0000	79	23	25	15	16	0	0	67	0	5	1	0	0	1	4	1	0	0	0	0	0	0	2	7	15	18	23	7	4	1	2	52.1	44.5	8.1
0700 - 1900	**8843**	**2164**	**2168**	**2231**	**2280**	**5**	**24**	**7940**	**14**	**640**	**29**	**16**	**4**	**45**	**61**	**54**	**4**	**7**	**2**	**5**	**0**	**19**	**179**	**1043**	**3071**	**3026**	**1182**	**248**	**45**	**14**	**9**	**45.5**	**40.3**	**5.4**
0600 - 2200	**10198**	**2441**	**2496**	**2572**	**2689**	**5**	**29**	**9145**	**17**	**734**	**35**	**18**	**4**	**57**	**74**	**68**	**5**	**7**	**2**	**5**	**0**	**20**	**204**	**1184**	**3432**	**3492**	**1412**	**343**	**66**	**18**	**20**	**45.7**	**40.5**	**5.5**
0600 - 0000	**10406**	**2498**	**2573**	**2608**	**2727**	**5**	**29**	**9326**	**17**	**742**	**36**	**19**	**4**	**62**	**83**	**71**	**5**	**7**	**2**	**5**	**0**	**20**	**206**	**1199**	**3472**	**3543**	**1482**	**363**	**72**	**20**	**22**	**45.9**	**40.6**	**5.6**
0000 - 0000	**10848**	**2585**	**2689**	**2719**	**2855**	**5**	**30**	**9654**	**17**	**803**	**41**	**21**	**4**	**79**	**97**	**84**	**6**	**7**	**2**	**5**	**0**	**20**	**208**	**1226**	**3552**	**3712**	**1592**	**406**	**79**	**21**	**25**	**46.1**	**40.7**	**5.6**

Wednesday 14 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	32	3	16	5	8	0	0	23	0	2	0	0	0	4	2	1	0	0	0	0	0	0	0	5	7	9	8	3	0	0	0	47.8	42.6	5.7
0100 - 0200	31	5	9	7	10	0	0	18	0	4	0	0	0	1	7	1	0	0	0	0	0	0	1	0	5	14	5	3	2	1	0	52.8	44.4	6.8
0200 - 0300	54	17	9	16	12	0	0	36	0	7	0	0	0	6	3	2	0	0	0	0	0	0	1	3	10	22	14	1	2	1	0	48.4	43.6	5.8
0300 - 0400	36	6	10	11	9	0	0	16	0	8	1	0	0	5	4	2	0	0	0	0	0	0	1	5	11	8	6	4	1	0	0	49.7	41.8	6.6
0400 - 0500	49	13	10	12	14	0	0	32	0	12	0	1	0	1	2	1	0	0	0	0	0	0	0	3	15	15	11	5	0	0	0	49.7	42.7	5.9
0500 - 0600	226	25	36	71	94	0	1	176	1	34	1	0	0	3	1	9	0	0	0	0	0	0	0	9	50	89	59	12	5	1	1	48.4	43.4	5.7
0600 - 0700	657	80	134	169	274	0	0	592	3	52	1	1	0	2	1	3	0	2	0	0	0	0	4	51	221	285	72	16	7	0	1	44.9	40.9	4.6
0700 - 0800	978	202	231	249	296	0	4	933	1	28	3	1	0	0	2	4	0	2	4	12	3	19	19	168	420	276	47	7	1	1	1	42.3	37.7	6.1
0800 - 0900	1339	296	337	356	350	0	3	1274	1	44	2	2	0	2	7	4	0	0	2	11	14	17	49	223	572	359	88	3	1	0	0	42.7	37.6	5.8
0900 - 1000	1099	359	275	258	207	0	4	996	4	67	5	1	1	3	5	13	0	0	1	11	12	13	20	158	409	367	92	11	4	1	0	43.7	38.7	6.0
1000 - 1100	597	168	174	117	138	0	0	502	0	71	1	1	0	4	9	8	1	0	0	0	0	0	2	64	192	210	95	31	3	0	0	46.5	41.2	5.1
1100 - 1200	507	121	131	123	132	0	0	422	0	61	1	3	0	9	3	6	1	1	0	0	0	1	7	51	192	173	69	10	4	0	0	45.3	40.4	4.9
1200 - 1300	459	120	107	129	103	0	1	386	0	49	2	0	0	8	5	8	0	0	0	1	2	2	17	40	170	151	59	11	2	3	1	45.2	39.9	6.0
1300 - 1400	611	150	146	176	139	0	3	510	2	70	4	0	1	6	6	5	2	2	0	0	0	0	1	56	203	222	92	29	4	4	0	46.6	41.4	5.2
1400 - 1500	598	145	165	142	146	0	2	490	1	83	3	2	1	9	4	2	0	1	0	0	0	0	0	34	174	228	119	31	10	2	0	47.2	42.3	5.1
1500 - 1600	575	139	146	140	150	1	1	490	0	65	3	1	0	7	3	3	1	0	0	0	0	0	2	67	180	186	102	31	5	2	0	47.2	41.4	5.5
1600 - 1700	598	164	148	145	141	1	4	543	0	43	1	0	0	0	2	4	0	0	2	1	4	3	5	28	220	212	88	32	1	2	0	46.1	41.0	5.9
1700 - 1800	687	152	171	179	185	0	4	636	1	37	0	0	0	2	2	4	1	0	0	0	0	0	11	104	247	229	77	13	6	0	0	44.9	39.7	4.9
1800 - 1900	684	190	192	162	140	0	7	640	0	28	1	0	0	5	1	1	0	1	0	0	0	0	7	63	238	245	107	17	5	2	0	45.9	40.9	5.1
1900 - 2000	387	110	105	89	83	0	3	335	0	29	3	1	0	9	3	3	0	1	0	0	0	0	0	8	90	148	101	29	8	3	0	49.1	43.7	5.3
2000 - 2100	256	65	64	61	66	0	2	224	0	17	1	0	0	3	5	4	0	0	0	0	0	0	0	6	44	100	73	20	10	3	0	49.4	44.4	5.4
2100 - 2200	224	58	55	63	48	0	1	199	1	8	1	0	0	6	5	3	0	0	0	0	0	0	2	24	54	67	49	22	2	2	2	49.3	42.6	6.9
2200 - 2300	164	54	46	38	26	0	0	140	0	9	1	0	1	3	7	3	0	0	0	0	0	0	0	11	37	65	27	12	7	2	3	49.8	43.4	6.9
2300 - 0000	105	36	29	26	14	0	0	90	0	3	1	0	0	1	3	7	0	0	0	0	0	0	3	7	18	40	19	8	5	3	2	51.3	44.1	7.9
0700 - 1900	**8732**	**2206**	**2223**	**2176**	**2127**	**2**	**33**	**7822**	**10**	**646**	**26**	**11**	**3**	**55**	**49**	**62**	**6**	**7**	**9**	**36**	**35**	**55**	**140**	**1056**	**3217**	**2858**	**1035**	**226**	**46**	**17**	**2**	**45.1**	**39.8**	**5.8**
0600 - 2200	**10256**	**2519**	**2581**	**2558**	**2598**	**2**	**39**	**9172**	**14**	**752**	**32**	**13**	**3**	**75**	**63**	**75**	**6**	**10**	**9**	**36**	**35**	**55**	**146**	**1145**	**3626**	**3458**	**1330**	**313**	**73**	**25**	**5**	**45.5**	**40.2**	**5.8**
0600 - 0000	**10525**	**2609**	**2656**	**2622**	**2638**	**2**	**39**	**9402**	**14**	**764**	**34**	**13**	**4**	**79**	**73**	**85**	**6**	**10**	**9**	**36**	**35**	**55**	**149**	**1163**	**3681**	**3563**	**1376**	**333**	**85**	**30**	**10**	**45.6**	**40.3**	**5.9**
0000 - 0000	**10953**	**2678**	**2746**	**2744**	**2785**	**2**	**40**	**9703**	**15**	**831**	**36**	**14**	**4**	**99**	**92**	**101**	**6**	**10**	**9**	**36**	**35**	**55**	**152**	**1188**	**3779**	**3720**	**1479**	**361**	**95**	**33**	**11**	**45.7**	**40.4**	**5.9**

Thursday 15 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	55	19	16	9	11	0	0	36	0	8	0	0	0	1	6	4	0	0	0	0	0	0	3	2	16	11	15	7	1	0	0	50.0	43.2	6.7
0100 - 0200	41	4	8	14	15	0	0	24	0	8	0	0	0	0	5	4	0	0	0	0	0	0	2	1	8	18	7	3	2	0	0	49.5	43.4	6.6
0200 - 0300	38	4	14	7	13	0	0	27	0	3	1	1	0	1	3	2	0	0	0	0	0	0	0	4	20	7	3	3	1	0	0	48.2	40.3	5.7
0300 - 0400	55	8	17	10	20	0	1	28	0	11	0	0	0	4	6	5	0	0	0	0	0	0	2	4	10	26	8	2	2	0	1	47.1	42.4	7.0
0400 - 0500	61	17	9	13	22	0	0	44	0	14	0	1	0	2	0	0	0	0	0	0	0	0	0	2	12	13	28	3	0	0	3	49.4	45.4	7.3
0500 - 0600	202	20	38	66	78	0	1	158	0	30	2	0	0	3	3	5	0	0	0	0	0	0	4	8	47	72	52	12	6	0	1	48.2	43.3	5.8
0600 - 0700	681	70	130	206	275	0	1	617	1	53	3	0	0	0	3	3	0	0	0	0	0	0	1	68	265	248	82	11	3	3	0	44.9	40.5	4.6
0700 - 0800	1012	227	237	244	304	0	4	957	1	38	1	1	0	0	4	6	0	0	0	0	0	0	8	136	416	354	90	8	0	0	0	43.7	39.5	4.1
0800 - 0900	1419	305	347	387	380	0	4	1354	3	47	4	0	0	2	2	2	1	0	0	0	0	0	6	180	668	476	82	6	1	0	0	42.9	39.2	3.7
0900 - 1000	1132	360	302	262	208	0	1	1038	2	63	1	1	0	6	8	10	0	2	0	0	0	3	52	156	434	358	100	26	3	0	0	44.3	39.1	5.2
1000 - 1100	578	153	138	153	134	0	1	490	2	65	2	0	0	4	5	8	0	1	0	0	0	0	0	42	178	216	110	20	9	2	1	47.2	41.9	5.3
1100 - 1200	478	120	114	118	126	0	1	398	0	61	1	2	1	5	4	5	0	0	0	0	0	0	0	22	131	203	84	31	6	1	0	46.9	42.4	5.0
1200 - 1300	492	115	115	115	147	0	0	413	0	63	3	0	0	7	3	2	0	1	0	0	0	0	0	17	112	223	94	36	5	2	3	48.4	43.3	5.3
1300 - 1400	542	124	116	147	155	1	3	454	1	59	0	1	0	11	8	3	1	0	0	0	0	0	1	28	143	221	106	37	5	1	0	47.8	42.5	5.0
1400 - 1500	553	138	143	128	144	0	1	445	0	82	1	2	0	7	7	8	0	0	0	0	0	0	0	25	143	229	124	25	4	3	0	47.1	42.4	4.8
1500 - 1600	584	126	154	153	151	0	1	502	1	69	1	0	1	2	3	3	1	0	0	0	0	0	3	39	139	241	121	33	7	1	0	47.8	42.5	5.1
1600 - 1700	561	115	146	158	142	1	2	507	2	42	1	0	0	0	2	3	1	0	1	0	0	0	4	39	147	244	111	10	5	0	0	46.1	41.4	4.8
1700 - 1800	581	137	163	163	118	0	1	555	0	24	1	0	0	0	0	0	0	0	0	0	0	0	9	46	171	239	77	30	4	2	3	46.5	41.6	6.0
1800 - 1900	514	116	126	142	130	0	6	464	0	32	1	0	2	1	3	5	0	0	0	0	0	0	3	22	119	225	110	26	5	3	1	47.4	42.7	5.1
1900 - 2000	359	104	106	74	75	0	1	332	0	13	1	0	0	6	1	5	0	0	0	0	0	0	0	11	83	151	83	24	4	2	1	48.1	43.2	5.1
2000 - 2100	281	76	56	76	73	0	0	259	0	12	0	1	0	1	2	5	1	0	0	0	0	0	0	12	64	105	65	23	5	6	1	49.3	43.7	5.9
2100 - 2200	189	48	62	42	37	0	2	162	0	13	0	0	0	7	4	1	0	0	0	0	0	1	0	15	39	59	50	19	3	3	0	49.4	43.5	6.0
2200 - 2300	156	53	33	28	42	0	1	131	0	11	0	1	0	4	5	3	0	0	0	0	0	0	2	12	37	50	35	15	3	1	1	49.2	43.0	6.4
2300 - 0000	87	24	23	20	20	0	0	64	0	10	0	0	0	4	7	2	0	0	0	0	0	0	0	5	19	29	20	8	1	5	0	50.5	44.1	6.8
0700 - 1900	**8446**	**2036**	**2101**	**2170**	**2139**	**2**	**25**	**7577**	**12**	**645**	**17**	**7**	**4**	**45**	**49**	**55**	**4**	**4**	**1**	**0**	**0**	**3**	**86**	**752**	**2801**	**3229**	**1209**	**288**	**54**	**15**	**8**	**45.9**	**41.0**	**5.1**
0600 - 2200	**9956**	**2334**	**2455**	**2568**	**2599**	**2**	**29**	**8947**	**13**	**736**	**21**	**8**	**4**	**59**	**59**	**69**	**5**	**4**	**1**	**0**	**0**	**4**	**87**	**858**	**3252**	**3792**	**1489**	**365**	**69**	**29**	**10**	**46.1**	**41.2**	**5.1**
0600 - 0000	**10199**	**2411**	**2511**	**2616**	**2661**	**2**	**30**	**9142**	**13**	**757**	**21**	**9**	**4**	**67**	**71**	**74**	**5**	**4**	**1**	**0**	**0**	**4**	**89**	**875**	**3308**	**3871**	**1544**	**388**	**73**	**35**	**11**	**46.1**	**41.2**	**5.2**
0000 - 0000	**10651**	**2483**	**2613**	**2735**	**2820**	**2**	**32**	**9459**	**13**	**831**	**24**	**11**	**4**	**78**	**94**	**94**	**5**	**4**	**1**	**0**	**0**	**4**	**100**	**896**	**3421**	**4018**	**1657**	**418**	**85**	**35**	**16**	**46.2**	**41.3**	**5.3**

Friday 16 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	37	17	11	3	6	0	0	26	0	3	1	0	0	3	1	3	0	0	0	0	0	0	0	7	7	8	8	5	1	1	0	51.9	43.0	7.6
0100 - 0200	47	11	19	11	6	0	0	27	0	7	1	0	0	6	3	2	1	0	0	0	1	0	1	6	12	17	6	3	1	0	0	46.9	40.8	6.9
0200 - 0300	51	7	25	14	5	0	1	33	0	4	1	0	0	6	5	1	0	0	0	0	0	0	0	5	12	17	13	2	1	1	0	47.8	42.6	6.1
0300 - 0400	55	13	12	13	17	0	0	34	0	11	0	0	0	3	3	4	0	0	0	0	0	0	1	1	7	17	16	10	2	1	0	51.7	45.6	6.0
0400 - 0500	82	22	14	20	26	0	0	49	0	19	0	1	0	4	7	2	0	0	0	0	0	0	0	5	24	25	17	8	2	1	0	49.4	43.5	6.3
0500 - 0600	214	17	38	65	94	0	0	166	0	37	0	0	0	4	1	6	0	0	0	0	0	0	0	4	28	71	62	35	5	8	1	51.7	45.8	6.3
0600 - 0700	638	74	141	181	242	0	0	572	0	56	3	0	0	0	4	3	0	0	0	0	0	0	0	38	246	218	109	23	4	0	0	46.0	41.3	4.6
0700 - 0800	1285	244	287	369	385	1	2	1217	6	40	4	3	0	3	2	6	1	0	0	0	4	16	42	228	646	279	64	5	0	1	0	42.1	37.7	4.6
0800 - 0900	1584	389	427	413	355	0	3	1498	8	58	3	2	1	2	1	7	0	1	0	0	0	1	33	450	719	337	40	3	1	0	0	41.3	37.2	4.0
0900 - 1000	926	240	240	250	196	0	1	831	3	74	3	2	0	2	5	5	0	0	0	0	0	8	13	71	270	372	154	31	6	0	1	46.0	41.1	5.3
1000 - 1100	483	101	138	134	110	0	0	391	0	65	2	1	1	5	9	9	0	0	0	0	0	0	0	45	119	181	113	22	2	0	1	47.3	42.0	5.1
1100 - 1200	546	118	160	146	122	0	1	449	2	66	4	3	0	5	5	11	0	0	1	2	4	0	5	37	158	208	94	26	8	0	3	47.3	41.5	6.3
1200 - 1300	542	135	128	151	128	0	4	449	1	70	1	1	0	6	3	6	1	0	0	0	0	0	1	22	163	179	136	31	6	3	1	48.0	42.7	5.3
1300 - 1400	554	114	143	155	142	0	2	465	0	62	0	1	0	7	14	3	0	0	0	0	0	0	1	12	110	244	137	36	11	2	1	47.9	43.5	4.9
1400 - 1500	572	149	146	125	152	1	1	480	0	74	1	2	1	4	6	1	0	1	0	0	0	0	0	7	25	142	208	127	50	7	4	2	48.5	43.0	5.7
1500 - 1600	596	157	139	147	153	0	2	527	1	54	0	1	0	3	4	3	0	1	0	0	0	0	1	31	133	236	139	41	11	3	1	48.0	43.2	5.2
1600 - 1700	601	167	116	143	175	0	1	555	0	41	1	0	0	0	1	2	0	0	0	0	0	1	11	36	206	229	105	7	5	1	0	45.7	40.9	4.9
1700 - 1800	501	120	140	122	119	0	3	464	0	28	0	0	0	0	3	1	1	1	0	0	0	0	3	32	153	182	89	37	3	0	2	47.4	42.1	5.4
1800 - 1900	422	118	113	83	108	0	6	376	3	26	2	2	0	2	4	1	0	0	0	0	0	0	1	45	87	153	101	20	8	6	1	47.8	42.6	6.1
1900 - 2000	303	66	69	76	92	0	1	270	0	22	0	1	0	3	2	4	0	0	0	0	0	1	0	18	68	97	70	35	8	4	2	50.3	43.9	6.6
2000 - 2100	199	49	39	47	64	0	1	178	0	11	0	1	0	3	4	1	0	0	0	0	0	0	1	4	41	74	49	14	8	6	2	50.1	44.7	7.2
2100 - 2200	174	48	38	48	40	0	1	154	0	6	0	1	0	7	4	1	0	0	0	0	0	0	1	6	36	67	46	14	3	1	0	48.8	43.7	5.2
2200 - 2300	154	38	41	35	40	0	2	135	0	6	0	2	1	5	1	2	0	0	0	0	0	0	2	7	36	49	45	9	3	2	1	49.0	43.7	6.5
2300 - 0000	95	29	23	28	15	0	0	87	0	1	0	0	0	3	3	1	0	0	0	0	0	0	0	5	18	27	20	16	2	6	1	53.8	45.6	7.4
0700 - 1900	**8612**	**2052**	**2177**	**2238**	**2145**	**2**	**26**	**7702**	**24**	**658**	**21**	**18**	**3**	**39**	**57**	**55**	**3**	**4**	**1**	**2**	**8**	**26**	**118**	**1034**	**2906**	**2808**	**1299**	**309**	**68**	**20**	**13**	**46.1**	**40.6**	**5.6**
0600 - 2200	**9926**	**2289**	**2464**	**2590**	**2583**	**2**	**29**	**8876**	**24**	**753**	**24**	**21**	**3**	**52**	**71**	**64**	**3**	**4**	**1**	**2**	**8**	**27**	**120**	**1100**	**3297**	**3264**	**1573**	**395**	**91**	**31**	**17**	**46.3**	**40.9**	**5.7**
0600 - 0000	**10175**	**2356**	**2528**	**2653**	**2638**	**2**	**31**	**9098**	**24**	**760**	**24**	**23**	**4**	**60**	**75**	**67**	**3**	**4**	**1**	**2**	**8**	**27**	**122**	**1112**	**3351**	**3340**	**1638**	**420**	**96**	**39**	**19**	**46.5**	**41.0**	**5.7**
0000 - 0000	**10661**	**2443**	**2647**	**2779**	**2792**	**2**	**32**	**9433**	**24**	**841**	**27**	**24**	**4**	**86**	**95**	**85**	**4**	**4**	**1**	**2**	**9**	**27**	**124**	**1140**	**3441**	**3495**	**1760**	**483**	**108**	**51**	**20**	**46.7**	**41.1**	**5.8**

Saturday 17 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	49	11	11	15	12	0	0	43	0	5	0	0	0	1	0	0	0	0	0	0	0	0	1	7	22	9	9	1	0	0	51.0	44.7	5.3
0100 - 0200	48	9	16	11	12	0	0	39	0	4	0	0	0	5	0	0	0	0	0	0	0	3	9	17	6	4	6	2	1	0	51.7	41.2	8.2
0200 - 0300	49	15	15	8	11	0	0	35	0	5	1	0	0	5	2	1	0	0	0	0	0	0	7	10	17	7	5	2	1	0	50.9	42.5	7.0
0300 - 0400	35	9	7	8	11	0	0	25	0	1	0	0	0	2	5	2	0	0	0	0	0	0	1	13	10	10	1	0	0	0	46.4	41.7	4.5
0400 - 0500	46	12	14	9	11	0	1	34	0	5	0	0	0	4	2	0	0	0	0	0	0	0	5	6	11	5	12	5	1	1	55.1	46.8	8.6
0500 - 0600	122	14	27	50	31	0	1	94	0	21	0	0	0	3	0	3	0	0	0	0	0	0	0	21	39	32	22	6	2	0	52.6	45.8	5.9
0600 - 0700	167	24	36	46	61	0	1	137	1	15	1	1	0	2	2	7	0	0	0	0	0	0	0	6	38	44	54	19	4	1	1	50.0	44.3	5.9
0700 - 0800	251	46	60	65	80	0	0	201	0	38	4	0	0	0	4	4	0	0	0	0	0	0	0	16	63	74	63	25	9	0	1	49.3	43.4	6.5
0800 - 0900	312	68	76	81	87	0	2	280	0	20	0	0	0	3	6	1	0	0	0	0	0	0	1	7	59	125	76	28	10	3	3	49.7	44.3	6.4
0900 - 1000	295	62	74	73	86	0	0	265	0	17	4	0	0	2	1	6	0	0	0	0	0	0	0	12	57	110	87	21	6	2	0	49.0	43.7	5.3
1000 - 1100	350	71	88	87	104	0	1	305	2	35	1	0	1	1	2	2	0	0	0	0	0	0	6	11	73	139	80	33	6	2	0	48.9	43.3	5.3
1100 - 1200	432	126	117	100	89	0	1	394	4	23	0	0	0	5	1	4	0	0	0	0	0	0	0	14	97	184	96	29	9	2	1	48.0	43.3	5.4
1200 - 1300	381	102	88	88	103	0	3	350	0	20	0	0	0	6	0	2	0	0	0	0	0	0	0	5	73	138	105	41	12	4	3	50.1	44.9	5.8
1300 - 1400	379	90	87	100	102	0	1	351	0	20	1	0	0	5	1	0	0	0	0	0	0	0	0	10	41	147	122	34	16	6	3	50.7	45.4	6.0
1400 - 1500	413	104	92	105	112	1	2	377	2	25	0	0	0	3	3	0	0	0	0	1	0	0	0	9	60	160	122	46	11	0	4	49.9	44.7	5.8
1500 - 1600	401	90	111	104	96	0	2	356	0	32	4	0	0	3	1	2	1	0	0	0	0	0	0	13	92	138	104	39	9	3	3	49.7	44.2	5.8
1600 - 1700	384	87	88	111	98	0	2	346	0	27	2	0	0	3	3	1	0	0	0	0	0	0	2	13	83	140	88	43	11	3	1	50.1	44.1	5.8
1700 - 1800	410	95	117	109	89	0	0	383	0	19	4	0	0	2	2	0	0	0	0	0	0	0	0	15	73	155	117	37	9	2	2	49.1	44.2	5.5
1800 - 1900	297	85	83	66	63	0	2	284	0	6	3	0	0	1	1	0	0	0	0	0	0	0	0	10	59	103	85	28	8	2	2	49.7	44.5	6.3
1900 - 2000	237	59	65	51	62	0	1	220	1	3	2	0	0	4	3	3	0	0	0	0	0	0	0	5	50	85	64	20	7	3	3	49.7	44.6	6.5
2000 - 2100	189	40	48	56	45	0	1	179	0	4	0	0	0	2	2	1	0	0	0	0	0	0	1	2	28	84	45	16	6	2	5	50.3	45.1	6.7
2100 - 2200	125	22	41	33	29	0	0	118	0	4	1	0	0	1	1	0	0	0	0	0	0	0	0	1	19	42	40	17	4	1	1	50.6	45.5	5.8
2200 - 2300	151	35	41	41	34	0	0	139	0	4	3	0	0	3	2	0	0	0	0	0	0	0	0	4	26	57	44	13	4	2	1	49.9	44.4	6.0
2300 - 0000	145	35	43	34	33	0	0	139	0	3	0	0	0	2	1	0	0	0	0	0	0	0	2	4	25	52	34	15	10	2	1	52.1	44.9	6.6
0700 - 1900	**4305**	**1026**	**1081**	**1089**	**1109**	**1**	**16**	**3892**	**8**	**282**	**23**	**0**	**1**	**34**	**25**	**22**	**1**	**0**	**0**	**1**	**0**	**0**	**9**	**135**	**830**	**1613**	**1145**	**404**	**116**	**29**	**23**	**49.4**	**44.2**	**5.8**
0600 - 2200	**5023**	**1171**	**1271**	**1275**	**1306**	**1**	**19**	**4546**	**10**	**308**	**27**	**1**	**1**	**43**	**33**	**33**	**1**	**0**	**0**	**1**	**0**	**0**	**10**	**149**	**965**	**1868**	**1348**	**476**	**137**	**36**	**33**	**49.5**	**44.3**	**5.9**
0600 - 0000	**5319**	**1241**	**1355**	**1350**	**1373**	**1**	**19**	**4824**	**10**	**315**	**30**	**1**	**1**	**48**	**36**	**33**	**1**	**0**	**0**	**1**	**0**	**0**	**12**	**157**	**1016**	**1977**	**1426**	**504**	**151**	**40**	**35**	**49.6**	**44.3**	**5.9**
0000 - 0000	**5668**	**1311**	**1445**	**1451**	**1461**	**1**	**21**	**5094**	**10**	**356**	**31**	**1**	**1**	**68**	**45**	**39**	**1**	**0**	**0**	**1**	**0**	**0**	**15**	**180**	**1090**	**2082**	**1493**	**559**	**167**	**45**	**36**	**49.8**	**44.3**	**6.0**

Sunday 18 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	110	21	38	34	17	0	0	103	0	2	0	0	0	0	4	1	0	0	0	0	0	0	3	3	32	32	28	10	1	1	0	48.8	42.9	5.8
0100 - 0200	60	19	14	15	12	0	0	54	0	3	1	0	0	1	0	1	0	0	0	0	0	1	0	2	13	22	10	8	4	0	0	52.5	43.9	6.5
0200 - 0300	42	11	10	11	10	0	0	36	0	1	1	0	0	1	2	1	0	0	0	0	0	1	4	8	13	11	3	0	1	1	1	49.4	43.4	7.6
0300 - 0400	41	13	8	6	14	0	0	34	0	5	1	0	0	0	1	0	0	0	0	0	0	0	0	3	6	15	15	1	1	0	0	46.0	43.0	5.1
0400 - 0500	47	15	7	17	8	0	0	44	0	2	0	0	0	0	0	1	0	0	0	0	0	0	2	2	7	10	13	8	3	1	1	52.1	45.6	8.6
0500 - 0600	79	14	23	18	24	0	1	64	0	8	0	0	0	3	3	0	0	0	0	0	0	0	0	4	15	26	28	6	0	0	0	48.6	43.6	4.8
0600 - 0700	77	12	19	14	32	0	0	67	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	29	29	8	2	2	0	51.9	45.9	5.2
0700 - 0800	162	28	43	48	43	0	0	145	0	13	2	0	0	1	1	0	0	0	0	0	0	0	1	3	38	61	43	11	4	0	1	49.0	43.7	5.3
0800 - 0900	181	45	41	42	53	0	0	168	0	8	1	1	0	1	0	2	0	0	0	0	0	0	2	4	28	55	63	24	3	2	0	50.1	44.8	5.5
0900 - 1000	181	38	43	47	53	0	1	169	1	7	1	0	0	2	0	0	0	0	0	0	0	0	0	8	39	65	51	8	8	2	0	49.3	44.0	5.7
1000 - 1100	254	54	62	73	65	0	1	241	0	8	1	0	0	1	0	2	0	0	0	0	0	0	0	6	58	96	63	19	10	1	1	48.8	43.9	5.9
1100 - 1200	302	79	76	68	79	0	0	279	0	10	3	0	0	7	2	1	0	0	0	0	0	0	0	3	53	119	93	27	4	2	1	48.9	44.2	5.1
1200 - 1300	361	92	92	73	104	0	2	338	1	10	2	0	2	4	1	1	0	0	0	0	0	0	0	6	49	136	131	30	6	3	0	49.0	44.7	4.9
1300 - 1400	393	86	92	114	101	0	1	365	0	13	1	1	0	7	5	0	0	0	0	0	0	0	0	7	69	145	117	44	7	1	3	49.7	44.6	5.6
1400 - 1500	326	84	82	83	77	0	4	305	0	9	0	0	0	3	4	1	0	0	0	0	0	0	1	5	48	123	106	33	7	3	0	49.2	44.7	5.1
1500 - 1600	359	69	85	103	102	0	2	333	0	17	1	0	0	1	3	2	0	0	0	0	0	0	2	4	65	136	101	38	8	3	2	49.7	44.4	5.5
1600 - 1700	353	88	89	93	83	0	1	336	0	12	1	0	0	1	2	0	0	0	0	0	0	0	4	7	44	148	89	43	14	3	1	50.5	44.9	5.6
1700 - 1800	332	89	85	80	78	0	0	315	0	5	4	0	1	4	1	2	0	0	0	0	0	0	1	12	79	121	80	30	6	3	0	48.9	43.5	5.4
1800 - 1900	299	83	76	71	69	0	0	288	0	6	3	0	0	2	0	0	0	0	0	0	0	0	0	10	74	108	61	30	10	5	1	50.2	43.9	6.0
1900 - 2000	203	52	59	49	43	0	0	197	0	4	0	0	0	0	0	2	0	0	0	0	0	0	0	6	38	59	59	31	7	3	0	50.9	45.0	6.1
2000 - 2100	171	37	45	41	48	0	0	164	0	2	1	0	0	2	1	1	0	0	0	0	0	0	0	12	34	51	47	19	5	2	1	50.7	44.3	6.5
2100 - 2200	126	36	30	28	32	0	0	117	0	3	1	0	0	3	2	0	0	0	0	0	0	0	0	4	26	31	38	19	4	2	2	51.4	45.4	6.5
2200 - 2300	70	22	19	9	20	0	0	65	0	0	1	0	0	2	0	2	0	0	0	0	0	0	1	0	3	18	24	15	6	1	1	49.5	43.7	7.9
2300 - 0000	78	18	21	21	18	0	0	76	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	13	21	21	13	9	0	0	53.7	46.2	6.0
0700 - 1900	**3503**	**835**	**866**	**895**	**907**	**0**	**12**	**3282**	**2**	**118**	**20**	**2**	**3**	**34**	**19**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**75**	**644**	**1313**	**998**	**337**	**87**	**28**	**10**	**49.4**	**44.3**	**5.5**
0600 - 2200	**4080**	**972**	**1019**	**1027**	**1062**	**0**	**12**	**3827**	**2**	**137**	**22**	**2**	**3**	**39**	**22**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**98**	**748**	**1483**	**1171**	**414**	**105**	**37**	**13**	**49.7**	**44.4**	**5.6**
0600 - 0000	**4228**	**1012**	**1059**	**1057**	**1100**	**0**	**12**	**3968**	**2**	**138**	**23**	**2**	**3**	**41**	**22**	**17**	**0**	**0**	**0**	**0**	**0**	**1**	**11**	**102**	**779**	**1528**	**1207**	**433**	**115**	**38**	**14**	**49.8**	**44.4**	**5.6**
0000 - 0000	**4607**	**1105**	**1159**	**1158**	**1185**	**0**	**13**	**4303**	**2**	**159**	**26**	**2**	**3**	**46**	**32**	**21**	**0**	**0**	**0**	**0**	**0**	**2**	**17**	**120**	**860**	**1646**	**1312**	**469**	**124**	**41**	**16**	**49.7**	**44.4**	**5.7**

Monday 19 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	46	16	11	11	8	0	0	35	0	6	2	0	0	1	1	1	0	0	0	0	0	0	0	1	14	12	11	5	3	0	0	53.5	44.3	6.4
0100 - 0200	25	5	1	8	11	0	0	20	0	1	0	0	0	0	4	0	0	0	0	0	0	0	0	3	8	7	5	0	2	0	0	47.1	41.7	6.5
0200 - 0300	20	4	3	9	4	0	0	12	0	4	0	0	0	2	1	1	0	0	0	0	0	0	0	2	9	7	1	0	1	0	0	44.8	41.1	5.6
0300 - 0400	29	5	6	8	10	0	1	19	0	2	0	0	0	3	4	0	0	0	0	0	0	0	0	1	5	8	11	3	1	0	0	49.6	44.9	5.8
0400 - 0500	56	16	13	9	18	0	0	38	0	10	2	2	0	2	2	0	0	0	0	0	0	0	0	2	10	27	10	4	2	0	1	48.2	44.0	6.5
0500 - 0600	209	26	43	64	76	0	1	164	0	32	2	0	0	1	7	2	0	0	0	0	0	0	0	3	28	86	63	16	7	2	4	49.6	45.3	6.3
0600 - 0700	545	75	108	149	213	0	3	481	0	47	3	1	0	1	6	3	0	0	0	0	0	0	1	37	157	242	87	17	3	1	0	46.0	41.6	4.6
0700 - 0800	921	198	214	235	274	1	3	871	0	33	3	0	0	1	1	7	0	1	1	0	0	0	13	97	428	307	65	6	3	0	1	43.3	39.3	4.3
0800 - 0900	1270	275	276	346	373	0	3	1201	5	40	3	0	0	4	1	12	0	1	0	0	0	7	40	204	605	343	57	10	4	0	0	42.6	38.2	4.5
0900 - 1000	1108	332	284	284	208	0	1	1020	3	62	5	0	0	4	6	7	0	0	0	0	0	0	10	143	392	403	129	21	9	0	1	44.9	40.2	4.9
1000 - 1100	555	166	145	113	131	0	2	452	1	68	4	1	1	8	9	9	0	0	0	0	0	0	0	45	187	198	96	25	3	0	1	46.6	41.5	5.1
1100 - 1200	512	132	153	102	125	0	2	427	0	62	2	0	1	5	7	6	0	0	0	0	0	0	0	52	166	177	86	25	5	1	0	46.0	41.2	5.2
1200 - 1300	557	132	142	147	136	0	1	459	0	72	3	0	0	9	7	6	0	0	0	0	0	0	4	52	180	196	100	19	6	0	0	46.4	41.3	5.0
1300 - 1400	612	135	146	176	155	0	2	522	0	65	3	0	0	5	10	4	0	1	0	0	0	0	5	71	197	227	87	20	4	1	0	45.5	40.8	5.1
1400 - 1500	529	134	127	146	122	0	1	434	1	66	4	0	1	4	12	6	0	0	0	0	0	0	5	37	151	184	120	23	8	1	0	47.5	42.0	5.3
1500 - 1600	580	150	144	143	143	0	2	509	0	49	2	0	2	3	4	6	2	1	0	0	0	6	4	53	168	206	101	32	10	0	0	47.2	41.6	5.7
1600 - 1700	604	144	160	156	144	0	1	567	1	29	2	0	0	1	1	1	0	1	0	0	0	0	13	90	235	186	55	17	7	1	0	44.6	39.7	5.3
1700 - 1800	567	130	126	126	185	2	1	530	0	24	2	0	0	0	3	5	0	0	0	1	0	0	2	56	193	226	75	10	4	0	0	45.1	40.6	4.7
1800 - 1900	539	157	141	130	111	1	1	506	2	23	3	0	0	3	0	0	0	0	0	0	0	0	1	37	166	180	124	24	6	1	0	47.1	42.1	5.1
1900 - 2000	344	108	92	71	73	0	5	303	1	18	7	0	0	3	4	3	0	0	0	0	0	0	3	23	101	120	60	27	5	4	1	48.1	42.6	5.9
2000 - 2100	223	62	53	46	62	0	1	203	0	7	1	1	0	1	7	2	0	0	0	0	0	0	4	11	50	82	49	22	2	2	1	48.4	43.2	6.0
2100 - 2200	184	44	45	51	44	0	2	161	1	9	1	1	0	6	1	2	0	0	0	0	0	0	1	14	40	66	41	14	6	1	1	49.0	43.2	6.0
2200 - 2300	113	22	27	40	24	0	0	94	1	2	0	0	0	6	9	1	0	0	0	0	0	0	0	11	29	37	26	7	1	1	1	48.2	42.6	6.1
2300 - 0000	67	25	16	11	15	0	0	53	0	2	0	0	0	3	8	1	0	0	0	0	0	0	2	7	19	23	10	6	0	0	0	47.4	41.4	5.6
0700 - 1900	**8354**	**2085**	**2058**	**2104**	**2107**	**4**	**20**	**7498**	**13**	**593**	**36**	**1**	**5**	**47**	**61**	**69**	**2**	**5**	**1**	**1**	**0**	**13**	**97**	**937**	**3068**	**2833**	**1095**	**232**	**69**	**5**	**3**	**45.5**	**40.4**	**5.1**
0600 - 2200	**9650**	**2374**	**2356**	**2421**	**2499**	**4**	**31**	**8646**	**15**	**674**	**48**	**4**	**5**	**58**	**79**	**79**	**2**	**5**	**1**	**1**	**0**	**13**	**106**	**1022**	**3416**	**3343**	**1332**	**312**	**85**	**13**	**6**	**45.7**	**40.7**	**5.2**
0600 - 0000	**9830**	**2421**	**2399**	**2472**	**2538**	**4**	**31**	**8793**	**16**	**678**	**48**	**4**	**5**	**67**	**96**	**81**	**2**	**5**	**1**	**1**	**0**	**13**	**108**	**1040**	**3464**	**3403**	**1368**	**325**	**86**	**14**	**7**	**45.7**	**40.7**	**5.2**
0000 - 0000	**10215**	**2493**	**2476**	**2581**	**2665**	**4**	**33**	**9081**	**16**	**733**	**54**	**6**	**5**	**76**	**115**	**85**	**2**	**5**	**1**	**1**	**0**	**13**	**108**	**1052**	**3538**	**3550**	**1469**	**353**	**102**	**16**	**12**	**45.9**	**40.8**	**5.3**

Virtual Day (14)

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	51	15	16	10	10	0	0	40	0	5	0	0	0	2	3	1	0	0	0	0	0	0	1	4	13	16	11	5	1	0	1	49.50	43.10	6.70
0100 - 0200	35	9	9	9	9	0	0	25	0	4	0	0	0	2	2	1	0	0	0	0	0	0	1	3	9	10	6	4	2	0	0	50.50	42.80	7.00
0200 - 0300	38	8	11	10	10	0	0	24	0	5	1	0	0	4	3	1	0	0	0	0	0	0	0	4	11	11	7	3	1	1	0	49.40	42.50	6.70
0300 - 0400	38	8	10	8	12	0	0	25	0	5	0	0	0	3	3	1	0	0	0	0	0	0	1	3	8	13	9	3	1	0	0	48.80	43.20	6.60
0400 - 0500	52	12	11	14	15	0	0	36	0	9	0	1	0	2	2	1	0	0	0	0	0	0	0	3	12	16	13	5	2	0	1	50.40	44.10	7.00
0500 - 0600	184	20	35	58	71	0	1	144	0	28	1	0	0	3	3	4	0	0	0	0	0	0	1	9	35	67	48	16	5	2	1	49.50	44.00	6.20
0600 - 0700	487	60	99	138	190	0	1	429	2	44	3	1	0	1	3	4	0	0	0	0	0	0	5	49	165	175	71	16	4	2	0	46.00	40.90	5.30
0700 - 0800	810	170	186	210	245	0	2	758	2	34	2	1	0	1	2	5	0	1	0	1	1	3	19	115	361	238	58	10	3	1	1	43.30	38.90	4.90
0800 - 0900	1096	248	277	290	282	0	2	1029	6	41	3	3	0	2	4	5	0	1	0	2	2	11	54	221	468	266	58	9	3	1	1	42.50	37.70	5.20
0900 - 1000	835	253	213	199	170	0	2	758	3	52	3	1	0	3	5	8	0	0	0	1	1	8	23	109	293	277	96	21	4	1	0	44.90	39.70	5.60
1000 - 1100	483	128	123	116	116	0	1	401	1	58	2	1	1	5	7	6	0	0	0	0	0	1	4	38	150	173	90	21	5	1	1	46.90	41.60	5.30
1100 - 1200	467	112	119	117	119	0	1	391	1	52	2	2	0	7	5	6	0	0	0	0	0	1	3	31	141	175	86	23	5	1	1	46.90	41.80	5.40
1200 - 1300	487	115	115	128	130	0	2	412	1	51	2	1	0	8	5	5	0	0	0	0	0	0	4	31	139	186	95	25	5	2	1	47.30	42.10	5.30
1300 - 1400	521	117	129	140	135	0	1	442	1	54	1	1	0	9	7	3	0	0	0	0	0	0	3	30	141	202	105	31	7	2	1	47.50	42.40	5.40
1400 - 1500	502	122	127	124	129	0	2	419	1	60	2	1	0	6	6	3	0	0	0	0	0	0	3	25	135	192	108	29	6	2	1	47.60	42.50	5.40
1500 - 1600	513	124	125	129	135	0	2	449	0	47	1	1	0	4	4	3	1	1	0	0	0	1	2	32	134	200	106	29	6	2	1	47.50	42.40	5.40
1600 - 1700	501	118	127	131	125	0	2	457	1	33	1	1	0	2	2	2	0	0	0	0	1	1	6	36	139	190	94	26	6	1	0	47.00	41.80	5.60
1700 - 1800	514	120	132	130	132	0	2	478	0	26	1	0	0	2	1	3	0	0	0	0	0	1	5	51	161	189	79	20	5	1	1	46.20	41.10	5.40
1800 - 1900	470	126	125	116	103	0	3	433	1	23	1	0	0	2	2	2	0	0	0	0	0	1	5	40	136	167	89	22	6	2	1	47.20	41.80	5.70
1900 - 2000	308	85	82	72	69	0	2	276	0	17	1	0	0	4	3	3	0	0	0	0	0	0	2	21	83	106	63	23	6	3	1	48.50	42.80	6.10
2000 - 2100	218	52	54	57	55	0	1	197	0	11	1	0	0	2	4	3	0	0	0	0	0	0	1	12	48	77	51	20	6	2	1	49.50	43.60	6.30
2100 - 2200	173	43	46	43	41	0	1	152	0	9	0	0	0	5	3	2	0	0	0	0	0	0	1	11	40	57	41	15	5	1	1	49.50	43.40	6.50
2200 - 2300	135	36	36	31	31	0	0	119	0	5	1	0	0	4	4	2	0	0	0	0	0	0	1	9	32	43	33	11	3	2	1	49.00	43.30	6.70
2300 - 0000	91	27	24	22	18	0	0	79	0	4	0	0	0	2	4	1	0	0	0	0	0	0	1	5	20	28	21	8	4	2	1	50.30	43.80	7.10
0700 - 1900	**7198**	**1750**	**1797**	**1829**	**1821**	**1**	**21**	**6427**	**18**	**531**	**22**	**12**	**4**	**52**	**51**	**50**	**3**	**5**	**1**	**4**	**5**	**27**	**131**	**759**	**2398**	**2455**	**1065**	**267**	**60**	**17**	**9**	**46.1**	**40.7**	**5.6**
0600 - 2200	**8384**	**1990**	**2079**	**2139**	**2177**	**1**	**25**	**7481**	**21**	**612**	**27**	**13**	**4**	**65**	**64**	**62**	**4**	**6**	**1**	**4**	**6**	**28**	**140**	**851**	**2734**	**2868**	**1291**	**341**	**82**	**25**	**13**	**46.4**	**40.9**	**5.7**
0600 - 0000	**8609**	**2053**	**2139**	**2192**	**2226**	**1**	**25**	**7678**	**21**	**621**	**28**	**13**	**4**	**71**	**71**	**66**	**4**	**6**	**1**	**4**	**6**	**28**	**142**	**866**	**2786**	**2939**	**1345**	**360**	**89**	**29**	**14**	**46.4**	**41.0**	**5.7**
0000 - 0000	**9007**	**2125**	**2230**	**2301**	**2352**	**1**	**27**	**7971**	**21**	**677**	**31**	**15**	**4**	**87**	**87**	**76**	**4**	**6**	**1**	**4**	**6**	**28**	**146**	**891**	**2873**	**3073**	**1439**	**396**	**100**	**33**	**17**	**46.6**	**41.1**	**5.8**

Virtual Week (2)

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
Mon	10474	2478	2550	2686	2760	2	30	9274	30	787	45	13	4	84	107	91	5	5	2	1	5	71	236	1210	3551	3489	1458	329	90	19	17	45.7	40.4	5.7
Tue	10586	2505	2638	2670	2774	3	30	9311	25	858	36	22	5	91	102	93	7	6	1	3	2	26	189	1089	3545	3685	1546	379	81	22	21	46.0	40.8	5.5
Wed	10869	2640	2677	2778	2774	2	36	9548	22	870	33	24	6	99	110	103	6	11	5	19	22	57	210	1385	3866	3500	1346	337	87	29	10	45.4	40.0	5.8
Thu	10510	2480	2592	2662	2778	2	31	9275	21	821	28	14	5	101	105	95	6	10	1	1	1	10	135	944	3517	3819	1559	389	88	34	15	46.1	41.1	5.3
Fri	10592	2455	2620	2744	2774	1	31	9285	31	880	35	24	5	99	100	92	4	7	1	6	13	32	209	1218	3497	3451	1596	423	95	37	17	46.2	40.7	5.8
Sat	5574	1263	1429	1423	1460	1	17	4980	12	368	22	5	1	83	50	37	1	1	0	1	0	1	25	239	1253	1978	1371	492	145	45	27	49.2	43.7	6.0
Sun	4443	1053	1104	1145	1142	0	15	4128	6	156	19	2	3	57	35	25	1	0	0	1	0	2	19	150	885	1590	1198	423	117	44	15	49.5	44.1	5.8
	63047	**14872**	**15608**	**16106**	**16461**	**10**	**188**	**55800**	**146**	**4738**	**216**	**102**	**28**	**612**	**607**	**533**	**29**	**40**	**9**	**30**	**41**	**198**	**1020**	**6234**	**20112**	**21512**	**10073**	**2770**	**701**	**229**	**121**	**46.6**	**41.1**	**5.8**

Total

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
	126094	**29744**	**31216**	**32212**	**32922**	**20**	**376**	**111600**	**291**	**9476**	**432**	**204**	**56**	**1223**	**1214**	**1066**	**57**	**79**	**17**	**60**	**81**	**396**	**2040**	**12467**	**40223**	**43023**	**20145**	**5540**	**1402**	**458**	**242**	**46.6**	**41.1**	**5.8**

Warrington, Cheshire

Report Id 704/16
Site Name Site 1 of 1
Description A574 Birchwood Way, 330m South West of Silver Lane
Direction Eastbound

Tuesday 06 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	28	10	8	5	5	0	0	17	0	5	0	0	0	2	2	2	0	0	0	0	0	0	0	1	4	9	6	5	3	0	0	54.0	45.8	6.7
0100 - 0200	28	6	7	9	6	0	0	18	0	4	0	0	0	3	3	0	0	0	0	0	0	0	0	1	9	3	7	4	3	0	1	54.3	45.8	8.4
0200 - 0300	26	12	5	3	8	0	0	16	0	1	0	0	0	4	2	5	0	0	0	0	0	0	0	0	7	15	5	1	0	0	0	46.2	42.6	3.8
0300 - 0400	31	7	5	13	6	0	0	15	0	5	0	0	0	7	2	2	0	0	0	0	0	1	0	4	9	5	8	4	0	0	0	49.1	42.0	7.2
0400 - 0500	74	10	13	30	21	0	0	53	0	6	1	1	0	8	3	2	0	0	0	0	0	0	0	3	17	30	18	4	2	0	0	48.2	43.1	5.2
0500 - 0600	232	35	39	77	81	0	1	183	0	20	2	0	3	9	10	4	0	0	0	0	0	0	2	9	48	88	64	13	6	2	0	48.0	43.3	5.4
0600 - 0700	706	124	128	218	236	0	2	607	3	64	2	1	2	8	12	5	0	0	0	0	0	0	5	58	241	284	100	14	4	0	0	45.2	40.9	4.5
0700 - 0800	1586	397	414	411	364	0	4	1401	23	119	6	10	1	4	7	8	1	2	10	26	12	48	132	683	508	140	19	6	2	0	0	38.8	34.0	5.8
0800 - 0900	962	310	228	232	192	0	3	856	2	78	4	2	0	2	5	8	2	0	0	0	0	0	1	51	332	382	161	29	6	0	0	46.2	41.5	4.4
0900 - 1000	693	177	206	144	166	0	1	573	3	90	2	1	0	3	8	8	1	3	0	0	0	1	26	33	205	258	137	31	1	1	0	46.9	41.6	5.2
1000 - 1100	575	167	135	141	132	1	1	452	4	91	3	1	0	2	11	8	1	0	1	0	0	5	4	37	167	221	116	19	3	2	0	46.7	41.5	5.3
1100 - 1200	581	131	166	126	158	1	1	431	2	108	4	1	1	12	10	7	1	2	0	0	0	2	3	50	170	206	121	22	6	1	0	46.9	41.7	5.3
1200 - 1300	670	161	177	183	149	0	1	556	3	80	4	4	1	3	10	5	0	3	0	0	0	0	8	43	168	306	118	26	0	1	0	46.2	41.7	4.6
1300 - 1400	627	166	188	131	142	0	2	498	1	97	3	0	0	8	12	6	0	0	0	0	0	3	10	49	202	232	106	22	3	0	0	45.8	41.1	5.1
1400 - 1500	759	196	179	182	202	0	5	628	3	91	6	1	0	2	11	10	0	2	0	0	0	0	2	72	288	260	116	15	4	2	0	45.6	40.7	4.7
1500 - 1600	1183	265	236	344	338	0	2	1081	5	79	2	0	0	2	6	6	0	0	0	0	0	0	2	142	471	424	122	22	0	0	0	44.2	40.0	4.2
1600 - 1700	1826	476	463	459	428	0	5	1717	17	65	0	5	0	4	7	6	0	0	0	0	0	0	162	824	802	37	1	0	0	0	0	37.4	34.4	3.0
1700 - 1800	1708	439	408	432	429	0	4	1622	17	50	0	3	0	6	1	4	1	0	0	0	0	9	125	954	590	30	0	0	0	0	0	37.1	34.0	3.0
1800 - 1900	920	346	257	189	128	0	2	872	4	29	1	0	0	5	4	2	1	0	0	0	0	0	24	206	300	275	102	10	3	0	0	44.6	38.9	5.2
1900 - 2000	435	157	105	105	68	0	1	387	0	27	1	0	0	8	7	4	0	0	0	0	0	0	3	15	106	185	92	23	11	0	0	47.7	42.8	5.0
2000 - 2100	277	91	69	76	41	0	0	249	0	14	0	0	0	3	8	3	0	0	0	0	0	0	0	10	49	102	82	27	5	1	1	49.2	44.0	5.3
2100 - 2200	162	53	50	36	23	0	2	142	0	8	0	0	0	4	4	2	0	0	0	0	0	0	0	13	41	48	38	15	7	0	0	49.8	43.3	6.1
2200 - 2300	115	45	22	26	22	0	1	100	0	5	0	0	0	6	2	1	0	0	0	0	0	1	0	0	12	28	40	21	11	1	0	1	49.2	42.5	6.6
2300 - 0000	47	12	10	17	8	0	0	35	0	4	0	0	0	3	3	2	0	0	0	0	0	0	1	7	6	16	11	5	1	0	0	49.7	42.5	6.4
0700 - 1900	**12090**	**3231**	**3057**	**2974**	**2828**	**2**	**31**	**10687**	**84**	**977**	**35**	**28**	**3**	**53**	**92**	**78**	**8**	**12**	**11**	**26**	**12**	**68**	**499**	**3144**	**4203**	**2771**	**1119**	**202**	**28**	**7**	**0**	**44.0**	**38.0**	**5.7**
0600 - 2200	**13670**	**3656**	**3409**	**3409**	**3196**	**2**	**36**	**12072**	**87**	**1090**	**38**	**29**	**5**	**76**	**123**	**92**	**8**	**12**	**11**	**26**	**12**	**68**	**507**	**3240**	**4640**	**3390**	**1431**	**281**	**55**	**8**	**1**	**44.5**	**38.5**	**5.8**
0600 - 0000	**13832**	**3713**	**3441**	**3452**	**3226**	**2**	**37**	**12207**	**87**	**1099**	**38**	**29**	**5**	**85**	**128**	**95**	**8**	**12**	**11**	**26**	**13**	**68**	**508**	**3259**	**4674**	**3446**	**1463**	**297**	**57**	**8**	**2**	**44.5**	**38.5**	**5.8**
0000 - 0000	**14253**	**3793**	**3518**	**3589**	**3353**	**2**	**38**	**12509**	**87**	**1140**	**41**	**30**	**8**	**118**	**150**	**110**	**8**	**12**	**11**	**26**	**13**	**69**	**510**	**3277**	**4768**	**3596**	**1571**	**328**	**71**	**10**	**3**	**44.7**	**38.7**	**5.8**

Wednesday 07 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	22	4	8	10	0	0	0	15	0	4	1	0	0	0	1	1	0	0	0	0	0	0	1	2	5	1	7	4	2	0	0	51.7	44.3	8.0
0100 - 0200	24	10	7	2	5	0	0	15	0	1	0	0	0	5	2	1	0	0	0	0	0	0	1	1	6	3	6	3	2	1	1	56.0	45.3	9.5
0200 - 0300	25	8	4	5	8	0	0	9	0	8	0	0	0	3	2	3	0	0	0	0	0	0	0	2	10	8	5	0	0	0	0	46.8	40.9	4.5
0300 - 0400	24	6	6	5	7	0	0	13	0	5	1	0	0	1	4	0	0	0	0	0	0	0	1	2	5	5	5	3	2	0	1	54.3	44.9	8.9
0400 - 0500	65	10	18	16	21	0	0	34	0	7	2	2	1	16	3	0	0	0	0	0	0	0	2	8	18	22	8	6	1	0	0	47.7	41.1	6.4
0500 - 0600	228	34	45	69	80	0	2	161	1	26	1	0	0	18	13	5	1	0	0	0	0	0	2	19	62	88	45	9	1	2	0	46.7	41.5	5.2
0600 - 0700	645	118	119	205	203	0	2	555	4	61	4	3	1	6	5	4	0	0	0	0	0	0	0	30	233	249	111	20	1	1	0	45.9	41.4	4.2
0700 - 0800	1399	353	345	376	325	1	6	1254	15	96	4	3	1	3	4	9	1	2	9	11	17	29	94	489	491	210	42	6	1	0	0	40.8	35.2	6.0
0800 - 0900	992	338	290	198	166	0	0	873	3	88	2	2	0	2	6	7	2	7	0	0	0	1	1	93	437	346	99	15	0	0	0	44.3	40.0	4.2
0900 - 1000	673	183	186	171	133	0	4	553	3	89	4	0	0	3	6	7	1	3	0	0	0	5	2	69	179	279	126	10	3	0	0	45.6	41.2	4.9
1000 - 1100	515	153	112	128	122	0	1	386	1	95	3	0	0	5	16	7	0	1	0	0	0	1	7	28	154	231	68	22	4	0	0	45.7	41.4	4.8
1100 - 1200	582	155	118	146	163	0	0	441	1	106	7	1	0	3	11	8	1	3	0	0	0	0	7	54	198	221	80	17	4	1	0	45.4	40.8	4.9
1200 - 1300	618	155	158	157	148	0	2	501	3	81	5	1	0	6	12	7	0	0	0	0	1	0	10	48	192	257	95	12	1	2	0	45.5	40.9	4.7
1300 - 1400	668	165	172	160	171	0	0	549	0	94	5	1	0	4	8	4	0	3	2	0	0	3	8	26	209	288	97	27	8	0	0	45.8	41.4	5.1
1400 - 1500	769	172	182	204	211	0	0	658	2	88	0	0	0	5	8	6	0	2	0	0	0	0	0	49	352	261	86	19	2	0	0	44.7	40.5	4.2
1500 - 1600	1250	274	296	326	354	0	0	1123	7	92	6	4	2	3	7	6	0	0	0	0	7	23	28	263	525	339	62	2	1	0	0	42.6	37.8	4.8
1600 - 1700	1730	464	423	426	417	0	3	1627	18	63	4	3	0	2	4	4	0	2	1	0	0	4	168	1092	447	17	0	1	0	0	0	35.9	33.4	2.8
1700 - 1800	1668	421	432	406	409	0	4	1569	22	51	1	1	0	8	7	5	0	0	0	0	0	2	253	1150	257	6	0	0	0	0	0	35.1	32.6	2.5
1800 - 1900	970	360	244	215	151	0	0	919	8	28	2	1	0	5	5	2	0	0	0	0	0	4	117	268	328	211	37	5	0	0	0	42.1	36.4	5.3
1900 - 2000	399	121	81	109	88	0	1	355	3	27	2	0	0	3	5	2	1	0	0	0	0	0	7	27	117	148	83	16	1	0	0	47.0	41.7	4.9
2000 - 2100	306	88	81	84	53	0	0	273	0	17	0	1	0	7	4	4	0	0	0	0	0	0	3	24	100	120	44	14	0	1	0	45.9	41.2	5.0
2100 - 2200	202	72	46	40	44	0	1	177	0	17	1	0	0	0	3	2	0	1	0	0	0	0	5	13	33	82	55	10	4	0	0	48.1	43.0	5.4
2200 - 2300	131	57	39	16	19	0	0	117	1	7	0	0	0	4	2	0	0	0	0	0	0	0	1	2	29	45	37	15	1	0	1	49.7	44.2	5.7
2300 - 0000	46	13	9	5	19	0	0	36	0	5	0	0	0	2	3	0	0	0	0	0	0	0	1	4	8	11	14	5	1	1	1	51.5	44.2	7.9
0700 - 1900	**11834**	**3193**	**2958**	**2913**	**2770**	**1**	**20**	**10453**	**83**	**971**	**43**	**17**	**3**	**49**	**94**	**72**	**5**	**23**	**12**	**11**	**25**	**72**	**695**	**3629**	**3769**	**2666**	**792**	**136**	**24**	**3**	**0**	**43.1**	**37.2**	**5.6**
0600 - 2200	**13386**	**3592**	**3285**	**3351**	**3158**	**1**	**24**	**11813**	**90**	**1093**	**50**	**21**	**4**	**65**	**111**	**84**	**6**	**24**	**12**	**11**	**25**	**72**	**710**	**3723**	**4252**	**3265**	**1085**	**196**	**30**	**5**	**0**	**43.7**	**37.7**	**5.7**
0600 - 0000	**13563**	**3662**	**3333**	**3372**	**3196**	**1**	**24**	**11966**	**91**	**1105**	**50**	**21**	**4**	**71**	**116**	**84**	**6**	**24**	**12**	**11**	**25**	**72**	**712**	**3729**	**4289**	**3321**	**1136**	**216**	**32**	**6**	**2**	**43.8**	**37.8**	**5.7**
0000 - 0000	**13951**	**3734**	**3421**	**3479**	**3317**	**1**	**26**	**12213**	**92**	**1156**	**55**	**23**	**5**	**114**	**141**	**94**	**7**	**24**	**12**	**11**	**25**	**72**	**719**	**3763**	**4395**	**3448**	**1212**	**241**	**40**	**9**	**4**	**43.9**	**37.9**	**5.8**

Thursday 08 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	31	8	11	7	5	0	0	19	0	4	0	0	0	3	3	2	0	0	0	0	0	0	2	2	5	9	9	3	1	0	0	48.7	42.9	6.6
0100 - 0200	33	15	8	4	6	0	0	24	0	3	0	0	0	3	2	1	0	0	0	0	0	0	0	4	4	7	12	6	0	0	0	51.0	44.3	5.9
0200 - 0300	24	9	4	4	7	0	0	10	1	4	0	0	0	3	2	4	0	0	0	0	0	0	0	4	4	7	7	1	1	0	0	47.4	42.4	6.2
0300 - 0400	33	10	9	3	11	0	0	21	0	3	0	0	0	3	3	2	0	1	0	0	0	0	2	2	13	11	5	0	0	0	0	45.5	39.9	5.2
0400 - 0500	83	16	17	25	25	0	0	49	0	9	1	1	0	16	7	0	0	0	0	0	0	0	1	9	19	27	18	8	1	0	0	49.3	42.4	5.6
0500 - 0600	215	31	40	70	74	0	2	164	0	19	3	1	1	8	14	3	0	0	0	0	0	0	3	13	43	80	55	18	2	1	0	48.4	43.1	5.4
0600 - 0700	721	136	135	193	257	0	4	632	2	61	4	2	0	5	7	4	0	0	0	0	0	0	2	35	245	305	115	15	4	0	0	45.8	41.4	4.4
0700 - 0800	1429	326	406	368	329	0	2	1274	12	111	6	2	1	5	6	6	1	3	0	0	0	3	29	304	661	355	76	1	0	0	0	42.5	38.0	4.1
0800 - 0900	1047	355	286	222	184	0	6	903	6	108	2	3	1	4	6	5	2	1	0	0	0	0	10	129	414	322	148	20	3	1	0	45.3	40.1	4.8
0900 - 1000	740	193	216	160	171	0	0	615	3	94	4	1	1	5	8	7	1	1	0	0	0	0	8	35	227	340	112	17	0	0	1	45.7	41.5	4.4
1000 - 1100	644	204	151	152	137	0	4	499	2	109	4	2	0	3	11	10	0	0	0	0	0	1	3	51	182	242	136	27	2	0	0	47.0	41.6	5.0
1100 - 1200	583	136	160	138	149	0	1	448	2	103	6	1	0	2	16	4	0	0	0	0	0	2	3	63	216	202	78	15	4	0	0	45.2	40.4	4.8
1200 - 1300	668	167	156	177	168	0	1	522	6	107	4	1	0	7	12	6	1	1	0	0	0	0	16	77	227	237	92	17	1	1	0	45.8	40.3	5.2
1300 - 1400	613	173	154	161	125	0	0	526	0	69	2	0	0	3	7	4	2	0	0	0	0	0	4	37	199	225	121	19	8	0	0	46.7	41.7	4.8
1400 - 1500	782	191	194	189	208	0	1	661	0	84	4	3	0	8	11	10	0	0	0	0	0	0	1	59	297	286	122	14	3	0	0	45.5	40.8	4.4
1500 - 1600	1250	294	245	329	382	0	1	1139	6	77	2	4	0	8	6	6	1	0	0	0	0	2	42	167	524	386	113	12	2	0	2	43.7	39.3	5.7
1600 - 1700	1803	483	465	428	427	0	3	1674	39	58	3	4	0	10	3	8	1	0	0	16	9	27	245	979	509	17	1	0	0	0	0	36.4	33.0	3.9
1700 - 1800	1670	446	420	429	375	0	2	1594	16	37	0	3	0	7	4	7	0	0	0	0	1	14	174	989	460	27	5	0	0	0	0	36.6	33.5	3.2
1800 - 1900	996	348	257	212	179	0	3	947	2	29	0	2	0	8	4	1	0	0	0	0	0	2	30	141	377	316	116	13	1	0	0	44.5	39.5	4.9
1900 - 2000	422	144	124	86	68	0	0	377	1	27	3	0	0	4	8	1	0	1	0	0	0	0	6	39	122	153	76	23	2	1	0	47.0	41.5	5.3
2000 - 2100	220	65	59	60	36	0	1	190	0	16	0	0	0	6	5	2	0	0	0	0	0	0	2	9	45	76	56	24	8	0	0	49.6	43.8	5.7
2100 - 2200	177	48	43	39	47	0	1	146	0	17	0	0	0	5	6	1	1	0	0	0	0	1	1	25	29	46	50	16	6	3	0	49.6	43.2	7.0
2200 - 2300	126	53	18	29	26	0	1	106	0	8	0	0	0	4	4	3	0	0	0	0	0	0	0	11	12	45	38	15	4	1	0	50.4	44.6	5.9
2300 - 0000	65	19	14	8	24	0	0	53	0	3	1	0	0	3	3	2	0	0	0	0	0	0	0	7	4	34	13	3	3	0	1	47.9	43.5	5.8
0700 - 1900	**12225**	**3316**	**3110**	**2965**	**2834**	**0**	**24**	**10802**	**94**	**986**	**37**	**26**	**3**	**70**	**94**	**74**	**9**	**6**	**0**	**16**	**10**	**51**	**565**	**3031**	**4293**	**2955**	**1120**	**155**	**24**	**2**	**3**	**43.8**	**38.1**	**5.5**
0600 - 2200	**13765**	**3709**	**3471**	**3343**	**3242**	**0**	**30**	**12147**	**97**	**1107**	**44**	**28**	**3**	**90**	**120**	**82**	**10**	**7**	**0**	**16**	**10**	**52**	**576**	**3139**	**4734**	**3535**	**1417**	**233**	**44**	**6**	**3**	**44.3**	**38.5**	**5.6**
0600 - 0000	**13956**	**3781**	**3503**	**3380**	**3292**	**0**	**31**	**12306**	**97**	**1118**	**45**	**28**	**3**	**97**	**127**	**87**	**10**	**7**	**0**	**16**	**10**	**52**	**576**	**3157**	**4750**	**3614**	**1468**	**251**	**51**	**7**	**4**	**44.4**	**38.6**	**5.7**
0000 - 0000	**14375**	**3870**	**3592**	**3493**	**3420**	**0**	**33**	**12593**	**98**	**1160**	**49**	**30**	**4**	**133**	**158**	**99**	**10**	**8**	**0**	**16**	**10**	**52**	**584**	**3191**	**4838**	**3755**	**1574**	**287**	**56**	**8**	**4**	**44.6**	**38.7**	**5.7**

Friday 09 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Number Vehicle Classes ARX Scheme Cycles	Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	46	16	14	8	8	0	0	31	0	4	0	0	0	4	5	2	0	0	0	0	0	0	1	3	7	11	14	7	2	1	0	50.3	44.7	6.7
0100 - 0200	27	10	9	3	5	0	0	19	0	2	0	0	0	1	5	0	0	0	0	0	0	0	0	5	2	5	6	5	4	0	0	54.8	45.7	7.9
0200 - 0300	28	7	9	7	5	0	0	15	0	5	2	0	0	1	4	1	0	0	0	0	0	0	2	4	6	7	7	2	0	0	0	48.9	41.2	7.0
0300 - 0400	33	4	9	10	10	0	0	20	0	5	0	0	0	5	2	1	0	0	0	0	0	1	1	1	4	15	6	2	2	1	0	50.6	43.5	7.5
0400 - 0500	80	7	21	17	35	0	1	48	1	8	0	0	0	13	8	1	0	0	0	0	0	0	1	9	31	25	9	2	2	1	0	45.2	40.5	6.0
0500 - 0600	234	34	44	80	76	0	0	172	1	36	2	0	0	7	12	3	1	0	0	0	0	0	6	27	60	67	53	15	6	0	0	48.6	41.9	6.1
0600 - 0700	644	113	118	184	229	0	4	550	1	67	1	3	0	7	6	5	0	0	0	0	0	0	0	15	145	325	121	35	3	0	0	46.7	42.7	4.2
0700 - 0800	1205	328	295	295	287	0	2	1076	6	100	1	1	0	3	6	6	3	1	0	1	1	15	20	151	535	377	94	11	0	0	0	43.8	39.1	4.7
0800 - 0900	823	253	229	160	181	0	3	704	2	89	5	1	0	4	4	3	4	4	0	0	0	0	7	31	268	349	127	38	3	0	0	46.4	41.7	4.6
0900 - 1000	713	180	224	147	162	0	0	557	3	116	1	4	1	9	12	3	1	6	0	0	0	1	8	39	207	286	141	24	7	0	0	46.2	41.8	4.8
1000 - 1100	557	141	128	134	154	0	2	413	2	112	3	1	0	5	9	8	1	1	0	0	0	4	4	21	147	213	131	32	5	0	0	47.1	42.3	5.0
1100 - 1200	695	158	214	162	161	0	1	546	2	114	2	1	0	11	7	10	0	1	0	0	0	3	9	58	233	279	92	21	0	0	0	45.4	40.7	4.8
1200 - 1300	872	234	222	222	194	0	1	756	2	75	3	1	0	11	13	9	1	0	0	0	0	1	17	42	290	344	144	32	1	1	0	46.1	41.3	4.8
1300 - 1400	774	223	177	181	193	0	3	676	0	74	3	3	1	3	8	3	0	0	0	0	0	0	0	47	243	277	157	42	5	3	0	47.4	42.1	5.0
1400 - 1500	1040	263	233	262	282	0	0	913	2	103	3	2	1	4	5	5	0	2	2	0	0	1	6	120	402	360	123	24	2	0	0	44.8	40.0	4.8
1500 - 1600	1467	390	371	369	337	0	3	1350	5	79	2	2	1	6	10	8	0	1	3	4	9	7	26	343	689	316	62	8	0	0	0	41.7	37.4	4.8
1600 - 1700	1708	416	431	446	415	0	4	1576	26	69	5	5	0	8	9	6	0	0	0	0	0	0	2	177	969	504	53	3	0	0	0	36.9	33.7	3.2
1700 - 1800	1267	405	366	275	231	0	4	1206	10	37	2	0	1	3	3	1	0	0	0	0	0	0	2	85	535	461	155	26	3	0	0	39.9	35.5	4.3
1800 - 1900	720	220	202	154	144	0	1	675	1	30	1	1	0	4	6	1	0	0	0	0	0	0	0	14	99	289	242	70	4	2	0	0	43.9	39.5	4.5
1900 - 2000	328	117	73	79	59	0	0	294	1	19	0	1	0	5	2	5	0	1	0	0	0	0	0	6	46	99	129	37	8	3	0	0	45.0	40.3	5.1
2000 - 2100	220	84	47	55	34	0	0	190	0	22	0	0	0	5	2	0	0	1	0	0	0	0	5	16	62	78	45	9	3	2	0	47.2	41.8	5.7
2100 - 2200	146	46	45	31	24	0	1	124	0	11	0	0	0	3	6	1	0	0	0	0	0	0	3	9	33	57	34	9	0	1	0	46.9	42.1	5.4
2200 - 2300	111	32	18	27	34	0	0	94	0	8	1	0	0	6	1	1	0	0	0	0	0	0	1	13	24	39	21	10	2	0	1	48.9	42.7	6.4
2300 - 0000	70	23	17	12	18	0	0	60	0	4	0	0	0	1	3	2	0	0	0	0	0	0	1	7	19	21	15	4	2	1	0	48.6	41.9	6.3
0700 - 1900	**11841**	**3211**	**3082**	**2807**	**2741**	**0**	**24**	**10448**	**61**	**998**	**31**	**22**	**5**	**71**	**92**	**63**	**10**	**16**	**5**	**5**	**10**	**36**	**373**	**2455**	**4268**	**3251**	**1170**	**239**	**25**	**4**	**0**	**44.2**	**38.8**	**5.4**
0600 - 2200	**13179**	**3571**	**3365**	**3156**	**3087**	**0**	**29**	**11606**	**63**	**1117**	**32**	**26**	**5**	**91**	**108**	**74**	**10**	**18**	**5**	**5**	**10**	**36**	**387**	**2541**	**4607**	**3840**	**1407**	**300**	**34**	**7**	**0**	**44.6**	**39.1**	**5.4**
0600 - 0000	**13360**	**3626**	**3400**	**3195**	**3139**	**0**	**29**	**11760**	**63**	**1129**	**33**	**26**	**5**	**98**	**112**	**77**	**10**	**18**	**5**	**5**	**10**	**36**	**389**	**2561**	**4650**	**3900**	**1443**	**314**	**38**	**8**	**1**	**44.6**	**39.1**	**5.4**
0000 - 0000	**13808**	**3704**	**3506**	**3320**	**3278**	**0**	**30**	**12065**	**65**	**1189**	**37**	**26**	**5**	**129**	**148**	**85**	**11**	**18**	**5**	**5**	**10**	**37**	**400**	**2610**	**4760**	**4030**	**1538**	**347**	**54**	**11**	**1**	**44.8**	**39.2**	**5.5**

Saturday 10 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	46	13	12	12	9	0	0	39	0	2	0	0	0	1	3	1	0	0	0	0	0	0	0	7	11	12	9	4	3	0	0	51.8	42.7	6.9
0100 - 0200	35	15	10	5	5	0	0	28	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	1	11	14	7	1	1	0	0	45.7	42.2	4.6
0200 - 0300	25	9	6	5	5	0	0	14	0	4	0	0	0	4	3	0	0	0	0	0	0	0	0	4	6	8	4	1	2	0	0	49.7	41.9	7.2
0300 - 0400	36	8	7	17	4	0	0	21	0	5	0	0	0	10	0	0	0	0	0	0	0	0	1	3	14	5	9	2	2	0	0	49.5	42.6	7.2
0400 - 0500	39	12	7	7	13	0	1	18	0	5	0	0	0	14	1	0	0	0	0	0	0	0	2	11	8	9	7	2	0	0	0	46.8	39.6	6.3
0500 - 0600	77	10	20	23	24	0	0	63	0	6	0	0	1	5	2	0	0	0	0	0	0	0	1	1	20	27	19	6	3	0	0	48.4	43.3	5.6
0600 - 0700	147	42	29	38	38	0	0	116	0	25	1	0	0	2	3	0	0	0	0	0	0	1	2	8	27	44	40	21	4	0	0	50.7	43.9	6.0
0700 - 0800	234	50	64	62	58	0	0	185	0	37	3	1	1	1	4	2	0	0	0	0	0	0	0	3	19	79	93	35	5	0	0	50.3	45.7	4.5
0800 - 0900	341	63	90	94	94	0	0	282	2	49	2	1	0	2	3	0	0	0	0	0	0	0	1	4	32	146	109	36	12	1	0	49.9	45.0	4.9
0900 - 1000	396	89	99	110	98	0	1	334	2	43	1	2	0	5	5	3	0	0	0	0	0	0	2	10	80	146	122	30	4	2	0	48.0	43.6	5.0
1000 - 1100	433	100	101	117	115	0	2	380	1	36	1	0	0	6	6	1	0	0	0	0	0	0	5	12	23	100	151	102	35	4	1	0	47.9	42.3	6.0
1100 - 1200	454	98	118	129	109	0	1	418	0	26	1	1	0	3	4	0	0	0	0	0	0	0	0	12	98	210	100	31	3	0	0	47.6	43.0	4.5
1200 - 1300	538	147	139	130	122	0	1	500	4	19	1	1	0	6	3	2	0	1	0	0	0	0	2	22	140	218	112	36	8	0	0	47.3	42.7	4.9
1300 - 1400	536	146	135	135	120	0	0	502	2	23	0	0	1	6	1	1	0	0	0	0	0	0	3	20	135	235	111	19	6	6	1	47.1	42.7	5.1
1400 - 1500	401	117	97	115	72	0	0	361	0	27	1	0	0	7	4	1	0	0	0	0	0	0	3	23	107	156	84	22	5	1	0	47.6	42.3	5.2
1500 - 1600	416	100	115	95	106	0	0	383	0	27	0	0	0	5	1	0	0	0	0	0	0	0	0	15	78	174	118	27	3	1	0	48.3	43.6	4.6
1600 - 1700	469	141	118	95	115	0	1	452	0	11	2	0	0	3	0	0	0	0	0	0	0	0	0	25	125	161	115	36	2	5	0	48.2	42.9	5.4
1700 - 1800	406	133	94	82	97	0	0	389	0	13	0	0	0	1	2	1	0	0	0	0	0	0	0	32	113	157	88	15	1	0	0	46.9	41.9	4.7
1800 - 1900	293	116	67	51	59	0	1	272	0	15	0	0	0	2	2	1	0	0	0	0	0	0	0	10	59	115	73	30	4	0	2	49.0	43.8	5.4
1900 - 2000	188	63	42	50	33	0	0	179	0	6	0	0	0	0	1	2	0	0	0	0	0	0	0	8	31	61	67	14	7	0	0	48.8	44.3	5.4
2000 - 2100	144	45	50	24	25	0	1	134	0	5	0	0	0	1	2	1	0	0	0	0	0	0	1	4	27	41	39	18	9	2	3	52.4	45.4	7.3
2100 - 2200	119	27	40	18	34	0	0	108	0	3	0	0	0	3	3	2	0	0	0	0	0	0	1	0	13	24	43	24	8	4	2	49.4	42.9	6.5
2200 - 2300	97	41	17	18	21	0	1	89	0	3	0	0	0	2	1	1	0	0	0	0	0	2	0	1	11	19	25	22	9	5	2	51.1	43.2	8.6
2300 - 0000	75	20	11	23	21	0	1	68	0	3	0	0	0	0	3	0	0	0	0	0	0	0	1	6	16	23	20	7	1	1	0	48.9	42.9	6.3
0700 - 1900	**4917**	**1300**	**1237**	**1215**	**1165**	**0**	**7**	**4458**	**11**	**326**	**12**	**6**	**2**	**47**	**35**	**12**	**0**	**1**	**0**	**0**	**0**	**5**	**23**	**199**	**1086**	**1948**	**1227**	**352**	**57**	**17**	**3**	**48.2**	**43.1**	**5.1**
0600 - 2200	**5515**	**1477**	**1398**	**1345**	**1295**	**0**	**8**	**4995**	**11**	**365**	**13**	**6**	**2**	**53**	**44**	**17**	**0**	**1**	**0**	**0**	**0**	**7**	**26**	**232**	**1195**	**2137**	**1397**	**413**	**81**	**21**	**6**	**48.4**	**43.2**	**5.3**
0600 - 0000	**5687**	**1538**	**1426**	**1386**	**1337**	**0**	**10**	**5152**	**11**	**371**	**13**	**6**	**2**	**55**	**48**	**18**	**0**	**1**	**0**	**0**	**2**	**7**	**28**	**249**	**1230**	**2185**	**1439**	**429**	**87**	**24**	**7**	**48.4**	**43.2**	**5.4**
0000 - 0000	**5945**	**1605**	**1488**	**1455**	**1397**	**0**	**11**	**5335**	**11**	**397**	**13**	**6**	**3**	**92**	**57**	**19**	**0**	**1**	**0**	**0**	**2**	**7**	**32**	**276**	**1300**	**2260**	**1494**	**445**	**98**	**24**	**7**	**48.4**	**43.2**	**5.4**

Sunday 11 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	62	18	17	20	7	0	0	56	0	3	0	0	0	2	1	0	0	0	0	0	0	1	1	9	15	14	16	6	0	0	0	48.8	41.8	6.5
0100 - 0200	42	20	3	12	7	0	0	37	0	1	0	0	0	3	0	1	0	0	0	0	0	1	4	5	13	11	6	1	0	0	1	45.8	39.3	7.5
0200 - 0300	47	13	6	16	12	0	0	39	0	2	0	0	0	4	2	0	0	0	0	0	0	2	0	4	9	17	7	8	0	0	0	50.2	42.2	6.9
0300 - 0400	42	8	3	11	20	0	0	38	0	1	0	0	0	2	1	0	0	0	0	0	0	0	4	7	16	11	2	2	0	0	0	43.0	38.0	5.7
0400 - 0500	28	8	3	7	10	0	0	18	0	2	0	0	0	2	4	2	0	0	0	0	0	0	0	2	10	10	6	0	0	0	0	46.2	41.0	4.0
0500 - 0600	80	13	20	22	25	0	1	53	0	8	0	0	0	13	5	0	0	0	0	0	0	0	1	4	24	25	20	5	1	0	0	48.1	42.2	5.8
0600 - 0700	94	20	22	22	30	0	0	81	0	6	1	0	0	5	1	0	0	0	0	0	0	0	0	3	10	32	29	18	2	0	0	50.8	45.4	5.2
0700 - 0800	106	24	16	32	34	0	1	86	0	11	1	0	2	3	2	0	0	0	0	0	0	0	1	1	10	33	31	23	5	2	0	52.1	46.3	6.0
0800 - 0900	144	41	23	35	45	0	0	132	1	2	1	0	2	3	2	1	0	0	0	0	0	0	2	6	16	38	54	22	4	2	0	51.2	45.5	6.0
0900 - 1000	257	44	70	71	72	0	1	235	0	12	3	0	0	4	0	2	0	0	0	0	0	0	2	3	37	84	92	34	4	1	0	50.2	44.9	5.0
1000 - 1100	391	103	104	101	83	0	1	366	2	15	0	0	0	3	4	0	0	0	0	0	0	0	1	8	47	156	133	39	7	0	0	49.5	44.7	4.7
1100 - 1200	397	106	93	100	98	0	7	370	1	12	0	0	0	5	2	0	0	0	0	0	0	1	1	8	79	160	118	23	7	0	0	48.2	43.5	4.7
1200 - 1300	430	109	116	111	94	0	1	411	2	9	0	0	0	5	2	0	0	0	0	0	0	1	1	11	62	197	106	44	9	0	0	49.0	44.1	4.8
1300 - 1400	372	107	71	110	84	0	0	350	0	15	1	0	0	4	1	1	0	0	0	0	0	0	0	7	68	161	107	24	4	1	0	48.3	43.8	4.5
1400 - 1500	404	109	89	109	97	0	0	380	3	14	0	0	0	4	1	2	0	0	0	0	0	0	1	13	64	160	125	33	7	1	0	48.6	44.0	4.9
1500 - 1600	351	79	95	98	79	0	1	329	0	12	0	0	1	3	3	2	0	0	0	0	0	1	2	22	47	122	105	43	6	2	1	50.0	44.3	5.9
1600 - 1700	318	88	81	85	64	0	4	301	0	9	2	0	0	2	0	0	0	0	0	0	0	0	0	10	37	115	107	39	5	5	0	50.1	45.0	5.3
1700 - 1800	249	42	51	77	79	0	0	238	0	9	0	0	0	2	0	0	0	0	0	0	0	0	1	9	63	94	63	17	2	0	0	47.6	42.8	5.0
1800 - 1900	211	52	44	67	48	0	1	202	0	3	1	0	0	0	2	2	0	0	0	0	0	0	0	16	44	79	50	17	4	0	1	49.4	43.2	5.9
1900 - 2000	202	67	42	53	40	0	1	193	0	5	2	0	0	1	0	0	0	0	0	0	0	0	1	2	43	79	50	19	8	0	0	49.6	43.9	5.3
2000 - 2100	147	39	43	34	31	0	1	132	0	6	0	0	0	3	4	1	0	0	0	0	0	0	0	2	25	57	44	16	1	2	0	49.4	44.3	5.2
2100 - 2200	123	25	29	39	30	0	0	108	1	9	0	0	0	1	3	1	0	0	0	0	0	0	1	3	10	27	42	32	8	0	0	48.7	42.2	5.9
2200 - 2300	70	23	25	8	14	0	1	53	0	9	0	0	0	3	4	0	0	0	0	0	0	0	0	4	14	24	23	5	0	0	0	49.2	43.2	5.0
2300 - 0000	36	9	10	6	11	0	0	32	0	1	0	0	0	1	1	1	0	0	0	0	0	0	2	2	9	10	8	3	1	1	0	50.4	42.7	7.4
0700 - 1900	**3630**	**904**	**853**	**996**	**877**	**0**	**17**	**3400**	**9**	**123**	**9**	**0**	**5**	**38**	**19**	**10**	**0**	**0**	**0**	**0**	**0**	**2**	**12**	**114**	**574**	**1399**	**1091**	**358**	**64**	**14**	**2**	**49.3**	**44.2**	**5.2**
0600 - 2200	**4196**	**1055**	**989**	**1144**	**1008**	**0**	**19**	**3914**	**10**	**149**	**12**	**0**	**5**	**48**	**27**	**12**	**0**	**0**	**0**	**0**	**0**	**3**	**16**	**131**	**679**	**1609**	**1246**	**419**	**75**	**16**	**2**	**49.3**	**44.1**	**5.2**
0600 - 0000	**4302**	**1087**	**1024**	**1158**	**1033**	**0**	**20**	**3999**	**10**	**159**	**12**	**0**	**5**	**52**	**32**	**13**	**0**	**0**	**0**	**0**	**0**	**3**	**18**	**137**	**702**	**1643**	**1277**	**427**	**76**	**17**	**2**	**49.3**	**44.1**	**5.2**
0000 - 0000	**4603**	**1167**	**1076**	**1246**	**1114**	**0**	**21**	**4240**	**10**	**176**	**12**	**0**	**5**	**78**	**45**	**16**	**0**	**0**	**0**	**0**	**0**	**7**	**28**	**168**	**789**	**1731**	**1334**	**449**	**77**	**17**	**3**	**49.3**	**43.9**	**5.4**

Monday 12 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	25	6	7	9	3	0	0	20	0	2	2	0	0	1	0	0	0	0	0	0	0	1	0	8	7	7	2	0	0	0	47.9	42.1	5.7
0100 - 0200	24	6	6	5	7	0	0	14	0	2	0	0	0	4	4	0	0	0	0	0	0	0	1	3	10	6	2	0	1	1	53.5	45.6	8.7
0200 - 0300	20	5	3	4	8	0	0	10	0	2	0	0	0	4	2	2	0	0	0	0	0	0	0	2	3	9	5	1	0	0	48.5	42.4	5.2
0300 - 0400	30	6	9	10	5	0	0	14	0	5	0	0	0	6	4	1	0	0	0	0	0	0	0	3	14	7	2	4	0	0	48.1	40.8	5.4
0400 - 0500	69	19	18	8	24	0	0	48	0	8	1	1	0	7	4	0	0	0	0	0	0	0	0	3	17	33	14	2	0	0	0	46.8	42.1	4.3
0500 - 0600	236	33	52	72	79	0	2	179	0	24	3	1	1	17	5	4	0	0	0	0	0	0	1	22	54	88	55	13	2	1	0	47.8	42.2	5.4
0600 - 0700	700	114	139	194	253	0	1	605	3	82	5	0	0	6	13	3	0	2	0	0	0	0	4	69	217	279	117	13	1	0	0	45.5	41.0	4.5
0700 - 0800	1442	326	369	391	356	0	4	1293	7	112	6	1	0	2	6	6	4	1	0	0	4	20	54	376	712	235	39	2	0	0	0	40.7	36.7	4.4
0800 - 0900	972	324	255	196	197	1	4	845	2	100	2	1	1	3	6	5	0	2	0	0	0	2	2	29	359	434	122	22	2	0	0	45.0	41.2	4.0
0900 - 1000	637	163	173	165	136	0	0	508	1	97	5	1	1	4	8	9	2	1	0	0	0	0	3	64	194	235	117	22	1	1	0	46.4	41.1	4.9
1000 - 1100	514	141	142	112	119	0	0	399	1	86	4	1	0	5	7	11	0	0	0	0	0	0	0	41	135	227	92	16	3	0	0	46.2	41.6	4.6
1100 - 1200	599	150	178	144	127	0	1	493	1	80	1	3	2	0	12	6	0	0	0	0	0	0	9	54	192	221	101	19	1	0	2	46.0	41.1	5.6
1200 - 1300	637	171	167	146	153	0	1	529	1	75	3	3	0	6	12	6	0	1	0	0	1	4	5	52	233	225	90	24	3	0	0	45.5	40.6	5.0
1300 - 1400	653	166	178	150	159	0	1	546	1	80	2	4	0	4	11	3	0	1	0	0	0	0	13	43	175	271	126	23	2	0	0	46.2	41.5	4.8
1400 - 1500	761	190	184	183	204	0	2	636	2	91	5	2	0	8	9	5	0	1	0	0	0	0	15	57	271	295	95	23	5	0	0	45.4	40.7	4.9
1500 - 1600	1148	270	236	303	339	0	2	1033	7	82	4	4	0	5	6	4	1	0	0	0	0	0	4	132	504	404	85	17	2	0	0	43.7	39.7	4.1
1600 - 1700	1785	483	431	438	433	0	2	1676	15	67	2	0	0	7	6	7	2	1	0	0	5	29	171	940	598	39	1	1	1	0	0	37.0	33.8	3.5
1700 - 1800	1709	442	414	416	437	0	2	1631	14	41	1	4	0	3	5	6	0	2	0	0	0	0	105	1030	553	19	1	1	0	0	0	36.6	34.0	2.7
1800 - 1900	1080	412	350	164	154	0	2	1027	14	24	2	1	0	5	4	1	0	0	0	0	0	10	86	376	383	145	63	13	4	0	0	41.7	36.4	5.4
1900 - 2000	417	157	85	93	82	0	2	376	1	23	0	0	0	6	3	4	0	2	0	0	2	5	9	23	103	152	97	21	1	4	0	47.6	41.9	6.0
2000 - 2100	241	106	56	36	43	0	1	220	1	5	1	0	0	4	5	4	0	0	0	0	0	1	10	16	72	74	45	17	6	0	0	48.8	41.7	6.2
2100 - 2200	169	64	40	34	31	0	1	141	0	17	0	0	0	4	3	3	0	0	0	0	0	0	2	8	22	53	53	27	4	0	0	51.5	44.9	5.8
2200 - 2300	109	54	19	19	17	0	0	99	0	4	1	0	0	1	4	0	0	0	0	0	0	0	2	5	10	38	38	13	3	0	0	50.0	44.7	5.8
2300 - 0000	50	19	15	5	11	0	1	39	0	3	0	0	0	3	4	0	0	0	0	0	0	0	0	4	11	13	11	10	1	0	0	51.3	44.0	6.0
0700 - 1900	**11937**	**3238**	**3077**	**2808**	**2814**	**1**	**21**	**10616**	**66**	**935**	**37**	**25**	**4**	**52**	**92**	**69**	**9**	**10**	**0**	**0**	**10**	**65**	**467**	**3194**	**4309**	**2750**	**932**	**183**	**24**	**1**	**2**	**43.3**	**37.9**	**5.3**
0600 - 2200	**13464**	**3679**	**3397**	**3165**	**3223**	**1**	**26**	**11958**	**71**	**1042**	**43**	**25**	**4**	**72**	**116**	**83**	**9**	**14**	**0**	**0**	**12**	**71**	**492**	**3310**	**4723**	**3308**	**1244**	**261**	**36**	**5**	**2**	**44.0**	**38.3**	**5.5**
0600 - 0000	**13623**	**3752**	**3431**	**3189**	**3251**	**1**	**27**	**12096**	**71**	**1049**	**44**	**25**	**4**	**76**	**124**	**83**	**9**	**14**	**0**	**0**	**12**	**71**	**494**	**3319**	**4744**	**3339**	**1293**	**284**	**40**	**5**	**2**	**44.1**	**38.4**	**5.5**
0000 - 0000	**14027**	**3827**	**3526**	**3297**	**3377**	**1**	**29**	**12381**	**71**	**1092**	**50**	**27**	**5**	**115**	**143**	**90**	**9**	**14**	**0**	**0**	**12**	**71**	**496**	**3350**	**4843**	**3513**	**1382**	**308**	**42**	**7**	**3**	**44.3**	**38.5**	**5.6**

Tuesday 13 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	26	3	6	7	10	0	0	12	0	7	0	0	0	3	3	1	0	0	0	0	0	0	3	6	5	9	3	0	0	0	49.3	43.2	6.1
0100 - 0200	34	11	7	6	10	0	0	25	0	3	0	0	0	2	2	2	0	0	0	0	0	0	1	1	4	17	6	3	1	0	1	49.9	43.9	7.5
0200 - 0300	16	3	4	5	4	0	1	9	0	2	0	1	0	1	1	1	0	0	0	0	0	0	0	1	3	2	5	4	1	0	0	51.8	45.7	6.7
0300 - 0400	28	8	5	9	6	0	0	19	0	3	0	0	0	5	0	1	0	0	0	0	0	0	0	2	9	10	6	1	0	0	0	46.6	42.0	4.8
0400 - 0500	80	22	19	19	20	0	0	56	0	7	0	0	0	9	6	2	0	0	0	0	0	0	3	9	14	30	11	11	2	0	0	50.3	42.5	6.5
0500 - 0600	231	29	48	67	87	0	1	187	0	19	1	0	1	5	12	3	1	1	0	0	0	1	3	8	60	92	55	9	3	0	0	47.0	42.3	5.0
0600 - 0700	716	114	143	203	256	0	3	627	2	56	2	1	0	7	10	8	0	0	0	0	0	0	0	33	231	334	105	11	2	0	0	45.3	41.3	3.9
0700 - 0800	1620	349	422	424	425	0	4	1465	13	113	2	6	0	3	7	6	0	1	2	18	6	12	91	664	676	126	24	1	0	0	0	38.6	35.0	4.6
0800 - 0900	1103	387	269	222	225	0	5	990	2	86	0	0	1	3	5	10	0	1	0	0	0	0	27	236	390	317	116	15	2	0	0	44.2	38.9	5.0
0900 - 1000	706	177	195	176	158	0	0	576	2	107	0	2	0	7	4	4	2	2	0	0	0	0	10	65	216	282	115	15	3	0	0	45.6	40.8	4.8
1000 - 1100	624	179	147	164	134	0	1	495	2	95	4	1	2	7	6	8	2	1	0	0	0	5	12	59	162	249	119	12	6	0	0	46.2	41.0	5.3
1100 - 1200	621	156	152	157	156	0	2	477	4	105	3	1	1	5	12	9	1	1	0	2	0	0	2	36	201	240	100	31	7	0	2	46.3	41.7	6.2
1200 - 1300	634	160	161	162	151	0	2	520	1	74	6	4	0	11	10	4	0	2	0	0	0	0	4	33	141	291	132	24	8	0	1	46.5	42.3	4.7
1300 - 1400	627	194	151	120	162	0	2	523	2	77	2	2	0	7	8	4	0	0	0	0	0	0	2	35	223	238	107	21	1	0	0	46.2	41.4	4.5
1400 - 1500	753	202	167	207	177	0	1	655	0	74	3	2	2	4	9	2	0	1	0	0	0	1	1	53	231	325	126	15	1	0	0	45.6	41.4	4.3
1500 - 1600	1203	280	244	297	382	0	4	1085	6	91	1	2	0	4	6	4	0	0	0	0	0	0	29	186	423	400	146	17	2	0	0	44.8	39.7	4.8
1600 - 1700	1813	459	472	445	437	1	5	1728	14	48	3	1	0	4	6	3	0	0	0	0	0	5	60	974	740	29	2	0	1	0	2	37.0	34.6	3.5
1700 - 1800	1716	442	434	406	434	0	1	1631	21	44	1	0	0	4	8	3	2	1	0	5	25	51	218	941	456	19	1	0	0	0	0	36.3	32.8	4.0
1800 - 1900	1042	395	292	190	165	0	2	995	5	21	5	0	1	5	4	3	1	0	0	0	0	1	35	259	415	235	82	10	4	0	1	43.8	38.1	5.5
1900 - 2000	381	143	90	80	68	0	3	331	1	28	0	1	0	12	4	1	0	0	0	0	0	0	2	17	88	148	87	31	6	2	0	48.0	43.1	5.4
2000 - 2100	260	81	71	67	41	0	0	232	0	14	0	2	0	6	2	4	0	0	0	0	0	0	1	8	46	95	70	31	6	3	0	50.2	44.4	5.5
2100 - 2200	169	58	32	38	41	0	2	143	0	11	1	0	0	5	4	2	0	1	0	0	0	0	1	6	35	45	52	26	2	0	2	50.2	44.7	7.1
2200 - 2300	109	49	23	20	17	0	0	94	0	7	0	0	0	4	1	3	0	0	0	0	0	0	0	12	13	28	33	19	3	1	0	50.9	44.6	6.4
2300 - 0000	47	20	7	16	4	0	0	37	0	2	0	0	0	4	3	1	0	0	0	0	0	0	1	3	12	24	3	1	2	0	1	45.3	42.3	7.3
0700 - 1900	**12462**	**3380**	**3106**	**2970**	**3006**	**1**	**29**	**11140**	**72**	**935**	**30**	**21**	**7**	**64**	**85**	**60**	**8**	**10**	**2**	**25**	**31**	**75**	**491**	**3541**	**4274**	**2751**	**1070**	**161**	**35**	**0**	**6**	**43.7**	**37.7**	**5.7**
0600 - 2200	**13988**	**3776**	**3442**	**3358**	**3412**	**1**	**37**	**12473**	**75**	**1044**	**33**	**25**	**7**	**94**	**105**	**75**	**8**	**11**	**2**	**25**	**31**	**75**	**495**	**3605**	**4674**	**3373**	**1384**	**260**	**51**	**5**	**8**	**44.3**	**38.3**	**5.8**
0600 - 0000	**14144**	**3845**	**3472**	**3394**	**3433**	**1**	**37**	**12604**	**75**	**1053**	**33**	**25**	**7**	**102**	**109**	**79**	**8**	**11**	**2**	**25**	**31**	**75**	**496**	**3620**	**4699**	**3425**	**1420**	**280**	**56**	**6**	**9**	**44.3**	**38.3**	**5.9**
0000 - 0000	**14559**	**3921**	**3561**	**3507**	**3570**	**1**	**39**	**12912**	**75**	**1094**	**34**	**26**	**8**	**127**	**133**	**89**	**9**	**12**	**2**	**25**	**31**	**76**	**503**	**3644**	**4795**	**3581**	**1512**	**311**	**63**	**6**	**10**	**44.5**	**38.5**	**5.9**

Wednesday 14 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	30	6	7	9	8	0	0	21	0	5	0	0	0	2	1	1	0	0	0	0	0	0	0	1	6	7	9	3	2	2	0	55.4	45.7	7.7
0100 - 0200	36	9	11	4	12	0	0	27	0	3	0	0	0	1	3	2	0	0	0	0	0	1	0	7	8	8	7	3	1	1	0	50.7	41.6	8.5
0200 - 0300	24	5	12	2	5	0	0	5	0	7	0	0	1	1	7	3	0	0	0	0	0	0	0	0	7	9	5	1	2	0	0	48.1	43.3	5.5
0300 - 0400	37	5	13	8	11	0	0	22	0	6	0	0	0	1	6	2	0	0	0	0	0	0	0	4	9	14	6	2	2	0	0	47.3	42.1	6.3
0400 - 0500	74	15	11	21	27	0	0	42	0	10	0	2	0	16	3	1	0	0	0	0	0	0	1	9	18	30	12	3	0	0	1	47.1	41.5	6.2
0500 - 0600	219	22	48	69	80	0	5	157	0	29	2	0	0	13	7	3	2	1	0	0	1	1	4	25	57	76	47	7	1	0	0	47.1	41.0	5.6
0600 - 0700	696	117	136	211	232	0	2	598	0	63	2	0	1	10	11	4	0	5	0	0	0	2	3	52	248	278	98	14	0	1	0	45.1	40.7	4.5
0700 - 0800	1491	361	398	368	364	0	8	1331	10	122	2	2	0	4	4	6	2	0	18	25	16	38	123	427	635	174	31	3	1	0	0	39.9	34.7	6.5
0800 - 0900	1034	331	302	223	178	0	7	917	5	80	0	1	1	3	5	11	2	2	0	0	0	1	7	93	393	383	128	25	3	1	0	45.1	40.5	4.6
0900 - 1000	558	153	139	131	135	0	0	472	1	71	1	1	0	1	3	4	2	2	0	0	0	0	2	32	127	226	145	22	4	0	0	47.5	42.6	4.8
1000 - 1100	575	160	132	133	150	0	2	453	2	91	0	3	1	5	9	6	0	3	0	0	0	1	8	31	140	281	99	10	5	0	0	45.8	41.7	4.5
1100 - 1200	589	131	143	153	162	0	2	450	2	107	3	1	0	4	10	10	0	0	0	0	0	0	6	54	193	228	88	17	3	0	0	45.7	40.8	4.8
1200 - 1300	600	165	138	163	134	0	1	478	4	84	3	2	1	7	15	3	1	1	0	0	2	8	6	69	171	222	94	22	4	2	0	45.9	40.7	5.8
1300 - 1400	692	180	163	165	184	0	1	576	2	86	0	1	0	1	19	4	1	1	0	0	0	0	17	57	203	287	102	24	2	0	0	45.6	41.0	4.9
1400 - 1500	747	180	188	174	205	1	1	627	1	101	0	4	0	3	6	3	0	0	0	0	3	3	3	26	195	321	157	35	4	0	0	47.1	42.2	4.8
1500 - 1600	1225	288	282	297	358	0	3	1096	8	91	4	3	0	6	6	6	2	0	0	0	0	0	6	159	493	398	151	16	2	0	0	44.7	39.9	4.5
1600 - 1700	1816	474	441	443	458	0	4	1714	21	52	3	6	0	7	2	6	0	1	0	0	0	8	96	1131	552	27	2	0	0	0	0	36.6	33.9	2.7
1700 - 1800	1728	445	405	428	450	0	3	1659	13	41	0	1	0	3	5	3	0	0	14	7	12	27	139	948	563	18	0	0	0	0	0	36.6	33.3	4.3
1800 - 1900	1145	402	373	214	156	0	0	1102	4	24	2	2	0	6	5	0	0	0	0	0	0	1	53	377	414	195	86	15	3	1	0	42.8	37.2	5.2
1900 - 2000	459	155	105	109	90	0	2	412	0	29	0	0	0	5	8	3	0	0	0	0	0	3	4	15	120	186	104	20	6	1	0	47.0	42.4	5.0
2000 - 2100	253	84	65	57	47	0	0	232	0	12	0	1	0	5	2	0	0	1	0	0	0	0	1	15	41	89	73	25	6	1	2	49.0	44.1	6.1
2100 - 2200	185	62	43	47	33	0	3	150	0	19	0	0	0	5	5	3	0	0	0	0	0	0	1	12	32	55	59	19	6	1	0	49.6	44.0	5.9
2200 - 2300	125	60	17	31	17	0	0	105	1	12	0	1	0	3	0	3	0	0	0	0	0	0	3	12	27	38	33	11	0	0	1	48.5	42.6	6.1
2300 - 0000	55	16	22	9	8	0	1	41	0	1	1	0	0	2	6	3	0	0	0	0	0	0	0	2	17	14	14	6	1	1	0	49.9	43.5	5.9
0700 - 1900	**12200**	**3270**	**3104**	**2892**	**2934**	**1**	**32**	**10875**	**73**	**950**	**18**	**27**	**3**	**50**	**89**	**62**	**10**	**10**	**32**	**32**	**33**	**87**	**466**	**3404**	**4079**	**2760**	**1083**	**189**	**31**	**4**	**0**	**43.8**	**37.7**	**5.9**
0600 - 2200	**13793**	**3688**	**3453**	**3316**	**3336**	**1**	**39**	**12267**	**73**	**1073**	**20**	**28**	**4**	**75**	**115**	**72**	**10**	**16**	**32**	**32**	**33**	**92**	**475**	**3498**	**4520**	**3368**	**1417**	**267**	**49**	**8**	**2**	**44.3**	**38.2**	**6.0**
0600 - 0000	**13973**	**3764**	**3492**	**3356**	**3361**	**1**	**40**	**12413**	**74**	**1086**	**21**	**29**	**4**	**80**	**121**	**78**	**10**	**16**	**32**	**32**	**33**	**92**	**478**	**3512**	**4564**	**3420**	**1464**	**284**	**50**	**9**	**3**	**44.5**	**38.3**	**6.0**
0000 - 0000	**14393**	**3826**	**3594**	**3469**	**3504**	**1**	**45**	**12687**	**74**	**1146**	**23**	**31**	**5**	**114**	**148**	**90**	**12**	**17**	**32**	**32**	**34**	**94**	**483**	**3558**	**4669**	**3564**	**1550**	**303**	**58**	**12**	**4**	**44.5**	**38.4**	**6.0**

Thursday 15 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	38	7	13	13	5	0	0	31	0	3	1	0	0	0	2	1	0	0	0	0	0	0	0	4	9	10	7	7	1	0	0	52.6	43.5	6.8
0100 - 0200	35	14	11	4	6	0	0	30	0	1	0	0	0	0	2	2	0	0	0	0	0	0	2	3	7	12	8	1	1	0	1	49.3	42.2	7.7
0200 - 0300	27	6	7	6	8	0	0	15	0	4	0	0	0	2	2	4	0	0	0	0	0	0	0	1	2	17	3	4	0	0	0	50.2	44.1	4.7
0300 - 0400	35	3	7	11	14	0	0	30	0	2	0	0	0	1	0	2	0	0	0	0	0	0	1	2	7	15	5	4	0	1	0	50.3	42.6	7.0
0400 - 0500	83	24	19	18	22	0	0	48	0	13	1	2	0	11	6	2	0	0	0	0	0	0	3	5	24	23	17	9	0	1	1	49.7	42.6	6.8
0500 - 0600	239	26	55	77	81	0	1	200	0	26	1	0	0	5	5	1	0	0	0	0	0	0	0	25	42	79	73	16	3	1	0	48.3	42.9	5.5
0600 - 0700	721	108	157	199	257	0	1	640	2	53	2	1	1	3	9	5	0	4	0	0	0	0	9	64	272	249	107	17	1	0	2	45.5	40.8	5.8
0700 - 0800	1493	341	408	397	347	0	4	1331	8	113	8	3	0	8	8	5	1	4	0	0	0	1	69	467	680	210	53	13	0	0	0	40.8	36.7	4.4
0800 - 0900	985	335	281	211	158	0	5	868	2	90	3	2	1	4	4	3	1	2	0	0	0	2	12	91	303	398	153	24	2	0	0	45.4	40.9	4.7
0900 - 1000	682	180	171	187	144	0	1	554	7	100	2	2	1	2	6	2	2	3	0	0	0	9	3	49	207	273	116	22	1	2	0	46.5	41.4	5.2
1000 - 1100	594	145	161	124	164	0	3	456	1	101	2	1	0	10	11	7	1	1	0	0	0	7	30	156	228	140	24	7	2	0	0	47.6	42.2	5.2
1100 - 1200	562	137	113	173	139	0	3	450	1	84	1	3	0	3	11	4	1	1	0	0	0	2	32	111	249	135	29	3	1	0	0	47.4	42.7	4.8
1200 - 1300	681	149	167	194	171	0	2	567	2	86	3	0	0	4	8	7	1	1	0	0	0	1	3	47	204	256	137	30	3	0	0	46.6	41.8	4.9
1300 - 1400	632	158	163	162	149	0	1	534	2	73	3	1	0	4	8	5	1	0	0	0	0	1	9	41	183	253	120	22	3	0	0	46.2	41.6	4.9
1400 - 1500	743	178	168	184	213	0	0	639	1	81	3	2	0	5	8	4	0	0	0	0	0	0	3	42	184	308	174	26	5	1	0	47.0	42.2	4.6
1500 - 1600	1256	302	259	322	373	0	3	1135	4	93	1	1	0	3	6	8	0	2	0	0	0	0	30	110	504	478	114	20	0	0	0	44.3	39.9	4.4
1600 - 1700	1819	483	451	439	446	0	6	1694	22	65	7	5	0	8	4	7	0	1	0	0	2	23	165	1032	568	25	3	1	0	0	0	36.8	33.7	3.2
1700 - 1800	1692	447	432	419	394	0	3	1596	28	42	0	4	0	5	5	8	0	1	0	0	0	12	168	1027	443	40	2	0	0	0	0	36.5	33.5	3.1
1800 - 1900	965	319	252	217	177	0	2	919	4	24	3	0	0	4	5	4	0	0	0	0	0	0	8	124	405	327	86	14	1	0	0	43.7	39.6	4.3
1900 - 2000	440	156	122	90	72	0	1	400	1	26	0	0	0	4	6	2	0	0	0	0	0	0	4	22	90	189	89	28	14	3	1	48.5	43.1	5.6
2000 - 2100	243	74	59	64	46	0	1	222	0	5	0	0	0	7	3	4	0	1	0	0	0	0	1	13	46	94	61	21	6	0	1	49.0	43.6	5.6
2100 - 2200	196	69	47	46	34	0	1	164	1	18	0	0	0	3	6	3	0	0	0	0	0	0	0	9	26	75	55	27	4	0	0	50.4	44.3	5.1
2200 - 2300	115	44	38	21	12	0	2	93	1	8	0	0	0	4	4	3	0	0	0	0	0	0	0	8	14	43	40	10	0	0	0	48.2	43.8	4.9
2300 - 0000	44	12	12	9	11	0	0	30	0	6	0	0	0	5	1	2	0	0	0	0	0	0	0	1	6	17	14	5	1	0	0	49.7	44.4	4.9
0700 - 1900	**12104**	**3174**	**3026**	**3029**	**2875**	**0**	**33**	**10743**	**82**	**952**	**36**	**24**	**2**	**60**	**84**	**64**	**8**	**16**	**0**	**0**	**2**	**49**	**479**	**3092**	**3948**	**3045**	**1233**	**225**	**25**	**6**	**0**	**44.3**	**38.4**	**5.5**
0600 - 2200	**13704**	**3581**	**3411**	**3428**	**3284**	**0**	**37**	**12169**	**86**	**1054**	**38**	**25**	**3**	**77**	**108**	**78**	**8**	**21**	**0**	**0**	**2**	**49**	**493**	**3200**	**4382**	**3652**	**1545**	**318**	**50**	**9**	**4**	**44.7**	**38.9**	**5.7**
0600 - 0000	**13863**	**3637**	**3461**	**3458**	**3307**	**0**	**39**	**12292**	**87**	**1068**	**38**	**25**	**3**	**86**	**113**	**83**	**8**	**21**	**0**	**0**	**2**	**49**	**493**	**3209**	**4402**	**3712**	**1599**	**333**	**51**	**9**	**4**	**44.9**	**38.9**	**5.7**
0000 - 0000	**14320**	**3717**	**3573**	**3587**	**3443**	**0**	**40**	**12646**	**87**	**1117**	**41**	**27**	**3**	**105**	**130**	**95**	**8**	**21**	**0**	**0**	**2**	**49**	**499**	**3249**	**4493**	**3868**	**1712**	**374**	**56**	**12**	**6**	**45.0**	**39.0**	**5.8**

Friday 16 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	33	5	11	10	7	0	0	25	0	4	0	0	0	3	1	0	0	0	0	0	0	0	0	4	5	8	13	3	0	0	0	49.6	43.5	5.7
0100 - 0200	34	9	13	5	7	0	0	29	0	0	0	0	0	2	1	2	0	0	0	0	0	0	1	1	7	8	11	4	1	0	1	50.5	44.8	9.0
0200 - 0300	36	8	11	9	8	0	0	18	0	10	0	0	0	4	3	1	0	0	0	0	0	0	1	0	3	17	9	5	0	1	0	50.5	45.1	5.8
0300 - 0400	36	7	11	7	11	0	1	21	1	9	0	0	0	4	0	0	0	0	0	0	0	0	1	4	7	17	3	1	3	0	0	47.8	42.2	6.6
0400 - 0500	65	15	11	17	22	0	0	39	0	6	1	0	0	17	2	0	0	0	0	0	0	0	1	7	17	20	13	5	1	1	0	49.0	42.0	6.3
0500 - 0600	233	37	51	75	70	0	1	157	0	34	1	0	1	17	17	4	0	1	0	0	0	0	1	14	55	91	58	12	2	0	0	47.6	42.4	5.1
0600 - 0700	662	119	113	192	238	0	5	572	1	60	2	0	2	5	8	5	0	2	0	0	0	0	2	30	212	292	100	21	5	0	0	45.9	41.4	4.5
0700 - 0800	1230	302	341	295	292	0	2	1110	2	94	2	4	2	5	5	3	0	1	0	0	0	0	1	118	534	469	106	2	0	0	0	43.8	39.9	3.6
0800 - 0900	802	272	198	168	164	0	6	695	2	87	1	0	1	1	2	4	1	2	0	0	0	0	1	47	278	295	159	21	1	0	0	46.1	41.5	4.5
0900 - 1000	692	178	152	189	173	0	1	556	4	103	2	2	0	4	12	7	0	1	0	0	0	0	3	42	169	314	142	21	0	1	0	46.4	42.0	4.5
1000 - 1100	620	170	154	160	136	0	4	486	1	98	3	1	0	7	11	6	0	3	0	0	0	0	5	24	175	288	112	32	3	1	0	46.9	42.1	4.7
1100 - 1200	657	142	182	165	168	0	0	539	1	97	3	2	0	4	3	8	0	0	0	0	0	0	10	29	154	301	129	27	6	1	0	46.6	42.2	4.8
1200 - 1300	909	254	224	245	186	0	1	789	1	83	4	1	0	8	17	3	1	1	0	0	0	2	4	75	304	344	155	24	1	0	0	45.9	41.2	4.6
1300 - 1400	814	223	196	195	200	0	1	713	1	77	3	2	1	4	4	8	0	0	0	0	0	1	5	48	270	310	147	27	6	0	0	46.4	41.5	4.8
1400 - 1500	944	213	211	254	266	0	4	815	5	87	2	3	0	7	6	12	2	1	0	0	0	1	1	48	296	395	163	35	4	1	0	46.1	41.7	4.4
1500 - 1600	1468	399	345	354	370	0	3	1349	12	85	1	3	2	2	7	4	0	0	0	0	0	2	31	258	647	410	110	10	0	0	0	43.3	38.7	4.4
1600 - 1700	1753	444	439	435	435	0	5	1634	16	70	2	5	0	9	5	7	0	0	0	0	0	0	7	141	1023	540	35	5	0	0	2	36.5	34.0	4.0
1700 - 1800	1332	405	312	355	260	0	3	1261	12	37	1	0	0	7	6	4	1	0	0	0	0	8	73	435	508	243	60	5	0	0	0	41.7	36.6	4.8
1800 - 1900	601	190	174	131	106	0	2	567	4	19	0	0	0	3	3	3	0	0	0	0	0	0	1	22	167	260	115	29	7	0	0	47.2	42.3	4.8
1900 - 2000	354	110	105	83	56	0	1	317	2	20	0	1	0	1	9	3	0	0	0	0	0	0	6	32	98	118	83	16	0	1	0	47.0	41.6	5.3
2000 - 2100	222	70	75	40	37	0	0	196	1	10	1	0	0	4	8	2	0	0	0	0	0	0	4	9	45	79	60	18	3	4	0	48.7	43.5	6.1
2100 - 2200	150	60	32	33	25	0	0	130	0	10	0	0	0	2	3	5	0	0	0	0	0	0	0	5	37	60	34	11	1	1	1	48.8	43.4	5.7
2200 - 2300	126	44	30	22	30	0	0	116	0	4	0	0	0	3	3	0	0	0	0	0	0	1	1	1	23	41	38	14	6	1	0	50.5	44.9	6.1
2300 - 0000	73	30	22	16	5	0	0	66	0	2	0	0	0	1	2	2	0	0	0	0	0	0	0	4	12	20	24	7	3	2	1	52.0	45.4	7.2
0700 - 1900	**11822**	**3192**	**2928**	**2946**	**2756**	**0**	**32**	**10514**	**61**	**937**	**24**	**23**	**6**	**61**	**81**	**69**	**5**	**9**	**0**	**0**	**0**	**21**	**276**	**2169**	**4042**	**3644**	**1403**	**233**	**28**	**4**	**2**	**44.8**	**39.4**	**5.3**
0600 - 2200	**13210**	**3551**	**3253**	**3294**	**3112**	**0**	**38**	**11729**	**65**	**1037**	**27**	**24**	**8**	**73**	**109**	**84**	**5**	**11**	**0**	**0**	**0**	**21**	**288**	**2245**	**4434**	**4193**	**1680**	**299**	**37**	**10**	**3**	**45.1**	**39.7**	**5.3**
0600 - 0000	**13409**	**3625**	**3305**	**3332**	**3147**	**0**	**38**	**11911**	**65**	**1043**	**27**	**24**	**8**	**77**	**114**	**86**	**5**	**11**	**0**	**0**	**0**	**22**	**289**	**2250**	**4469**	**4254**	**1742**	**320**	**46**	**13**	**4**	**45.2**	**39.8**	**5.4**
0000 - 0000	**13846**	**3706**	**3413**	**3455**	**3272**	**0**	**40**	**12200**	**66**	**1106**	**29**	**24**	**9**	**124**	**138**	**93**	**5**	**12**	**0**	**0**	**0**	**22**	**294**	**2280**	**4563**	**4415**	**1849**	**350**	**53**	**15**	**5**	**45.3**	**39.9**	**5.4**

Saturday 17 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	35	10	8	9	8	0	0	31	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	5	6	11	3	7	1	0	2	53.9	44.6	9.6
0100 - 0200	40	16	10	6	8	0	0	29	0	2	0	1	0	4	4	0	0	0	0	0	0	0	1	2	6	18	7	5	1	0	0	50.0	43.0	5.8
0200 - 0300	45	11	14	10	10	0	0	25	0	9	0	0	0	7	3	1	0	0	0	0	0	0	1	3	11	18	6	3	3	0	0	48.8	42.8	6.0
0300 - 0400	36	6	8	17	5	0	0	16	0	4	0	0	0	13	3	0	0	0	0	0	0	1	0	1	16	9	7	0	2	0	0	47.8	41.0	6.4
0400 - 0500	42	4	9	12	17	0	0	25	0	5	0	0	0	11	1	0	0	0	0	0	0	0	1	5	10	12	10	3	1	0	0	48.3	41.8	6.0
0500 - 0600	104	23	23	37	21	0	1	76	0	13	1	0	1	10	2	0	0	0	0	0	0	1	2	8	21	33	29	6	2	2	0	48.9	42.8	6.6
0600 - 0700	164	42	35	41	46	0	0	135	0	22	0	0	0	2	4	1	0	0	0	0	0	0	0	4	24	41	54	31	7	3	0	52.2	46.2	5.8
0700 - 0800	233	54	57	61	61	0	0	181	0	36	1	1	0	7	2	4	1	0	0	0	0	0	0	4	30	79	79	30	7	3	1	50.5	45.6	5.5
0800 - 0900	343	74	83	103	83	0	0	267	1	58	3	1	0	3	5	5	0	0	0	0	0	0	0	16	43	115	118	43	6	1	1	50.0	44.7	5.3
0900 - 1000	415	103	103	114	95	0	1	357	1	42	1	0	2	1	5	5	0	0	0	0	0	0	0	5	71	152	149	29	9	0	0	48.7	44.3	4.6
1000 - 1100	458	113	101	133	111	0	3	401	1	37	0	0	1	8	4	3	0	0	0	0	0	0	2	19	72	193	138	31	1	2	0	48.1	43.4	4.7
1100 - 1200	499	127	113	146	113	0	3	458	1	28	0	0	0	2	4	3	0	0	0	0	0	0	2	10	111	220	124	28	2	1	1	47.3	43.0	4.6
1200 - 1300	511	142	135	103	131	1	2	468	4	27	0	0	0	7	2	0	0	0	1	0	0	0	1	15	116	210	120	37	8	2	1	48.7	43.3	5.3
1300 - 1400	539	145	147	125	122	0	3	491	1	29	1	0	1	5	5	3	0	0	0	0	0	1	0	10	87	238	156	36	10	1	0	48.3	43.8	4.7
1400 - 1500	415	110	100	121	84	0	1	401	0	11	0	0	0	2	0	0	0	0	0	0	0	0	2	21	63	167	122	32	5	1	2	48.8	43.8	5.4
1500 - 1600	464	112	101	114	137	0	0	440	0	18	0	0	1	4	0	1	0	0	0	0	0	0	0	8	89	216	114	30	7	0	0	47.5	43.5	4.4
1600 - 1700	459	137	124	100	98	1	1	434	0	16	1	0	0	2	3	1	0	0	0	0	0	0	2	5	94	206	114	30	8	0	0	47.6	43.4	4.6
1700 - 1800	387	105	105	101	76	0	0	368	2	11	1	0	0	1	3	0	1	0	0	0	0	0	6	25	71	157	91	29	5	2	1	48.7	43.1	5.7
1800 - 1900	321	107	81	70	63	0	0	304	0	11	0	0	0	0	2	4	0	0	0	0	1	0	0	14	82	126	78	17	2	1	0	47.6	42.7	4.9
1900 - 2000	197	70	43	42	42	0	0	186	1	5	0	0	0	2	2	1	0	0	0	0	0	0	2	8	41	73	53	12	7	1	0	48.8	43.3	5.9
2000 - 2100	135	47	37	23	28	0	1	126	0	4	0	0	0	0	2	2	0	0	0	0	0	0	0	4	33	38	37	19	3	1	0	50.6	44.5	5.5
2100 - 2200	105	27	37	23	18	0	0	96	0	8	0	0	0	0	1	0	0	0	0	0	0	0	0	5	21	37	25	11	3	3	0	50.7	44.4	6.1
2200 - 2300	113	46	29	21	17	0	0	105	0	4	2	0	0	1	1	0	0	0	0	0	0	0	0	7	24	35	39	4	2	2	0	48.2	43.5	5.5
2300 - 0000	73	19	17	25	12	0	0	70	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	6	25	24	14	4	0	0	0	46.9	41.3	5.1
0700 - 1900	**5044**	**1329**	**1250**	**1291**	**1174**	**2**	**14**	**4570**	**11**	**324**	**8**	**2**	**5**	**42**	**35**	**29**	**2**	**0**	**1**	**0**	**1**	**1**	**15**	**152**	**929**	**2079**	**1403**	**372**	**70**	**14**	**7**	**48.4**	**43.6**	**5.0**
0600 - 2200	**5645**	**1515**	**1402**	**1420**	**1308**	**2**	**15**	**5113**	**12**	**363**	**8**	**2**	**5**	**46**	**44**	**33**	**2**	**0**	**1**	**0**	**1**	**1**	**17**	**173**	**1048**	**2268**	**1572**	**445**	**90**	**22**	**7**	**48.7**	**43.7**	**5.1**
0600 - 0000	**5831**	**1580**	**1448**	**1466**	**1337**	**2**	**15**	**5288**	**12**	**367**	**11**	**2**	**5**	**47**	**47**	**33**	**2**	**0**	**1**	**0**	**1**	**1**	**17**	**186**	**1097**	**2327**	**1625**	**453**	**92**	**24**	**7**	**48.7**	**43.7**	**5.1**
0000 - 0000	**6133**	**1650**	**1520**	**1557**	**1406**	**2**	**16**	**5490**	**12**	**401**	**12**	**3**	**6**	**93**	**61**	**35**	**2**	**0**	**1**	**0**	**1**	**3**	**22**	**210**	**1167**	**2428**	**1687**	**477**	**102**	**26**	**9**	**48.7**	**43.6**	**5.2**

Sunday 18 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	45	11	10	12	12	0	0	42	0	2	0	0	0	1	0	0	0	0	0	0	0	1	1	2	10	20	7	3	1	0	0	48.4	42.0	6.5
0100 - 0200	51	10	18	12	11	0	0	45	0	2	1	0	0	0	3	0	0	0	0	0	0	0	0	5	10	19	11	4	1	1	0	49.1	42.8	6.0
0200 - 0300	33	6	4	10	13	0	0	29	0	2	0	0	0	1	0	1	0	0	0	0	0	0	1	2	5	15	8	2	0	0	0	49.7	42.8	5.7
0300 - 0400	26	5	8	10	3	0	0	21	0	0	2	0	0	0	2	1	0	0	0	0	0	0	0	5	8	8	3	1	1	0	0	45.5	40.7	5.5
0400 - 0500	44	6	9	11	18	0	0	41	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1	7	24	11	1	0	0	0	45.6	42.3	3.6
0500 - 0600	65	16	16	14	19	0	0	61	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	7	10	26	16	4	0	2	0	48.1	42.7	5.8
0600 - 0700	130	37	30	24	39	0	0	117	1	4	2	0	0	2	4	0	0	0	0	0	0	0	0	4	31	40	33	19	1	2	0	50.3	44.1	5.8
0700 - 0800	116	17	30	39	30	0	0	98	0	14	1	0	0	1	1	1	0	0	0	0	0	0	0	3	15	35	44	12	5	2	0	50.7	45.6	5.4
0800 - 0900	169	43	52	34	40	0	0	141	0	20	1	1	1	4	1	0	0	0	0	0	0	0	0	3	9	64	61	27	5	0	0	50.9	46.0	4.6
0900 - 1000	276	68	60	69	79	0	1	257	0	15	0	0	0	3	0	0	0	0	0	0	0	1	0	0	6	38	91	98	28	13	1	0	50.1	45.1	5.5
1000 - 1100	366	86	94	88	98	0	2	350	1	13	0	0	0	0	0	0	0	0	0	0	0	0	1	14	57	148	112	27	7	0	0	49.0	44.0	4.9
1100 - 1200	431	91	107	130	103	0	2	411	1	15	0	0	0	1	0	1	0	0	0	0	0	3	0	1	4	83	162	130	38	10	0	0	49.3	44.0	5.3
1200 - 1300	458	103	107	142	106	0	1	430	3	20	0	0	0	2	1	1	0	0	0	0	0	0	0	4	17	76	200	128	26	6	1	0	47.8	43.3	4.8
1300 - 1400	436	109	107	102	118	0	0	421	1	11	0	0	0	2	0	1	0	0	0	0	0	0	0	4	71	172	146	35	7	1	0	49.1	44.4	4.6
1400 - 1500	387	97	91	102	97	0	3	365	1	11	1	0	1	3	1	1	0	0	0	0	0	0	1	6	64	164	109	36	5	2	0	48.8	44.1	4.9
1500 - 1600	378	82	84	90	122	1	0	349	1	16	2	1	0	3	3	2	0	0	0	1	0	0	0	13	92	138	98	30	4	2	0	48.4	43.4	5.3
1600 - 1700	371	104	103	101	63	0	0	350	1	14	1	0	0	3	0	1	0	1	0	0	0	0	0	9	70	144	95	43	9	1	0	49.6	44.1	5.1
1700 - 1800	247	68	68	63	48	0	0	237	1	6	0	0	0	2	0	1	0	0	0	0	0	0	0	10	45	97	64	26	4	1	0	49.0	43.8	5.2
1800 - 1900	249	99	53	55	42	0	1	236	0	8	0	0	0	2	0	2	0	0	0	0	0	0	0	9	50	100	67	19	4	0	0	48.7	43.5	4.9
1900 - 2000	188	56	38	46	48	0	1	179	0	3	0	0	0	3	1	1	0	0	0	0	0	0	0	9	30	49	69	26	4	1	0	50.2	44.9	5.6
2000 - 2100	136	42	36	31	27	0	0	130	1	1	0	0	0	0	3	1	0	0	0	0	0	0	0	5	27	56	36	8	2	1	1	48.5	43.6	5.3
2100 - 2200	99	34	28	24	13	0	0	90	0	7	0	1	0	0	1	0	0	0	0	0	0	0	0	2	15	31	36	12	2	1	0	50.3	45.0	5.1
2200 - 2300	62	25	11	7	19	0	0	49	0	8	0	0	0	3	2	0	0	0	0	0	0	0	0	5	8	20	25	2	0	1	1	49.4	44.6	6.0
2300 - 0000	50	8	19	15	8	0	0	43	0	0	1	0	0	0	4	2	0	0	0	0	0	0	0	4	7	15	20	3	1	0	0	48.5	43.6	5.3
0700 - 1900	**3884**	**967**	**956**	**1015**	**946**	**1**	**10**	**3645**	**10**	**163**	**6**	**2**	**2**	**26**	**7**	**11**	**0**	**1**	**0**	**1**	**4**	**0**	**7**	**98**	**670**	**1515**	**1152**	**347**	**79**	**11**	**0**	**49.1**	**44.1**	**5.1**
0600 - 2200	**4437**	**1136**	**1088**	**1140**	**1073**	**1**	**11**	**4161**	**12**	**178**	**8**	**3**	**2**	**31**	**16**	**13**	**0**	**1**	**0**	**1**	**4**	**0**	**7**	**118**	**773**	**1691**	**1326**	**412**	**88**	**16**	**1**	**49.2**	**44.1**	**5.1**
0600 - 0000	**4549**	**1169**	**1118**	**1162**	**1100**	**1**	**11**	**4253**	**12**	**186**	**9**	**3**	**2**	**34**	**22**	**15**	**0**	**1**	**0**	**1**	**4**	**0**	**7**	**127**	**788**	**1726**	**1371**	**417**	**89**	**17**	**2**	**49.2**	**44.1**	**5.1**
0000 - 0000	**4813**	**1223**	**1183**	**1231**	**1176**	**1**	**11**	**4492**	**12**	**195**	**12**	**3**	**2**	**39**	**28**	**17**	**0**	**1**	**0**	**1**	**4**	**1**	**9**	**149**	**838**	**1838**	**1427**	**432**	**92**	**20**	**2**	**49.2**	**44.0**	**5.2**

Monday 19 November 2018

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	21	3	11	4	3	0	0	15	0	2	0	0	0	1	3	0	0	0	0	0	0	0	0	2	7	6	5	0	1	0	0	46.1	41.4	6.1
0100 - 0200	28	7	6	8	7	0	0	24	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	12	9	5	1	0	0	52.1	46.4	4.8
0200 - 0300	17	7	3	5	2	0	0	12	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	1	3	6	5	1	1	0	0	48.0	43.1	5.8
0300 - 0400	33	6	7	9	11	0	0	27	0	1	0	0	0	2	3	0	0	0	0	0	0	0	0	1	6	8	12	3	2	1	0	52.3	45.5	6.2
0400 - 0500	56	19	9	12	16	0	0	35	0	7	2	1	0	8	3	0	0	0	0	0	0	0	0	3	10	24	9	10	0	0	0	50.2	43.7	5.1
0500 - 0600	229	42	46	76	65	0	1	175	0	28	1	0	0	12	6	6	0	0	0	0	0	0	4	10	57	92	51	12	3	0	0	47.8	42.4	5.3
0600 - 0700	713	124	146	201	242	0	4	621	2	58	2	3	2	10	3	6	1	1	0	0	0	0	3	51	188	342	111	15	2	1	0	45.7	41.5	4.4
0700 - 0800	1544	337	390	418	399	0	2	1370	16	113	12	4	1	5	11	6	1	3	2	26	9	58	164	671	434	146	32	2	0	0	0	39.1	33.7	5.8
0800 - 0900	1251	403	345	271	232	0	5	1110	7	104	2	2	1	7	5	6	1	1	0	0	0	0	23	119	516	394	169	28	2	0	0	45.1	40.2	4.7
0900 - 1000	681	190	160	166	165	0	1	570	0	87	3	2	0	3	2	10	1	2	0	0	0	0	0	32	157	313	149	21	8	1	0	46.8	42.5	4.5
1000 - 1100	597	190	120	159	128	0	1	454	0	98	6	2	1	6	15	13	0	1	0	0	0	0	5	39	162	226	133	29	3	0	0	46.9	41.9	4.9
1100 - 1200	579	134	148	143	154	0	2	445	2	90	3	3	0	7	15	10	1	1	0	0	1	5	3	47	145	238	119	17	4	0	0	46.4	41.5	5.1
1200 - 1300	626	166	168	155	137	0	2	509	1	88	3	1	0	3	11	6	0	2	0	0	0	1	12	39	205	251	97	16	5	0	0	46.0	41.1	4.9
1300 - 1400	630	147	179	155	149	0	1	538	2	76	1	0	0	4	3	4	0	1	0	0	0	0	19	52	192	229	106	26	6	0	0	46.6	41.1	5.4
1400 - 1500	723	190	157	191	185	0	1	604	1	88	4	5	0	5	10	3	2	0	0	0	0	0	3	67	246	287	94	22	3	1	0	45.3	40.8	4.8
1500 - 1600	1131	257	251	284	339	0	5	1024	8	73	3	0	0	1	8	8	0	1	0	0	1	6	22	201	410	370	102	17	2	0	0	43.8	39.1	4.9
1600 - 1700	1730	434	406	456	434	0	4	1629	14	49	1	3	0	8	10	10	1	1	0	13	36	46	135	1019	463	18	0	0	0	0	0	36.1	32.9	4.1
1700 - 1800	1729	443	443	432	411	0	2	1660	27	31	0	1	0	2	1	3	0	2	0	0	6	19	195	1128	377	4	0	0	0	0	0	35.7	32.9	2.9
1800 - 1900	1026	403	288	173	162	0	1	978	7	26	1	1	0	4	4	4	0	0	0	0	3	15	64	309	367	199	61	8	0	0	0	42.1	36.7	5.4
1900 - 2000	416	124	128	87	77	0	2	378	0	19	2	1	0	6	5	2	1	0	0	0	0	0	7	36	114	141	96	19	2	1	0	47.1	41.8	5.4
2000 - 2100	261	82	81	55	43	0	1	237	0	10	1	0	0	5	5	2	0	0	0	0	0	0	6	18	73	99	48	14	3	0	0	47.1	41.7	5.5
2100 - 2200	164	49	40	38	37	0	1	136	0	14	0	0	0	3	7	3	0	0	0	0	0	0	0	8	31	63	49	11	1	1	0	48.1	43.4	5.1
2200 - 2300	111	40	30	23	18	0	1	92	0	12	0	0	0	1	3	2	0	0	0	0	0	0	2	10	37	38	17	5	1	0	1	47.0	41.3	5.9
2300 - 0000	45	17	11	7	10	0	1	32	0	1	1	0	0	3	2	5	0	0	0	0	0	2	1	3	6	15	13	5	0	0	0	48.1	42.6	6.8
0700 - 1900	**12247**	**3294**	**3055**	**3003**	**2895**	**0**	**27**	**10891**	**85**	**923**	**39**	**24**	**3**	**55**	**95**	**83**	**7**	**15**	**2**	**39**	**56**	**150**	**645**	**3723**	**3674**	**2675**	**1062**	**186**	**33**	**2**	**0**	**43.6**	**37.3**	**6.0**
0600 - 2200	**13801**	**3673**	**3450**	**3384**	**3294**	**0**	**35**	**12263**	**87**	**1024**	**44**	**28**	**5**	**79**	**115**	**96**	**9**	**16**	**2**	**39**	**56**	**150**	**661**	**3836**	**4080**	**3320**	**1366**	**245**	**41**	**5**	**0**	**44.1**	**37.8**	**6.1**
0600 - 0000	**13957**	**3730**	**3491**	**3414**	**3322**	**0**	**37**	**12387**	**87**	**1037**	**45**	**28**	**5**	**83**	**120**	**103**	**9**	**16**	**2**	**39**	**56**	**152**	**664**	**3949**	**4123**	**3373**	**1396**	**255**	**42**	**5**	**1**	**44.2**	**37.9**	**6.1**
0000 - 0000	**14341**	**3814**	**3573**	**3528**	**3426**	**0**	**38**	**12675**	**87**	**1077**	**48**	**29**	**5**	**109**	**139**	**109**	**9**	**16**	**2**	**39**	**56**	**152**	**668**	**3866**	**4207**	**3521**	**1487**	**286**	**50**	**6**	**1**	**44.3**	**38.0**	**6.1**

Virtual Day (14)

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
0000 - 0100	35	9	10	10	6	0	0	27	0	3	0	0	0	2	2	1	0	0	0	0	0	0	1	3	7	9	9	4	1	0	0	50.30	43.40	6.90
0100 - 0200	34	11	9	6	7	0	0	26	0	2	0	0	0	2	2	1	0	0	0	0	0	0	1	3	7	11	8	3	1	0	1	50.20	43.50	7.50
0200 - 0300	28	8	7	7	7	0	0	16	0	4	0	0	0	3	3	2	0	0	0	0	0	0	0	2	6	11	6	2	1	0	0	48.90	42.80	5.90
0300 - 0400	33	6	8	10	9	0	0	21	0	4	0	0	0	4	2	1	0	0	0	0	0	0	1	3	10	10	6	2	1	0	0	48.60	41.90	6.70
0400 - 0500	63	13	13	16	21	0	0	40	0	7	1	1	0	11	4	1	0	0	0	0	0	0	1	6	16	23	12	5	1	0	0	47.80	42.00	5.80
0500 - 0600	187	28	39	59	62	0	1	142	0	21	1	0	1	10	8	3	0	0	0	0	0	0	2	14	44	68	46	10	3	1	0	47.80	42.40	5.50
0600 - 0700	533	95	104	152	183	0	2	461	2	47	2	1	1	6	7	4	0	1	0	0	0	0	2	33	166	221	89	19	3	1	0	46.20	41.60	4.70
0700 - 0800	1081	255	283	281	262	0	3	961	8	85	4	3	1	4	5	5	1	1	3	8	5	16	56	312	424	191	55	11	2	1	0	41.90	36.60	5.80
0800 - 0900	783	252	209	169	153	0	3	685	3	74	2	1	1	3	4	5	1	2	0	0	0	0	7	68	271	285	123	26	4	0	0	45.90	41.00	4.90
0900 - 1000	580	148	154	143	135	0	1	480	2	76	2	1	0	4	6	5	1	2	0	0	0	1	5	35	151	234	126	23	4	1	0	47.00	42.10	5.00
1000 - 1100	533	147	127	132	127	0	2	428	2	77	2	1	0	5	9	6	0	1	0	0	0	2	5	30	133	217	117	25	4	1	0	47.10	42.20	5.10
1100 - 1200	559	132	143	144	140	0	2	456	2	77	2	1	0	4	8	6	0	1	0	0	0	1	4	37	156	224	108	24	4	0	0	46.70	41.80	5.20
1200 - 1300	632	163	160	164	146	0	1	538	3	65	3	1	0	6	9	4	0	1	0	0	0	1	7	42	181	254	116	26	4	1	0	46.50	41.70	5.00
1300 - 1400	615	164	156	147	148	0	1	532	1	63	2	1	0	4	7	4	0	0	0	0	0	1	6	34	176	244	122	26	5	1	0	46.80	41.90	5.00
1400 - 1500	688	172	160	177	179	0	1	596	2	68	2	2	0	5	6	5	0	1	0	0	0	0	3	47	219	268	121	25	4	1	0	46.40	41.50	4.80
1500 - 1600	1014	242	226	259	287	0	2	923	5	65	2	2	1	4	5	5	0	0	0	0	1	3	16	144	393	327	107	19	2	0	0	44.50	39.60	5.00
1600 - 1700	1386	363	346	343	334	0	3	1300	15	47	3	3	0	6	4	5	0	1	0	2	4	11	109	717	432	66	32	11	2	1	0	37.70	34.60	4.60
1700 - 1800	1251	335	312	309	295	0	2	1190	13	32	1	1	0	4	4	3	0	0	1	1	3	10	110	658	354	76	29	7	1	0	0	38.00	34.40	4.50
1800 - 1900	753	269	210	150	124	0	1	715	4	21	1	1	0	4	4	2	0	0	0	0	0	2	31	159	263	202	78	15	3	0	0	44.50	38.70	5.50
1900 - 2000	345	117	85	79	64	0	1	312	1	19	1	0	0	4	4	2	0	0	0	0	0	1	4	21	86	129	77	20	5	1	0	47.70	42.40	5.50
2000 - 2100	219	71	59	50	38	0	1	197	0	10	0	0	0	4	4	2	0	0	0	0	0	0	2	11	49	78	53	19	4	1	1	48.90	43.20	5.80
2100 - 2200	155	50	39	35	31	0	1	133	0	12	0	0	0	3	4	2	0	0	0	0	0	0	1	10	29	53	43	15	3	1	0	49.30	43.60	5.90
2200 - 2300	109	44	24	21	20	0	1	94	0	7	0	0	0	3	2	1	0	0	0	0	0	0	1	8	20	36	30	10	2	1	1	49.40	43.60	6.20
2300 - 0000	55	17	14	12	12	0	0	46	0	3	0	0	0	2	3	2	0	0	0	0	0	0	1	4	11	18	14	5	1	1	0	49.10	43.20	6.40
0700 - 1900	**9874**	**2643**	**2486**	**2416**	**2330**	**1**	**23**	**8803**	**57**	**750**	**26**	**18**	**4**	**53**	**71**	**54**	**6**	**9**	**5**	**11**	**14**	**49**	**358**	**2282**	**3151**	**2586**	**1133**	**238**	**39**	**6**	**2**	**44.9**	**38.8**	**5.9**
0600 - 2200	**11125**	**2976**	**2772**	**2732**	**2645**	**1**	**27**	**9906**	**60**	**838**	**29**	**19**	**4**	**69**	**90**	**64**	**6**	**11**	**5**	**11**	**14**	**50**	**368**	**2357**	**3482**	**3068**	**1394**	**311**	**54**	**10**	**3**	**45.2**	**39.2**	**5.9**
0600 - 0000	**11289**	**3036**	**2810**	**2765**	**2677**	**1**	**28**	**10045**	**60**	**848**	**30**	**19**	**4**	**75**	**95**	**67**	**6**	**11**	**5**	**11**	**14**	**50**	**369**	**2369**	**3513**	**3122**	**1438**	**326**	**58**	**11**	**4**	**45.3**	**39.2**	**5.9**
0000 - 0000	**11669**	**3111**	**2896**	**2872**	**2790**	**1**	**30**	**10317**	**61**	**889**	**33**	**20**	**5**	**106**	**116**	**74**	**6**	**11**	**5**	**11**	**14**	**51**	**375**	**2399**	**3602**	**3253**	**1524**	**353**	**65**	**13**	**4**	**45.4**	**39.3**	**6.0**

Virtual Week (2)

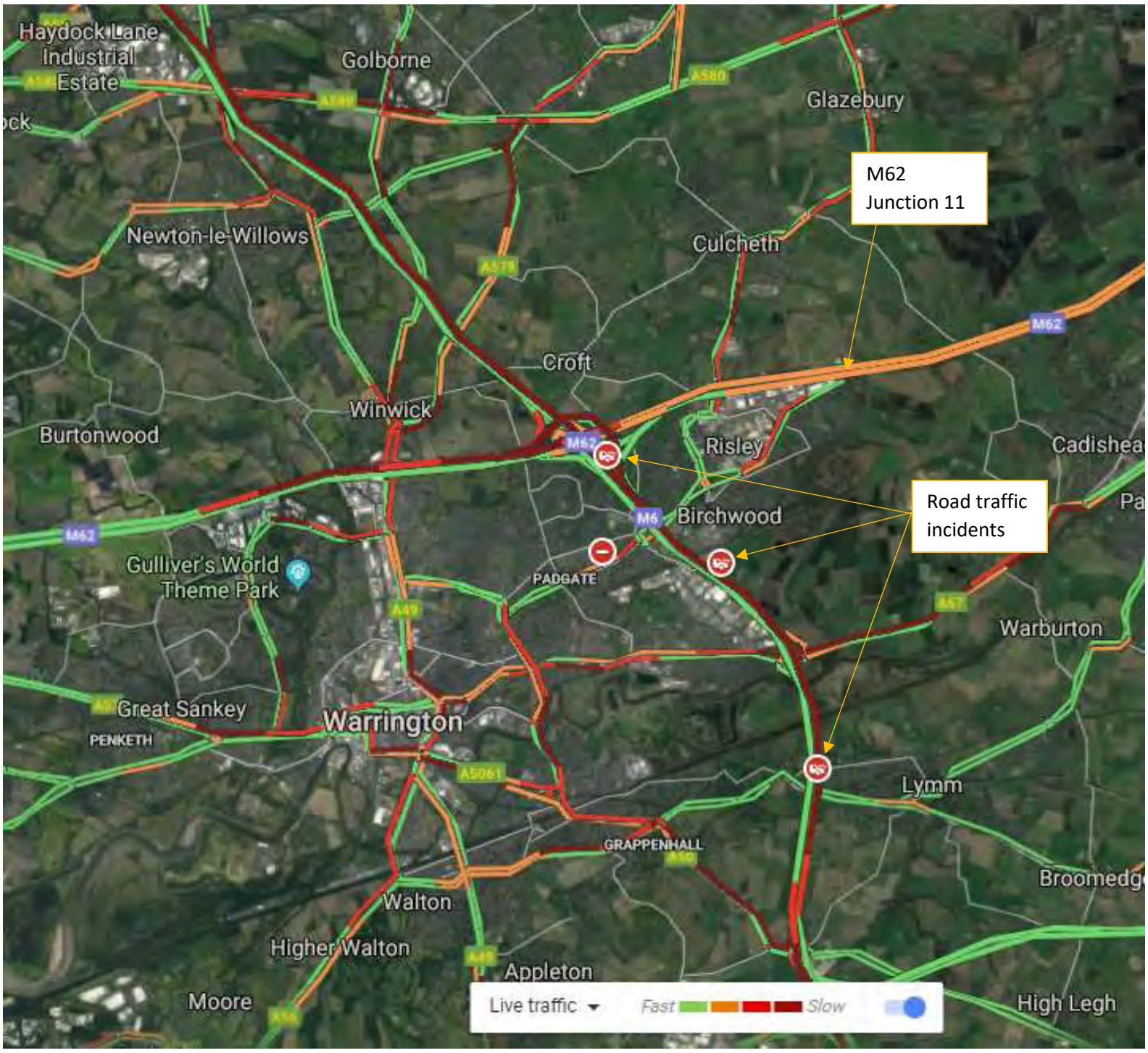
Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
Mon	14184	3821	3550	3413	3402	1	34	12528	79	1085	49	28	5	112	141	100	9	15	1	20	34	112	582	3608	4525	3517	1435	297	46	7	2	44.3	38.3	5.9
Tue	14406	3857	3540	3548	3462	2	39	12711	81	1117	38	28	8	123	142	100	9	12	7	26	22	73	507	3461	4782	3589	1542	320	67	8	7	44.6	38.6	5.9
Wed	14172	3780	3508	3474	3411	1	36	12450	83	1151	39	27	5	114	145	92	10	21	22	22	30	83	601	3661	4532	3506	1381	272	49	11	4	44.2	38.2	5.9
Thu	14348	3794	3583	3540	3432	0	37	12620	93	1139	45	29	4	119	144	97	9	15	0	8	6	51	542	3220	4666	3812	1643	331	56	10	5	44.8	38.9	5.7
Fri	13827	3705	3460	3388	3275	0	35	12133	66	1148	33	25	7	127	143	89	8	15	3	3	5	30	347	2445	4662	4223	1694	349	54	13	3	45.1	39.6	5.5
Sat	6039	1628	1504	1506	1402	1	14	5413	12	399	13	5	5	93	59	27	1	1	1	0	2	5	27	243	1234	2344	1591	461	100	25	8	48.5	43.4	5.3
Sun	4708	1195	1130	1239	1145	1	16	4366	11	186	12	2	4	59	37	17	0	1	0	1	2	4	19	159	814	1785	1381	441	85	19	3	49.2	44.0	5.3
	81684	**21779**	**20272**	**20107**	**19527**	**5**	**209**	**72219**	**424**	**6223**	**228**	**143**	**37**	**745**	**810**	**521**	**45**	**78**	**33**	**78**	**100**	**356**	**2624**	**16796**	**25213**	**22774**	**10665**	**2469**	**456**	**92**	**31**	**45.4**	**39.3**	**6.0**

Total

Time	Hourly Totals	15 Minute Bin Drops 00-15	15-30	30-45	45-00	Cycles	Number Vehicle Classes ARX Scheme Motor Cycles	Car Van	Car Van Towing	2 Axle Van Lorry	3 Axle Rigid	4 Axle Rigid	3 Axle Artic	4 Axle Artic	5 Axle Artic	6 Axle Artic	Double Road Train	Triple Road Train	Vehicle Speed MPH 0 <10mph	MPH 10 <15mph	MPH 15 <20mph	MPH 20 <25mph	MPH 25 <30mph	MPH 30 <35mph	MPH 35 <40mph	MPH 40 <45mph	MPH 45 <50mph	MPH 50 <55mph	MPH 55 <60mph	MPH 60 <65mph	MPH 65 <140mph	P-Tile 0.85	Average Speed	Standard deviation
	163367	**43557**	**40544**	**40213**	**39053**	**9**	**417**	**144438**	**847**	**12446**	**456**	**285**	**73**	**1490**	**1619**	**1041**	**90**	**156**	**65**	**155**	**200**	**712**	**5247**	**33591**	**50425**	**45548**	**21329**	**4938**	**912**	**183**	**62**	**45.4**	**39.3**	**6.0**

APPENDIX 8.B. Google Traffic Flow Images

Appendix 8.B Highway Conditions at 07:55 on Tuesday 13th November 2018



APPENDIX 8.C. Peak Hour Analysis

Summary - Slips Only (PCU)

MIDAS Data - Junction 11 M62 - Peak hour Summary

Time Period End Time	Eastbound On-Slip Site M62/1335K			Westbound On-Slip Site M62/1332M			Eastbound Off-Slip Site M62/1332J			Westbound Off-Slip Site M62/1336L			Slips Total (PCU)
	Vehicles	Vehicles per hour	PCUs Per Hour	Vehicles	Vehicles per hour	PCUs Per Hour	Vehicles	Vehicles per hour	PCUs Per Hour	Vehicles	Vehicles per hour	PCUs Per Hour	Per hour
07:14:00	254			84			49			169			
07:29:00	269			77			54			202			
07:44:00	268			81			64			229			
07:59:00	240	1031	1116	89	331	386	82	249	271	242	842	877	2650
08:14:00	229	1006	1093	87	334	394	104	304	331	221	893	931	2750
08:29:00	186	924	1008	94	350	417	132	382	416	212	904	945	2786
08:44:00	143	799	877	89	359	431	151	469	508	211	886	932	2748
08:59:00	120	678	745	88	358	432	164	551	594	189	833	881	2652
09:14:00	119	568	625	89	360	437	155	602	648	152	764	812	2523
09:29:00	107	489	540	87	353	433	134	604	649	142	695	742	2363
09:44:00	90	436	483	84	348	429	125	578	623	115	598	640	2176
09:59:00	79	394	440	81	340	424	105	519	566	103	512	552	1982
10:14:00	80	355	402	84	336	418	82	446	493	85	445	486	1798
10:29:00	81	330	376	83	332	410	77	389	438	80	383	425	1650
10:44:00	74	314	360	81	329	404	75	339	388	75	343	389	1540
10:59:00	75	311	359	76	324	396	74	308	357	76	316	362	1475
11:14:00	73	303	351	80	319	390	70	296	344	72	303	350	1436
11:29:00	81	303	352	83	319	389	72	291	339	75	298	346	1425
11:44:00	81	309	360	87	325	396	76	292	340	78	301	349	1445
11:59:00	84	319	369	86	336	406	71	290	335	77	303	352	1461
12:14:00	83	329	380	99	355	423	65	285	328	77	307	358	1489
12:29:00	81	330	379	98	371	436	75	287	330	81	313	364	1509
12:44:00	85	333	383	97	381	443	80	291	331	84	319	369	1526
12:59:00	82	332	382	91	386	446	78	297	337	87	328	377	1542
13:14:00	81	330	379	97	385	445	71	303	343	81	333	379	1546
13:29:00	82	331	381	94	380	440	72	300	339	85	337	382	1542
13:44:00	80	327	375	93	376	436	81	302	342	85	338	383	1537
13:59:00	80	324	371	89	373	433	74	298	340	83	335	379	1523
14:14:00	90	332	379	114	390	447	63	290	331	82	336	381	1538
14:29:00	89	339	386	112	408	465	68	286	326	89	340	384	1562
14:44:00	100	358	406	115	429	486	66	271	311	94	348	394	1596
14:59:00	104	383	429	120	461	518	67	263	303	98	363	410	1660
15:14:00	130	423	469	170	517	575	66	266	308	100	381	429	1781
15:29:00	125	459	503	151	556	614	67	265	310	109	401	449	1876
15:44:00	144	503	545	175	616	674	65	264	310	110	417	464	1993
15:59:00	159	558	598	188	683	742	71	269	312	117	435	480	2133
16:14:00	209	636	675	295	809	864	68	271	314	110	445	486	2339
16:29:00	208	719	764	289	947	998	69	273	313	116	452	489	2563
16:44:00	199	775	825	302	1074	1122	65	273	311	116	459	490	2748
16:59:00	200	816	874	317	1204	1248	74	276	312	117	459	487	2921
17:14:00	184	791	852	346	1254	1296	67	275	307	115	464	490	2946
17:29:00	202	785	841	311	1276	1316	68	274	302	120	467	492	2952
17:44:00	199	784	834	299	1273	1310	65	274	299	127	478	502	2945
17:59:00	183	767	808	242	1198	1232	65	265	286	127	488	512	2838
18:14:00	162	745	779	206	1058	1091	53	251	270	133	506	530	2670
18:29:00	144	687	716	148	895	925	55	238	256	134	520	545	2442
18:44:00	123	612	636	110	706	736	49	221	237	113	506	532	2141
18:59:00	98	527	548	83	548	573	46	203	218	85	465	489	1828

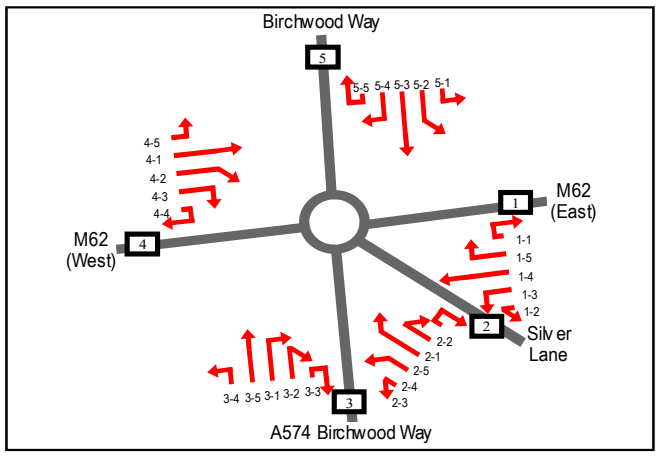
AM	Total PCU Per Hour
07:00-08:00	2650
07:15-08:15	2750
07:30-08:30	2786
07:45-08:45	2748
08:00-09:00	2652
08:15-09:15	2523
08:30-09:30	2363
08:45-09:45	2176
09:00-10:00	1982

2786

PM	Total Vehicles Per Hour
15:00-16:00	2133
15:15-16:15	2339
15:30-16:30	2563
15:45-16:45	2748
16:00-17:00	2921
16:15-17:15	2946
16:30-17:30	2952
16:45-17:45	2945
17:00-18:00	2838
17:15-18:15	2670
17:30-18:30	2442
17:45-18:45	2141

2952

Junction 1: Summary (PCUs / Hour)



Weekday 12 Hour Survey

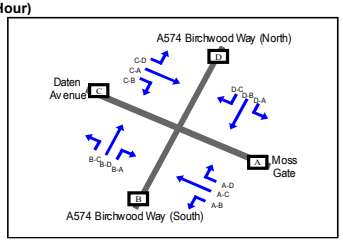
TIME	1 1	1 2	1 3	1 4	1 5	2 1	2 2	2 3	2 4	2 5	3 1	3 2	3 3	3 4	3 5	4 1	4 2	4 3	4 4	4 5	5 1	5 2	5 3	5 4	5 5	TOTAL
0700 - 0800	12	6	801	2	1	0	0	3	3	0	1339	0	0	327	0	1	0	243	8	3	2	0	0	0	0	**2752**
0715 - 0815	12	6	852	1	1	0	0	3	4	0	1369	0	0	345	1	1	0	298	21	2	2	0	0	1	0	**2918**
0730 - 0830	13	6	907	1	2	0	0	4	3	0	1232	0	0	363	1	1	0	397	39	2	2	0	0	1	0	**2975**
0745 - 0845	18	5	939	1	1	0	0	3	3	0	1026	0	0	371	1	5	0	469	73	2	1	0	0	1	0	**2918**
0800 - 0900	24	0	861	3	1	0	0	1	2	0	810	2	0	399	1	7	0	529	106	1	0	0	0	2	0	**2749**
0815 - 0915	30	0	832	2	2	0	0	1	0	0	624	2	0	393	2	7	0	595	101	3	1	0	0	1	0	**2597**
0830 - 0930	34	1	730	3	1	0	0	0	1	0	514	2	0	385	2	8	0	615	87	4	2	0	0	5	0	**2395**
0845 - 0945	40	3	666	3	2	0	0	1	1	0	470	3	2	376	3	5	0	617	61	5	4	0	0	7	1	**2271**
0900 - 1000	48	4	634	2	2	0	0	2	1	0	400	1	7	348	7	4	0	599	41	7	5	1	3	6	2	**2124**
0915- 1015	49	4	533	2	1	0	0	2	2	0	383	1	7	366	5	4	0	517	43	7	5	1	6	9	2	**1948**
0930-1030	49	4	461	4	2	0	0	2	1	0	365	1	7	357	5	2	0	460	46	10	6	1	6	6	2	**1798**
0945-1045	49	3	386	4	1	0	0	2	4	0	354	1	7	341	5	2	1	406	54	12	5	1	7	4	1	**1649**
1000-1100	40	2	329	7	2	0	0	1	6	0	350	1	2	359	1	2	1	348	48	11	10	0	4	4	0	**1527**
1015- 1115	38	3	300	8	2	0	0	2	5	0	334	1	2	354	1	2	1	316	43	9	9	0	2	1	0	**1433**
1030-1130	34	4	304	7	2	0	0	2	7	0	330	1	2	357	2	7	1	287	37	5	6	0	2	0	0	**1397**
1045-1145	30	3	294	8	3	0	0	1	4	0	326	0	0	366	1	10	0	285	33	8	7	0	1	1	0	**1381**
1100-1200	28	3	305	5	2	0	0	1	2	0	344	0	0	350	1	9	0	278	28	11	2	0	1	1	0	**1371**
1115- 1215	22	4	313	4	4	0	0	1	2	0	329	0	2	352	3	13	0	281	24	11	3	0	1	2	1	**1372**
1130-1230	26	3	304	4	7	0	0	3	0	0	346	0	2	349	2	10	0	290	30	12	6	0	2	2	1	**1400**
1145-1245	35	4	304	4	6	0	0	3	0	0	353	1	2	355	4	6	0	302	24	7	6	0	2	2	1	**1421**
1200-1300	39	4	305	4	6	0	0	3	0	0	355	1	5	363	5	7	0	326	31	4	7	0	2	6	1	**1474**
1215- 1315	40	3	299	6	4	0	0	3	1	0	402	1	2	360	3	3	0	328	37	5	8	0	4	6	0	**1517**
1230-1330	39	2	314	4	2	0	0	1	1	0	385	1	2	355	3	1	0	334	37	6	5	0	3	7	0	**1504**
1245-1345	30	1	317	4	2	0	0	1	2	0	344	0	2	344	3	1	0	297	35	8	6	0	8	7	0	**1412**
1300-1400	32	1	311	4	2	0	0	1	2	0	335	0	0	350	2	0	0	285	32	7	5	0	7	3	0	**1378**
1315- 1415	32	1	300	3	1	0	0	0	2	0	322	1	0	377	3	0	0	274	30	7	3	0	5	6	0	**1366**
1330-1430	28	1	290	3	0	0	0	0	2	0	327	2	0	393	3	0	0	242	27	4	3	0	6	5	0	**1337**
1345-1445	33	1	305	3	0	0	0	2	2	0	376	2	0	430	2	1	0	251	35	5	2	0	2	5	0	**1456**
1400-1500	25	2	310	2	1	0	0	2	3	0	388	2	4	435	3	2	0	243	31	5	4	0	5	5	0	**1473**
1415- 1515	25	1	344	1	3	0	0	2	2	0	422	3	4	469	2	3	0	249	28	5	4	0	4	4	0	**1576**
1430-1530	30	3	341	2	3	0	0	2	5	0	462	2	4	517	2	3	0	248	32	5	4	0	4	4	0	**1675**
1445-1545	30	3	358	1	3	0	0	0	4	0	489	2	4	591	1	4	0	247	26	4	4	0	5	3	0	**1781**
1500-1600	38	2	375	2	5	0	0	1	3	0	572	2	0	697	0	5	0	231	34	3	4	0	4	4	0	**1982**
1515- 1615	35	2	377	3	2	0	0	2	3	0	636	1	0	802	1	4	0	220	34	3	5	0	4	4	0	**2138**
1530-1630	25	0	397	5	2	0	0	2	0	0	730	1	0	905	1	4	0	230	24	3	5	0	4	6	0	**2347**
1545-1645	21	0	382	5	2	0	0	2	0	0	792	2	0	981	1	2	0	235	29	2	4	0	3	7	0	**2471**
1600-1700	18	0	374	4	1	1	0	1	1	0	789	2	0	1056	1	0	0	249	25	4	3	1	2	7	0	**2540**
1615- 1715	22	2	389	5	2	1	0	1	1	0	763	1	0	1060	0	0	0	245	27	3	3	1	2	7	0	**2535**
1630-1730	26	3	377	2	2	1	0	1	1	0	727	2	0	1073	1	0	0	253	31	3	3	1	1	5	0	**2512**
1645-1745	24	4	408	3	2	1	0	1	1	0	716	1	0	1049	1	0	0	248	25	2	2	1	1	4	0	**2494**
1700-1800	25	4	427	4	2	0	0	2	3	0	716	1	0	1038	1	0	0	245	21	0	1	0	0	3	0	**2493**
1715- 1815	26	2	432	5	1	0	0	1	3	0	718	2	0	996	3	1	0	244	17	0	1	0	0	0	0	**2450**
1730-1830	27	1	464	5	1	0	0	1	4	0	659	1	0	900	5	1	0	213	15	0	2	0	1	0	0	**2300**
1745-1845	25	1	422	5	1	0	0	1	4	0	577	1	0	763	5	1	0	202	12	0	2	0	1	2	0	**2024**
1800-1900	20	1	388	5	1	0	0	0	2	0	483	1	0	587	5	1	0	182	15	1	3	0	1	3	0	**1698**

Saturday 7 hour survey

TIME	1 1	1 2	1 3	1 4	1 5	2 1	2 2	2 3	2 4	2 5	3 1	3 2	3 3	3 4	3 5	4 1	4 2	4 3	4 4	4 5	5 1	5 2	5 3	5 4	5 5	TOTAL
1000-1100	22	1	149	3	4	2	0	0	0	0	279	1	0	210	3	3	0	181	37	4	3	0	5	5	0	912
1015- 1115	21	1	160	3	4	1	0	0	0	0	275	0	0	225	4	2	0	205	37	9	6	0	3	6	0	962
1030-1130	23	1	165	2	5	1	0	0	0	1	267	0	0	242	6	2	0	218	31	10	6	0	5	8	0	993
1045-1145	24	0	199	4	5	0	0	1	0	1	239	0	0	275	7	1	0	207	31	10	7	0	4	7	0	1022
1100-1200	25	2	207	3	2	1	0	1	1	1	232	0	0	271	8	0	0	203	33	11	8	0	2	4	0	1016
1115- 1215	20	2	229	2	2	1	0	0	1	1	250	0	0	276	8	0	0	177	30	7	5	0	2	3	0	1017
1130-1230	18	3	230	3	0	1	0	0	1	0	273	0	0	276	5	0	0	156	45	6	6	0	2	2	0	1028
1145-1245	15	3	208	2	0	2	0	0	1	0	274	0	0	242	5	0	0	155	40	6	6	0	2	3	0	964
1200-1300	15	1	214	2	0	1	0	0	0	0	285	0	0	253	4	0	0	158	39	4	4	0	2	3	0	984
1215- 1315	13	1	191	3	2	1	0	0	0	0	281	1	0	254	2	0	0	158	44	3	5	0	3	3	0	964
1230-1330	17	1	193	3	2	2	0	0	0	0	284	1	0	261	2	0	0	163	33	2	3	0	2	1	0	970
1245-1345	27	2	211	2	3	1	0	0	0	0	300	1	0	265	3	1	0	168	47	1	3	0	2	1	0	1038
1300-1400	32	2	207	3	3	1	0	0	0	0	289	1	0	262	2	1	0	172	45	1	3	0	3	1	0	1028
1315- 1415	36	3	223	4	2	2	0	0	0	0	267	0	0	243	2	3	0	174	38	3	2	0	3	2	0	1008
1330-1430	31	2	221	3	2	1	0	0	0	0	245	0	0	215	2	4	0	180	35	3	2	0	4	3	0	953
1345-1445	28	2	218	3	1	2	0	0	0	0	232	0	0	218	1	3	0	180	27	3	1	0	4	3	0	927
1400-1500	29	2	219	5	2	2	0	0	0	0	208	0	0	202	3	3	0	186	25	2	0	0	4	3	0	895
1415- 1515	25	3	204	5	1	1	0	0	0	1	204	0	0	217	3	1	0	184	26	0	0	0	3	3	0	882
1430-1530	31	3	218	5	1	2	0	0	0	1	194	0	0	227	4	1	0	190	36	1	0	0	1	2	0	918
1445-1545	27	2	223	5	1	1	0	0	0	1	197	0	0	225	3	1	0	188	39	2	1	0	3	3	0	921
1500-1600	17	2	236	3	0	1	0	0	0	1	236	0	0	244	2	1	0	164	41	4	3	0	3	3	0	960
1515- 1615	18	0	248	2	0	1	0	0	0	0	265	0	0	241	2	1	0	152	41	7	5	0	4	2	0	989
1530-1630	9	1	238	2	0	2	0	0	0	0	281	0	0	242	2	0	0	141	38	6	6	0	5	2	0	974
1545-1645	12	1	240	2	0	2	0	0	0	0	277	0	0	230	2	1	0	138	30	8	5	0	7	1	0	956
1600-1700	15	1	229	2	0	2	0	0	0	0	250	0	0	214	2	1	0	151	27	7	6	0	6	1	0	915

Note: **Traffic flows from MCC alone have not been used for assessment due to traffic incident on day of survey. Average flows for slip roads and mainline to be extracted from MIDAS data to inform baseline turning movements at roundabout junction, supplemented with data from MCC for numbers of u-turners and movements into and out of northern stub arm of junction**

Junction 2 (PCU / Hour)



Junction 2 Peak Hours
AM 07:30-08:30
PM 16:45-17:45

Original MCC Results

TIME	AB	AC	AD	BA	BC	BD	CA	CB	CD	DA	DB	DC	Total
0700 - 0800	66	81	245	16	80	848	22	19	569	45	456	529	**2976**
0715 - 0815	70	94	248	16	84	760	26	15	656	58	521	535	**3084**
0730 - 0830	72	108	237	11	87	634	34	17	644	67	606	602	**3119**
0745 - 0845	70	120	204	24	98	522	39	15	615	73	683	661	**3125**
0800 - 0900	62	129	170	30	93	418	59	15	576	73	669	661	**2956**
0815 - 0915	72	139	144	32	95	380	63	19	481	70	657	728	**2881**
0830 - 0930	58	121	109	32	90	373	73	18	458	81	610	694	**2718**
0845 - 0945	60	106	96	31	80	343	76	17	418	86	568	654	**2536**
0900 - 1000	69	88	89	34	65	310	63	17	375	80	540	635	**2364**

TIME	AB	AC	AD	BA	BC	BD	CA	CB	CD	DA	DB	DC	Total
1600 - 1700	35	89	252	32	9	823	32	22	770	138	220	259	**2681**
1615 - 1715	29	80	242	31	7	836	42	22	767	139	232	266	**2694**
1630 - 1730	29	72	256	36	10	811	38	25	790	158	241	268	**2735**
1645 - 1745	30	76	270	35	9	832	39	27	794	163	230	265	**2771**
1700 - 1800	24	78	249	34	12	845	40	17	803	158	261	253	**2775**
1715 - 1815	28	74	223	40	17	786	33	40	791	156	271	233	**2692**
1730 - 1830	35	68	168	42	17	697	52	85	727	148	278	220	**2537**
1745 - 1845	40	65	118	61	21	593	57	119	594	147	271	199	**2285**
1800 - 1900	54	49	108	64	20	434	67	126	471	144	239	185	**1961**

Adjustments to Flows into and out of Arm D based on J11 on-slip and off-slip flows

To D (MCC)	J11 off-slips (MIDAS)	u-turns	Difference	From D (survey)	J11 on-slips (MIDAS)	u-turns	Difference
1663	1502	20	**-181**	1030	1148	20	**98**
1664	1487	33	**-210**	1115	1262	33	**115**
1514	1425	53	**-141**	1275	1361	53	**33**
1341	1308	91	**-125**	1418	1440	91	**-69**
1165	1177	130	**-117**	1403	1475	130	**-58**
1005	1062	131	**-74**	1456	1461	131	**-126**
940	973	121	**-88**	1385	1390	121	**-116**
858	912	101	**-46**	1308	1264	101	**-145**
774	864	88	**1**	1255	1119	88	**-225**

To D (MCC)	J11 off-slips (MIDAS)	u-turns	Difference	From D (MCC)	J11 on-slips (MIDAS)	u-turns	Difference
1845	2122	43	**234**	617	799	43	**139**
1845	2148	49	**254**	638	797	49	**110**
1857	2157	57	**243**	666	795	57	**72**
1896	2144	49	**200**	658	801	49	**94**
1897	2040	46	**98**	672	798	46	**80**
1800	1870	42	**28**	661	801	42	**98**
1593	1642	42	**7**	646	801	42	**113**
1305	1372	37	**29**	617	769	37	**115**
1013	1120	35	**73**	568	707	35	**104**

Total movements through junction following adjustments

TIME	Adjusted total movements
0700 - 0800	2893
0715 - 0815	2989
0730 - 0830	3011
0745 - 0845	2931
0800 - 0900	2781
0815 - 0915	2681
0830 - 0930	2514
0845 - 0945	2346
0900 - 1000	2141

3011

TIME	Adjusted total movements
1600 - 1700	3053
1615 - 1715	3058
1630 - 1730	3050
1645 - 1745	3065
1700 - 1800	2952
1715 - 1815	2818
1730 - 1830	2657
1745 - 1845	2429
1800 - 1900	2139

3065

Summary - All Approaches (Vehs)

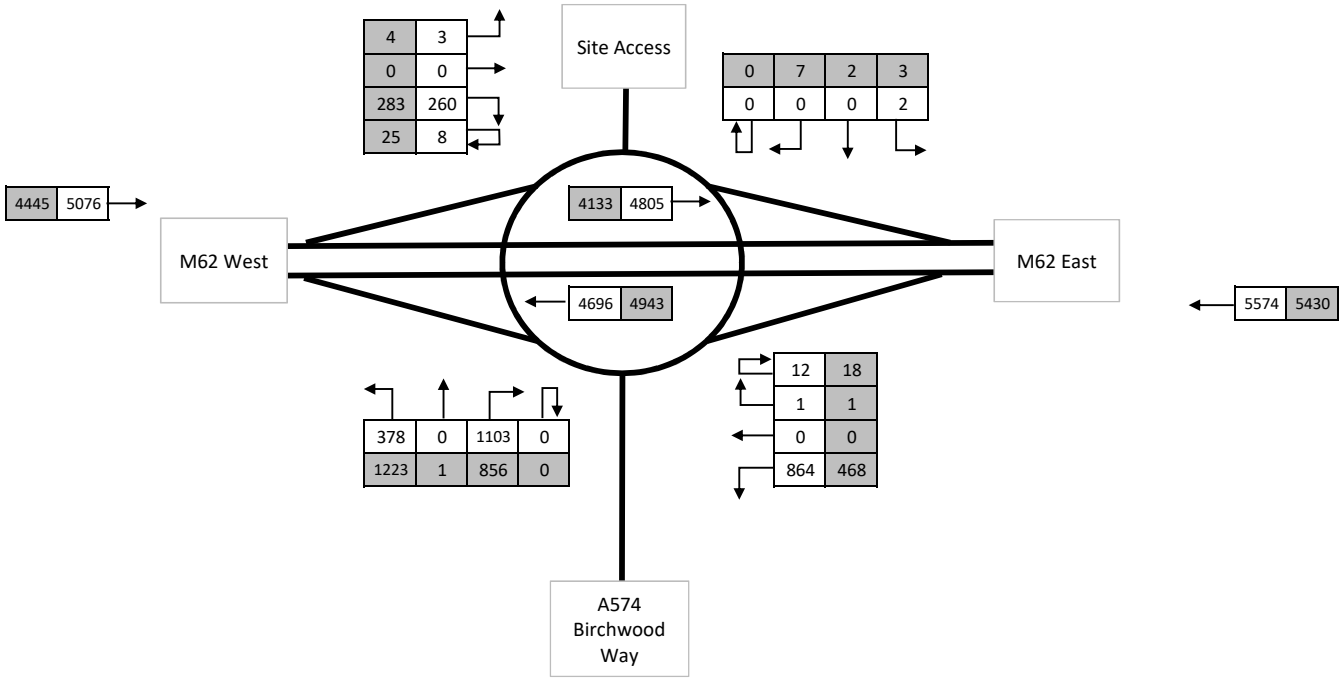
MIDAS Data - Junction 11 M62 - Peak hour Summary

Time Period End Time	Eastbound Mainline Site M62/1328A				Westbound Mainline Site M62/1389B		Eastbound On-Slip Site M62/1335K		Westbound On-Slip Site M62/1332M				Junction Total (Vehicles)	
	Vehicles	Vehicles per hour	PCUs Per Hour	HGV % Per hour	Vehicles	Vehicles per hour	Vehicles	Vehicles per hour	Vehicles	Vehicles per hour	PCUs Per Hour	HGV % Per hour	Per 15 minutes	Per hour
07:14:00	1118				1200		254		84				2656	
07:29:00	1093				1232		269		77				2672	
07:44:00	1106				1204		268		81				2659	
07:59:00	1086	4403	5076	11.75%	1153	4790	240	1031	89	331	386	12.80%	2568	10555
08:14:00	1143	4427	5112	11.89%	1135	4725	229	1006	87	334	394	13.82%	2594	10493
08:29:00	1164	4498	5220	12.34%	1087	4580	186	924	94	350	417	14.72%	2532	10352
08:44:00	1140	4532	5294	12.93%	1049	4425	143	799	89	359	431	15.48%	2421	10114
08:59:00	1088	4534	5342	13.71%	976	4248	120	678	88	358	432	15.76%	2272	9818
09:14:00	1136	4528	5384	14.56%	955	4068	119	568	89	360	437	16.45%	2300	9524
09:29:00	1126	4490	5376	15.18%	941	3922	107	489	87	353	433	17.38%	2261	9253
09:44:00	1082	4432	5354	16.01%	899	3771	90	436	84	348	429	17.86%	2154	8986
09:59:00	983	4327	5282	16.97%	863	3658	79	394	81	340	424	18.87%	2006	8721
10:14:00	888	4079	5050	18.32%	842	3544	80	355	84	336	418	18.73%	1894	8314
10:29:00	866	3819	4816	20.08%	857	3460	81	330	83	332	410	18.13%	1887	7940
10:44:00	857	3594	4601	21.54%	830	3392	74	314	81	329	404	17.69%	1843	7629
10:59:00	833	3444	4456	22.60%	823	3351	75	311	76	324	396	17.24%	1807	7430
11:14:00	827	3383	4401	23.15%	823	3333	73	303	80	319	390	17.07%	1803	7339
11:29:00	850	3368	4385	23.23%	841	3317	81	303	83	319	389	16.93%	1854	7306
11:44:00	867	3377	4395	23.18%	840	3327	81	309	87	325	396	16.78%	1876	7339
11:59:00	865	3409	4430	23.02%	843	3347	84	319	86	336	406	16.10%	1878	7411
12:14:00	855	3437	4454	22.77%	834	3358	83	329	99	355	423	14.67%	1871	7479
12:29:00	880	3467	4484	22.55%	878	3395	81	330	98	371	436	13.59%	1937	7562
12:44:00	916	3516	4538	22.37%	883	3438	85	333	97	381	443	12.49%	1981	7668
12:59:00	900	3550	4570	22.10%	874	3469	82	332	91	386	446	12.00%	1947	7737
13:14:00	884	3579	4600	21.94%	872	3506	81	330	97	385	445	12.08%	1934	7800
13:29:00	917	3616	4645	21.89%	912	3540	82	331	94	380	440	12.14%	2005	7867
13:44:00	909	3609	4633	21.83%	898	3556	80	327	93	376	436	12.29%	1981	7867
13:59:00	904	3613	4645	21.97%	893	3575	80	324	89	373	433	12.22%	1965	7885
14:14:00	909	3639	4674	21.90%	920	3623	90	332	114	390	447	11.32%	2033	7984
14:29:00	951	3673	4713	21.78%	989	3700	89	339	112	408	465	10.80%	2141	8120
14:44:00	952	3716	4759	21.60%	1010	3812	100	358	115	429	486	10.09%	2177	8316
14:59:00	937	3749	4772	20.99%	1025	3944	104	383	120	461	518	9.39%	2187	8538
15:14:00	954	3794	4801	20.43%	1080	4104	130	423	170	517	575	8.65%	2334	8839
15:29:00	999	3842	4812	19.44%	1190	4306	125	459	151	556	614	8.05%	2465	9162
15:44:00	1019	3909	4836	18.24%	1224	4520	144	503	175	616	674	7.26%	2562	9548
15:59:00	993	3965	4845	17.08%	1253	4748	159	558	188	683	742	6.59%	2592	9953
16:14:00	979	3989	4802	15.67%	1249	4917	209	636	295	809	864	5.23%	2732	10351
16:29:00	985	3975	4714	14.31%	1271	4997	208	719	289	947	998	4.11%	2752	10639
16:44:00	919	3875	4540	13.21%	1166	4939	199	775	302	1074	1122	3.42%	2586	10663
16:59:00	955	3838	4445	12.17%	1176	4862	200	816	317	1204	1248	2.85%	2649	10720
17:14:00	930	3789	4352	11.41%	1156	4770	184	791	346	1254	1296	2.54%	2616	10604
17:29:00	926	3731	4256	10.83%	1150	4648	202	785	311	1276	1316	2.40%	2589	10440
17:44:00	903	3715	4214	10.34%	1131	4613	199	784	299	1273	1310	2.21%	2532	10386
17:59:00	891	3651	4123	9.95%	1141	4578	183	767	242	1198	1232	2.20%	2456	10193
18:14:00	859	3580	4030	9.69%	1128	4549	162	745	206	1058	1091	2.39%	2355	9932
18:29:00	899	3552	3992	9.53%	1134	4534	144	687	148	895	925	2.62%	2325	9668
18:44:00	824	3473	3898	9.41%	997	4400	123	612	110	706	736	3.20%	2055	9191
18:59:00	746	3328	3736	9.43%	859	4118	98	527	83	548	573	3.55%	1786	8521

AM	Total Vehicles Per Hour	
07:00-08:00	10555	
07:15-08:15	10493	
07:30-08:30	10352	
07:45-08:45	10114	
08:00-09:00	9818	
08:15-09:15	9524	
08:30-09:30	9253	
08:45-09:45	8986	
09:00-10:00	8721	*10555*

PM	Total Vehicles Per Hour	
15:00-16:00	9953	
15:15-16:15	10351	
15:30-16:30	10639	
15:45-16:45	10663	
16:00-17:00	10720	
16:15-17:15	10604	
16:30-17:30	10440	
16:45-17:45	10386	
17:00-18:00	10193	
17:15-18:15	9932	
17:30-18:30	9668	
17:45-18:45	9191	*10720*

APPENDIX 8.D. Existing Peak Hour Turning Flows



AM: 07:00-08:00
PM: 16:00-17:00

KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

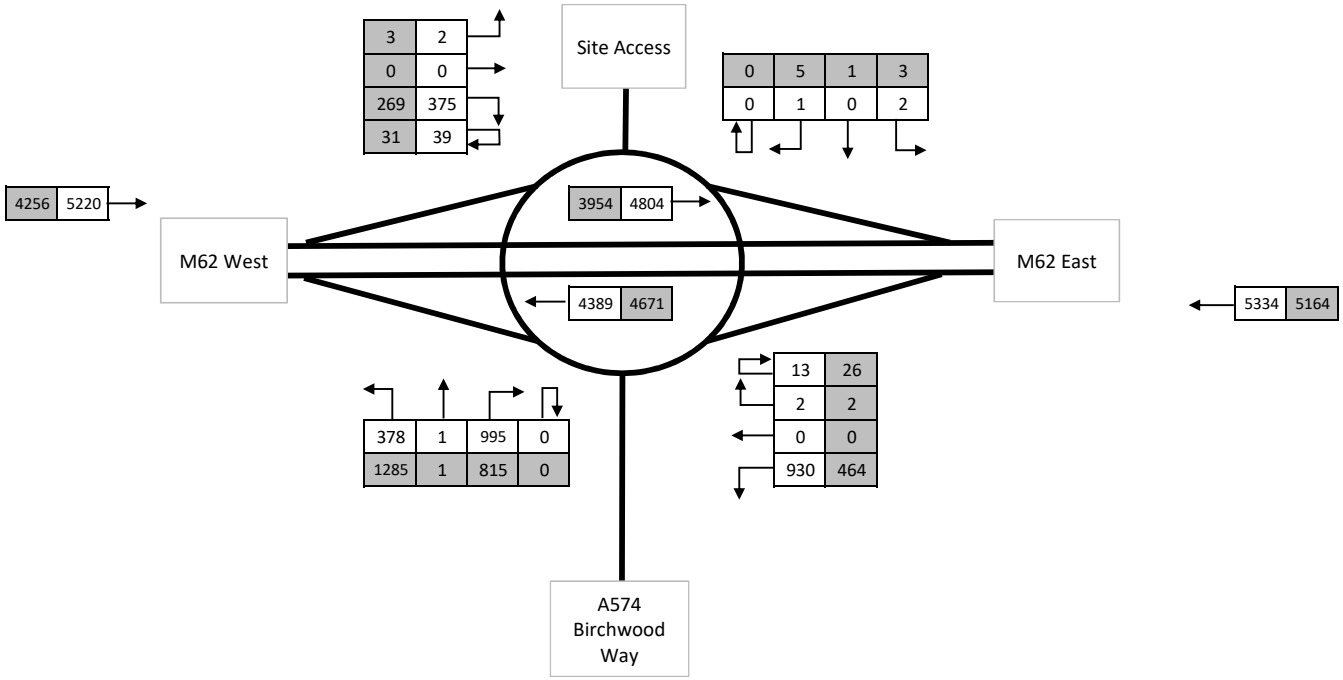
i-Transport

Centurion House, 129
Deansgate, Manchester, M3 3WR
Tel: 0161 830 2172
www.i-transport.co.uk

WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8D (i)

2018 Baseline Flows - J11 M62



KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

AM: 07:30-08:30

PM: 16:30-17:30

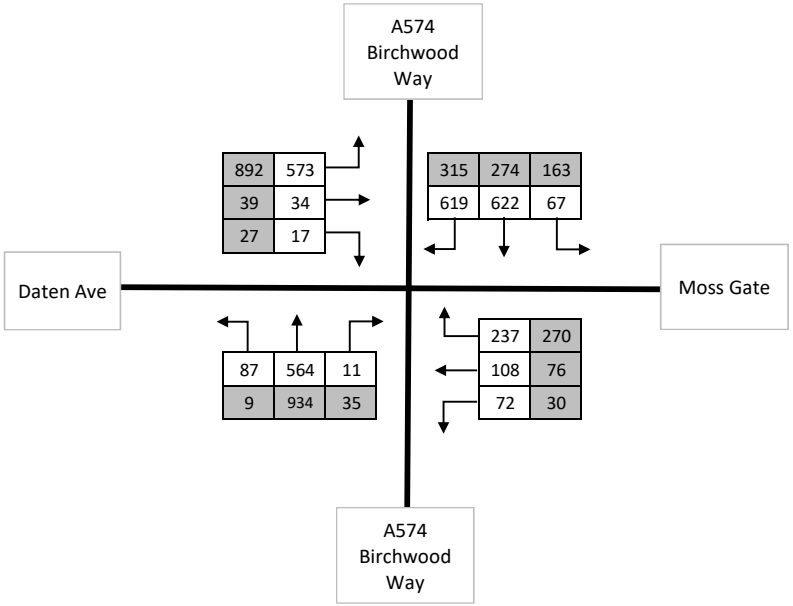
i-Transport

Centurion House, 129
Deansgate, Manchester, M3 3WR
Tel: 0161 830 2172
www.i-transport.co.uk

WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8D (ii)

2018 Baseline Flows - J11 M62



AM: 07:30-08:30
PM: 16:45-17:45

KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

i-Transport

Centurion House, 129
Deansgate, Manchester, M3 3WR
Tel: 0161 830 2172
www.i-transport.co.uk

WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8D (iii)

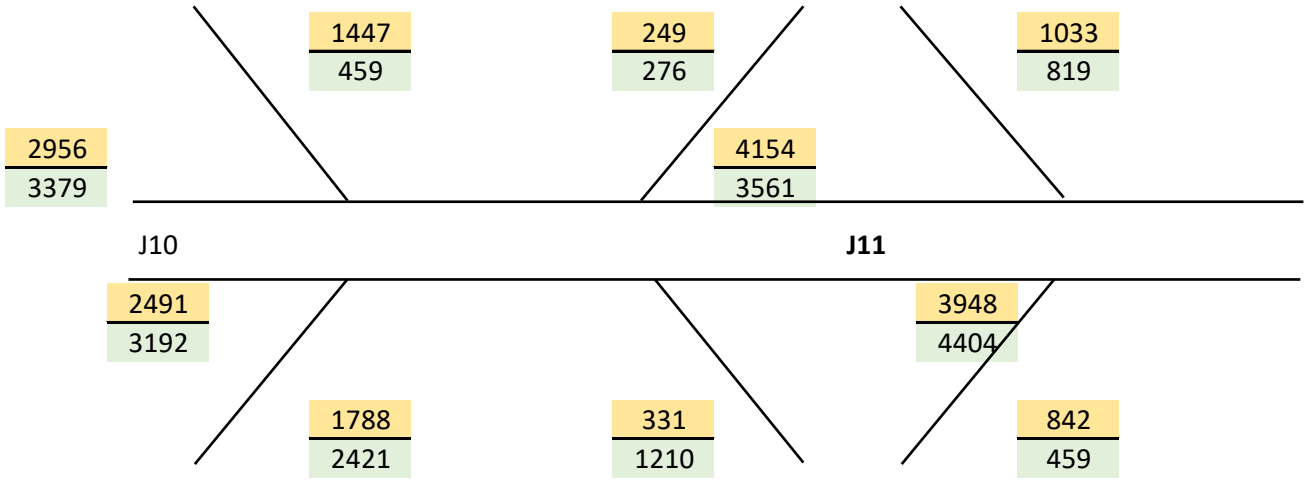
2018 Baseline Flows - Birchwood Way Signals

APPENDIX 8.E. M62 Mainline and M62J11 Slip Road Flows

Weaving & Merge/Diverge flows for calculation

Base 2018

AM	0700-0800
PM	1600-1700



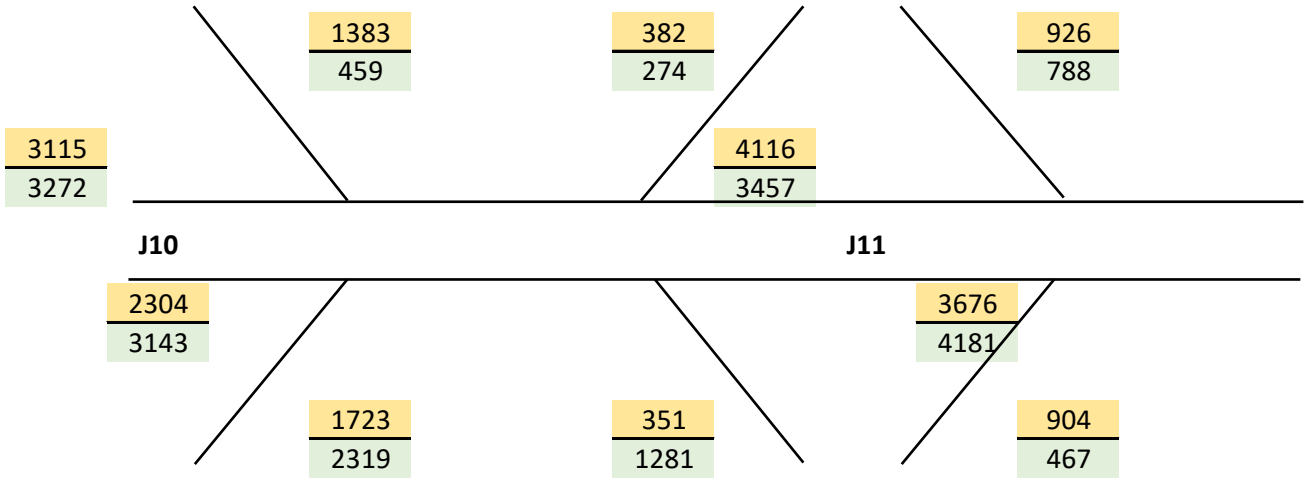
Notes

Mainline Flows at J10 derived from 3 other counts

Weaving & Merge/Diverge flows for calculation

Base 2018

AM	0730-0830
PM	1630-1730



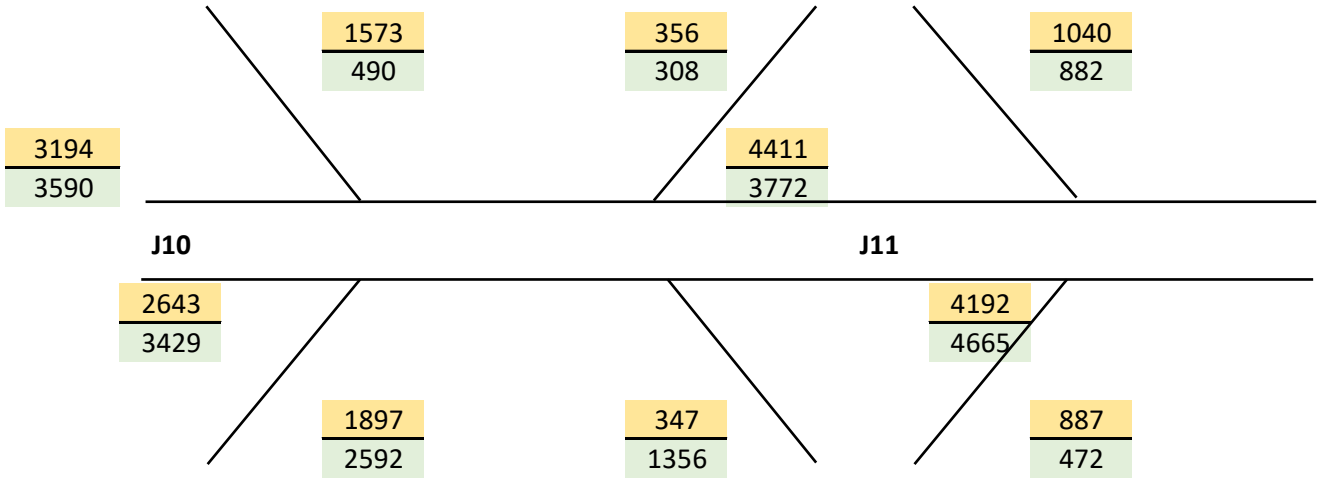
Notes

Mainline Flows at J10 derived from 3 other counts

Weaving & Merge/Diverge flows for calculation

2022 Base + Committed

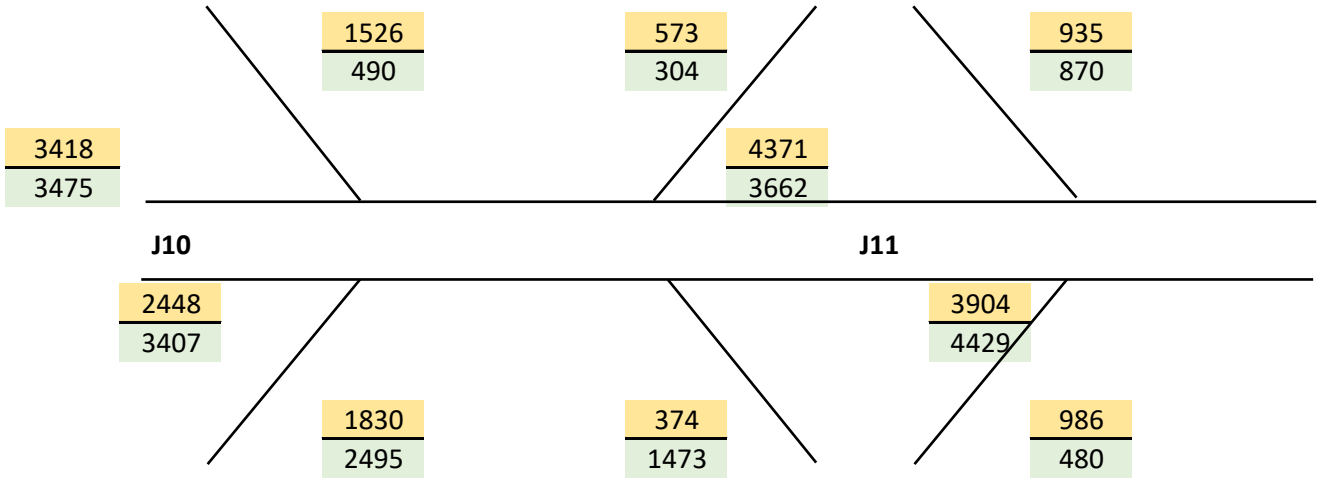
AM	0700-0800
PM	1600-1700



Weaving & Merge/Diverge flows for calculation

2022 Base + Committed

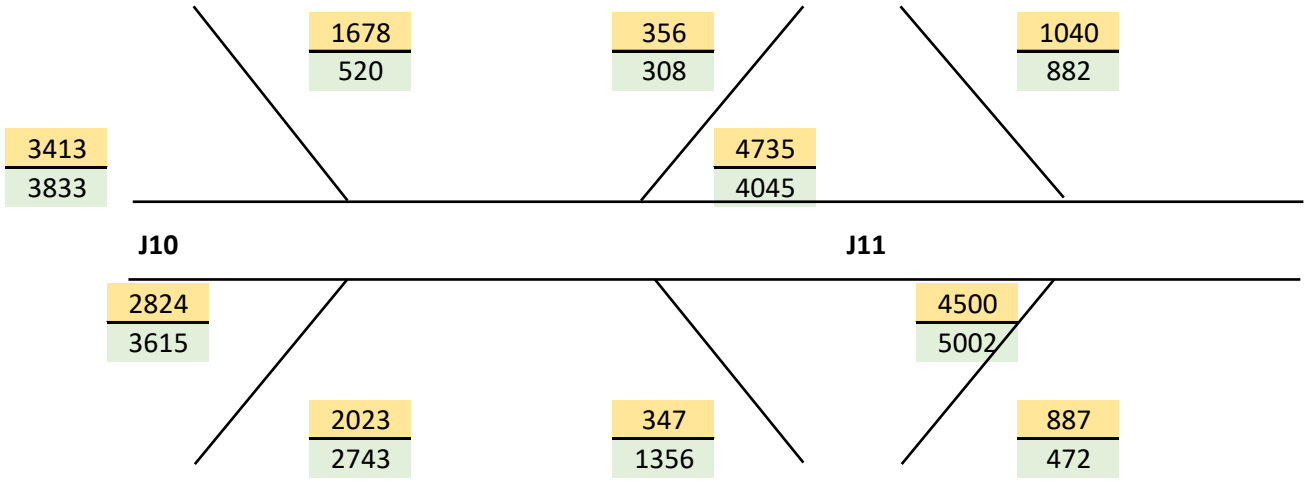
AM	0730-0830
PM	1630-1730



Weaving & Merge/Diverge flows for calculation

2029 Base + Committed

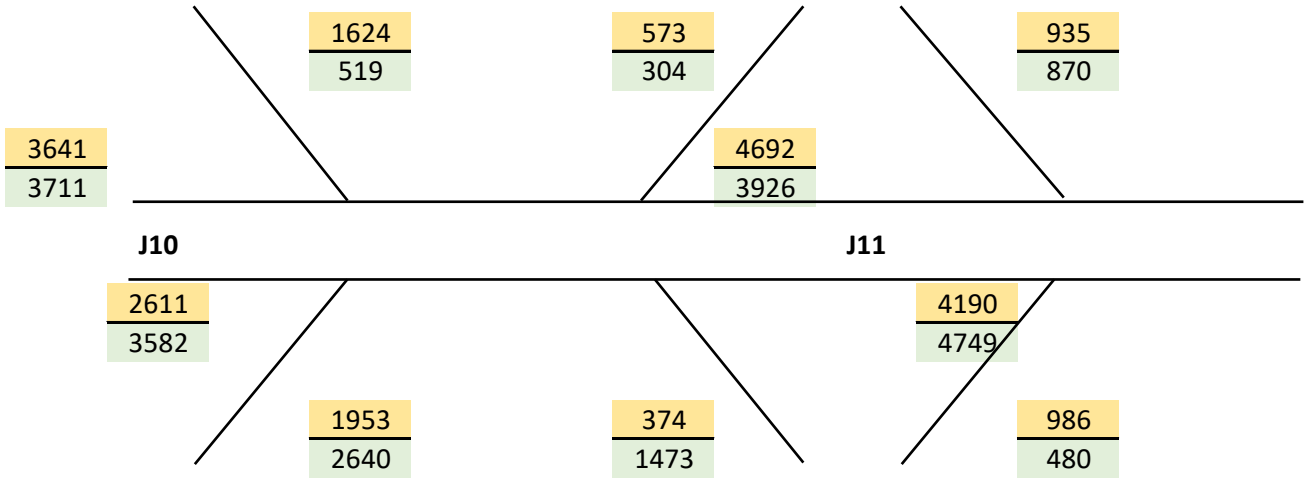
AM	0700-0800
PM	1600-1700



Weaving & Merge/Diverge flows for calculation

2029 Base + Committed

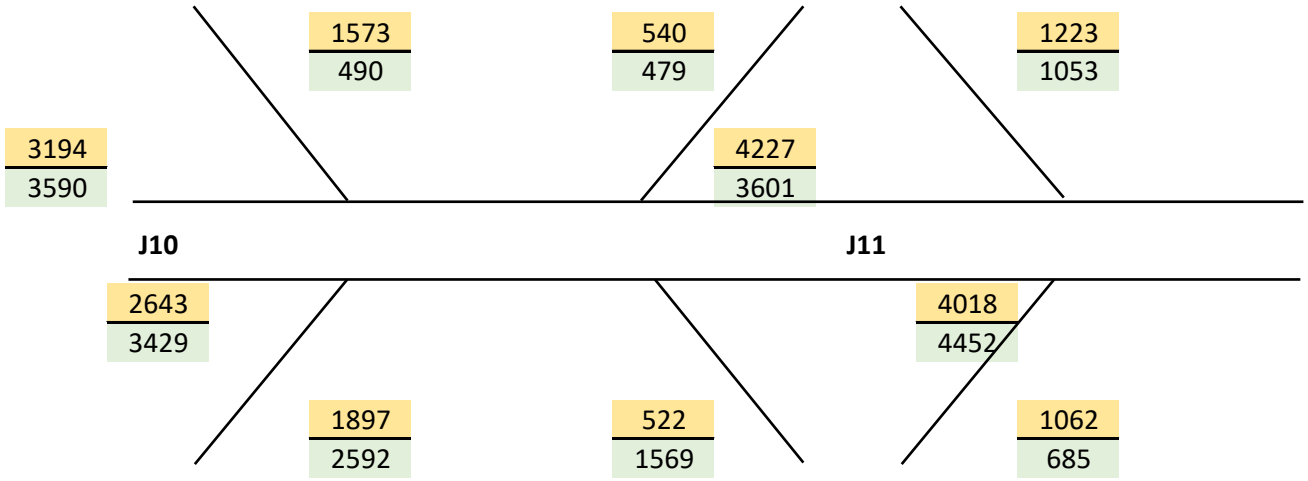
AM	0730-0830
PM	1630-1730



Weaving & Merge/Diverge flows for calculation

2022 Base + Committed + Development

AM	0700-0800
PM	1600-1700



Weaving & Merge/Diverge flows for calculation

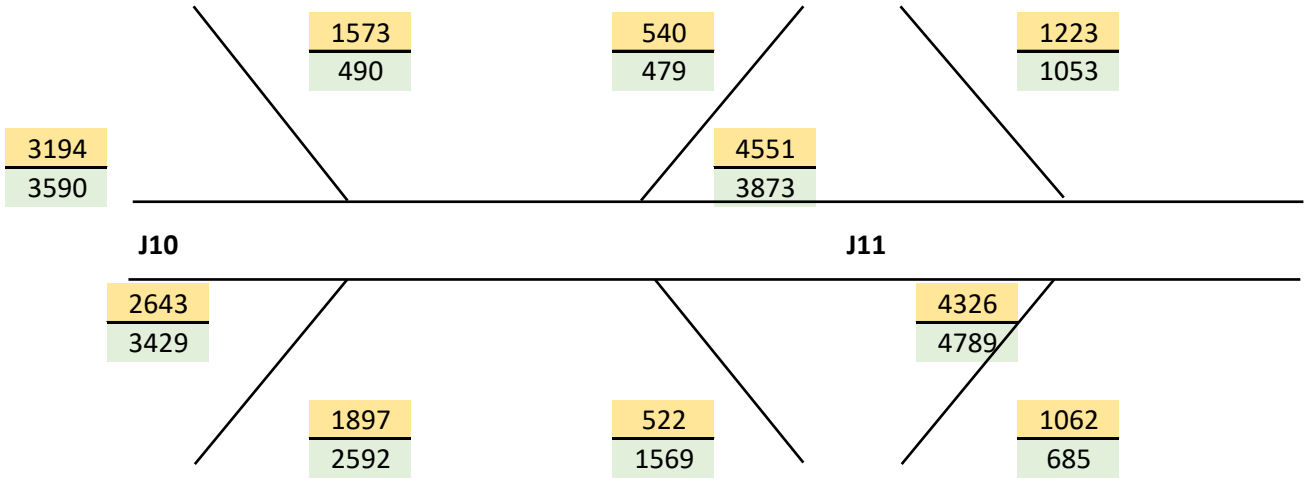
2022 Base + Committed + Development

AM	0730-0830
PM	1630-1730

Weaving & Merge/Diverge flows for calculation

2029 Base + Committed + Development

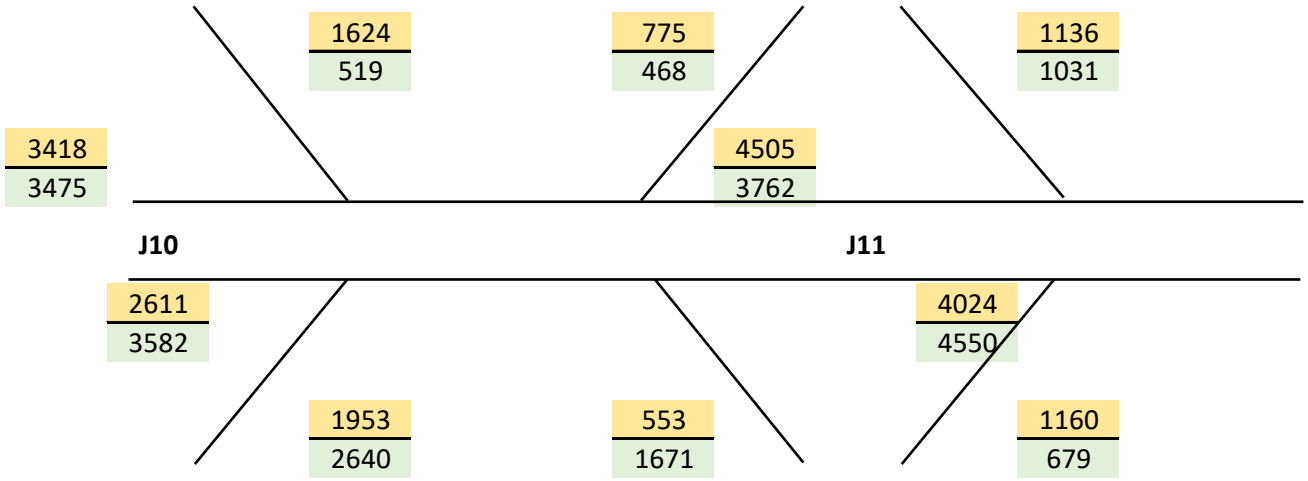
AM	0700-0800
PM	1600-1700



Weaving & Merge/Diverge flows for calculation

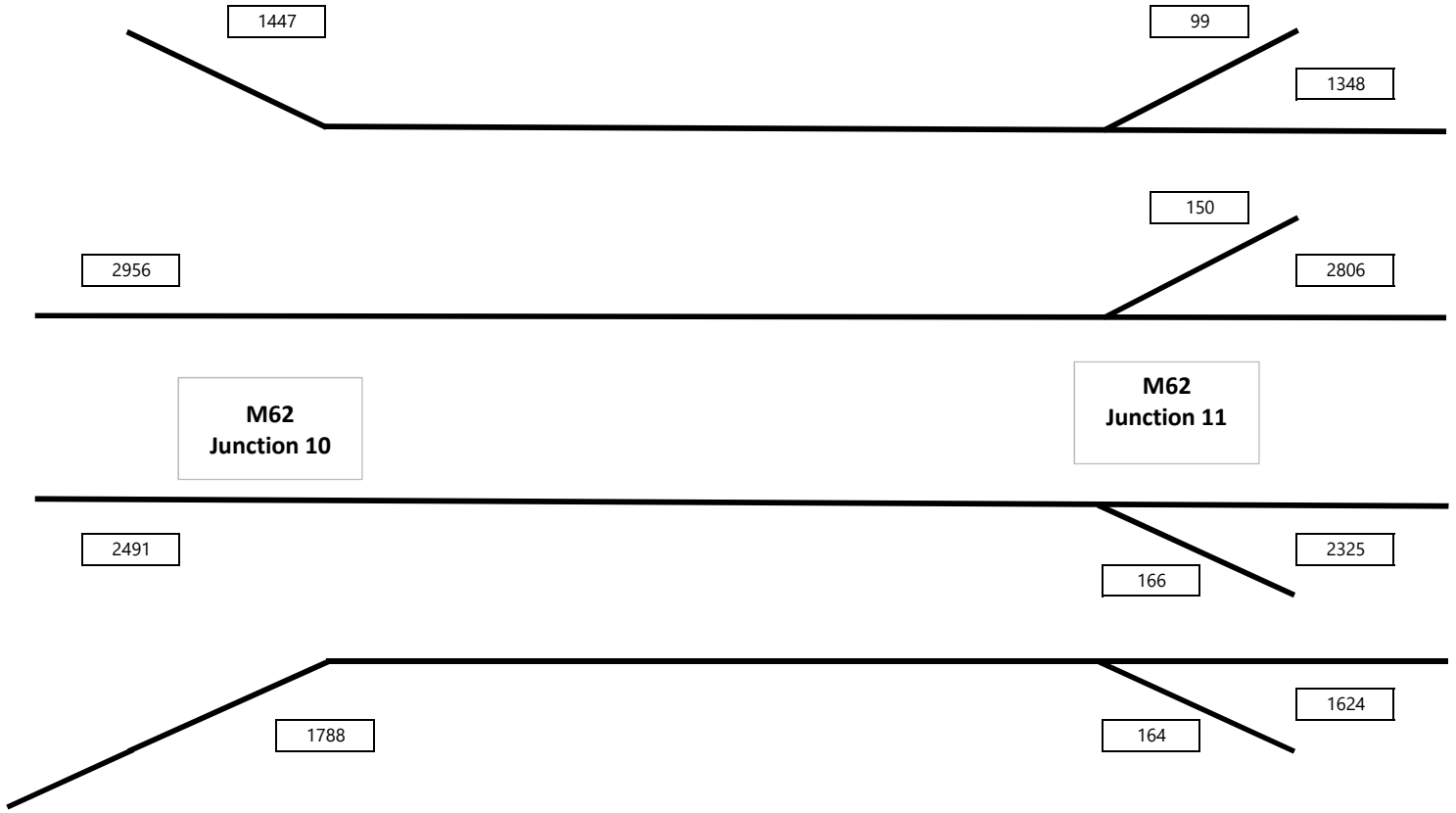
2029 Base + Committed + Development

AM	0730-0830
PM	1630-1730



APPENDIX 8.F. Weaving Flow Diagrams

0700 - 0800



KEY

500 = Total Vehicles 07:00-08:00

i-Transport

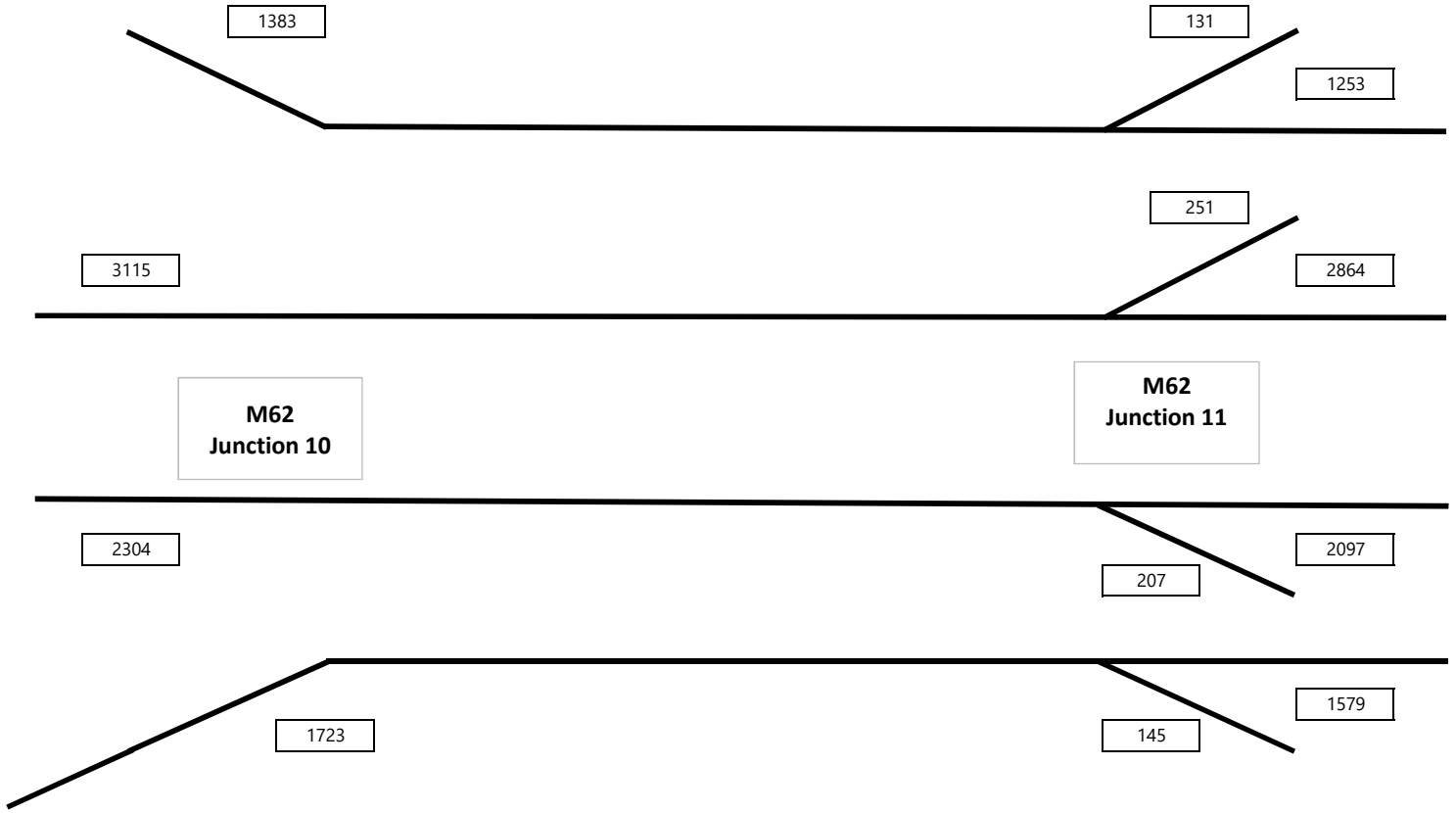
Centurion House, 129
Deansgate, Manchester, M3
3WR
Tel: 0161 830 2172

WARRINGTON, MSA

Appendix 8F

2018 Baseline Weaving Flows 07:00-08:00

0730 - 0830



KEY

500 = Total Vehicles 07:30-08:30

i-Transport

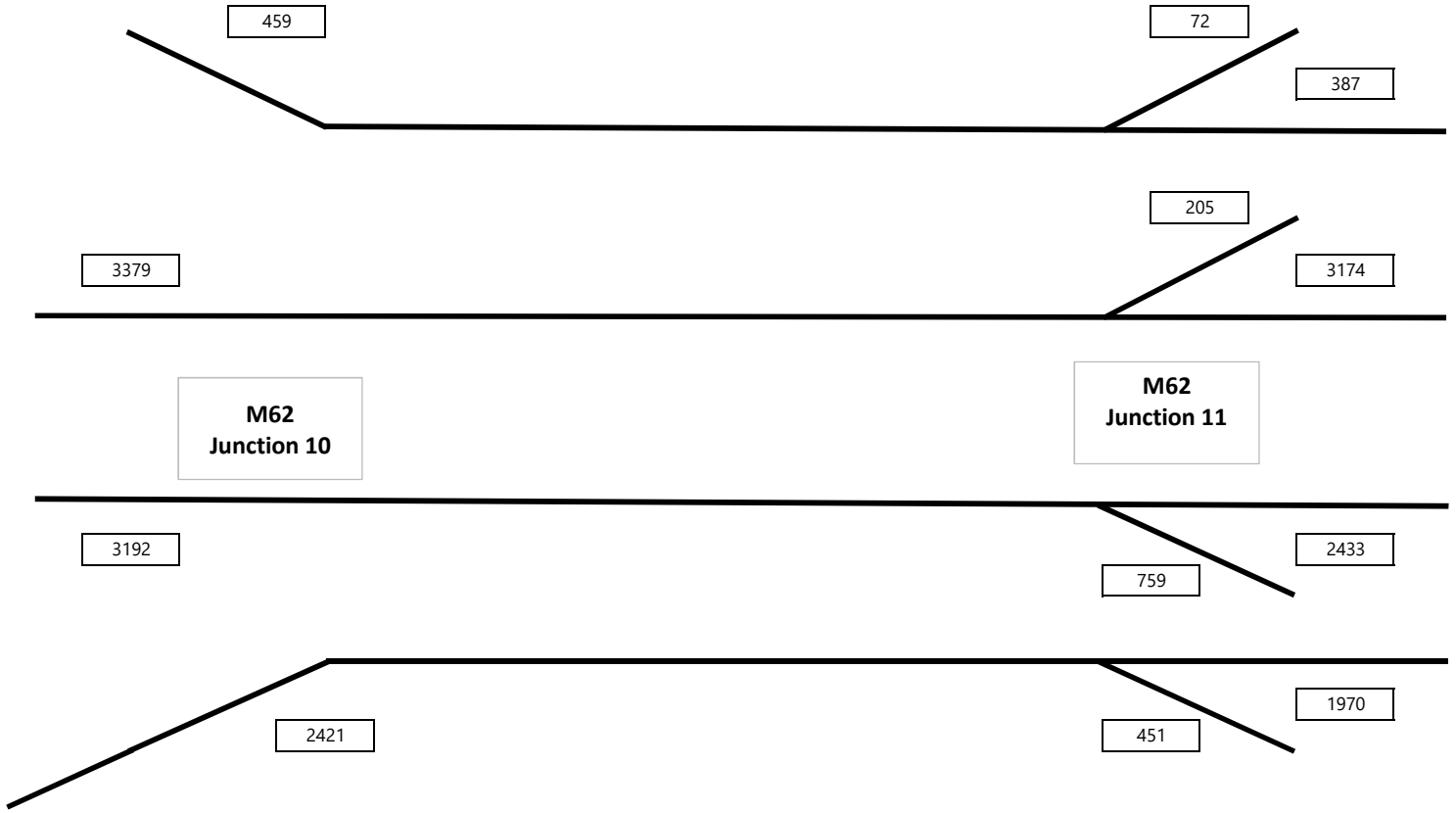
Centurion House, 129
Deansgate, Manchester, M3
3WR
Tel: 0161 830 2172

WARRINGTON, MSA

Appendix 8F

2018 Baseline Weaving Flows 07:30-08:30

1600 - 1700



KEY

500 = Total Vehicles 1600-1700

i-Transport

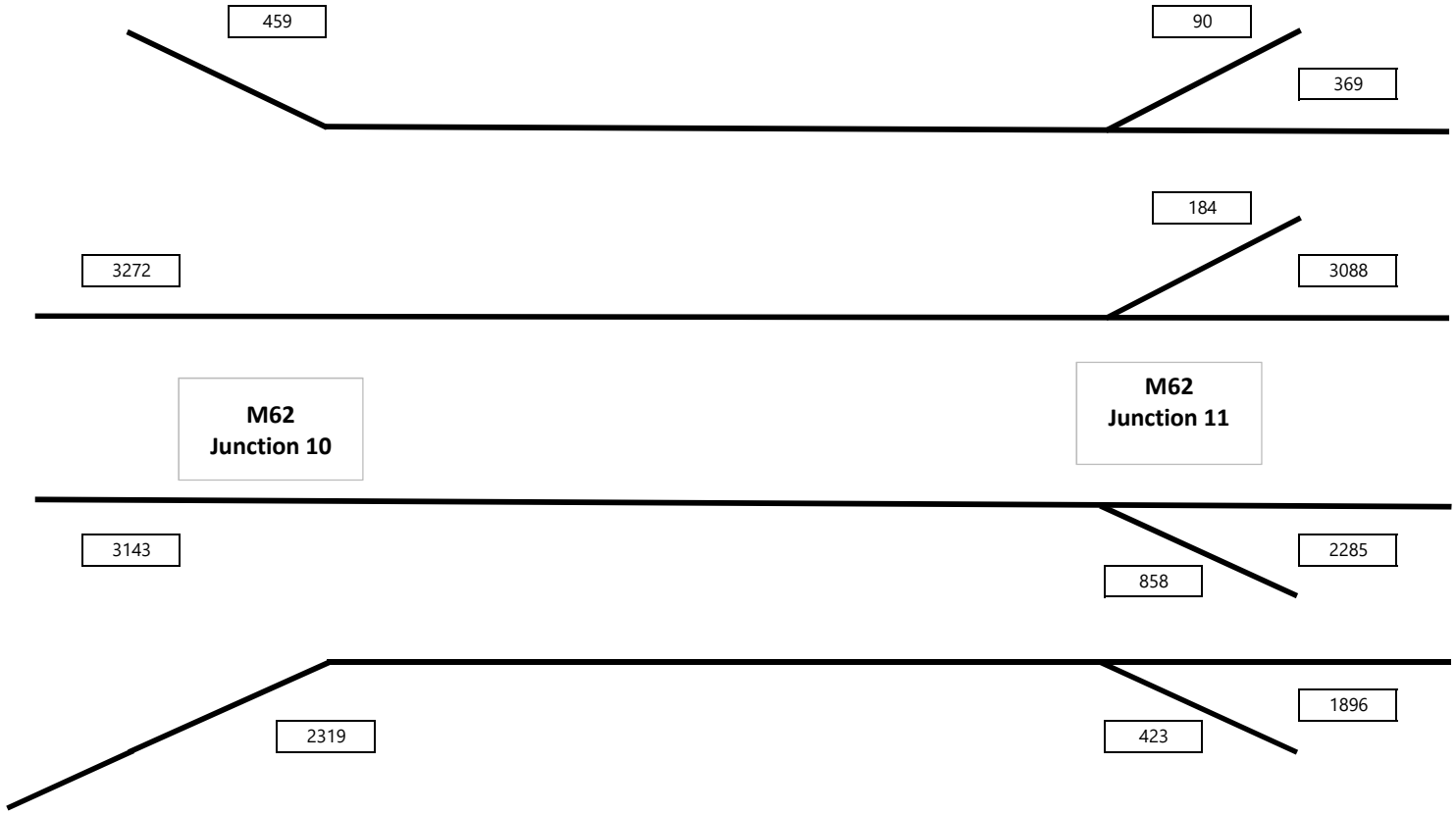
Centurion House, 129
Deansgate, Manchester, M3
3WR
Tel: 0161 830 2172

WARRINGTON, MSA

Appendix 8F

2018 Baseline Weaving Flows 16:00-17:00

1630 - 1730



KEY

500 = Total Vehicles 16:30-17:30

i-Transport

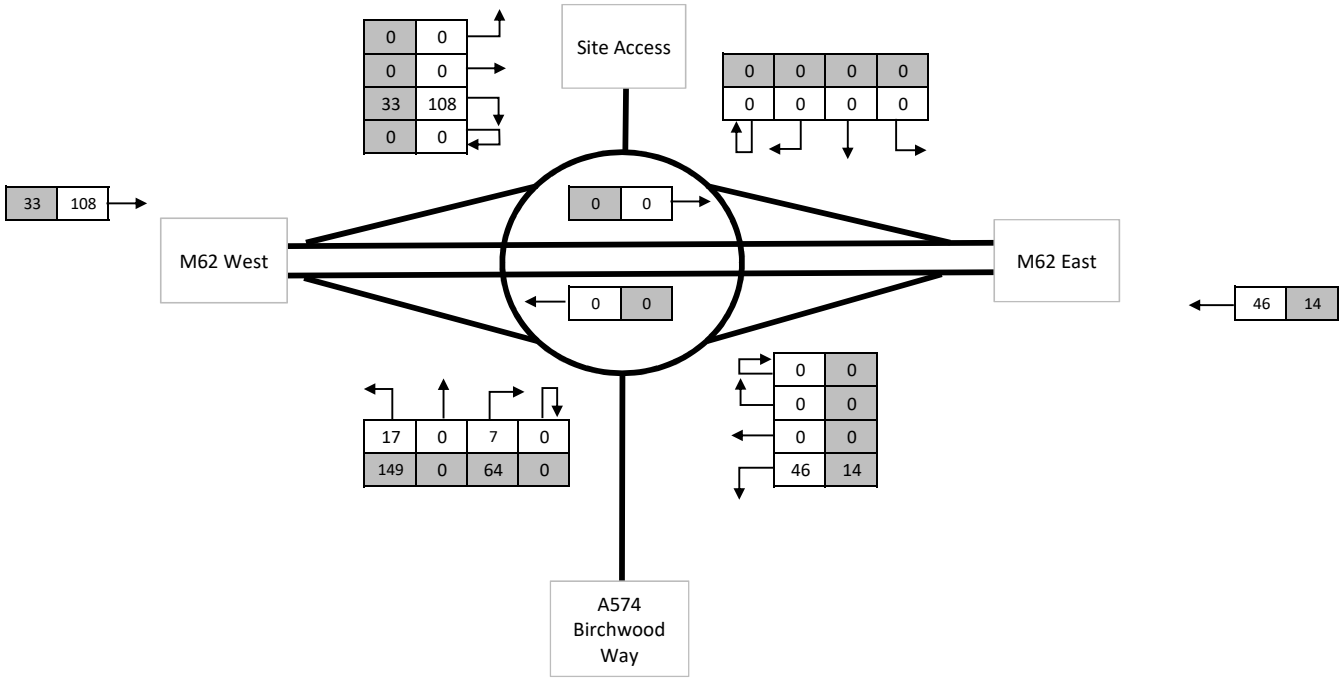
Centurion House, 129
Deansgate, Manchester, M3
3WR
Tel: 0161 830 2172

WARRINGTON, MSA

Appendix 8F

2018 Baseline Weaving Flows 16:30-17:30

APPENDIX 8.G. Committed Development Traffic Flows



i-Transport

Centurion House, 129
Deansgate, Manchester, M3 3WR
Tel: 0161 830 2172
www.i-transport.co.uk

KEY

500 = AM PEAK PCUs

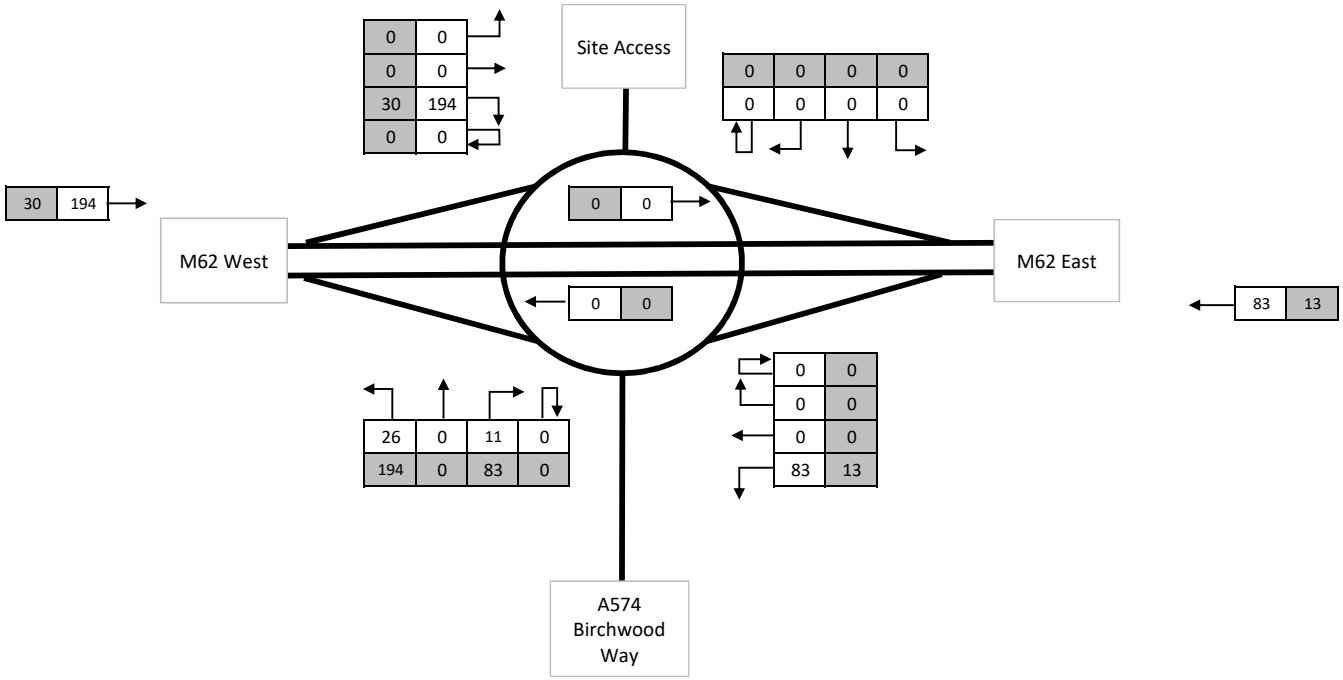
500 = PM PEAK PCUs

AM: 07:00-08:00
PM: 16:00-17:00

WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8G (i)

Committed Development - J11 M62



KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

AM: 07:30-08:30

PM: 16:30-17:30

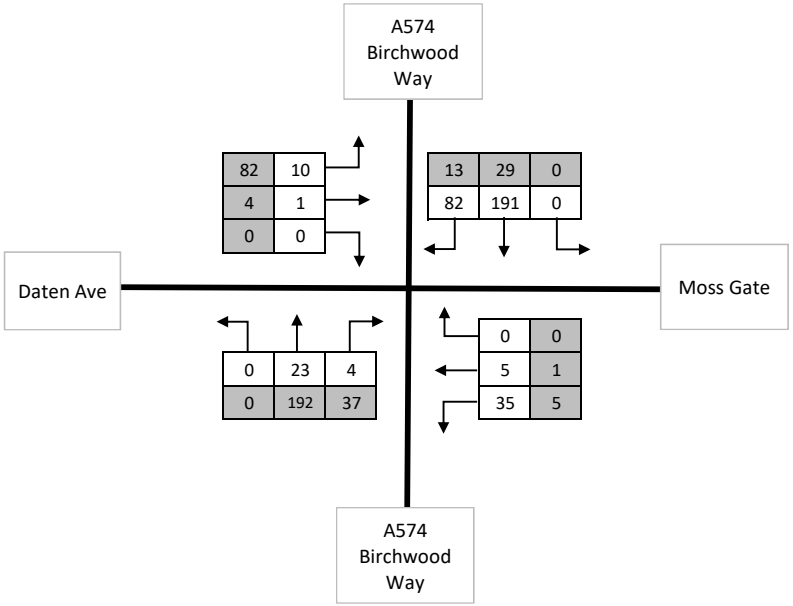
i-Transport

Centurion House, 129
Deansgate, Manchester, M3 3WR
Tel: 0161 830 2172
www.i-transport.co.uk

WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8G (ii)

Committed Development - J11 M62



AM: 07:30-08:30
PM: 16:45-17:45

KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

i-Transport

Centurion House, 129
Deansgate, Manchester, M3 3WR
Tel: 0161 830 2172
www.i-transport.co.uk

WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8G (iii)

Committed Development - Birchwood Way Signals

APPENDIX 8.H. Beaconsfield MSA Turn-In Data

2018 Turn in Rates - supplied by Extra

Week by week		Mon			Tue			Wed			Thu			Sat			Total Tues, Weds & Thurs		
		23-Apr			24-Apr			25-Apr			26-Apr			28-Apr					
Week 1	Time	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%
Beaconsfield	0700-0800	10875	522	4.80%	11114	558	5.02%	11007	554	5.03%	11033	546	4.95%				33154	1658	5.00%
	0800-0900	10626	660	6.21%	10475	643	6.14%	10839	653	6.02%	10908	683	6.26%				32222	1979	6.14%
	1200-1300	7359	752	10.22%	7088	754	10.64%	7304	774	10.60%	7417	775	10.45%	9156	817	8.92%	21809	2303	10.56%
	1600-1700	9461	459	4.85%	9613	532	5.53%	9685	610	6.30%	10445	581	5.56%				29743	1723	5.79%
	1700-1800	10275	506	4.92%	10439	541	5.18%	10722	609	5.68%	11449	644	5.62%				32610	1794	5.50%

		Mon			Tue			Wed			Thu			Sat			Total Tues, Weds & Thurs		
		30-Apr			01-May			02-May			03-May			05-May					
Week 2	Time	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%
Beaconsfield	0700-0800	11041	550	4.98%	10548	503	4.77%	6266	334	5.33%	10861	590	5.43%				21409	1093	5.11%
	0800-0900	10075	656	6.51%	10985	629	5.73%	5253	393	7.48%	10602	623	5.88%				21587	1252	5.80%
	1200-1300	7056	821	11.64%	7105	801	11.27%	5564	721	12.96%	7309	805	11.01%	9517	583	6.13%	19978	2327	11.65%
	1600-1700	9470	512	5.41%	9853	521	5.29%	9366	580	6.19%	10274	578	5.63%				29493	1679	5.69%
	1700-1800	10255	517	5.04%	10803	560	5.18%	10580	599	5.66%	11117	582	5.24%				32500	1741	5.36%

		Mon			Tue			Wed			Thu			Sat			Total Tues, Weds & Thurs		
		08-Oct			09-Oct			10-Oct			11-Oct			13-Oct					
Week 3	Time	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%
Beaconsfield	0700-0800	No Data	538		11052	485	4.39%	10608	546	5.15%	10927	503	4.60%				32587	1534	4.71%
	0800-0900	No Data	636		10138	562	5.54%	10579	509	4.81%	10726	626	5.84%				31443	1697	5.40%
	1200-1300	7562	755	9.98%	7118	696	9.78%	7234	702	9.70%	7383	724	9.81%	9780	815	8.33%	21735	2122	9.76%
	1600-1700	9924	513	5.17%	9725	483	4.97%	10549	566	5.37%	10927	633	5.79%				31201	1682	5.39%
	1700-1800	10548	492	4.66%	10607	529	4.99%	10948	545	4.98%	11173	625	5.59%				32728	1699	5.19%

		Mon			Tue			Wed			Thu			Sat			Total Tues, Weds & Thurs		
		15-Oct			16-Oct			17-Oct			18-Oct			20-Oct					
Week 4	Time	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%
Beaconsfield	0700-0800	No data	429		No data	458		10537	491	4.66%	11073	551	4.98%				21610	1042	4.82%
	0800-0900	No data	634		No data	522		10189	556	5.46%	10535	646	6.13%				20724	1202	5.80%
	1200-1300	No data	732		No data	724		7503	774	10.32%	7530	770	10.23%	9321	824	8.84%	15033	1544	10.27%
	1600-1700	No data	423		No data	463		10393	543	5.22%	10724	601	5.60%				21117	1144	5.42%
	1700-1800	No data	395		No data	580		11219	593	5.29%	11262	637	5.66%				22481	1230	5.47%

		Mon			Tue			Wed			Thu			Sat			Total Tues, Weds & Thurs		
		05-Nov			06-Nov			07-Nov			08-Nov			10-Nov					
Week 5	Time	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%
Beaconsfield	0700-0800	11132	546	4.90%	11203	476	4.25%	10511	483	4.60%	10997	556	5.06%				32711	1515	4.63%
	0800-0900	10388	633	6.09%	10399	587	5.64%	10256	589	5.74%	10492	635	6.05%				31147	1811	5.81%
	1200-1300	7380	740	10.03%	7109	709	9.97%	6919	682	9.86%	7473	712	9.53%	9367	768	8.20%	21501	2103	9.78%
	1600-1700	9454	465	4.92%	10169	489	4.81%	10063	554	5.51%	10391	555	5.34%				30623	1598	5.22%
	1700-1800	10140	444	4.38%	10006	556	5.56%	11140	621	5.57%	11351	585	5.15%				32497	1762	5.42%

		Mon			Tue			Wed			Thu			Sat			Total Tues, Weds & Thurs		
		12-Nov			13-Nov			14-Nov			15-Nov			17-Nov					
Week 6	Time	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%	Mainline	Turn in	%
Beaconsfield	0700-0800	11045	504	4.56%	10968	509	4.64%	No data	378	0	No data	370	0				10968	509	4.64%
	0800-0900	10806	658	6.09%	9912	498	5.02%	No data	535	0	No data	509	0				9912	498	5.02%
	1200-1300	6920	675	9.75%	7013	666	9.50%	No data	592	0	No data	624	0				7013	666	9.50%
	1600-1700	10350	570	5.51%	10033	488	4.86%	No data	606	0	No data	595	0				10033	488	4.86%
	1700-1800	10478	414	3.95%	10855	544	5.01%	No data	563	0	No data	572	0				10855	544	5.01%

5.5 Week Total

		Total Tues, Weds & Thurs			Saturday		
	Time	Mainline	Turn in	%	Mainline	Turn in	%
Beaconsfield	0700-0800	152439	7351	4.82%			
	0800-0900	147035	8439	5.74%			
	0730-0830	299474	15790	5.27%			
	1200-1300	107069	11065	10.33%	47141	3807	8.08%
	1600-1700	152210	8314	5.46%			
	1700-1800	163671	8770	5.36%			
	1630-1730	315881	17084	5.41%			

Notes
Turn in data supplied by Extra
Mainline data from Webtris website
Beaconsfield data provided for 1 week April, 1 weeek April/May , 2 weeks October 2018 (pre half-term) and 1 and a partial week in November
Assessment periods (base counts) 0730 - 0830 and 1600 - 1700
Assessed Average of 0700 - 0800 and 0800 - 0900 for am peak period

Excluded due to incomplete or missing data

APPENDIX 8.I. Facilities in the Birchwood Area

N

KEY:

Site Boundary

Convenience Store

1. SPAR Risley
2. Nisa Local
3. Londis
4. McColl's
5. Aldi
6. B&M Express
7. Asda Birchwood Superstore
8. One-Stop Stores
9. Sainsbury's
10. Culcheth Village Store
11. Co-op Food Culcheth

Petrol Filling Station

1. Asda Birchwood Filling Station
2. BP Filling Station Birchwood
3. BP Filling Station Culcheth

i-Transport

Centurion House, 129 Deansgate,
Manchester, M3 3WR

Tel: 0161 830 2172
Fax: 0161 830 2173

www.i-transport.co.uk

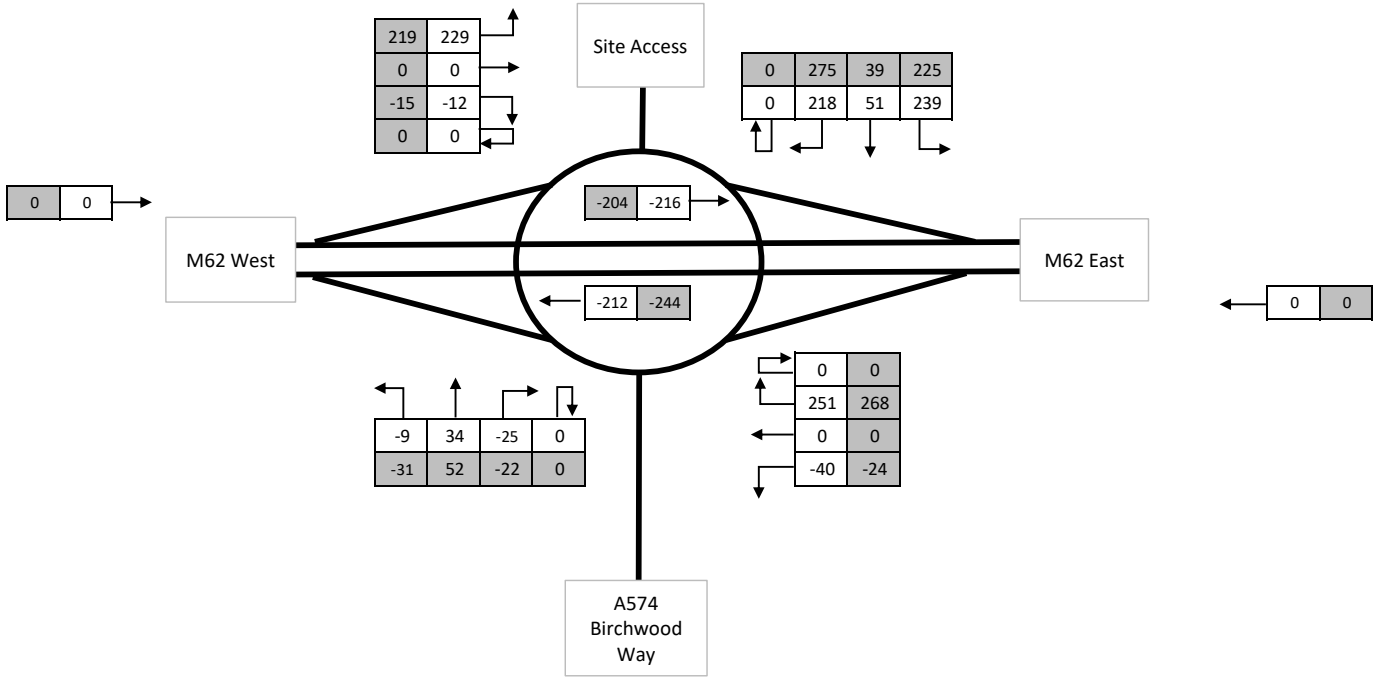
TITLE:

WARRINGTON MSA,
JUNCTION 11 M62
LOCAL FACILITIES PLAN

FIGURE No:

APPENDIX 8I

APPENDIX 8.J. Warrington MSA Turn-In Flows



KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

AM: 07:00-08:00

PM: 16:00-17:00

i-Transport

Centurion House, 129 Deansgate,
Manchester, M3 3WR
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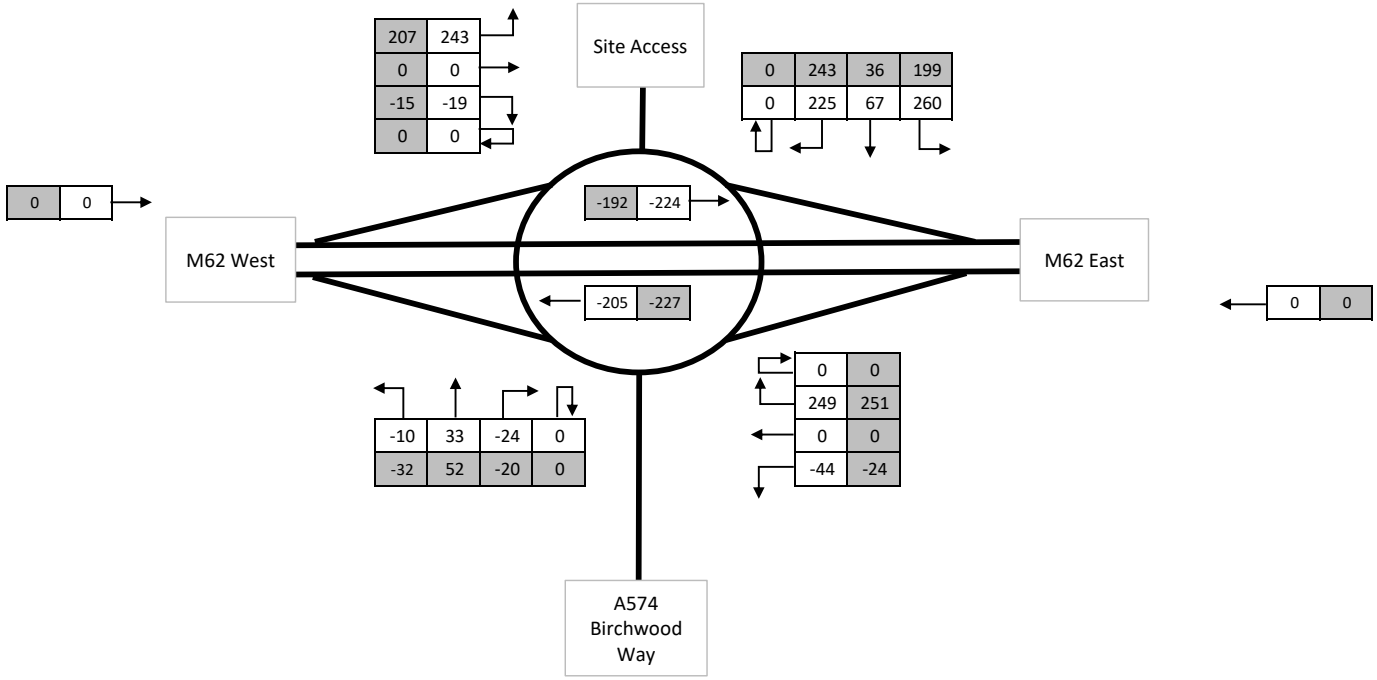
WARRINGTON MSA, JUNCTION 11 M62

APPENDIX F1

Turn-In Flows (Visitor Trips) - J11 M62



KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

AM: 07:30-08:30

PM: 16:30-17:30

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WARRINGTON MSA, JUNCTION 11 M62

APPENDIX F2

Turn-In Flows (Visitor Trips) - J11 M62

APPENDIX 8.K. Staff Trips Census Analysis

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

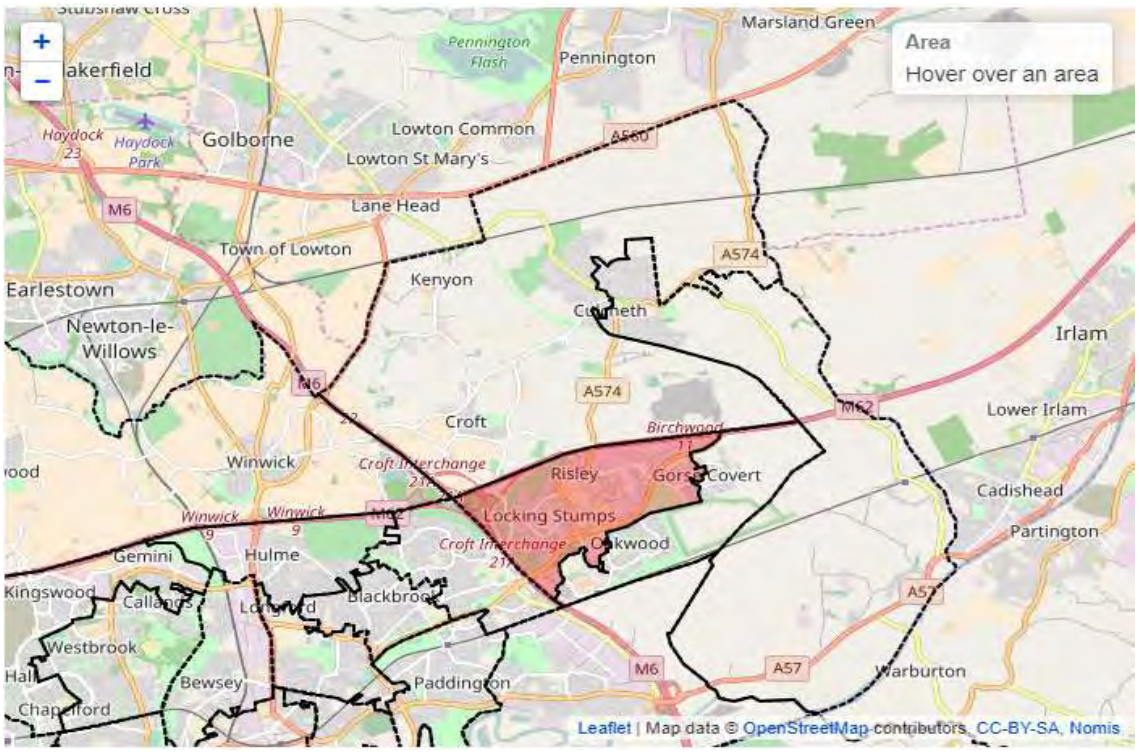
population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011
method of travel to work	Driving a car or van

usual residence	place of work E02002593 : Warrington 004	%	Route
E02002590 : Warrington 001	154	1.3%	F
E02002591 : Warrington 002	155	1.3%	F
E02002592 : Warrington 003	98	0.8%	D
E02002593 : Warrington 004	233	2.0%	
E02002594 : Warrington 005	228	1.9%	
E02002595 : Warrington 006	107	0.9%	C
E02002596 : Warrington 007	281	2.4%	C
E02002597 : Warrington 008	156	1.3%	C
E02002598 : Warrington 009	140	1.2%	D
E02002599 : Warrington 010	196	1.7%	D
E02002600 : Warrington 011	165	1.4%	C
E02002601 : Warrington 012	194	1.6%	C
E02002602 : Warrington 013	100	0.8%	C
E02002603 : Warrington 014	186	1.6%	C
E02002604 : Warrington 015	99	0.8%	D
E02002605 : Warrington 016	157	1.3%	D
E02002606 : Warrington 017	198	1.7%	C
E02002607 : Warrington 018	166	1.4%	C
E02002608 : Warrington 019	88	0.7%	C
E02002609 : Warrington 020	135	1.1%	C
E02002610 : Warrington 021	117	1.0%	C
E02002611 : Warrington 022	104	0.9%	C
E02002612 : Warrington 023	154	1.3%	C
E02002613 : Warrington 024	82	0.7%	B
E02002614 : Warrington 025	74	0.6%	B
Total Warrington	**3,767**	**32.0%**	

usual residence	E02002593 : Warrington 004	%	Route
E02001287 : Wigan 001	13	0.1%	E
E02001288 : Wigan 002	22	0.2%	E
E02001289 : Wigan 003	41	0.3%	E
E02001290 : Wigan 004	11	0.1%	E
E02001291 : Wigan 005	17	0.1%	E
E02001292 : Wigan 006	28	0.2%	E
E02001293 : Wigan 007	13	0.1%	F
E02001294 : Wigan 008	16	0.1%	E
E02001295 : Wigan 009	3	0.0%	E
E02001296 : Wigan 010	7	0.1%	E
E02001297 : Wigan 011	13	0.1%	E
E02001298 : Wigan 012	18	0.2%	F
E02001299 : Wigan 013	24	0.2%	F
E02001300 : Wigan 014	15	0.1%	E
E02001301 : Wigan 015	15	0.1%	E
E02001302 : Wigan 016	23	0.2%	F
E02001303 : Wigan 017	14	0.1%	G
E02001304 : Wigan 018	32	0.3%	E
E02001305 : Wigan 019	25	0.2%	G
E02001306 : Wigan 020	20	0.2%	F
E02001307 : Wigan 021	46	0.4%	F
E02001308 : Wigan 022	14	0.1%	G
E02001309 : Wigan 023	27	0.2%	G
E02001310 : Wigan 024	22	0.2%	F
E02001311 : Wigan 025	21	0.2%	G
E02001312 : Wigan 026	23	0.2%	F
E02001313 : Wigan 027	30	0.3%	G
E02001314 : Wigan 028	40	0.3%	G
E02001315 : Wigan 029	34	0.3%	G
E02001316 : Wigan 030	43	0.4%	G
E02001317 : Wigan 031	47	0.4%	G
E02001318 : Wigan 032	35	0.3%	F
E02001319 : Wigan 033	33	0.3%	G
E02001320 : Wigan 034	58	0.5%	G
E02001321 : Wigan 035	45	0.4%	F
E02001322 : Wigan 036	28	0.2%	F
E02001323 : Wigan 037	60	0.5%	G
E02001324 : Wigan 038	55	0.5%	F
E02001325 : Wigan 039	105	0.9%	F
E02001326 : Wigan 040	81	0.7%	F
Total Wigan	**1,217**	**10.3%**	

usual residence	E02002593 : Warrington 004	%	Route
E02000984 : Bolton 001	17	0.1%	A
E02000985 : Bolton 002	8	0.1%	A
E02000986 : Bolton 003	10	0.1%	A
E02000987 : Bolton 004	5	0.0%	A
E02000988 : Bolton 005	4	0.0%	A
E02000989 : Bolton 006	5	0.0%	A
E02000990 : Bolton 007	11	0.1%	A
E02000991 : Bolton 008	7	0.1%	A
E02000992 : Bolton 009	7	0.1%	A
E02000993 : Bolton 010	2	0.0%	A
E02000994 : Bolton 011	1	0.0%	A
E02000995 : Bolton 012	10	0.1%	A
E02000996 : Bolton 013	3	0.0%	A
E02000997 : Bolton 014	4	0.0%	A
E02000998 : Bolton 015	1	0.0%	A
E02000999 : Bolton 016	4	0.0%	A
E02001000 : Bolton 017	7	0.1%	A
E02001001 : Bolton 018	5	0.0%	A
E02001002 : Bolton 019	6	0.1%	A
E02001003 : Bolton 020	10	0.1%	A
E02001004 : Bolton 021	4	0.0%	A
E02001005 : Bolton 022	5	0.0%	A
E02001006 : Bolton 023	3	0.0%	A
E02001007 : Bolton 024	14	0.1%	A
E02001008 : Bolton 025	2	0.0%	A
E02001009 : Bolton 026	7	0.1%	A
E02001010 : Bolton 027	4	0.0%	A
E02001011 : Bolton 028	21	0.2%	G
E02001012 : Bolton 029	3	0.0%	A
E02001013 : Bolton 030	15	0.1%	G
E02001014 : Bolton 031	10	0.1%	G
E02001015 : Bolton 032	7	0.1%	A
E02001016 : Bolton 033	4	0.0%	A
E02001017 : Bolton 034	14	0.1%	A
E02001018 : Bolton 035	26	0.2%	G
Total Bolton	**266**	**2.3%**	

usual residence	E02002593 : Warrington 004	%	Route		
St. Helens	703	6.0%	D		
Cheshire West and Chester	593	5.0%	B		
Halton	489	4.2%	D		
Trafford	470	4.0%	A	B	
Cheshire East	429	3.6%	A	B	
Manchester	408	3.5%	A		
Liverpool	404	3.4%	D		
Salford	366	3.1%	A		
Stockport	275	2.3%	A		
Sefton	243	2.1%	D		
Wirral	174	1.5%	B		
Knowsley	165	1.4%	D		
Bury	163	1.4%	A		
Chorley	133	1.1%	E		
West Lancashire	110	0.9%	E		
Tameside	99	0.8%	A		
Rochdale	97	0.8%	A		
South Ribble	80	0.7%	E		
Oldham	68	0.6%	A		
Flintshire	58	0.5%	B		
Preston	48	0.4%	E		
Wyre	36	0.3%	E		
Stoke-on-Trent	35	0.3%	B		
Rossendale	34	0.3%	A		
Wrexham	33	0.3%	B		
Blackburn with Darwen	30	0.3%	E		
Fylde	30	0.3%	E		
Calderdale	29	0.2%	A		
High Peak	29	0.2%	A		
Blackpool	28	0.2%	A		
Newcastle-under-Lyme	25	0.2%	B		
Staffordshire Moorlands	24	0.2%	B		
Hyndburn	22	0.2%	A		
Leeds	22	0.2%	A		
Lancaster	20	0.2%	E		
Kirklees	19	0.2%	A		
Pendle	19	0.2%	A		
Bradford	18	0.2%	A		
Burnley	17	0.1%	A		
Doncaster	17	0.1%	A		
Denbighshire	15	0.1%	B		
Ribble Valley	15	0.1%	E		
Conwy	14	0.1%	B		
Birmingham	13	0.1%	B		
Rotherham	12	0.1%	A		
Wakefield	12	0.1%	A		
East Riding of Yorkshire	11	0.1%	A		
Barnsley	10	0.1%	A		
Solihull	10	0.1%	B		
Other	358	3.0%	A	B	D E
Total Local Authorities	**6,532**	**55.4%**			
Total	**11,782**	**100.0%**			

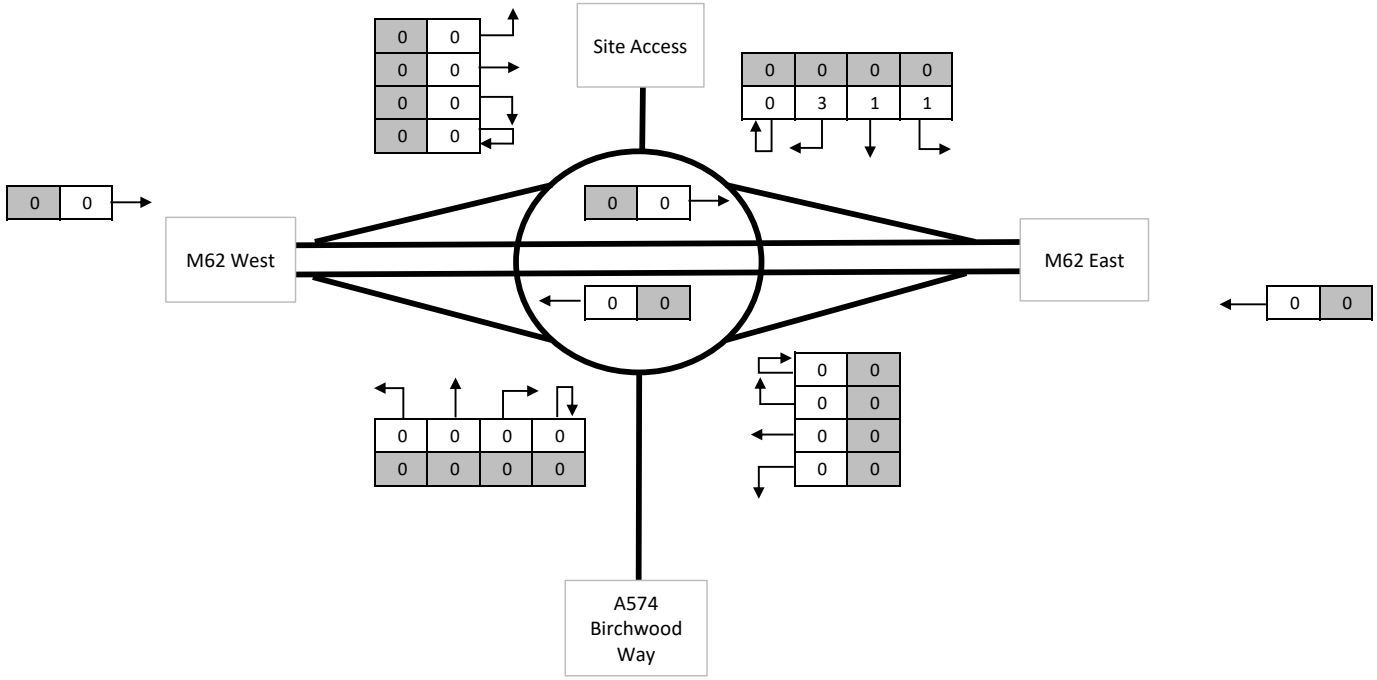


A	M62 (East)	27.4%
B	M62 West (from M6 (S))	9.8%
C	Birchwood Way	18.3%
D	M62 (West)	22.9%
E	M62 W (from M6 (N))	6.2%
F	M62 W (from M6 N via Winwick Lan	7.2%
G	Birchwood Way via Daton Ave	4.4%
		96.1%
E02002593 : Warrington 004		2.0%
E02002594 : Warrington 005		1.9%
		100.0%

Assume 1/3 via Moss Gate, and 2/3 via Birchwood Way

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

APPENDIX 8.L. Staff Traffic Flows



KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

AM: 07:00-08:00

PM: 16:00-17:00

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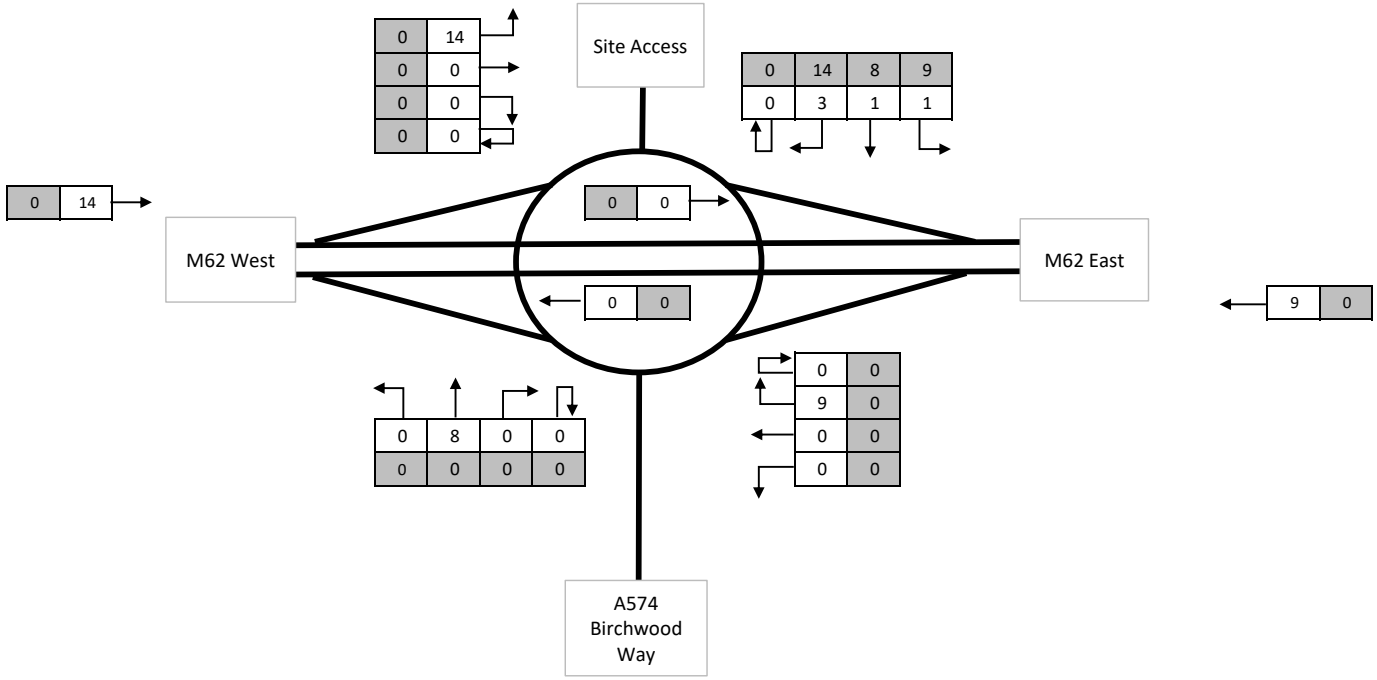
WARRINGTON MSA, JUNCTION 11 M62

APPENDIX H1

Staff Trips - J11 M62



KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

AM: 07:30-08:30

PM: 16:30-17:30

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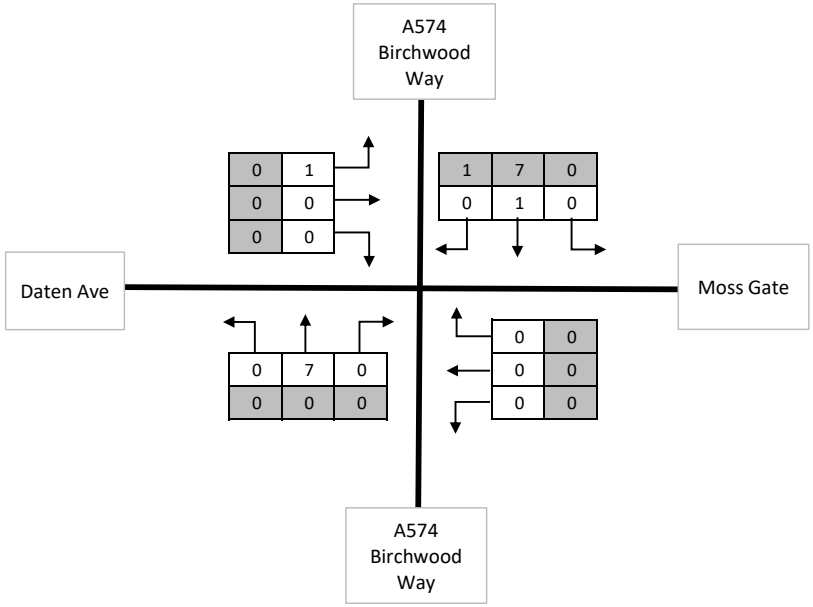
APPENDIX H2

Staff Trips - J11 M62



AM: 07:30-08:30
PM: 16:45-17:45

KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

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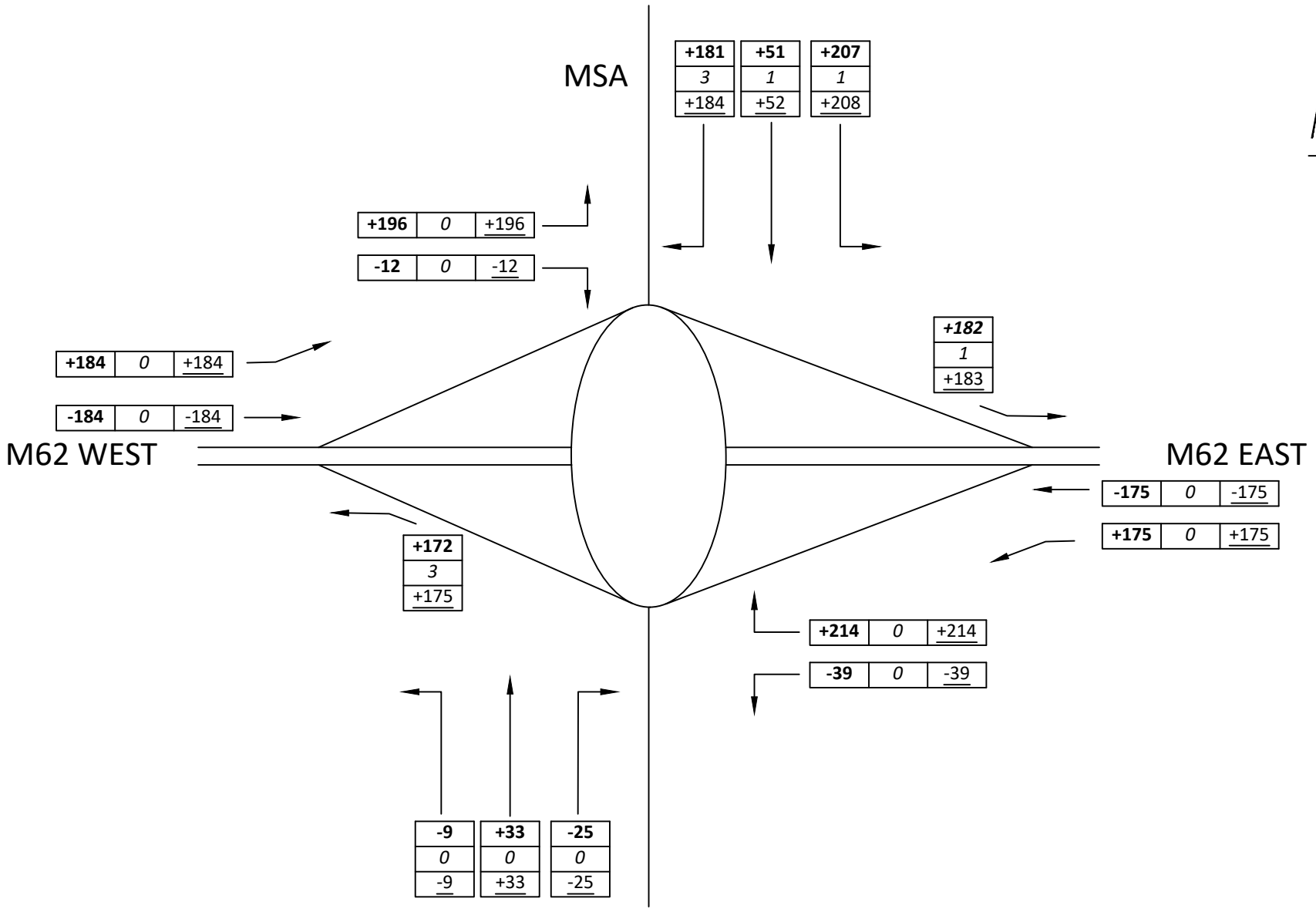
APPENDIX H3

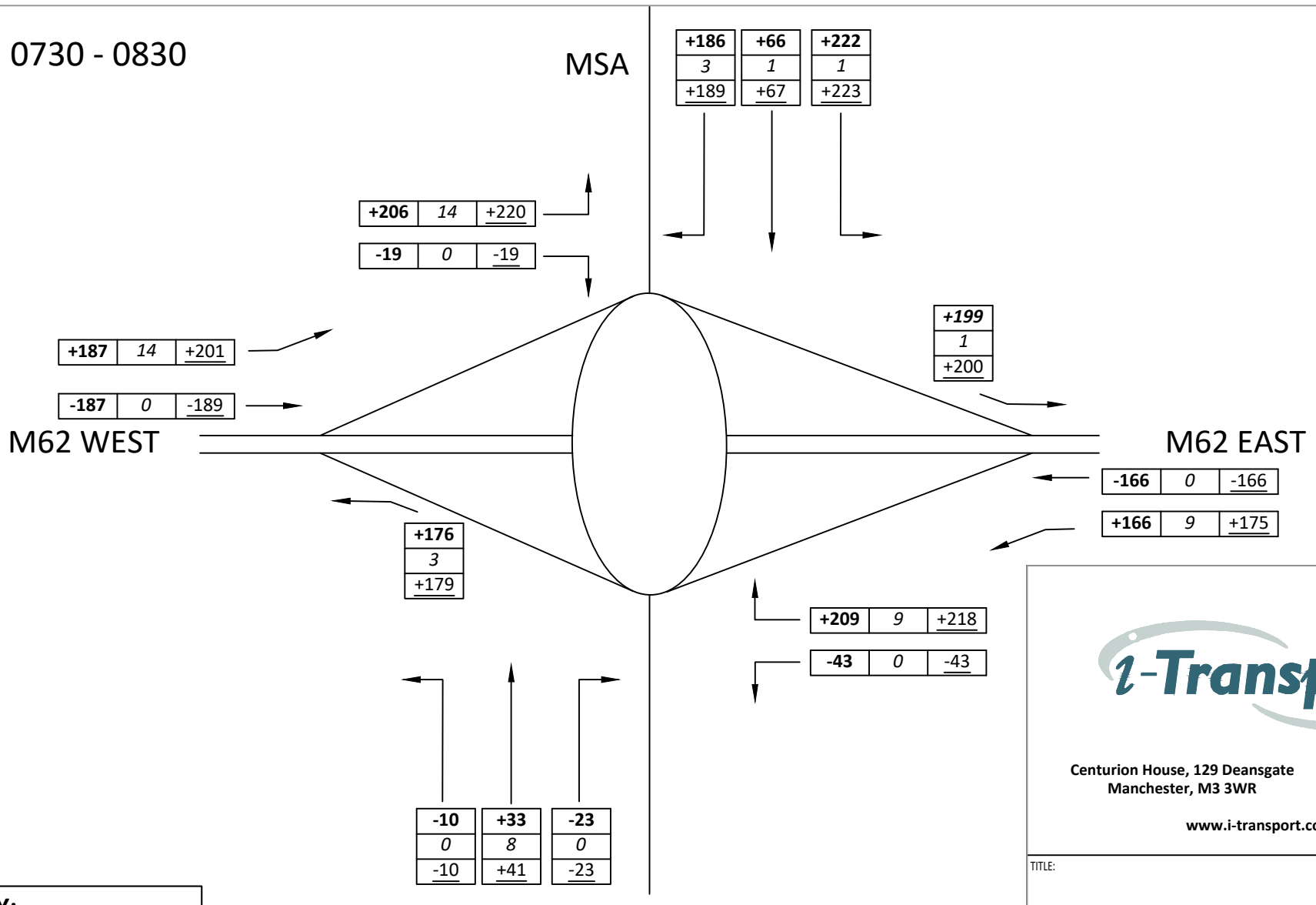
Staff Trips - Birchwood Way Signals

APPENDIX 8.M. Overall Warrington MSA Turn-In Flows

0700 - 0800



0730 - 0830



KEY:

+10	MSA Visitors
+10	MSA Staff
+10	Total

FILE REF: ITM12377

REV:

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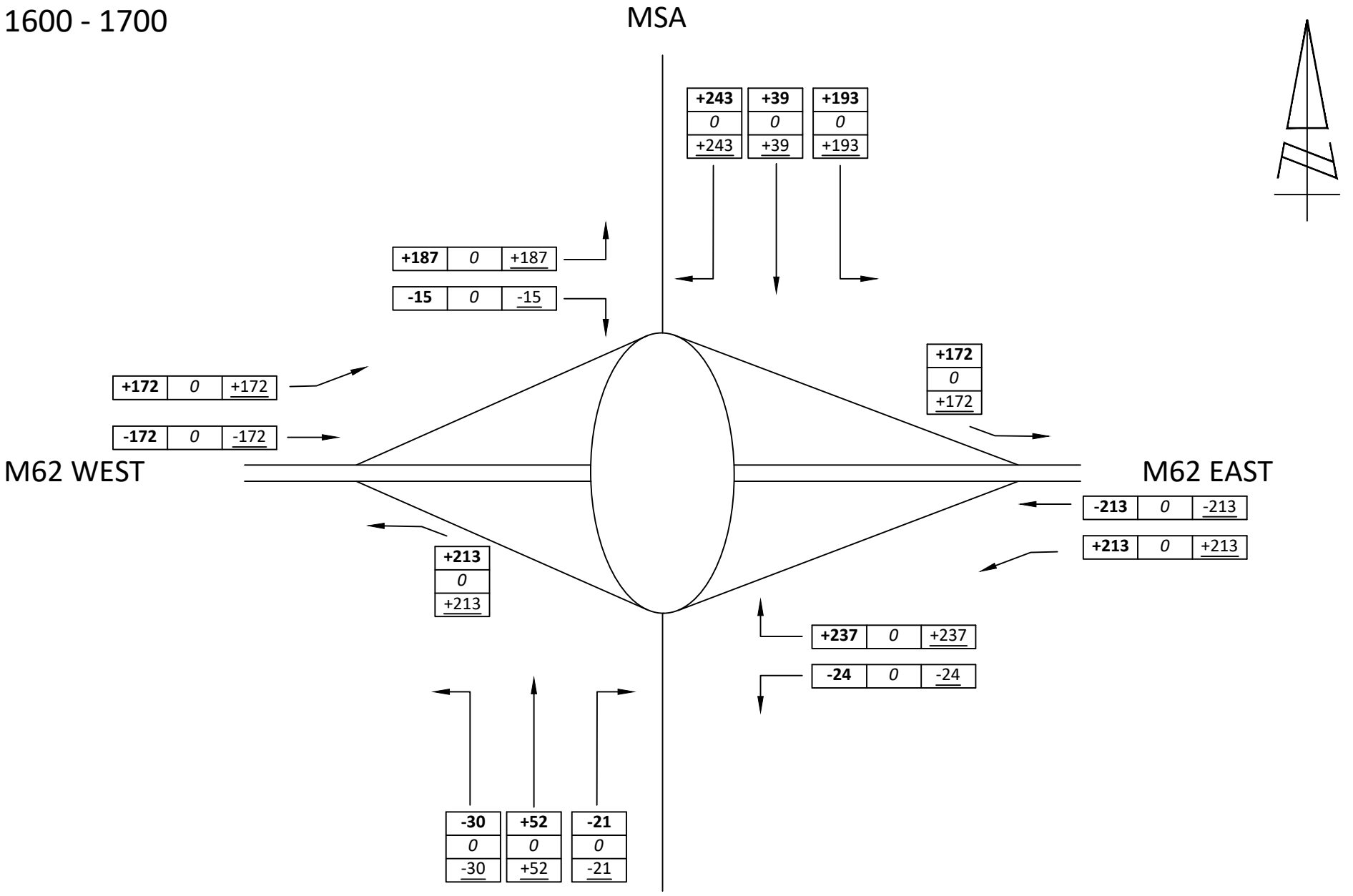
TITLE:

WARRINGTON MSA, JUNCTION 11 M62
TURN-IN FLOWS (VEHICLES/HOUR)

FIGURE No:

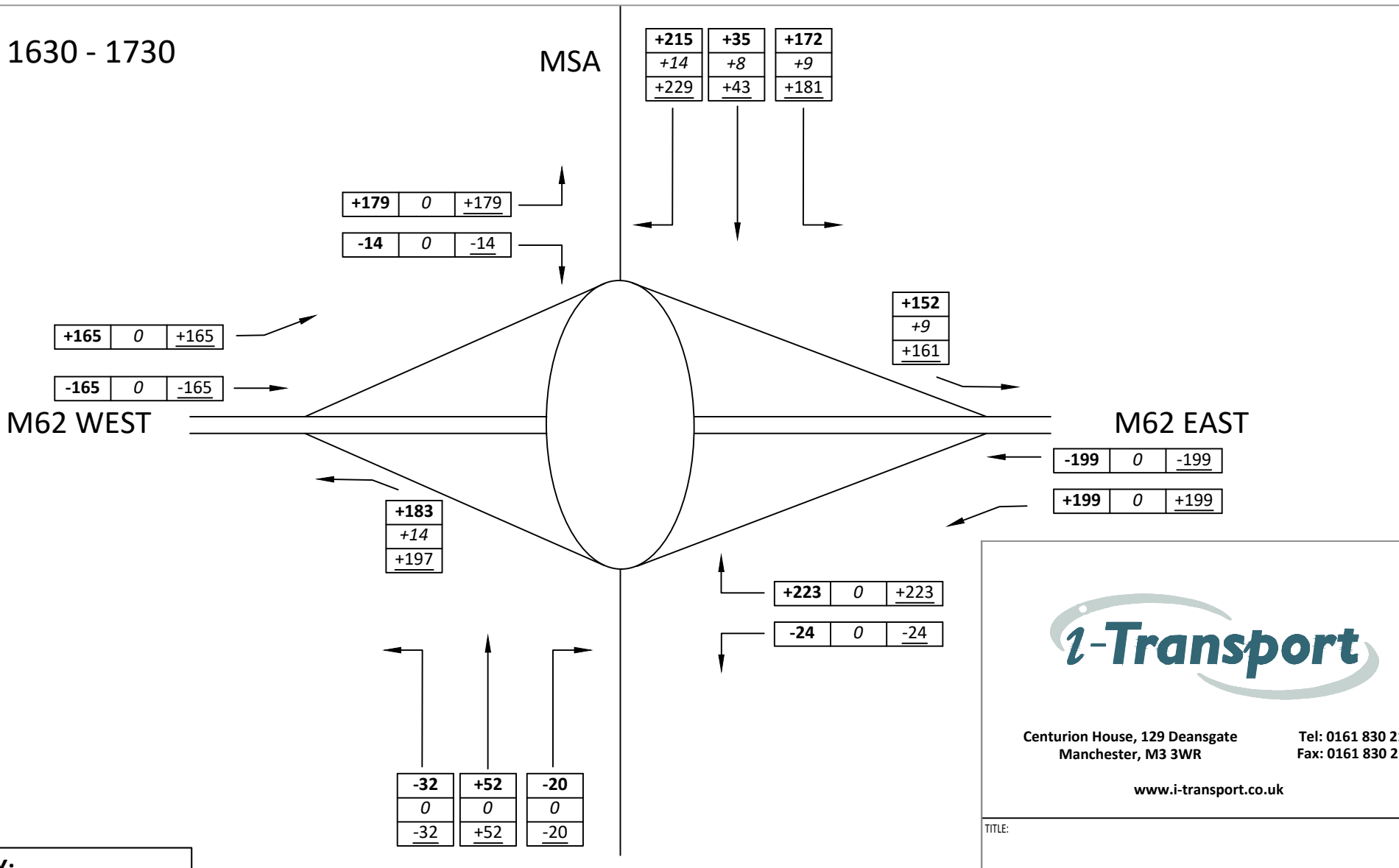
APPENDIX 8M (i)

1600 - 1700



NOTE: NO STAFF SHIFT CHANGEOVER EXPECTED 16:00 - 17:00

1630 - 1730



KEY:

+10	MSA Visitors
+10	MSA Staff
+10	Total

FILE REF: ITM12377

REV:

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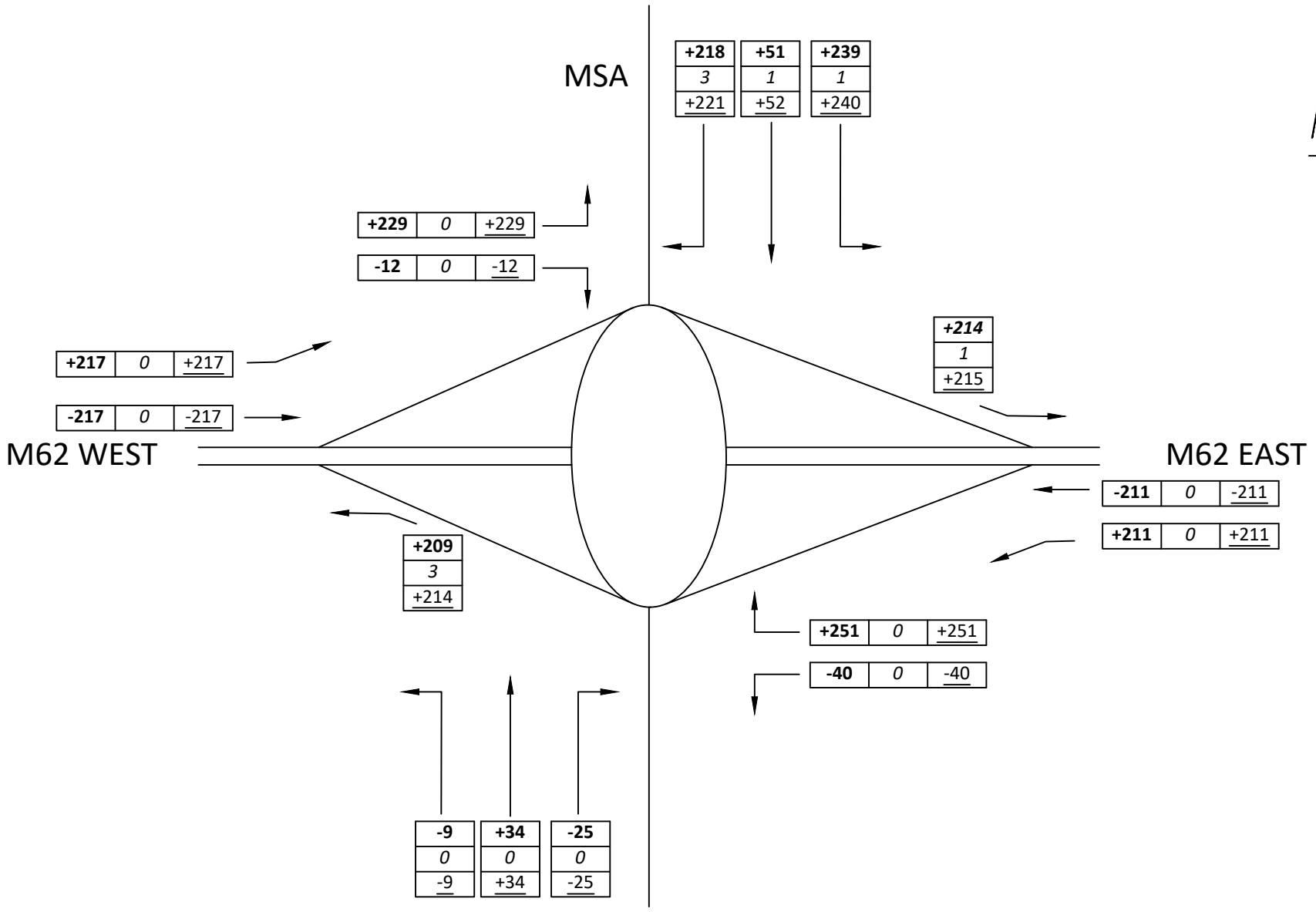
TITLE:

WARRINGTON MSA, JUNCTION 11, M62
TURN-IN FLOWS (VEHICLES/HOUR)

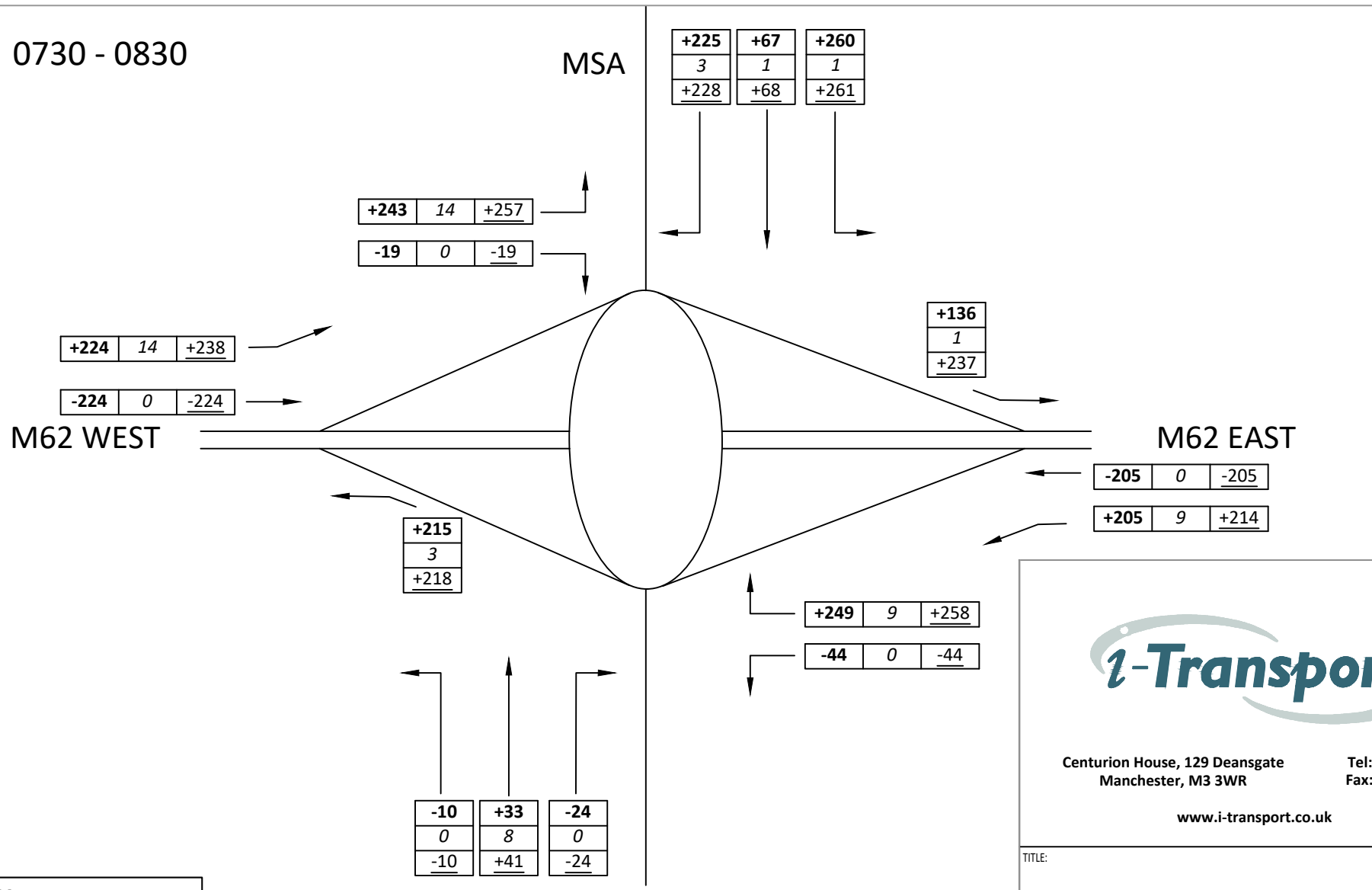
FIGURE No:

APPENDIX 8M (ii)

0700 - 0800



0730 - 0830



KEY:

+10	MSA Visitors
+10	MSA Staff
+10	Total

FILE REF: ITM12377

REV:

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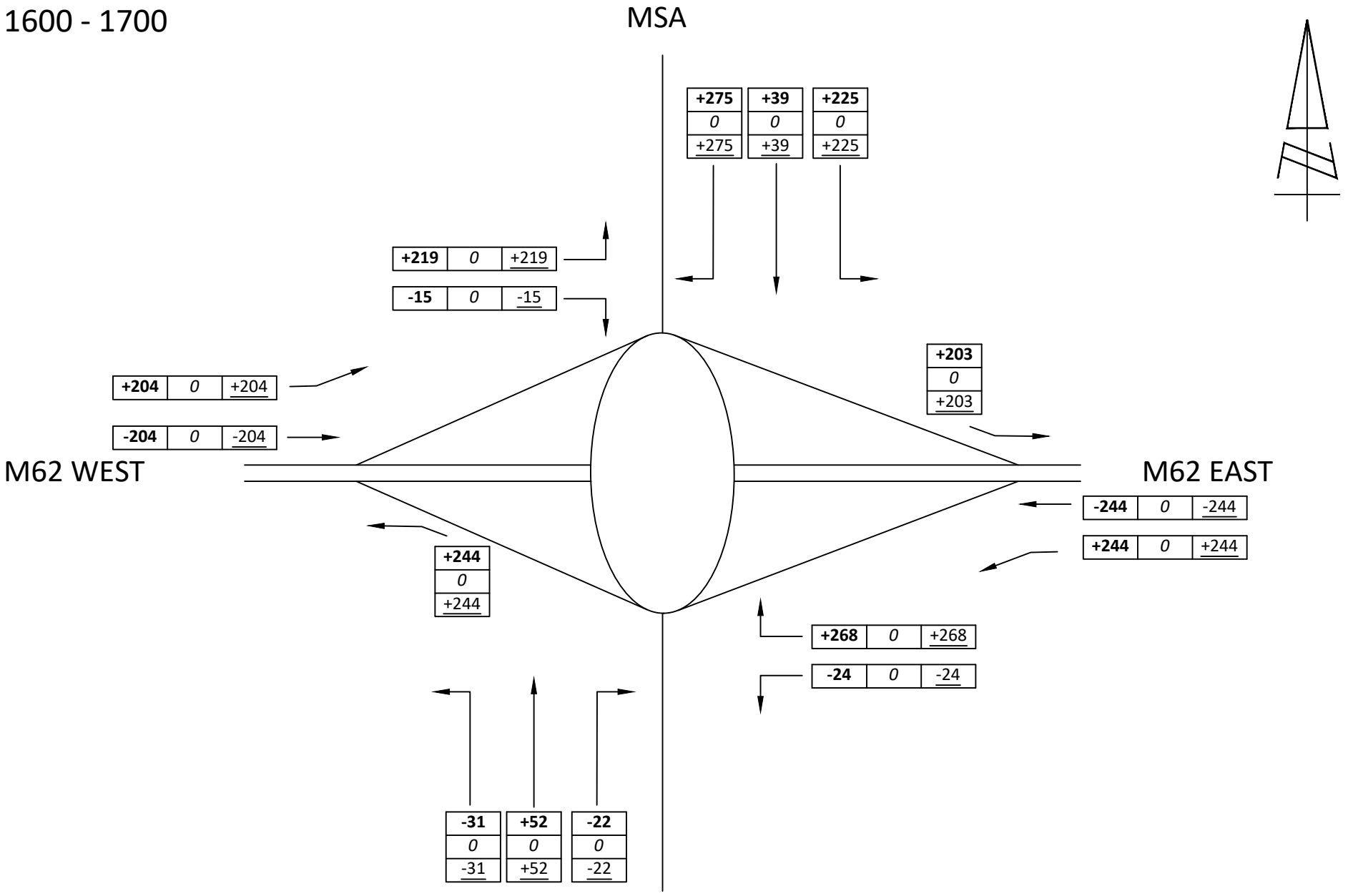
TITLE:

WARRINGTON MSA, JUNCTION 11, M62
TURN-IN FLOWS (PCUs/HOUR)

FIGURE No:

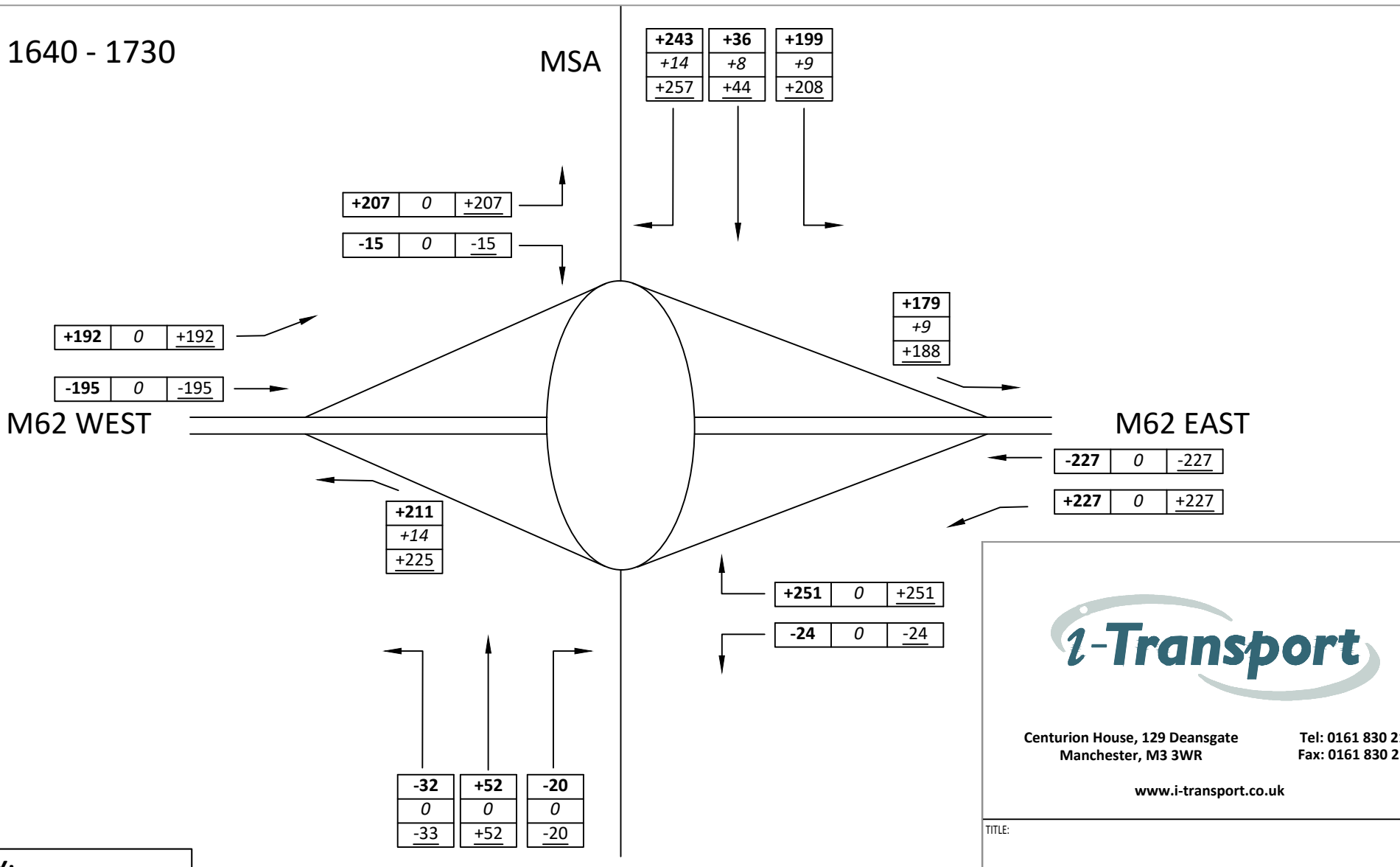
APPENDIX 8M (iii)

1600 - 1700



NOTE: NO STAFF SHIFT CHANGEOVER EXPECTED 16:00 - 17:00

1640 - 1730



KEY:

+10	MSA Visitors
+10	MSA Staff
+10	Total

FILE REF: ITM12377

REV:

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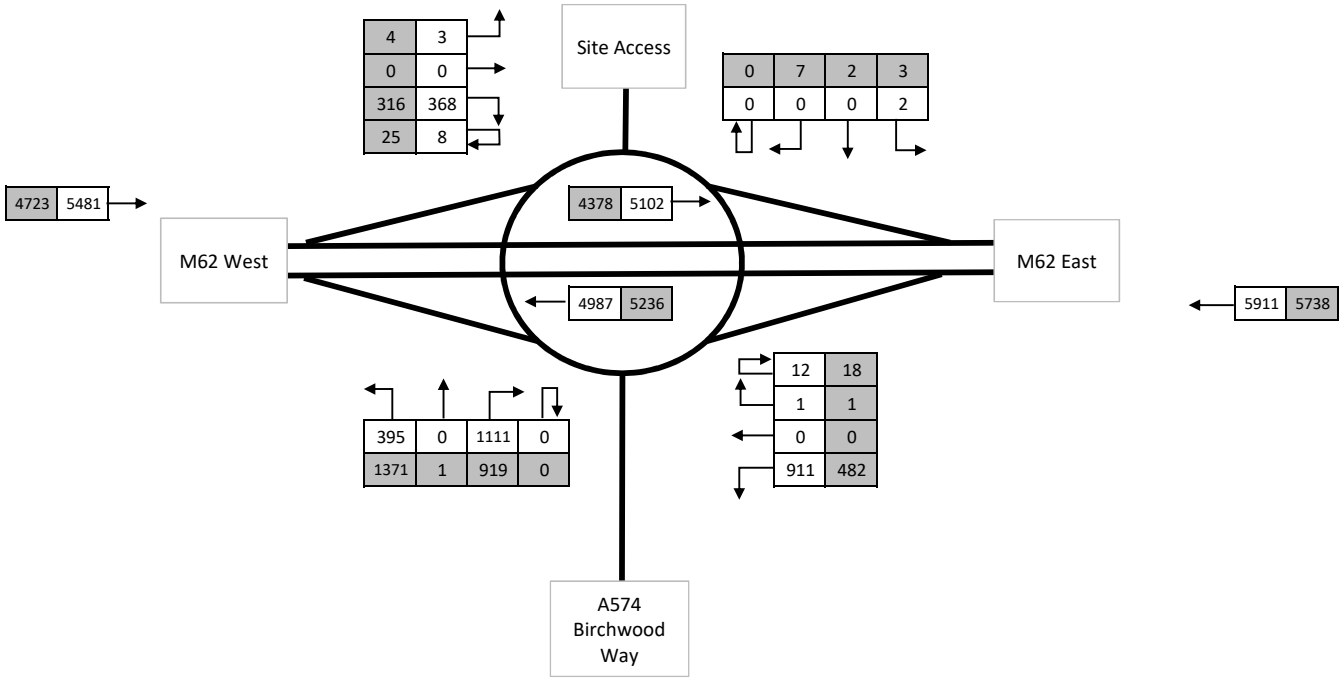
TITLE:

WARRINGTON MSA, JUNCTION 11, M62
TURN-IN FLOWS (PCUs/HOUR)

FIGURE No:

APPENDIX 8M (iv)

APPENDIX 8.N. With Development Traffic Flow Diagrams



AM: 07:00-08:00
PM: 16:00-17:00

KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

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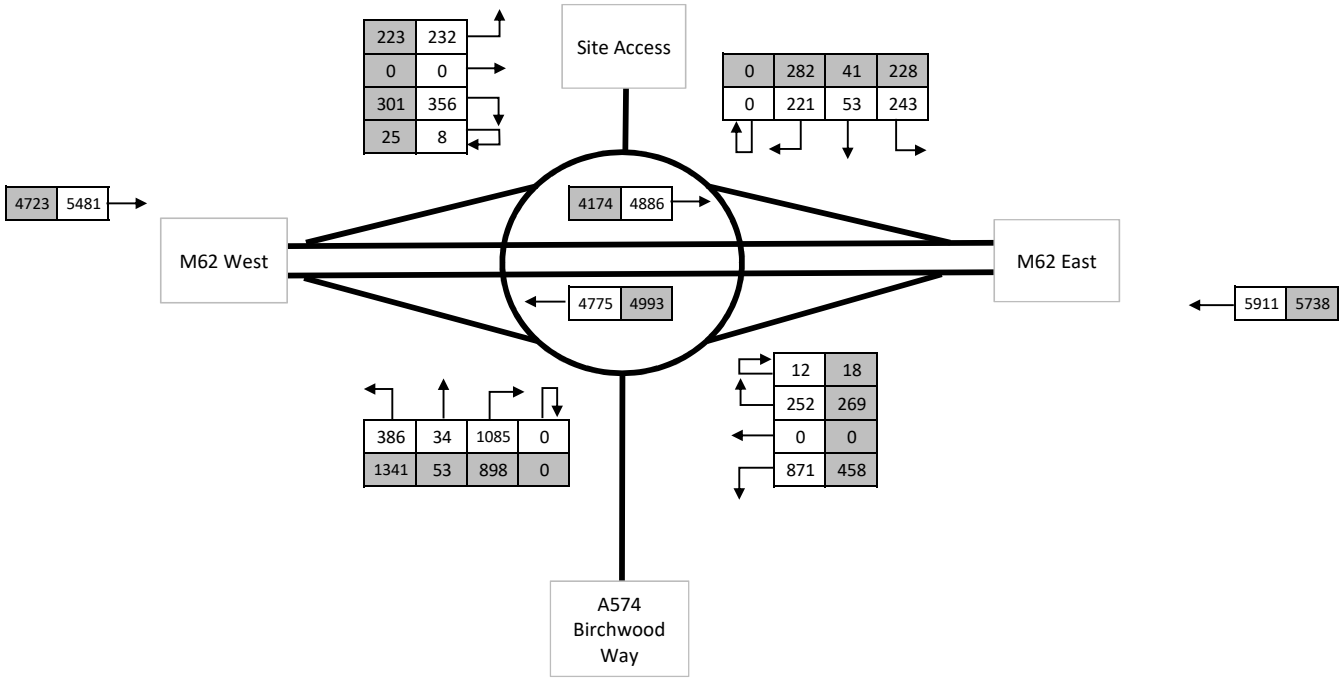
APPENDIX 8N

2022 Base + Committed - J11 M62



KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

AM: 07:00-08:00

PM: 16:00-17:00

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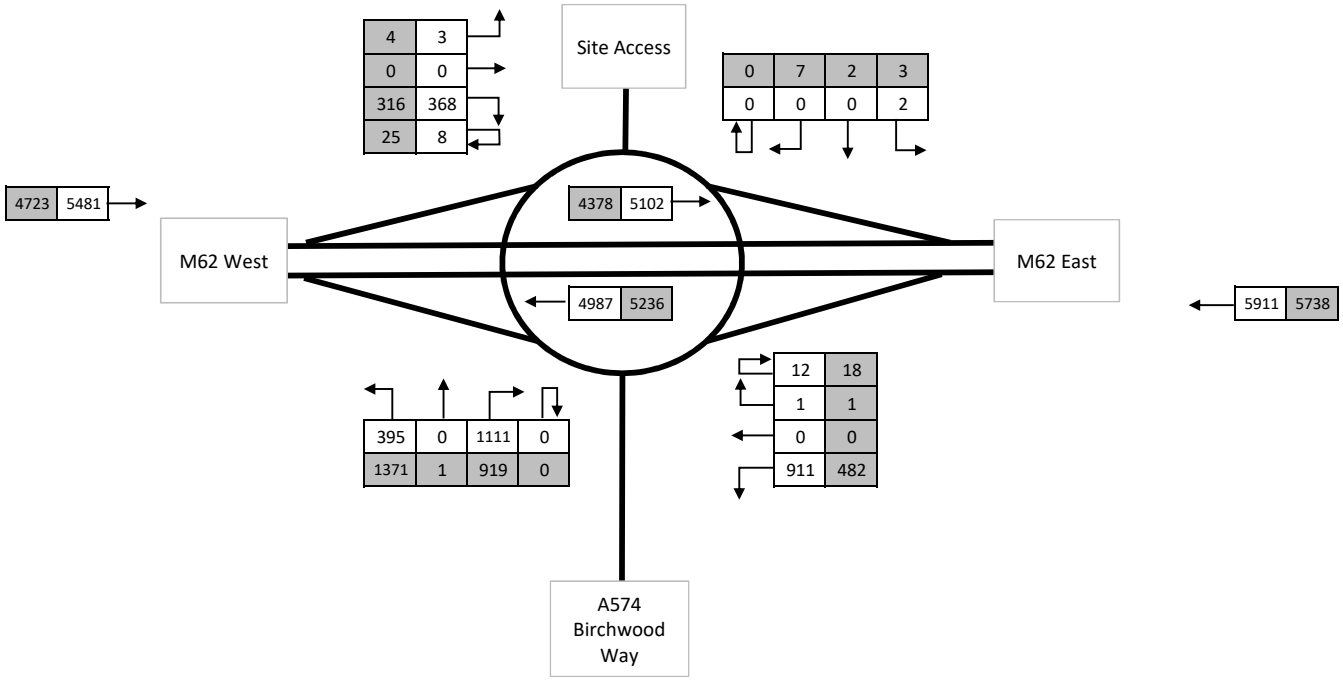
WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8N

2022 Base + Committed + MSA - J11 M62



AM: 07:00-08:00
PM: 16:00-17:00

KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

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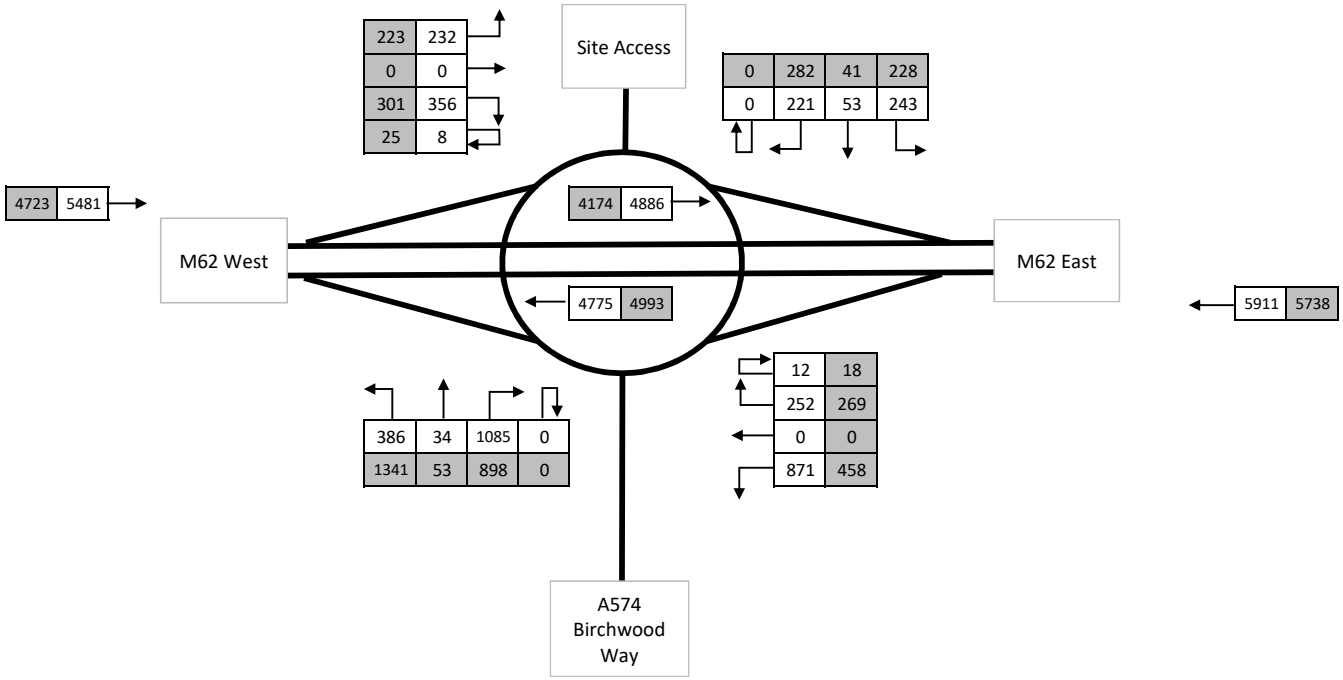
WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8N

2022 Base + Committed - J11 M62



KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

AM: 07:00-08:00

PM: 16:00-17:00

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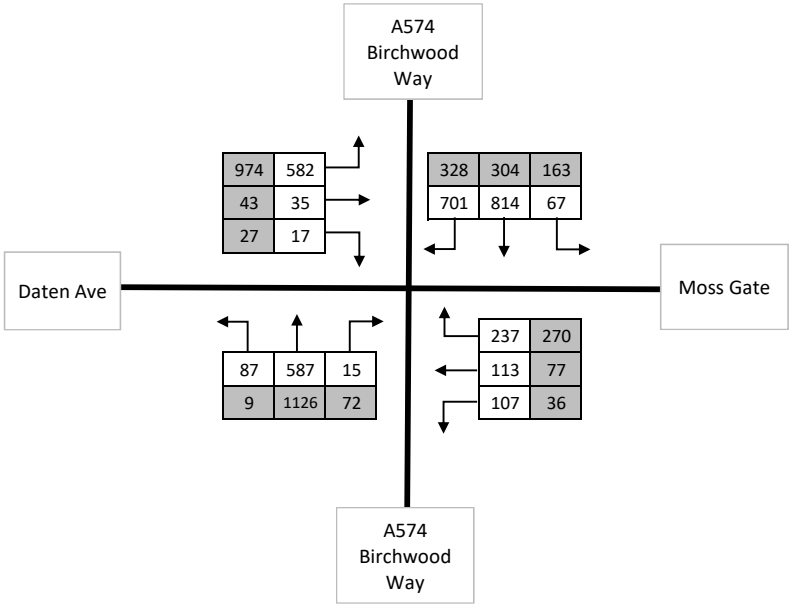
WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8N

2022 Base + Committed + MSA - J11 M62



AM: 07:30-08:30
PM: 16:45-17:45

KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

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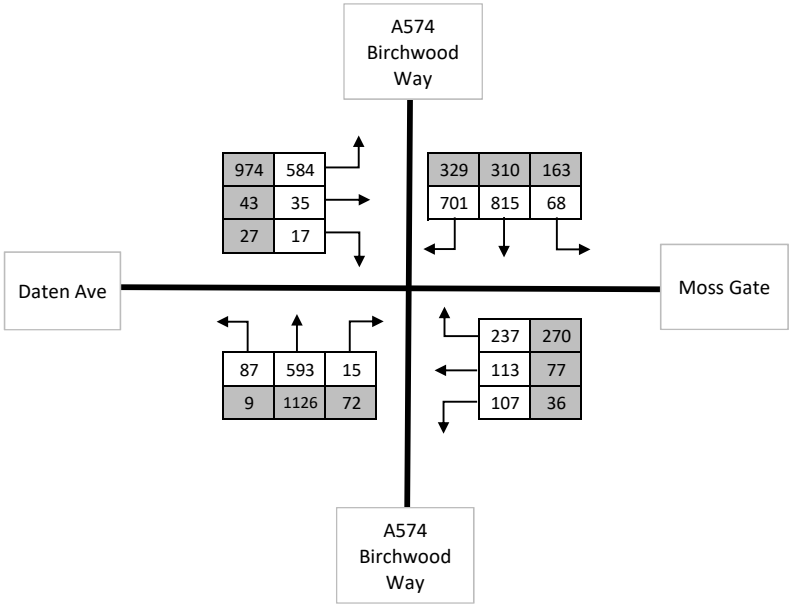
WARRINGTON MSA, JUNCTION 11 M62

APPENDIX 8N

2022 Base + Committed



AM: 07:30-08:30
PM: 16:45-17:45

KEY

500 = AM PEAK PCUs

500 = PM PEAK PCUs

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WARRINGTON MSA, JUNCTION 11 M62

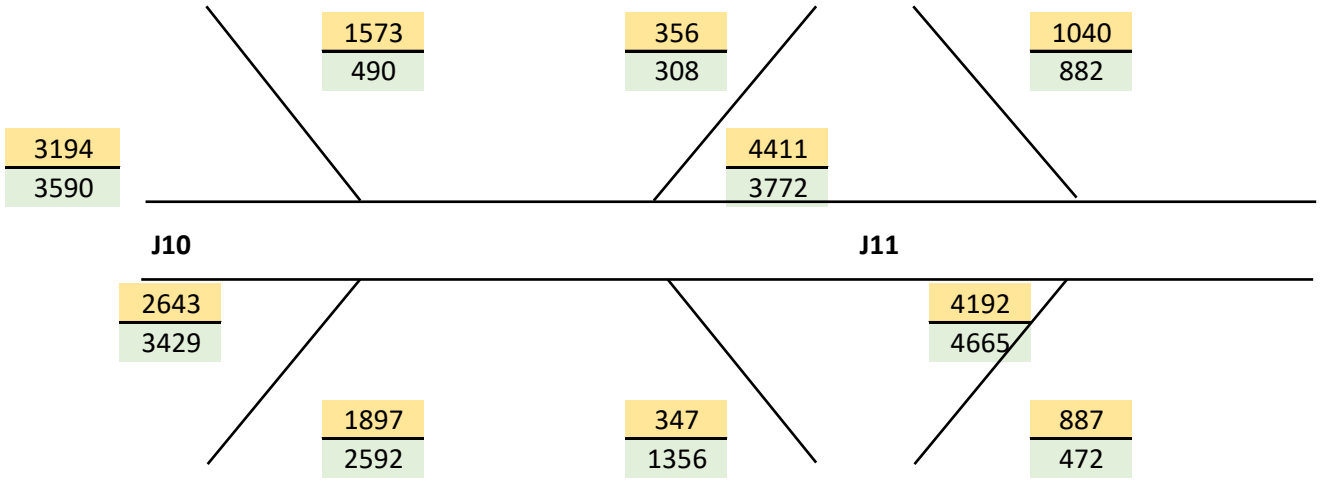
APPENDIX 8N

2022 Base + Committed + MSA - Birchwood Way Signals

Weaving & Merge/Diverge flows for calculation

2022 Base + Committed

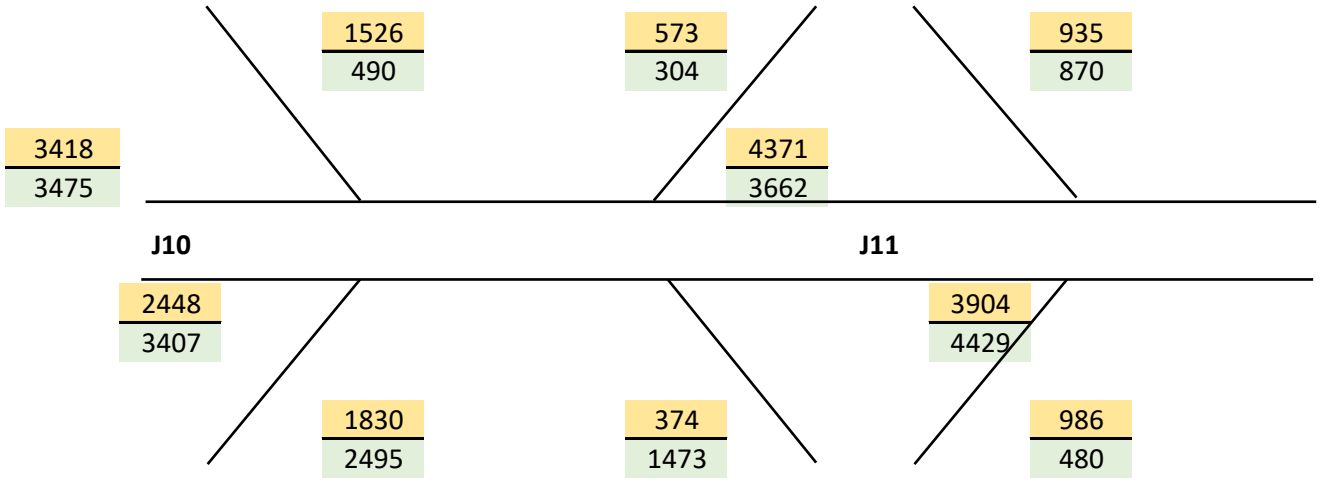
AM	0700-0800
PM	1600-1700



Weaving & Merge/Diverge flows for calculation

2022 Base + Committed

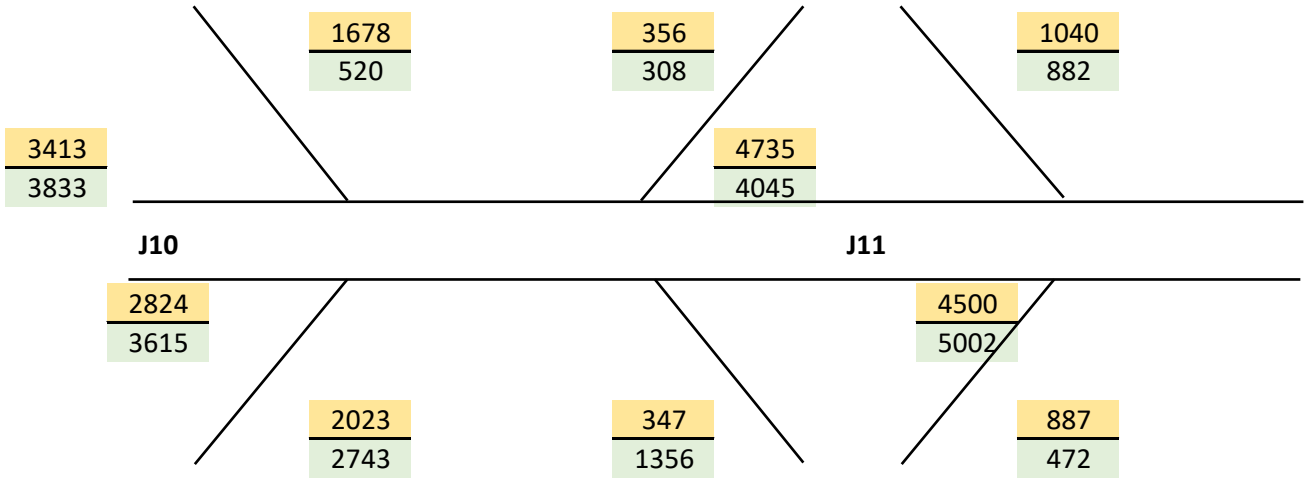
AM	0730-0830
PM	1630-1730



Weaving & Merge/Diverge flows for calculation

2029 Base + Committed

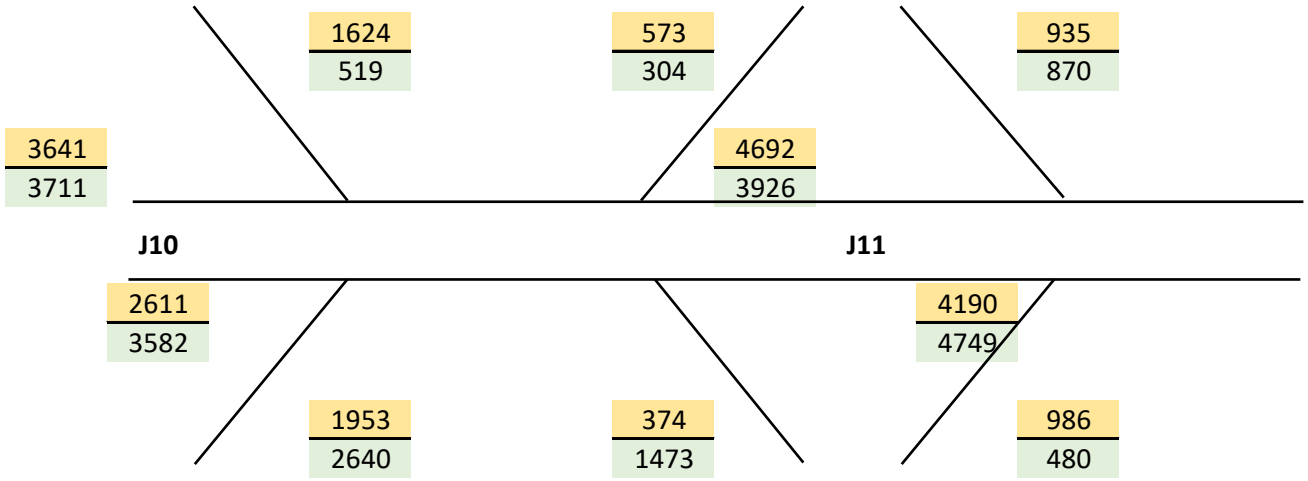
AM	0700-0800
PM	1600-1700



Weaving & Merge/Diverge flows for calculation

2029 Base + Committed

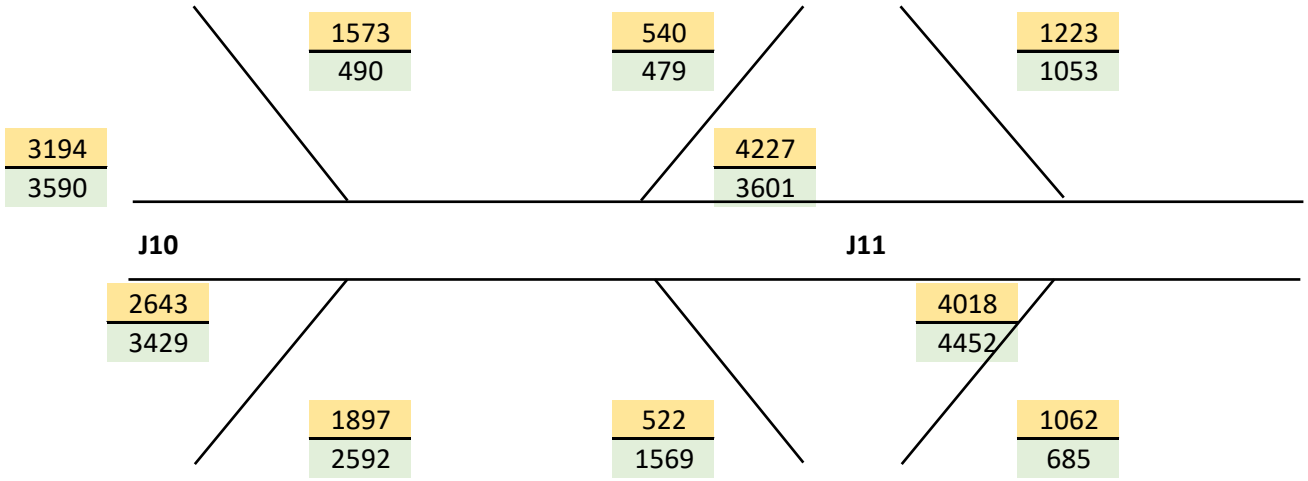
AM	0730-0830
PM	1630-1730



Weaving & Merge/Diverge flows for calculation

2022 Base + Committed + Development

AM	0700-0800
PM	1600-1700



Weaving & Merge/Diverge flows for calculation

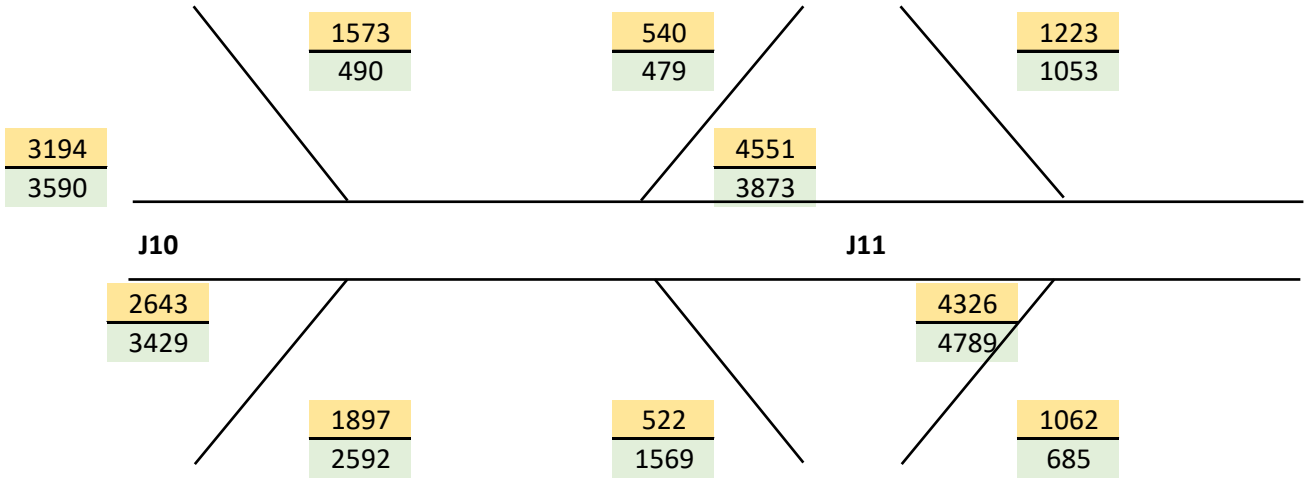
2022 Base + Committed + Development

AM	0730-0830
PM	1630-1730

Weaving & Merge/Diverge flows for calculation

2029 Base + Committed + Development

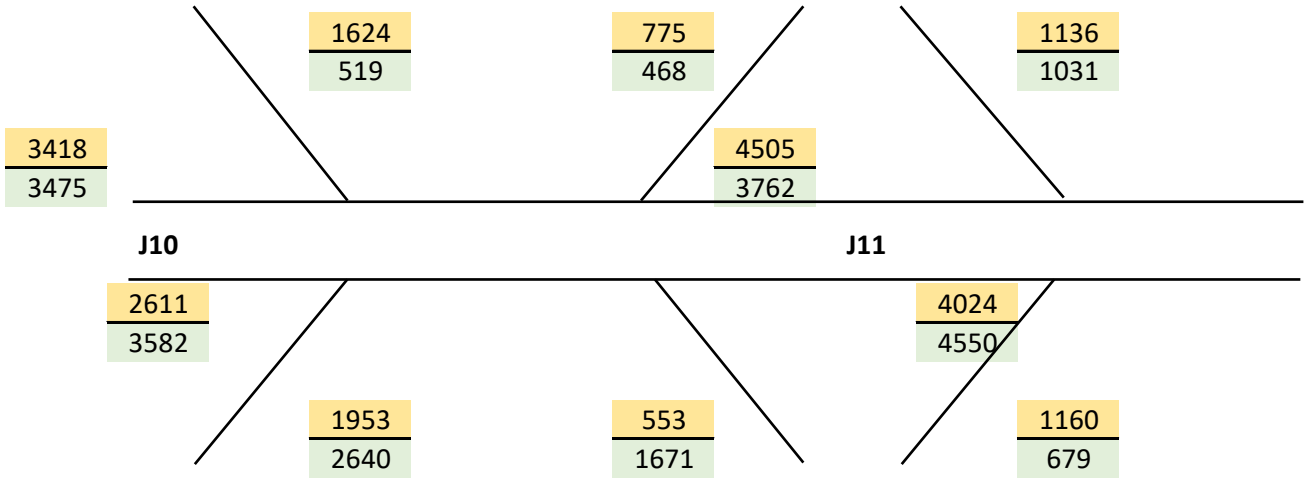
AM	0700-0800
PM	1600-1700



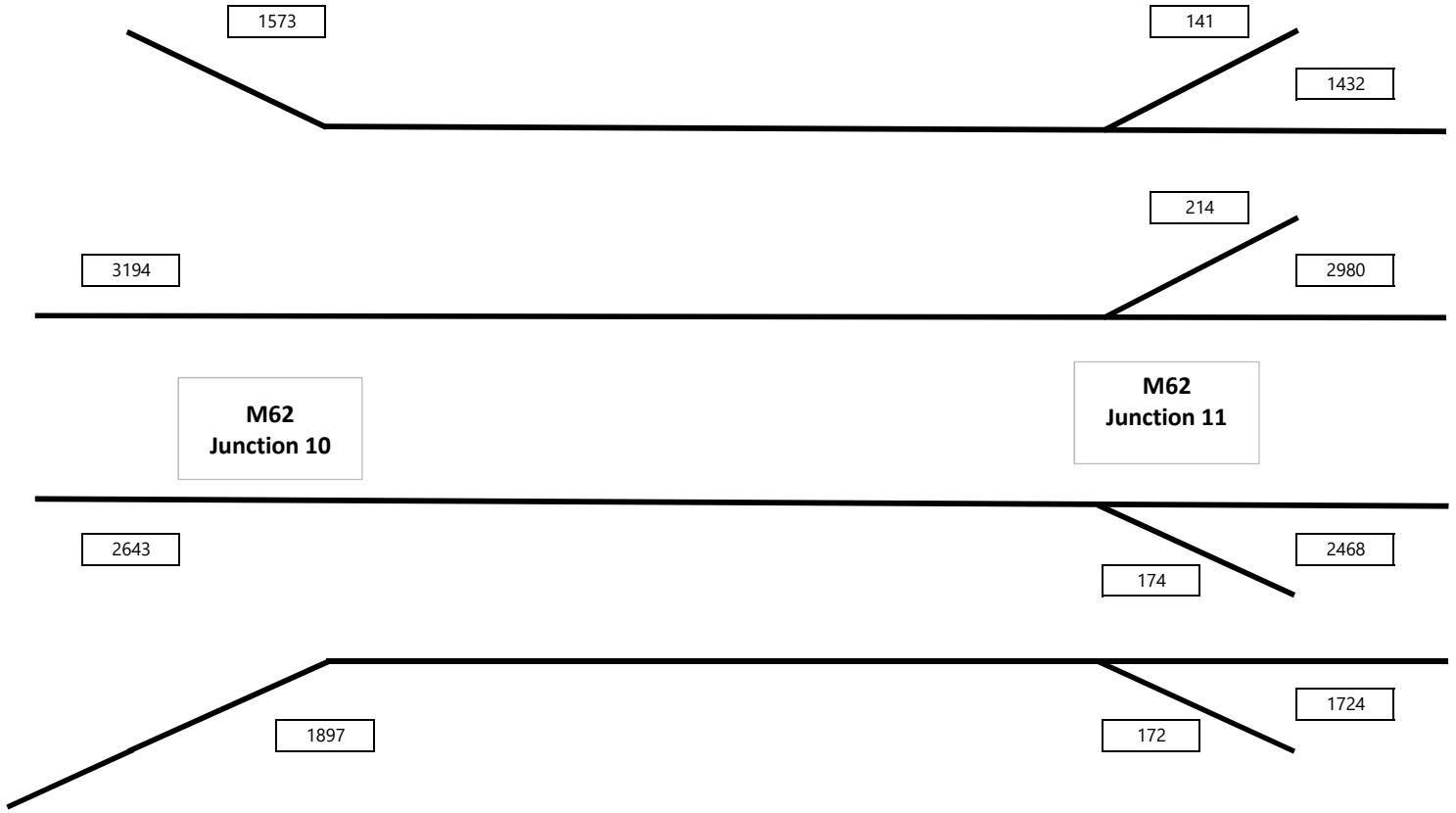
Weaving & Merge/Diverge flows for calculation

2029 Base + Committed + Development

AM	0730-0830
PM	1630-1730



0700 - 0800



KEY

500 = Total Vehicles 07:00-08:00

i-Transport

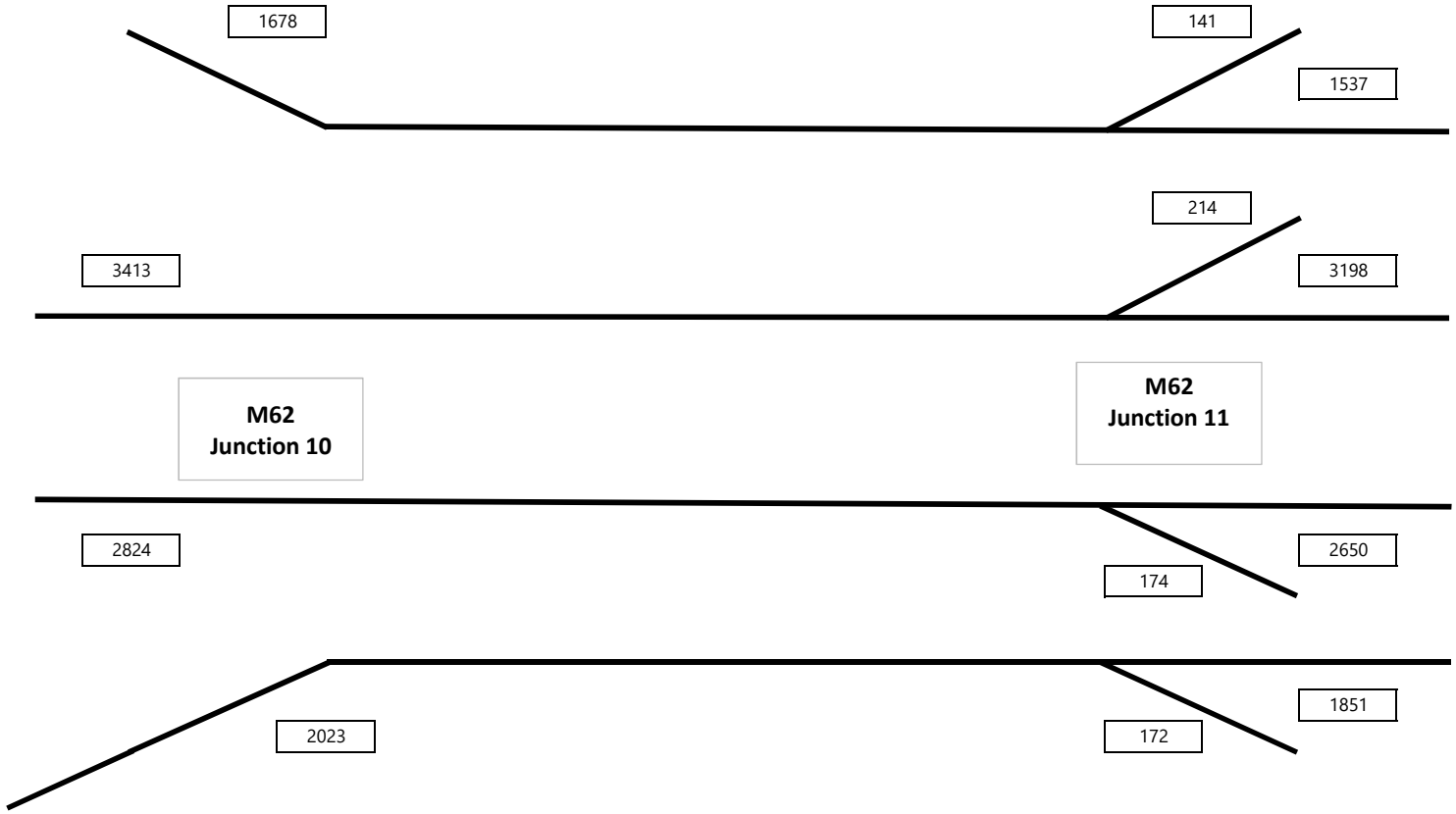
Centurion House, 129
Deansgate, Manchester, M3
3WR
Tel: 0161 830 2172

WARRINGTON, MSA

Appendix 8N

2022 Baseline Weaving Flows

0700 - 0800



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500 = Total Vehicles 07:00-08:00

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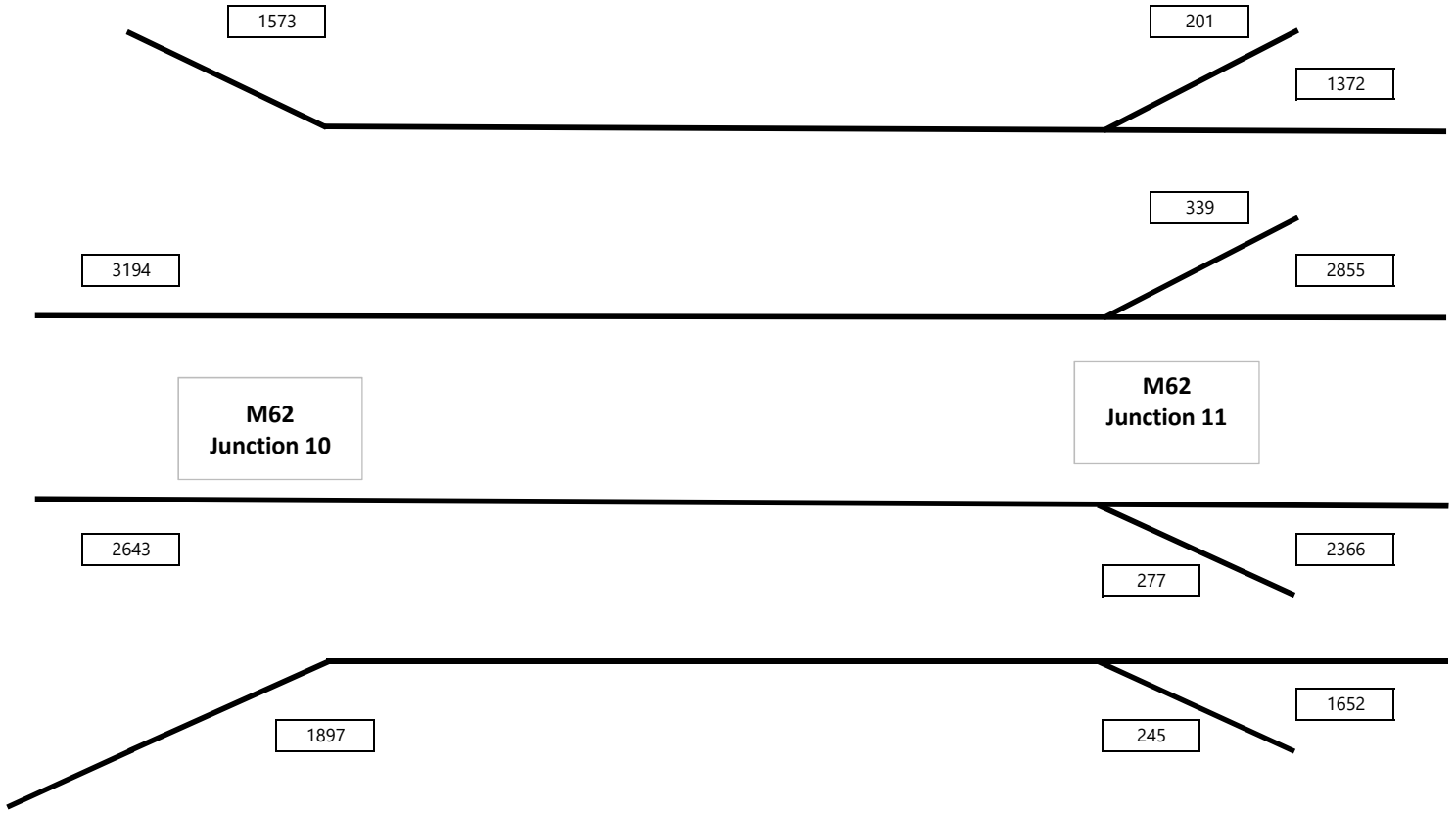
2029 Baseline Weaving Flows

0700 - 0800



KEY

500 = Total Vehicles 07:00-08:00

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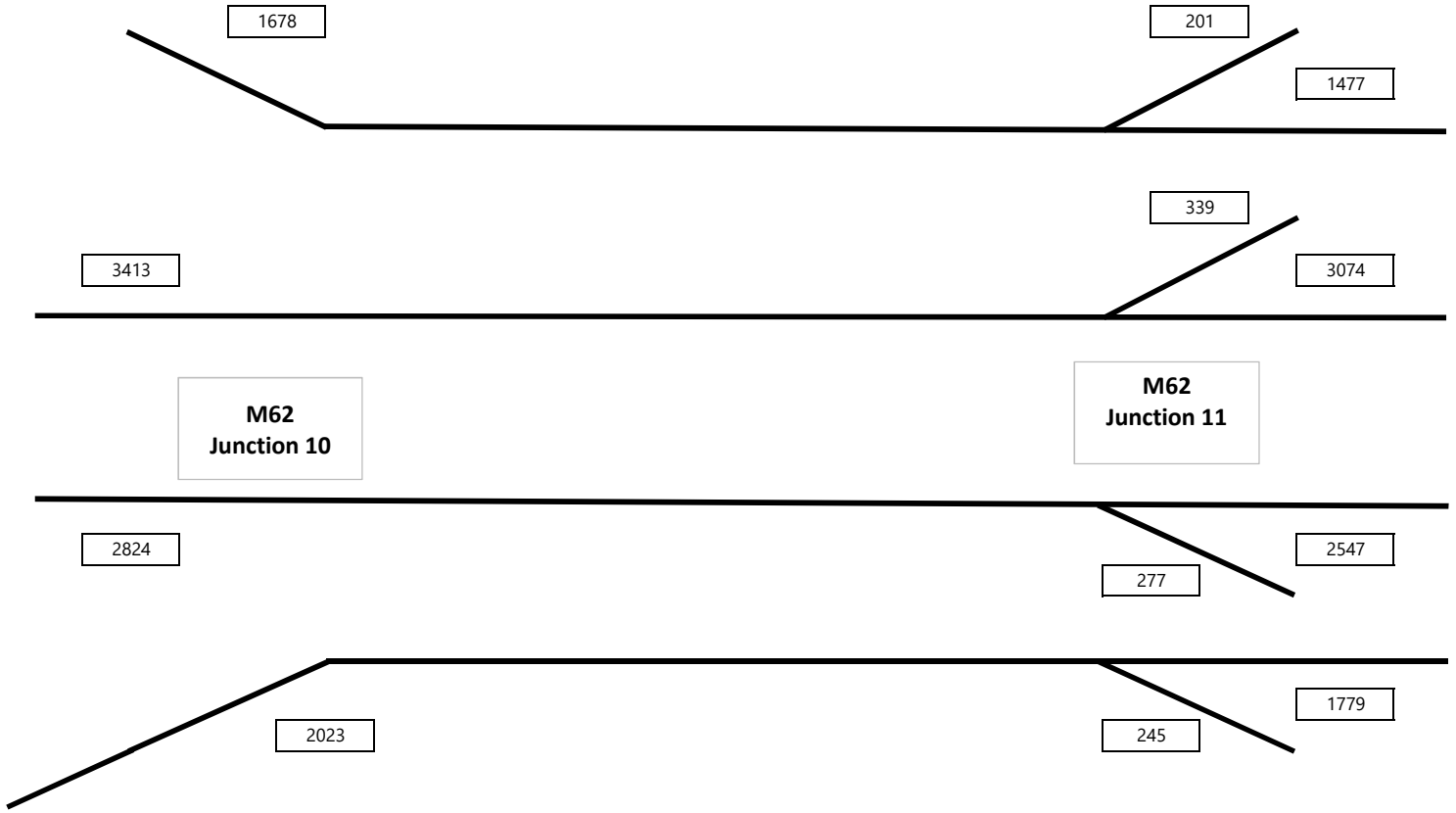
2022 With Development Weaving Flows

0700 - 0800



KEY

500 = Total Vehicles 07:00-08:00

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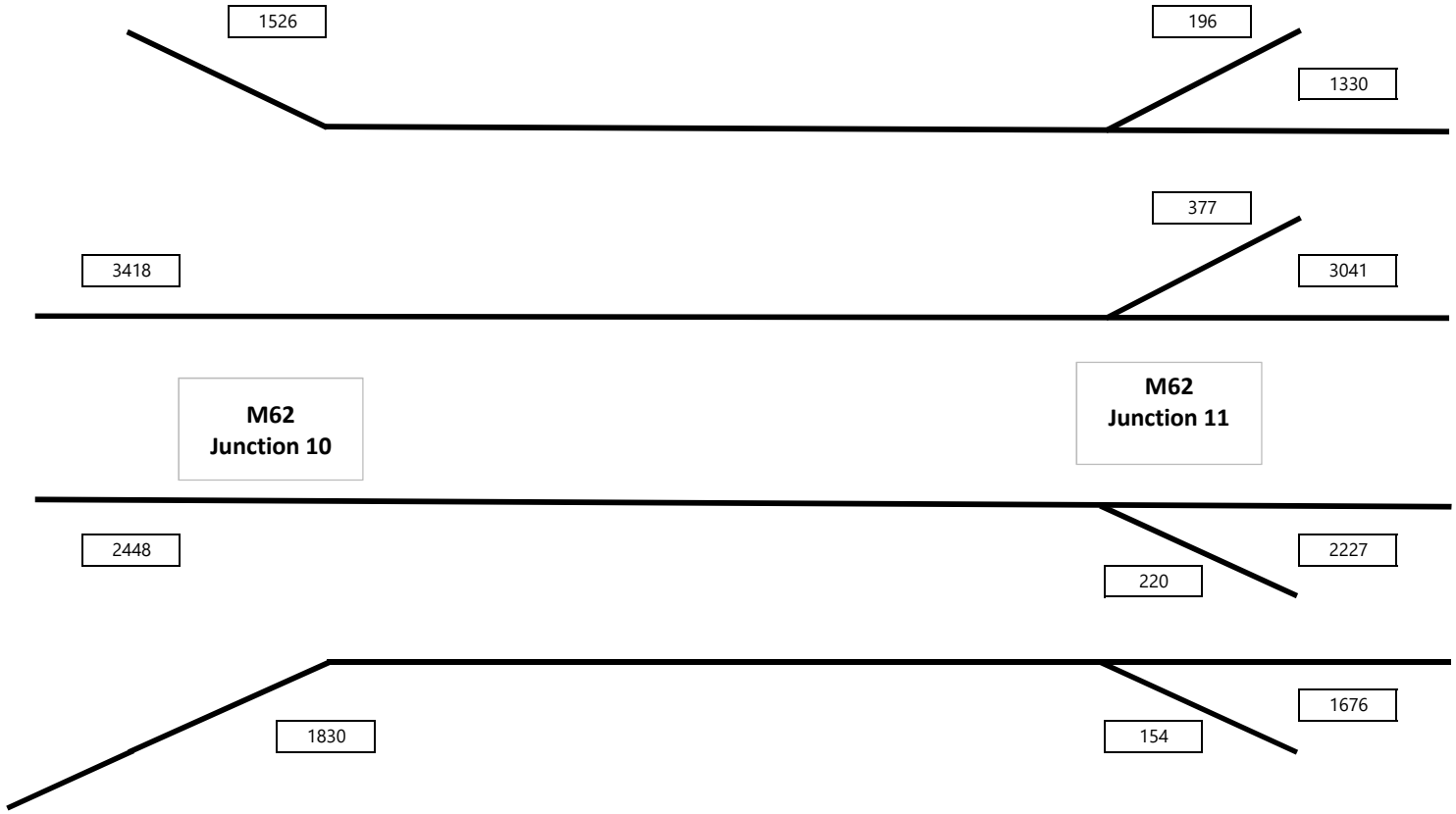
2029 With Development Weaving Flows

0730 - 0830



KEY

500 = Total Vehicles 07:30-08:30

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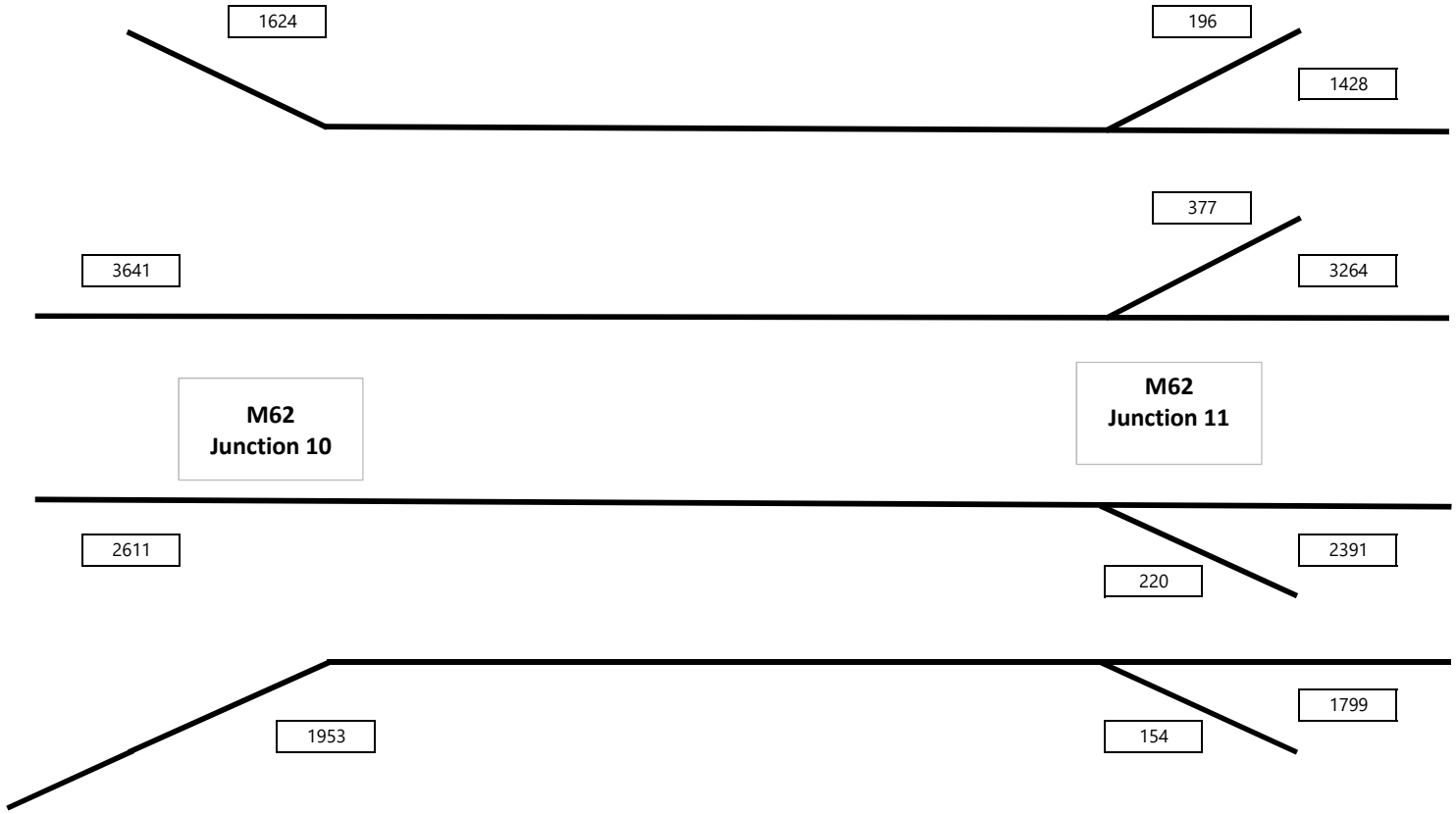
2022 Baseline Weaving Flows

0730 - 0830



KEY

500 = Total Vehicles 07:30-08:30

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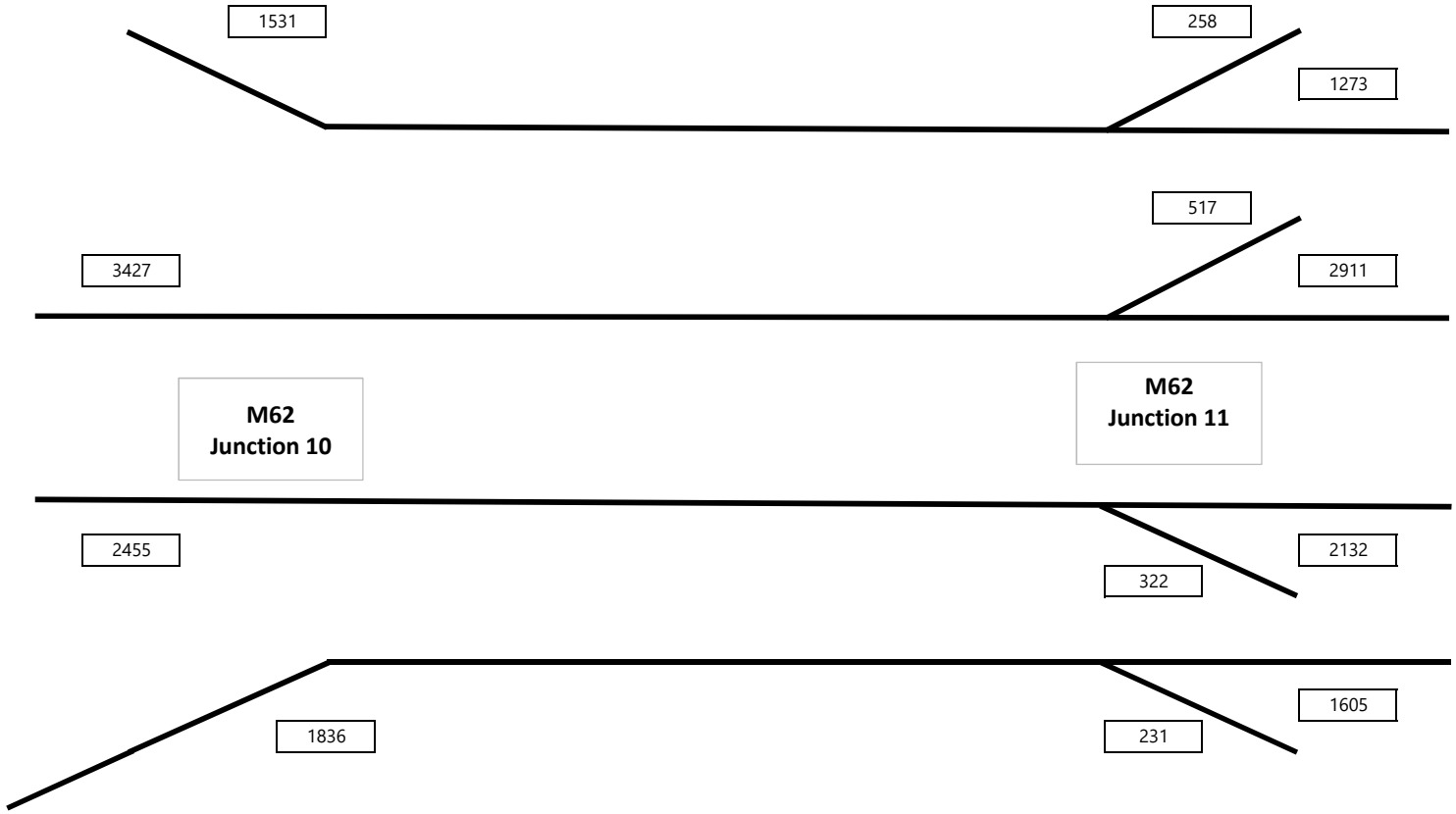
2029 Baseline Weaving Flows

0730 - 0830



KEY

500 = Total Vehicles 07:30-08:30

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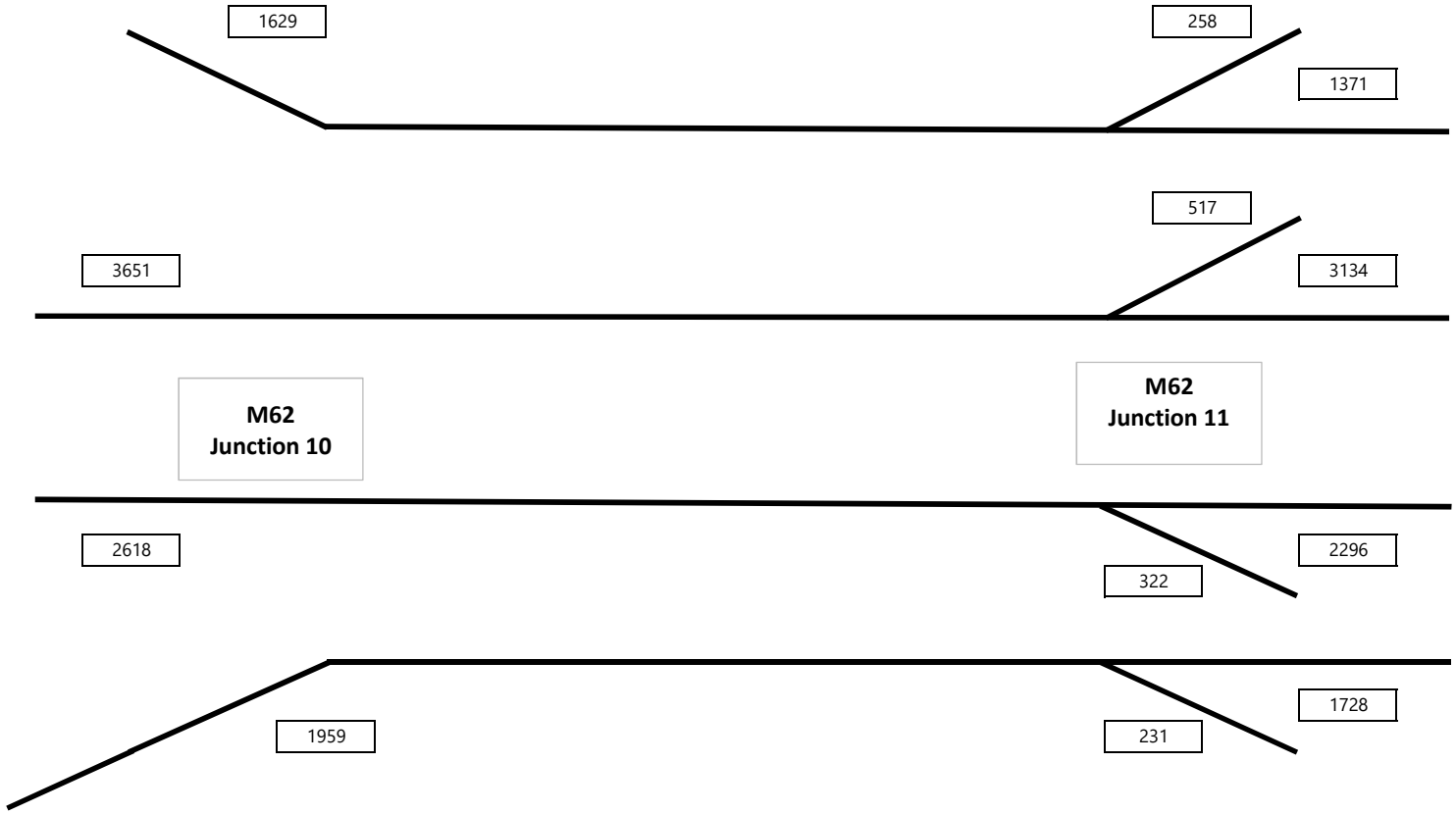
2022 With Development Weaving Flows

0730 - 0830



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500 = Total Vehicles 07:30-08:30

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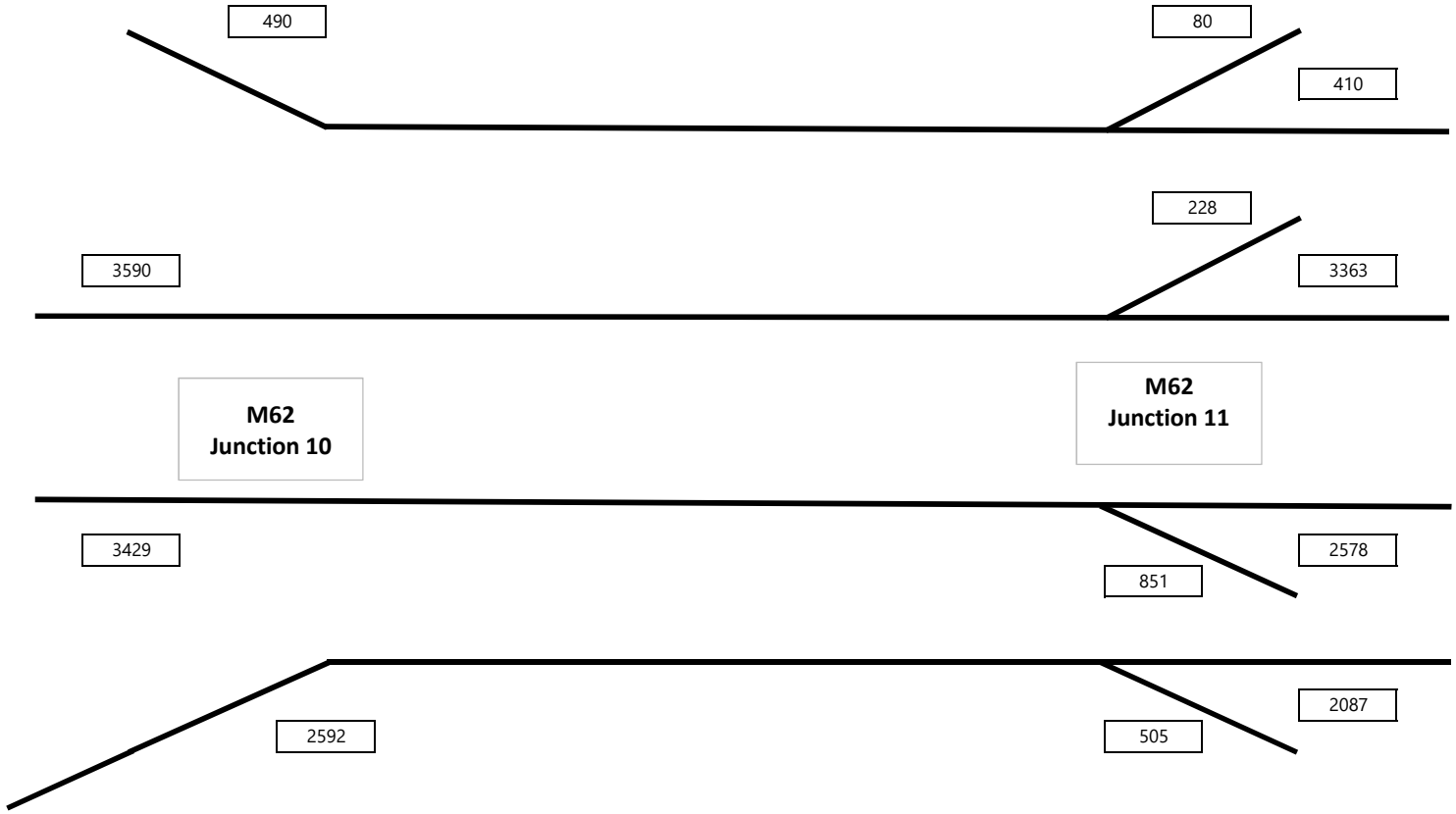
2029 With Development Weaving Flows

1600 - 1700



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500 = Total Vehicles 1600-1700

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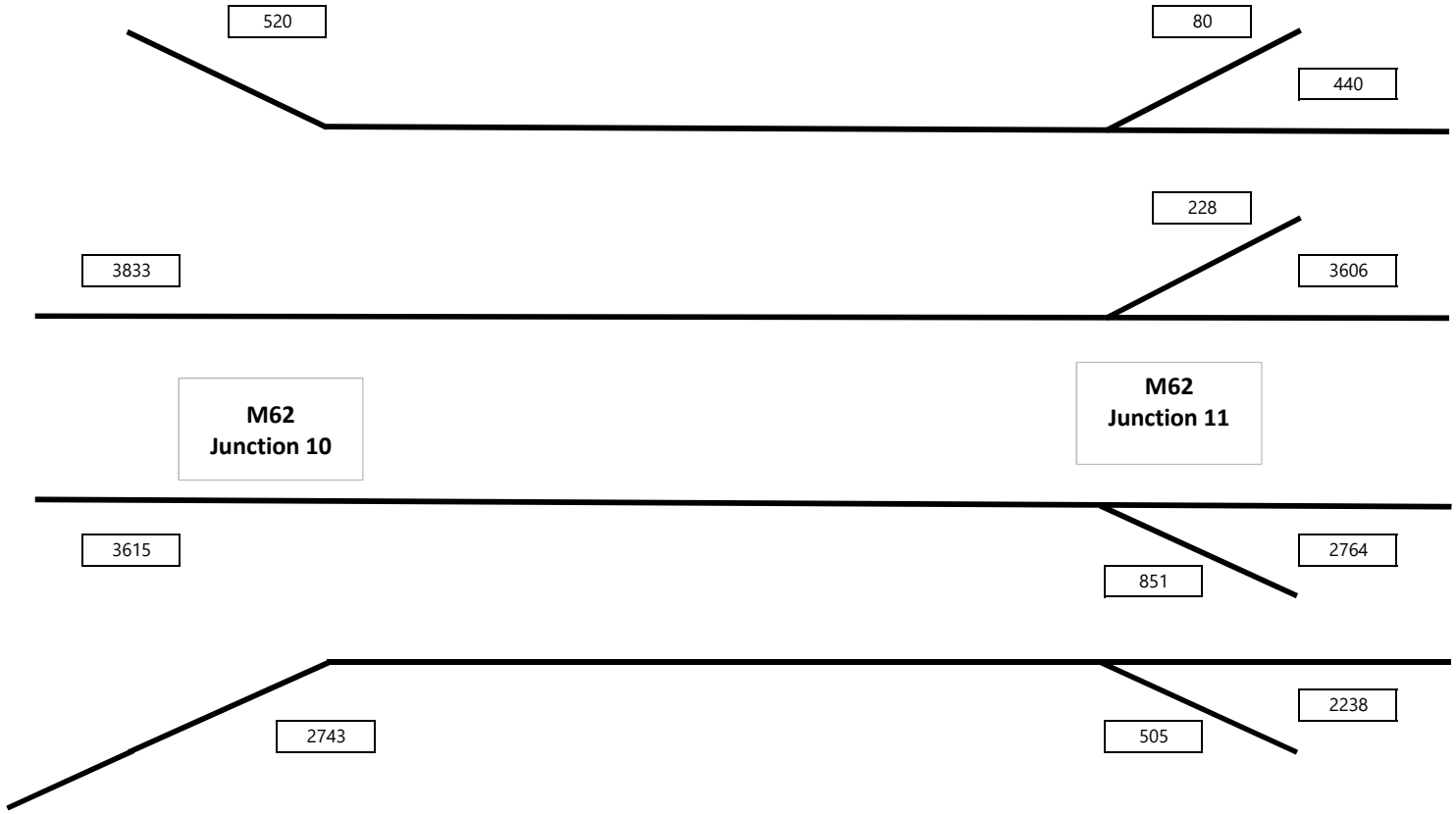
2022 Baseline Weaving Flows

1600 - 1700



KEY

500 = Total Vehicles 1600-1700

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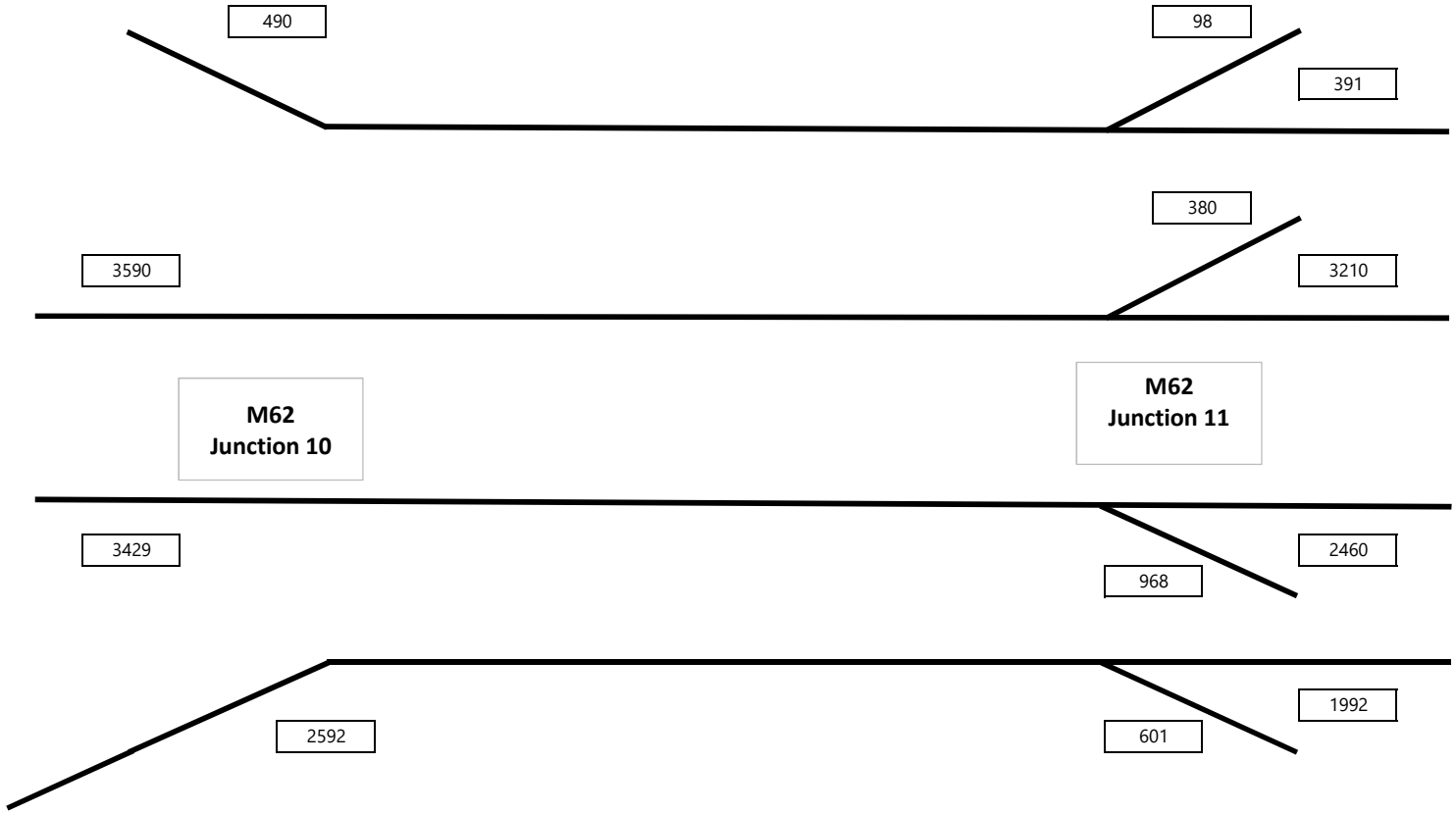
2029 Baseline Weaving Flows

1600 - 1700



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500 = Total Vehicles 1600-1700

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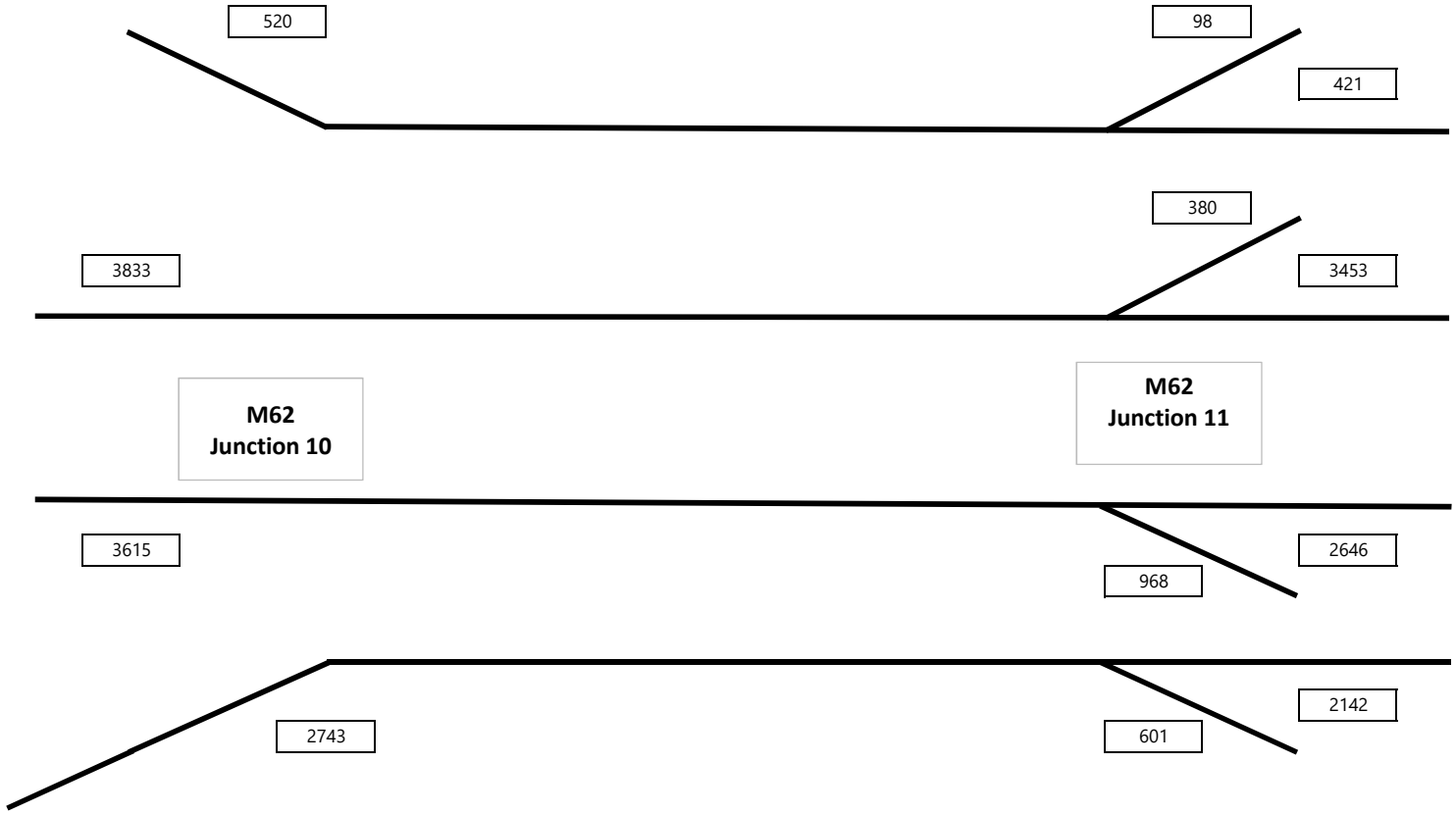
2022 With Development Weaving Flows

1600 - 1700



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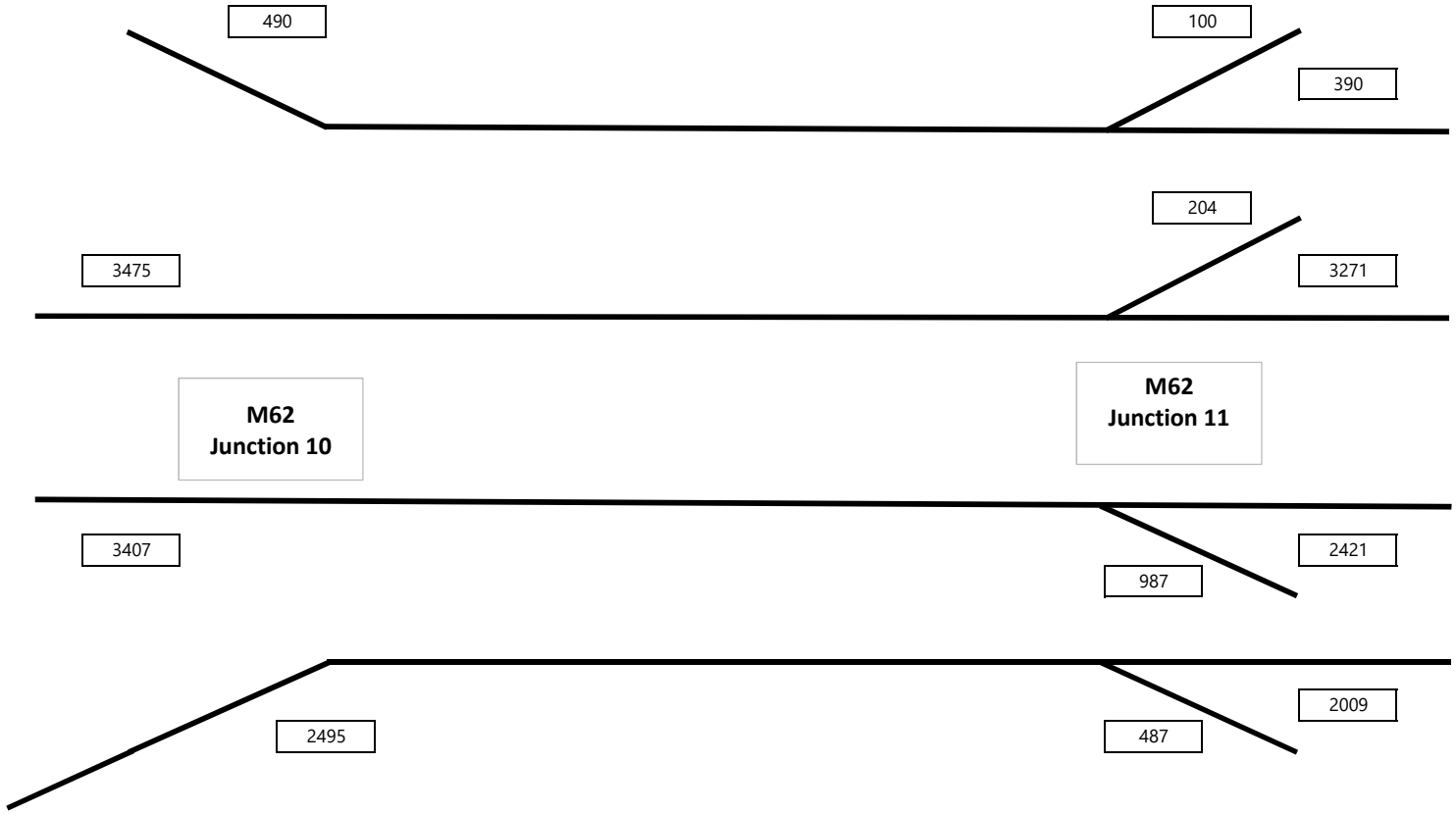
2029 With Development Weaving Flows

1630 - 1730



KEY

500 = Total Vehicles 16:30-17:30

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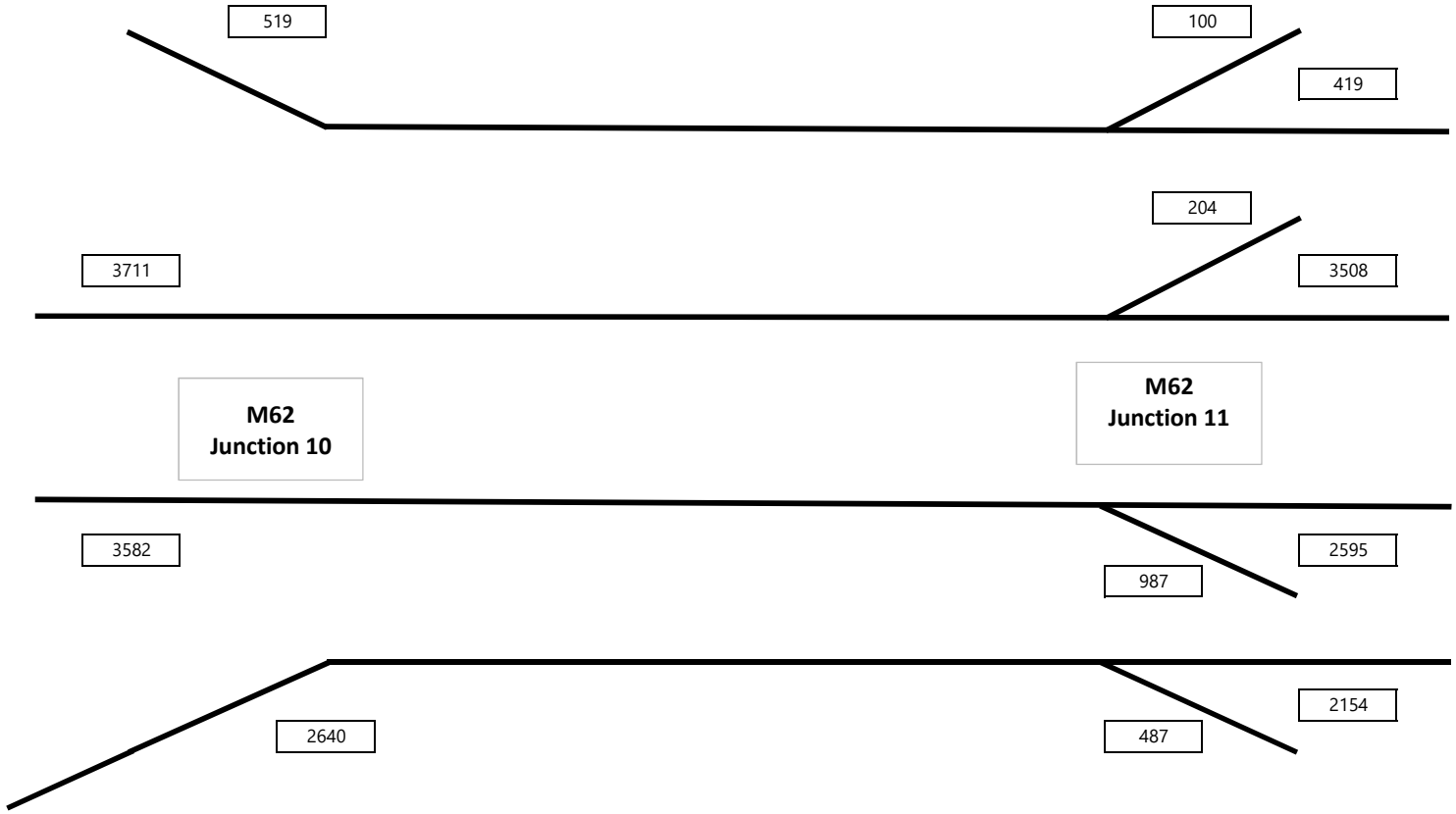
2022 Baseline Weaving Flows

1630 - 1730



KEY

500 = Total Vehicles 16:30-17:30

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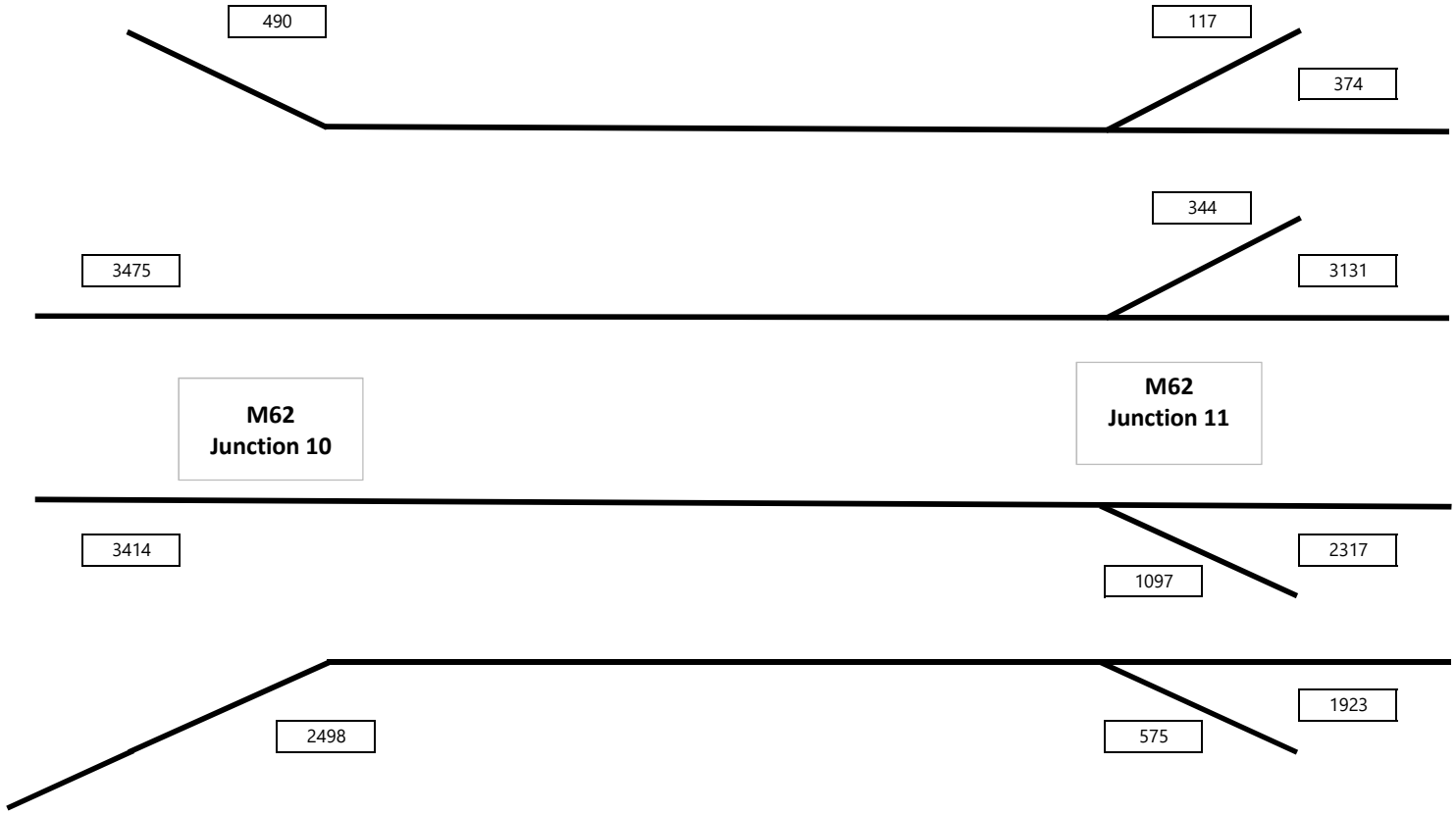
2029 Baseline Weaving Flows

1630 - 1730



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500 = Total Vehicles 16:30-17:30

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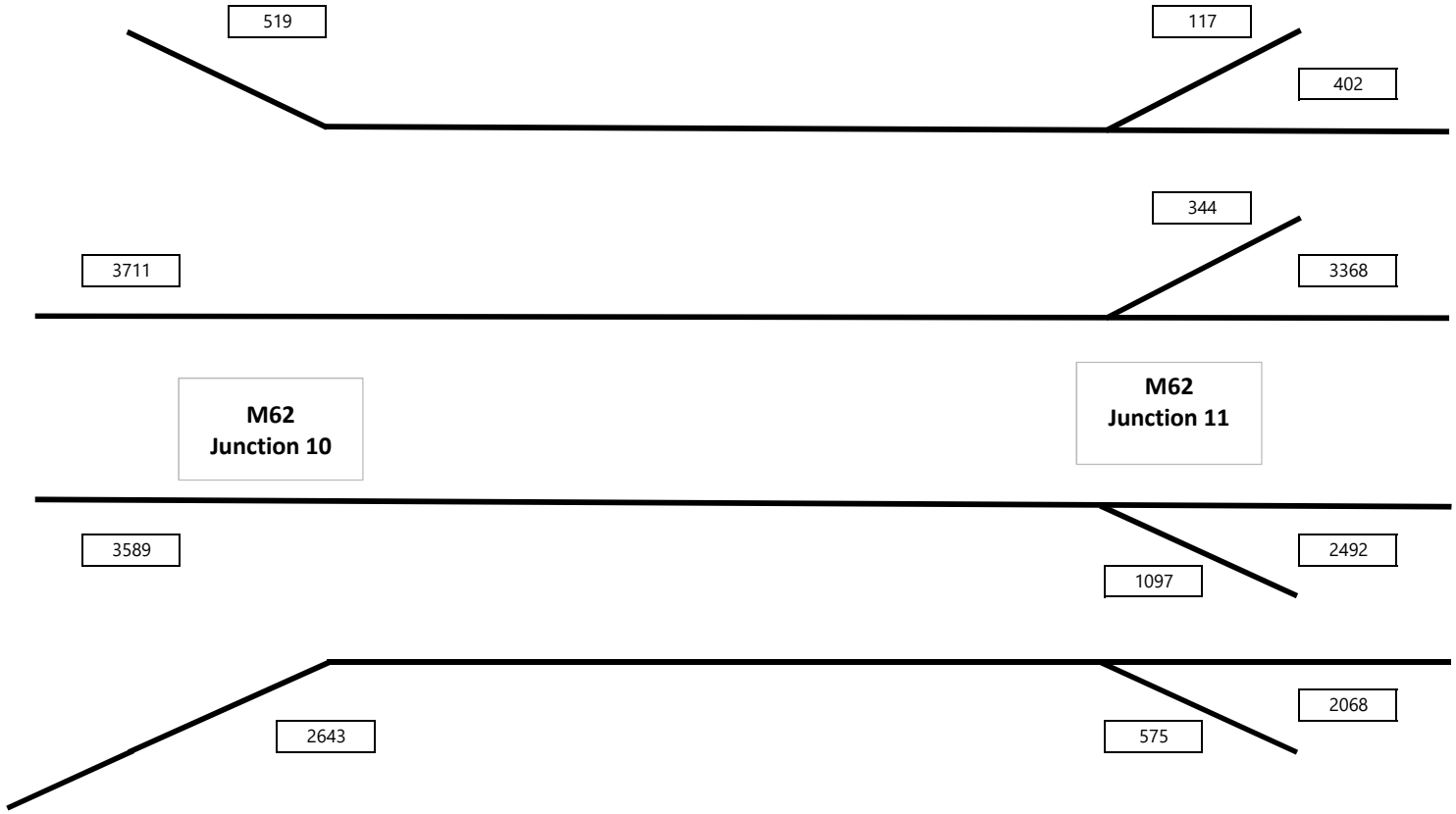
2022 With Development Weaving Flows

1630 - 1730



KEY

500 = Total Vehicles 16:30-17:30

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2029 With Development Weaving Flows

APPENDIX 9.A. Capacity Assessment Model Outputs

Junctions 9

ARCADY 9 - Roundabout Module

Filename: M62 J11 - 2018 Base.j9
Path: Z:\Projects\12377ITM M62 Warrington MSA\Tech\Junction Assessments\Arcady
Report generation date: 29/01/2019 13:34:39

»Existing Layout - 2018 Base, AM 1
»Existing Layout - 2018 Base, AM 2
»Existing Layout - 2018 Base, PM 1
»Existing Layout - 2018 Base, PM 2

Summary of junction performance

	AM 1						AM 2						PM 1						PM 2					
	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap
	Existing Layout [Lane Simulation] - 2018 Base																							
Arm 1	3.3	11.77		B	9.53	% [ ]	9.1	32.43		D	16.20	% [ ]	0.9	5.01		A	11.85	% [ ]	0.9	5.07		A	10.28	% [ ]
Arm 2	3.6	8.32		A			1.5	4.22		A			8.8	14.07		B			7.5	12.10		B		
Arm 3	0.8	8.85		A			2.8	15.00		B			0.7	7.68		A			0.8	6.94		A		
Arm 4	0.0	0.00		A			0.0	0.00		A			0.0	0.00		A			0.0	0.00		A		

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 Av. delay per arriving vehicle. Arm and junction delays are Av.s for all movements, including movements with zero delay. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	M62 J11
Location	Birchwood
Site number	
Date	26/11/2018
Version	
Status	Exisiting Layout
Identifier	
Client	
Jobnumber	ITM12377
Enumerator	HB
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Av. animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			2026807718	138	16.05

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically

D1	2018 Base	AM 1	ONE HOUR	06:45	08:15	15	✓
D2	2018 Base	AM 2	ONE HOUR	07:45	09:15	15	✓
D3	2018 Base	PM 1	ONE HOUR	15:45	17:15	15	✓
D4	2018 Base	PM 2	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Existing Layout	✓	✓	100.000	100.000

Existing Layout - 2018 Base, AM 1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Existing Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	9.53	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	M62 E	
2	A574 Birchwood Way S	
3	M62 W	
4	Birchwood Way (N)	

Roundabout Geometry

Arm	V (m)	E (m)	l' (m)	R (m)	D (m)	PHI (deg)	Exit only
1	5.80	8.00	14.0	60.0	194.0	30.0	
2	3.20	8.20	75.0	40.0	128.0	25.0	
3	6.00	6.40	4.0	85.0	194.0	8.0	
4	4.80	9.00	31.0	45.0	128.0	21.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	298	110.00
2	51	0.00
3	890	106.00
4	1206	0.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	1.077	2836
2	1.144	3169
3	0.951	2561
4	0.950	3070

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00

3	Evenly split	10.00
4	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Min Cap (PCU/hr)	Max Cap (PCU/hr)	Signalised
1	**Entry**	**1**	**1**	2	✓	35.00		0	99999	
			2	1, 3, 4	✓	35.00		0	99999	
		2	**1**	(1, 2, 3, 4)		Infinity				
	Exit	**1**	**1**			Infinity				
2	**Entry**	**1**	**1**	3	✓	15.00		0	99999	
			2	1, 2, 4	✓	15.00		0	99999	
		2	**1**	(1, 2, 3, 4)		Infinity				
	Exit	**1**	**1**			Infinity				
3	**Entry**	**1**	**1**	1, 4	✓	33.00		0	99999	
			2	2, 3	✓	33.00		0	99999	
		2	**1**	(1, 2, 3, 4)		Infinity				
	Exit	**1**	**1**			Infinity				
4	**Entry**	**1**	**1**	1, 2, 3, 4		Infinity		0	99999	
	Exit	**1**	**1**			Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	**Entry**	**1**	**1**	0.539	1418
			2	0.539	1418
2	**Entry**	**1**	**1**	0.572	1585
			2	0.572	1585
3	**Entry**	**1**	**1**	0.476	1281
			2	0.476	1281
4	**Entry**	**1**	**1**	0.950	3070

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			1	**2**	**3**	**4**
1	**1**	**1**		✓		

		2	✓		✓	✓
	2	1	✓	✓	✓	✓
2	1	1			✓	
		2	✓	✓		✓
	2	1	✓	✓	✓	✓
3	1	1	✓			✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
4	1	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Base	AM 1	ONE HOUR	06:45	08:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	877	100.000
2		ONE HOUR	✓	1481	100.000
3		ONE HOUR	✓	271	100.000
4		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	12	865	0	0
	2	1103	0	378	0
	3	0	263	8	0
	4	0	0	0	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	11.77	3.3	B	804	1206
2	8.32	3.6	A	1357	2035
3	8.85	0.8	A	250	374
4	0.00	0.0	A	0	0

Main Results for each time segment

06:45 - 07:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	657	164	204	658	653	825	0.0	1.0	5.489	A
2	1099	275	16	1098	1101	846	0.0	1.5	4.147	A
3	204	51	825	204	206	288	0.0	0.3	5.321	A
4	0	0	1029	0	0	0	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	794	198	248	793	788	1010	1.0	1.6	6.994	A
2	1343	336	19	1344	1332	1022	1.5	2.0	5.334	A
3	248	62	1010	248	244	353	0.3	0.5	6.438	A
4	0	0	1257	0	0	0	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	967	242	295	964	957	1223	1.6	3.0	10.888	B
2	1617	404	25	1614	1616	1234	2.0	3.6	7.983	A
3	295	74	1223	295	294	415	0.5	0.8	8.727	A
4	0	0	1518	0	0	0	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	967	242	300	967	966	1228	3.0	3.3	11.769	B
2	1629	407	24	1628	1629	1243	3.6	3.6	8.323	A
3	301	75	1228	300	298	423	0.8	0.7	8.848	A
4	0	0	1528	0	0	0	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service

1	776	194	245	777	789	1016	3.3	1.5	7.131	A
2	1343	336	17	1348	1347	1004	3.6	2.0	5.567	A
3	245	61	1016	245	249	349	0.7	0.4	6.658	A
4	0	0	1261	0	0	0	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	663	166	205	663	665	834	1.5	0.9	5.378	A
2	1110	278	14	1110	1122	854	2.0	1.3	4.328	A
3	204	51	834	205	205	289	0.4	0.3	5.514	A
4	0	0	1039	0	0	0	0.0	0.0	0.000	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

06:45 - 07:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	**Entry**	**1**	**1**	2	647	1308	0.494	648	644	0.0	1.0	5.528	A
			2	1, 3, 4	10	1308	0.008	10	9	0.0	0.0	2.800	A
		2	**1**	(1, 2, 3, 4)	657			657	657	0.0	0.0	0.000	A
	Exit	**1**	**1**		825			825	831	0.0	0.0	0.000	A
2	**Entry**	**1**	**1**	3	284	1576	0.180	283	279	0.0	0.3	2.722	A
			2	1, 2, 4	815	1576	0.517	815	822	0.0	1.2	4.631	A
		2	**1**	(1, 2, 3, 4)	1099			1099	1107	0.0	0.0	0.000	A
	Exit	**1**	**1**		846			846	843	0.0	0.0	0.000	A
3	**Entry**	**1**	**1**	1, 4	0	888	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	204	888	0.230	204	206	0.0	0.3	5.321	A
		2	**1**	(1, 2, 3, 4)	204			204	207	0.0	0.0	0.000	A
	Exit	**1**	**1**		288			288	285	0.0	0.0	0.000	A
4	**Entry**	**1**	**1**	1, 2, 3, 4	0	2093	0.000	0	0	0.0	0.0	0.000	A
	Exit	**1**	**1**		0			0	0	0.0	0.0	0.000	A

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	783	1285	0.609	782	777	1.0	1.6	7.054	A
			2	1, 3, 4	11	1285	0.008	11	11	0.0	0.0	2.626	A
		2	1	(1, 2, 3, 4)	794			794	790	0.0	0.0	0.000	A
	Exit	1	1		1010			1010	1004	0.0	0.0	0.000	A
2	Entry	1	1	3	346	1574	0.220	345	339	0.3	0.3	2.905	A
			2	1, 2, 4	997	1574	0.634	999	993	1.2	1.7	6.153	A
		2	1	(1, 2, 3, 4)	1343			1343	1334	0.0	0.0	0.006	A
	Exit	1	1		1022			1022	1013	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	800	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	248	800	0.310	248	244	0.3	0.5	6.438	A
		2	1	(1, 2, 3, 4)	248			248	244	0.0	0.0	0.000	A
	Exit	1	1		353			353	347	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1876	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	952	1259	0.756	949	944	1.6	3.0	11.003	B
			2	1, 3, 4	15	1259	0.012	15	13	0.0	0.0	2.861	A
		2	1	(1, 2, 3, 4)	967			967	963	0.0	0.0	0.000	A
	Exit	1	1		1223			1223	1218	0.0	0.0	0.000	A
2	Entry	1	1	3	404	1571	0.257	405	411	0.3	0.3	3.080	A
			2	1, 2, 4	1212	1571	0.772	1209	1205	1.7	3.3	9.534	A
		2	1	(1, 2, 3, 4)	1617			1616	1622	0.0	0.0	0.085	A
	Exit	1	1		1234			1234	1229	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	699	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	295	699	0.423	295	294	0.5	0.8	8.727	A
		2	1	(1, 2, 3, 4)	295			295	295	0.0	0.0	0.000	A
	Exit	1	1		415			415	420	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1628	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	952	1256	0.758	952	953	3.0	3.3	11.897	B
			2	1, 3, 4	15	1256	0.012	15	14	0.0	0.0	2.752	A
		2	1	(1, 2, 3, 4)	967			967	968	0.0	0.0	0.000	A
	Exit	1	1		1228			1228	1232	0.0	0.0	0.000	A
2	Entry	1	1	3	415	1571	0.264	415	410	0.3	0.3	3.184	A
			2	1, 2, 4	1213	1571	0.772	1213	1219	3.3	3.2	9.816	A
		2	1	(1, 2, 3, 4)	1629			1628	1629	0.0	0.1	0.170	A
	Exit	1	1		1243			1243	1241	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	696	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	301	696	0.433	300	298	0.8	0.7	8.848	A
		2	1	(1, 2, 3, 4)	301			301	298	0.0	0.0	0.000	A
	Exit	1	1		423			423	420	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1618	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	765	1286	0.595	766	778	3.3	1.5	7.195	A
			2	1, 3, 4	11	1286	0.008	11	11	0.0	0.0	2.672	A
		2	1	(1, 2, 3, 4)	776			776	781	0.0	0.0	0.000	A
	Exit	1	1		1016			1016	1018	0.0	0.0	0.000	A
2	Entry	1	1	3	343	1575	0.218	343	340	0.3	0.3	2.901	A
			2	1, 2, 4	1000	1575	0.635	1006	1006	3.2	1.7	6.404	A
		2	1	(1, 2, 3, 4)	1343			1343	1341	0.1	0.0	0.063	A
	Exit	1	1		1004			1004	1019	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	797	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	245	797	0.307	245	249	0.7	0.4	6.658	A
		2	1	(1, 2, 3, 4)	245			245	248	0.0	0.0	0.000	A
	Exit	1	1		349			349	348	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1872	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	655	1307	0.501	655	656	1.5	0.8	5.409	A
			2	1, 3, 4	7	1307	0.006	8	9	0.0	0.0	2.974	A
		2	1	(1, 2, 3, 4)	663			663	662	0.0	0.0	0.000	A
	Exit	1	1		834			834	845	0.0	0.0	0.000	A
2	Entry	1	1	3	283	1577	0.179	283	285	0.3	0.2	2.846	A
			2	1, 2, 4	827	1577	0.524	826	837	1.7	1.1	4.834	A
		2	1	(1, 2, 3, 4)	1110			1110	1119	0.0	0.0	0.000	A
	Exit	1	1		854			854	855	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	884	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	204	884	0.231	205	205	0.4	0.3	5.514	A
		2	1	(1, 2, 3, 4)	204			204	204	0.0	0.0	0.000	A
	Exit	1	1		289			289	291	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2083	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

Existing Layout - 2018 Base, AM 2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Existing Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS

1	M62 J11	Large Roundabout		1, 2, 3, 4	16.20	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms
[same as above]

Roundabout Geometry
[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	654	110.00
2	51	0.00
3	890	106.00
4	1206	0.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018 Base	AM 2	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	881	100.000
2		ONE HOUR	✓	1137	100.000
3		ONE HOUR	✓	594	100.000
4		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	24	857	0	0
	2	721	0	416	0
	3	0	578	16	0
	4	0	0	0	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	32.43	9.1	D	810	1214
2	4.22	1.5	A	1044	1566
3	15.00	2.8	B	539	808
4	0.00	0.0	A	0	0

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	166	447	664	661	565	0.0	1.4	7.020	A
2	862	215	31	860	861	1080	0.0	0.8	3.249	A
3	444	111	565	447	449	326	0.0	0.8	6.377	A
4	0	0	1013	0	0	0	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	795	199	521	795	792	666	1.4	2.4	10.446	B
2	1012	253	36	1012	1019	1281	0.8	1.1	3.598	A
3	522	130	666	521	529	382	0.8	1.4	8.429	A
4	0	0	1187	0	0	0	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	970	242	660	957	948	800	2.4	8.4	24.636	C
2	1237	309	43	1240	1253	1574	1.1	1.2	4.202	A
3	659	165	800	660	647	483	1.4	2.8	14.999	B
4	0	0	1460	0	0	0	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	961	240	650	956	966	831	8.4	9.1	32.432	D
2	1260	315	42	1259	1251	1564	1.2	1.5	4.225	A
3	653	163	831	650	651	470	2.8	2.8	14.779	B
4	0	0	1481	0	0	0	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	800	200	519	804	826	673	9.1	2.6	16.082	C
2	1039	260	37	1038	1031	1286	1.5	1.0	3.635	A
3	520	130	673	519	539	401	2.8	1.3	9.167	A
4	0	0	1192	0	0	0	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	667	167	436	666	668	564	2.6	1.3	7.238	A
2	854	214	32	855	854	1070	1.0	0.8	3.210	A
3	434	108	564	436	448	323	1.3	0.8	6.458	A

4	0	0	1000	0	0	0	0.0	0.0	0.000	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	644	1152	0.559	644	642	0.0	1.4	7.127	A
			2	1, 3, 4	20	1152	0.017	20	18	0.0	0.0	3.295	A
		2	1	(1, 2, 3, 4)	664			664	666	0.0	0.0	0.000	A
	Exit	1	1		565			565	566	0.0	0.0	0.000	A
2	Entry	1	1	3	315	1567	0.201	314	313	0.0	0.3	2.881	A
			2	1, 2, 4	546	1567	0.349	546	548	0.0	0.5	3.459	A
		2	1	(1, 2, 3, 4)	862			862	864	0.0	0.0	0.000	A
	Exit	1	1		1080			1080	1080	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	1012	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	444	1012	0.439	447	449	0.0	0.8	6.377	A
		2	1	(1, 2, 3, 4)	444			444	452	0.0	0.0	0.000	A
	Exit	1	1		326			326	324	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2108	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	771	1115	0.692	772	769	1.4	2.3	10.655	B
			2	1, 3, 4	24	1115	0.021	23	23	0.0	0.0	3.374	A
		2	1	(1, 2, 3, 4)	795			795	796	0.0	0.0	0.000	A
	Exit	1	1		666			666	670	0.0	0.0	0.000	A
2	Entry	1	1	3	370	1564	0.237	370	372	0.3	0.3	3.032	A
			2	1, 2, 4	642	1564	0.410	642	647	0.5	0.8	3.923	A
		2	1	(1, 2, 3, 4)	1012			1012	1020	0.0	0.0	0.000	A

	Exit	1	1		1281			1281	1285	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	964	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	522	964	0.541	521	529	0.8	1.4	8.429	A
		2	1	(1, 2, 3, 4)	522			522	532	0.0	0.0	0.000	A
	Exit	1	1		382			382	385	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1942	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	943	1045	0.902	930	921	2.3	8.4	25.158	D
			2	1, 3, 4	27	1045	0.025	27	26	0.0	0.0	3.567	A
		2	1	(1, 2, 3, 4)	970			969	972	0.0	0.0	0.044	A
	Exit	1	1		800			800	816	0.0	0.0	0.000	A
2	Entry	1	1	3	466	1560	0.298	467	464	0.3	0.4	3.285	A
			2	1, 2, 4	771	1560	0.494	773	790	0.8	0.8	4.740	A
		2	1	(1, 2, 3, 4)	1237			1237	1253	0.0	0.0	0.000	A
	Exit	1	1		1574			1574	1551	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	900	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	659	900	0.732	660	647	1.4	2.8	14.999	B
		2	1	(1, 2, 3, 4)	659			659	652	0.0	0.0	0.000	A
	Exit	1	1		483			483	480	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1683	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	934	1050	0.889	931	941	8.4	8.8	32.959	D
			2	1, 3, 4	25	1050	0.024	25	26	0.0	0.0	3.446	A
		2	1	(1, 2, 3, 4)	961			959	968	0.0	0.2	0.185	A
	Exit	1	1		831			831	820	0.0	0.0	0.000	A
2	Entry	1	1	3	452	1560	0.289	453	456	0.4	0.4	3.322	A
			2	1, 2, 4	809	1560	0.518	806	795	0.8	1.1	4.739	A
		2	1	(1, 2, 3, 4)	1260			1260	1252	0.0	0.0	0.002	A

	Exit	1	1		1564			1564	1574	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	886	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	653	886	0.738	650	651	2.8	2.8	14.779	B
		2	1	(1, 2, 3, 4)	653			653	651	0.0	0.0	0.000	A
	Exit	1	1		470			470	474	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1663	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

08:45 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	779	1116	0.698	782	804	8.8	2.6	16.393	C
			2	1, 3, 4	22	1116	0.019	22	22	0.0	0.0	3.433	A
		2	1	(1, 2, 3, 4)	800			800	801	0.2	0.0	0.166	A
	Exit	1	1		673			673	674	0.0	0.0	0.000	A
2	Entry	1	1	3	386	1564	0.247	386	379	0.4	0.3	3.048	A
			2	1, 2, 4	653	1564	0.418	651	652	1.1	0.8	3.977	A
		2	1	(1, 2, 3, 4)	1039			1039	1030	0.0	0.0	0.000	A
	Exit	1	1		1286			1286	1328	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	960	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	520	960	0.541	519	539	2.8	1.3	9.167	A
		2	1	(1, 2, 3, 4)	520			520	533	0.0	0.0	0.000	A
	Exit	1	1		401			401	393	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1938	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

09:00 - 09:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	648	1158	0.560	647	650	2.6	1.3	7.349	A
			2	1, 3, 4	19	1158	0.016	19	18	0.0	0.0	3.218	A
		2	1	(1, 2, 3, 4)	667			667	663	0.0	0.0	0.000	A
	Exit	1	1		564			564	560	0.0	0.0	0.000	A
2	Entry	1	1	3	310	1567	0.198	310	312	0.3	0.3	2.860	A
			2	1, 2, 4	544	1567	0.347	545	542	0.8	0.5	3.412	A
		2	1	(1, 2, 3, 4)	854			854	853	0.0	0.0	0.000	A

	Exit	1	1		1070			1070	1086	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	1012	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	434	1012	0.428	436	448	1.3	0.8	6.458	A
		2	1	(1, 2, 3, 4)	434			434	446	0.0	0.0	0.000	A
	Exit	1	1		323			323	324	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2121	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

Existing Layout - 2018 Base, PM 1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Existing Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	11.85	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry
[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	316	110.00
2	51	0.00
3	890	106.00
4	1206	0.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2018 Base	PM 1	ONE HOUR	15:45	17:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)

1		ONE HOUR	✓	487	100.000
2		ONE HOUR	✓	2079	100.000
3		ONE HOUR	✓	312	100.000
4		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	**2**	**3**	**4**
From	**1**	18	469	0	0
	2	856	0	1223	0
	3	0	287	25	0
	4	0	0	0	0

Vehicle Mix

HV %s

		To			
		1	**2**	**3**	**4**
From	**1**	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)

1	5.01	0.9	A	446	669
2	14.07	8.8	B	1909	2863
3	7.68	0.7	A	287	430
4	0.00	0.0	A	0	0

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	368	92	236	367	370	648	0.0	0.4	3.826	A
2	1554	388	32	1552	1552	572	0.0	2.1	4.744	A
3	236	59	648	236	236	936	0.0	0.3	4.872	A
4	0	0	884	0	0	0	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	436	109	284	436	437	785	0.4	0.5	4.190	A
2	1877	469	39	1882	1864	680	2.1	3.2	6.429	A
3	285	71	785	284	279	1136	0.3	0.5	5.675	A
4	0	0	1069	0	0	0	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	533	133	344	534	532	964	0.5	0.7	4.975	A
2	2290	573	45	2289	2270	833	3.2	8.3	12.013	B
3	344	86	964	344	342	1369	0.5	0.7	7.371	A
4	0	0	1308	0	0	0	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	538	135	342	537	534	964	0.7	0.9	5.010	A
2	2286	572	50	2289	2296	829	8.3	8.8	14.074	B
3	341	85	964	342	344	1375	0.7	0.7	7.680	A
4	0	0	1306	0	0	0	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	437	109	282	436	440	789	0.9	0.6	4.328	A
2	1865	466	38	1867	1888	680	8.8	3.3	7.375	A
3	281	70	789	282	284	1116	0.7	0.5	5.977	A
4	0	0	1070	0	0	0	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	365	91	234	365	369	662	0.6	0.4	3.849	A
2	1578	395	33	1576	1571	567	3.3	2.3	4.988	A
3	235	59	662	234	236	947	0.5	0.3	5.087	A
4	0	0	896	0	0	0	0.0	0.0	0.000	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

15:45 - 16:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	355	1289	0.276	355	357	0.0	0.4	3.861	A
			2	1, 3, 4	13	1289	0.010	13	13	0.0	0.0	2.863	A
		2	1	(1, 2, 3, 4)	368			368	372	0.0	0.0	0.000	A
	Exit	1	1		648			648	649	0.0	0.0	0.000	A
2	Entry	1	1	3	918	1566	0.586	917	916	0.0	1.4	5.350	A

			2	1, 2, 4	636	1566	0.406	635	636	0.0	0.7	3.870	A
		2	1	(1, 2, 3, 4)	1554			1554	1560	0.0	0.0	0.000	A
	Exit	1	1		572			572	574	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	972	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	236	972	0.243	236	236	0.0	0.3	4.872	A
		2	1	(1, 2, 3, 4)	236			236	238	0.0	0.0	0.000	A
	Exit	1	1		936			936	935	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2230	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	420	1264	0.333	421	421	0.4	0.5	4.238	A
			2	1, 3, 4	15	1264	0.012	15	16	0.0	0.0	2.925	A
		2	1	(1, 2, 3, 4)	436			436	437	0.0	0.0	0.000	A
	Exit	1	1		785			785	784	0.0	0.0	0.000	A
2	Entry	1	1	3	1108	1562	0.709	1113	1096	1.4	2.3	7.739	A
			2	1, 2, 4	769	1562	0.492	770	768	0.7	0.9	4.500	A
		2	1	(1, 2, 3, 4)	1877			1877	1869	0.0	0.0	0.022	A
	Exit	1	1		680			680	677	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	907	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	285	907	0.314	284	279	0.3	0.5	5.675	A
		2	1	(1, 2, 3, 4)	285			285	280	0.0	0.0	0.000	A
	Exit	1	1		1136			1136	1118	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2055	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	515	1231	0.418	516	512	0.5	0.7	5.052	A
			2	1, 3, 4	18	1231	0.015	18	20	0.0	0.0	2.949	A
		2	1	(1, 2, 3, 4)	533			533	532	0.0	0.0	0.000	A
	Exit	1	1		964			964	960	0.0	0.0	0.000	A
2	Entry	1	1	3	1345	1559	0.863	1343	1330	2.3	5.6	13.789	B

			2	1, 2, 4	945	1559	0.606	946	940	0.9	1.4	5.797	A
		2	1	(1, 2, 3, 4)	2290			2290	2285	0.0	1.3	1.496	A
	Exit	1	1		833			833	827	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	822	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	344	822	0.418	344	342	0.5	0.7	7.371	A
		2	1	(1, 2, 3, 4)	344			344	343	0.0	0.0	0.000	A
	Exit	1	1		1369			1369	1357	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1828	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	516	1232	0.419	515	513	0.7	0.9	5.093	A
			2	1, 3, 4	22	1232	0.018	22	21	0.0	0.0	2.997	A
		2	1	(1, 2, 3, 4)	538			538	535	0.0	0.0	0.000	A
	Exit	1	1		964			964	968	0.0	0.0	0.000	A
2	Entry	1	1	3	1342	1556	0.863	1347	1349	5.6	5.4	15.268	C
			2	1, 2, 4	945	1556	0.607	942	947	1.4	1.6	5.967	A
		2	1	(1, 2, 3, 4)	2286			2287	2296	1.3	1.8	2.638	A
	Exit	1	1		829			829	828	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	822	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	341	822	0.414	342	344	0.7	0.7	7.680	A
		2	1	(1, 2, 3, 4)	341			341	343	0.0	0.0	0.000	A
	Exit	1	1		1375			1375	1377	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1830	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	422	1265	0.334	421	424	0.9	0.6	4.376	A
			2	1, 3, 4	15	1265	0.012	15	16	0.0	0.0	3.038	A
		2	1	(1, 2, 3, 4)	437			437	438	0.0	0.0	0.000	A
	Exit	1	1		789			789	791	0.0	0.0	0.000	A
2	Entry	1	1	3	1091	1563	0.698	1093	1112	5.4	2.3	8.478	A

			2	1, 2, 4	774	1563	0.495	774	775	1.6	0.9	4.637	A
		2	1	(1, 2, 3, 4)	1865			1866	1872	1.8	0.1	0.531	A
	Exit	1	1		680			680	685	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	905	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	281	905	0.311	282	284	0.7	0.5	5.977	A
		2	1	(1, 2, 3, 4)	281			281	283	0.0	0.0	0.000	A
	Exit	1	1		1116			1116	1135	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2053	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	351	1290	0.272	351	355	0.6	0.4	3.892	A
			2	1, 3, 4	14	1290	0.011	14	14	0.0	0.0	2.760	A
		2	1	(1, 2, 3, 4)	365			365	368	0.0	0.0	0.000	A
	Exit	1	1		662			662	657	0.0	0.0	0.000	A
2	Entry	1	1	3	931	1566	0.595	928	928	2.3	1.6	5.742	A
			2	1, 2, 4	647	1566	0.413	647	643	0.9	0.8	3.870	A
		2	1	(1, 2, 3, 4)	1578			1578	1567	0.1	0.0	0.018	A
	Exit	1	1		567			567	572	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	966	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	235	966	0.243	234	236	0.5	0.3	5.087	A
		2	1	(1, 2, 3, 4)	235			235	236	0.0	0.0	0.000	A
	Exit	1	1		947			947	947	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2219	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

Existing Layout - 2018 Base, PM 2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Existing Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	10.28	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	316	110.00
2	51	0.00
3	890	106.00
4	1206	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2018 Base	PM 2	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		ONE HOUR	✓	511	100.000
2		ONE HOUR	✓	1994	100.000
3		ONE HOUR	✓	287	100.000
4		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	25	486	0	0
	2	783	0	1211	0
	3	0	266	21	0
	4	0	0	0	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.07	0.9	A	473	710
2	12.10	7.5	B	1838	2757
3	6.94	0.8	A	264	396
4	0.00	0.0	A	0	0

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	390	98	209	391	384	625	0.0	0.4	3.751	A
2	1511	378	38	1515	1503	562	0.0	1.6	4.859	A
3	208	52	625	209	216	929	0.0	0.2	4.766	A
4	0	0	834	0	0	0	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	452	113	261	454	457	723	0.4	0.3	4.012	A
2	1803	451	42	1804	1780	673	1.6	3.2	6.107	A
3	261	65	723	261	255	1122	0.2	0.3	5.238	A
4	0	0	984	0	0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	569	142	322	570	558	890	0.3	0.7	4.907	A
2	2205	551	53	2219	2187	840	3.2	6.8	12.101	B
3	323	81	890	322	316	1382	0.3	0.6	6.423	A
4	0	0	1212	0	0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	573	143	322	571	570	912	0.7	0.9	5.071	A
2	2199	550	48	2204	2184	845	6.8	7.5	11.784	B
3	321	80	912	322	315	1341	0.6	0.8	6.944	A
4	0	0	1234	0	0	0	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service

1	466	116	255	465	458	727	0.9	0.6	4.314	A
2	1803	451	39	1809	1814	681	7.5	2.8	6.329	A
3	254	63	727	255	263	1122	0.8	0.3	5.498	A
4	0	0	982	0	0	0	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	392	98	216	392	385	620	0.6	0.5	3.919	A
2	1507	377	31	1502	1515	577	2.8	2.2	4.792	A
3	217	54	620	216	215	914	0.3	0.4	4.707	A
4	0	0	836	0	0	0	0.0	0.0	0.000	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	**Entry**	**1**	**1**	2	369	1304	0.283	369	365	0.0	0.4	3.800	A
			2	1, 3, 4	21	1304	0.016	21	19	0.0	0.0	2.786	A
		2	**1**	(1, 2, 3, 4)	390			390	386	0.0	0.0	0.000	A
	Exit	**1**	**1**		625			625	611	0.0	0.0	0.000	A
2	**Entry**	**1**	**1**	3	910	1563	0.582	912	910	0.0	1.1	5.588	A
			2	1, 2, 4	601	1563	0.385	603	593	0.0	0.5	3.738	A
		2	**1**	(1, 2, 3, 4)	1511			1511	1510	0.0	0.0	0.000	A
	Exit	**1**	**1**		562			562	565	0.0	0.0	0.000	A
3	**Entry**	**1**	**1**	1, 4	0	984	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	208	984	0.211	209	216	0.0	0.2	4.766	A
		2	**1**	(1, 2, 3, 4)	208			208	217	0.0	0.0	0.000	A
	Exit	**1**	**1**		929			929	927	0.0	0.0	0.000	A
4	**Entry**	**1**	**1**	1, 2, 3, 4	0	2278	0.000	0	0	0.0	0.0	0.000	A
	Exit	**1**	**1**		0			0	0	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	430	1276	0.337	432	435	0.4	0.3	4.080	A
			2	1, 3, 4	22	1276	0.017	22	22	0.0	0.0	2.635	A
		2	1	(1, 2, 3, 4)	452			452	456	0.0	0.0	0.000	A
	Exit	1	1		723			723	720	0.0	0.0	0.000	A
2	Entry	1	1	3	1103	1561	0.707	1102	1082	1.1	2.6	7.301	A
			2	1, 2, 4	699	1561	0.448	701	699	0.5	0.6	4.177	A
		2	1	(1, 2, 3, 4)	1803			1803	1787	0.0	0.0	0.029	A
	Exit	1	1		673			673	670	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	937	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	261	937	0.279	261	255	0.2	0.3	5.238	A
		2	1	(1, 2, 3, 4)	261			261	256	0.0	0.0	0.000	A
	Exit	1	1		1122			1122	1102	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2135	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	539	1243	0.434	541	529	0.3	0.7	5.013	A
			2	1, 3, 4	29	1243	0.023	29	29	0.0	0.0	2.967	A
		2	1	(1, 2, 3, 4)	569			569	560	0.0	0.0	0.000	A
	Exit	1	1		890			890	888	0.0	0.0	0.000	A
2	Entry	1	1	3	1346	1555	0.866	1358	1328	2.6	4.7	13.625	B
			2	1, 2, 4	857	1555	0.551	861	859	0.6	1.1	5.256	A
		2	1	(1, 2, 3, 4)	2205			2203	2198	0.0	1.0	1.731	A
	Exit	1	1		840			840	823	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	858	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	323	858	0.377	322	316	0.3	0.6	6.423	A
		2	1	(1, 2, 3, 4)	323			323	318	0.0	0.0	0.000	A
	Exit	1	1		1382			1382	1351	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1919	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	546	1243	0.439	544	541	0.7	0.9	5.183	A
			2	1, 3, 4	27	1243	0.022	27	28	0.0	0.0	2.941	A
		2	1	(1, 2, 3, 4)	573			573	571	0.0	0.0	0.000	A
	Exit	1	1		912			912	897	0.0	0.0	0.000	A
2	Entry	1	1	3	1314	1557	0.844	1320	1315	4.7	5.1	14.133	B
			2	1, 2, 4	882	1557	0.567	885	869	1.1	1.4	5.472	A
		2	1	(1, 2, 3, 4)	2199			2196	2187	1.0	1.0	1.103	A
	Exit	1	1		845			845	834	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	847	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	321	847	0.379	322	315	0.6	0.8	6.944	A
		2	1	(1, 2, 3, 4)	321			321	315	0.0	0.0	0.000	A
	Exit	1	1		1341			1341	1338	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	1898	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	443	1279	0.346	443	436	0.9	0.5	4.383	A
			2	1, 3, 4	23	1279	0.018	23	22	0.0	0.0	2.951	A
		2	1	(1, 2, 3, 4)	466			466	456	0.0	0.0	0.000	A
	Exit	1	1		727			727	730	0.0	0.0	0.000	A
2	Entry	1	1	3	1100	1562	0.704	1105	1106	5.1	2.0	7.635	A
			2	1, 2, 4	703	1562	0.450	704	708	1.4	0.8	4.154	A
		2	1	(1, 2, 3, 4)	1803			1803	1799	1.0	0.0	0.089	A
	Exit	1	1		681			681	679	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	935	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	254	935	0.272	255	263	0.8	0.3	5.498	A
		2	1	(1, 2, 3, 4)	254			254	261	0.0	0.0	0.000	A
	Exit	1	1		1122			1122	1126	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2137	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	374	1300	0.288	374	366	0.5	0.5	3.989	A
			2	1, 3, 4	18	1300	0.014	18	19	0.0	0.0	2.614	A
		2	1	(1, 2, 3, 4)	392			392	385	0.0	0.0	0.000	A
	Exit	1	1		620			620	618	0.0	0.0	0.000	A
2	Entry	1	1	3	906	1567	0.578	901	917	2.0	1.6	5.479	A
			2	1, 2, 4	601	1567	0.384	602	598	0.8	0.6	3.725	A
		2	1	(1, 2, 3, 4)	1507			1507	1513	0.0	0.0	0.007	A
	Exit	1	1		577			577	567	0.0	0.0	0.000	A
3	Entry	1	1	1, 4	0	986	0.000	0	0	0.0	0.0	0.000	A
			2	2, 3	217	986	0.220	216	215	0.3	0.4	4.707	A
		2	1	(1, 2, 3, 4)	217			217	216	0.0	0.0	0.000	A
	Exit	1	1		914			914	932	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	0	2276	0.000	0	0	0.0	0.0	0.000	A
	Exit	1	1		0			0	0	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Filename: M62 J11 - Future Model - Flat Profile.j9
Path: Z:\Projects\12377ITM M62 Warrington MSA\Tech\Junction Assessments\Arcady
Report generation date: 29/05/2019 13:41:29

»Proposed Layout - 2022 Base + Committed, AM 1
»Proposed Layout - 2022 Base + Committed, AM 2
»Proposed Layout - 2022 Base + Committed, PM 1
»Proposed Layout - 2022 Base + Committed, PM 2
»Proposed Layout - 2022 Base + Committed + Dev, AM 1
»Proposed Layout - 2022 Base + Committed + Dev, AM 2
»Proposed Layout - 2022 Base + Committed + Dev, PM 1
»Proposed Layout - 2022 Base + Committed + Dev, PM 2

Summary of junction performance

	AM 1						AM 2						PM 1						PM 2					
	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap	Q (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Res Cap
	Proposed Layout [Lane Simulation] - 2022 Base + Committed																							
Arm 1	1.1	3.72		A	4.89	% [ ]	1.6	4.78		A	4.93	% [ ]	0.6	3.25		A	8.63	% [ ]	0.5	3.27		A	11.21	% [ ]
Arm 2	2.7	5.61		A			2.0	4.92		A			7.4	10.49		B			9.6	13.92		B		
Arm 3	0.6	4.88		A			1.1	5.20		A			0.6	4.40		A			0.5	4.45		A		
Arm 4	0.0	2.43		A			0.0	2.83		A			0.0	2.09		A			0.0	2.04		A		
	Proposed Layout [Lane Simulation] - 2022 Base + Committed + Dev																							
Arm 1	1.8	5.55		A	7.58	% [ ]	2.9	8.37		A	8.10	% [ ]	1.0	4.70		A	30.67	% [ ]	1.0	4.64		A	78.50	% [ ]
Arm 2	4.3	10.38		B			4.0	8.72		A			36.8	51.59		F			108.3	133.25		F		
Arm 3	1.5	8.25		A			2.3	9.64		A			1.3	6.96		A			1.0	6.62		A		
Arm 4	0.5	3.13		A			0.6	3.64		A			0.4	2.81		A			0.5	2.69		A		

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 Av. delay per arriving vehicle. Arm and junction delays are Av.s for all movements, including movements with zero delay. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	M62 J11
Location	Birchwood
Site number	
Date	26/11/2018
Version	
Status	Proposed Layout
Identifier	
Client	
Jobnumber	ITM12377
Enumerator	HB
Description	Warrington Phase 3 Improvements and Smart Motorway

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75			✓	Delay	0.85	36.00	20.00

Lane Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Av. animation capture interval (s)	Use quick response	Do flow sampling	Suppress automatic lane creation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	100000	100000	-1	3	1	60	✓			1423038841	101	8.83

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 Base + Committed	AM 1	FLAT	07:00	08:00	60	15	✓
D2	2022 Base + Committed	AM 2	FLAT	07:30	08:30	60	15	✓
D3	2022 Base + Committed	PM 1	FLAT	16:00	17:00	60	15	✓
D4	2022 Base + Committed	PM 2	FLAT	16:30	17:30	60	15	✓
D5	2022 Base + Committed + Dev	AM 1	FLAT	07:00	08:00	60	15	✓
D6	2022 Base + Committed + Dev	AM 2	FLAT	07:30	08:30	60	15	✓
D7	2022 Base + Committed + Dev	PM 1	FLAT	16:00	17:00	60	15	✓
D8	2022 Base + Committed + Dev	PM 2	FLAT	16:30	17:30	60	15	✓
D9	2022 Base + Committed + Construction	AM 1	FLAT	07:00	08:00	60	15	
D10	2022 Base + Committed + Construction	AM 2	FLAT	07:30	08:30	60	15	
D11	2022 Base + Committed + Construction	PM 1	FLAT	16:00	17:00	60	15	
D12	2022 Base + Committed + Construction	PM 2	FLAT	16:30	17:30	60	15	

Analysis Set Details

ID	Name	Use Lane Simulation	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Proposed Layout	✓	Warrington Phase 3 and Smart Motorway Improvements	✓	100.000	100.000

Proposed Layout - 2022 Base + Committed, AM 1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Proposed Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	4.89	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	M62 E	
2	A574 Birchwood Way S	
3	M62 W	
4	Birchwood Way (N)	

Roundabout Geometry

Arm	V (m)	E (m)	I' (m)	R (m)	D (m)	PHI (deg)	Exit only
1	5.80	8.00	14.0	60.0	194.0	30.0	
2	7.30	8.20	50.0	40.0	128.0	18.0	
3	3.80	7.50	54.0	85.0	194.0	12.0	
4	4.80	9.00	31.0	45.0	128.0	21.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	376	110.00
2	572	0.00
3	1210	106.00
4	1219	0.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	1.062	2818
2	1.132	3372
3	0.916	2638
4	0.947	3067

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic considering secondary lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00
4	Evenly split	10.00

Lanes

Arm	Side	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Has bottleneck	Min Cap (PCU/hr)	Max Cap (PCU/hr)	Signalised
1	Entry	1	1	2		Infinity		0	99999	
			2	1, 2, 3, 4		Infinity		0	99999	
	Exit	1	1			Infinity				
2	Entry	1	1	3	✓	180.00		0	99999	
			2	1, 2, 4	✓	180.00		0	99999	
		2	1	(1, 2, 3, 4)		Infinity				
	Exit	1	1			Infinity				
3	Entry	1	1	1, 2, 4	✓	13.00		0	99999	
			2	2, 3	✓	13.00		0	99999	
		2	1	(1, 2, 3, 4)		Infinity				
	Exit	1	1			Infinity				
4	Entry	1	1	1, 2, 3, 4		Infinity		0	99999	
	Exit	1	1			Infinity				

Entry Lane slope and intercept

Arm	Side	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	Entry	1	1	0.531	1409
			2	0.531	1409
2	Entry	1	1	0.566	1686
			2	0.566	1686
3	Entry	1	1	0.458	1319
			2	0.458	1319
4	Entry	1	1	0.947	3067

Summary of Entry Lane allowed movements

Arm	Lane Level	Lane	Destination arm			
			1	2	3	4
1	1	1		✓		

		2	✓	✓	✓	✓
2	1	1			✓	
		2	✓	✓		✓
	2	1	✓	✓	✓	✓
3	1	1	✓	✓		✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
4	1	1	✓	✓	✓	✓

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 Base + Committed	AM 1	FLAT	07:00	08:00	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	924	100.000
2		FLAT	✓	1506	100.000
3		FLAT	✓	379	100.000
4		FLAT	✓	2	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	12	911	0	1
	2	1111	0	395	0
	3	0	368	8	3
	4	2	0	0	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	3.72	1.1	A	924	924
2	5.61	2.7	A	1516	1516
3	4.88	0.6	A	384	384
4	2.43	0.0	A	2	2

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	943	236	383	941	921	1117	0.0	1.1	3.640	A
2	1507	377	21	1507	1499	1303	0.0	2.1	5.282	A
3	384	96	1116	385	374	411	0.0	0.5	4.880	A
4	3	0.68	1497	3	3	4	0.0	0.0	1.858	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	922	230	379	922	933	1135	1.1	1.0	3.721	A
2	1520	380	22	1520	1508	1279	2.1	2.7	5.611	A
3	381	95	1133	381	377	409	0.5	0.5	4.841	A
4	3	0.65	1511	2	2	3	0.0	0.0	2.365	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	920	230	377	921	909	1132	1.0	0.9	3.653	A
2	1514	378	21	1518	1516	1277	2.7	1.8	5.314	A
3	382	95	1131	380	379	407	0.5	0.6	4.832	A
4	2	0.39	1508	2	2	3	0.0	0.0	2.428	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	911	228	386	916	932	1138	0.9	0.8	3.687	A
2	1524	381	22	1520	1503	1280	1.8	2.5	5.311	A
3	390	97	1138	389	383	404	0.6	0.4	4.835	A
4	2	0.45	1522	2	2	5	0.0	0.0	2.327	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	466	1206	0.387	465	457	0.0	0.6	3.636	A
			2	1, 2, 3, 4	477	1206	0.396	476	465	0.0	0.5	3.644	A
	Exit	1	1		1117			1117	1115	0.0	0.0	0.000	A
2	Entry	1	1	3	404	1674	0.242	404	399	0.0	0.3	2.892	A
			2	1, 2, 4	1103	1674	0.659	1102	1100	0.0	1.7	6.147	A
		2	1	(1, 2, 3, 4)	1507			1507	1507	0.0	0.0	0.000	A
	Exit	1	1		1303			1303	1271	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	191	808	0.236	191	186	0.0	0.3	4.773	A
			2	2, 3	194	808	0.240	194	188	0.0	0.2	4.987	A
		2	1	(1, 2, 3, 4)	384			384	376	0.0	0.0	0.000	A
	Exit	1	1		411			411	408	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	3	1649	0.002	3	3	0.0	0.0	1.858	A
	Exit	1	1		4			4	3	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	465	1208	0.385	466	464	0.6	0.5	3.683	A
			2	1, 2, 3, 4	456	1208	0.378	457	469	0.5	0.5	3.758	A
	Exit	1	1		1135			1135	1126	0.0	0.0	0.000	A
2	Entry	1	1	3	399	1674	0.238	400	396	0.3	0.2	2.835	A
			2	1, 2, 4	1121	1674	0.670	1120	1112	1.7	2.5	6.595	A
		2	1	(1, 2, 3, 4)	1520			1520	1511	0.0	0.0	0.000	A
	Exit	1	1		1279			1279	1287	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	192	800	0.240	191	188	0.3	0.3	4.748	A
			2	2, 3	189	800	0.237	190	189	0.2	0.2	4.935	A
		2	1	(1, 2, 3, 4)	381			381	377	0.0	0.0	0.000	A
	Exit	1	1		409			409	404	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	3	1636	0.002	2	2	0.0	0.0	2.365	A
	Exit	1	1		3			3	4	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	459	1209	0.380	459	450	0.5	0.5	3.685	A
			2	1, 2, 3, 4	461	1209	0.381	462	460	0.5	0.5	3.622	A
	Exit	1	1		1132			1132	1130	0.0	0.0	0.000	A

2	Entry	1	1	3	401	1674	0.239	399	400	0.2	0.3	2.750	A
			2	1, 2, 4	1113	1674	0.665	1118	1116	2.5	1.5	6.238	A
		2	1	(1, 2, 3, 4)	1514			1514	1512	0.0	0.0	0.000	A
	Exit	1	1		1277			1277	1265	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	185	801	0.230	184	190	0.3	0.3	4.854	A
			2	2, 3	197	801	0.246	196	190	0.2	0.3	4.810	A
		2	1	(1, 2, 3, 4)	382			382	380	0.0	0.0	0.000	A
	Exit	1	1		407			407	408	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	2	1639	0.001	2	2	0.0	0.0	2.428	A
	Exit	1	1		3			3	4	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	459	1204	0.381	461	467	0.5	0.4	3.617	A
			2	1, 2, 3, 4	452	1204	0.376	455	465	0.5	0.4	3.757	A
	Exit	1	1		1138			1138	1125	0.0	0.0	0.000	A
2	Entry	1	1	3	394	1674	0.236	394	393	0.3	0.3	2.759	A
			2	1, 2, 4	1129	1674	0.675	1126	1110	1.5	2.2	6.215	A
		2	1	(1, 2, 3, 4)	1524			1524	1506	0.0	0.0	0.000	A
	Exit	1	1		1280			1280	1289	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	192	798	0.241	192	189	0.3	0.2	4.928	A
			2	2, 3	198	798	0.248	197	194	0.3	0.2	4.746	A
		2	1	(1, 2, 3, 4)	390			390	382	0.0	0.0	0.000	A
	Exit	1	1		404			404	402	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	2	1625	0.001	2	2	0.0	0.0	2.327	A
	Exit	1	1		5			5	4	0.0	0.0	0.000	A

Proposed Layout - 2022 Base + Committed, AM 2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Proposed Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	4.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	609	110.00
2	572	0.00
3	1210	106.00
4	1219	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2022 Base + Committed	AM 2	FLAT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)

1		FLAT	✓	1028	100.000
2		FLAT	✓	1411	100.000
3		FLAT	✓	610	100.000
4		FLAT	✓	3	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	**2**	**3**	**4**
From	**1**	13	1013	0	2
	2	1006	0	404	1
	3	0	569	39	2
	4	2	0	1	0

Vehicle Mix

HV %s

		To			
		1	**2**	**3**	**4**
From	**1**	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	4.78	1.6	A	1034	1034
2	4.92	2.0	A	1414	1414
3	5.20	1.1	A	613	613
4	2.83	0.0	A	3	3

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1042	260	613	1042	1025	1029	0.0	1.6	4.668	A
2	1411	353	57	1414	1396	1598	0.0	1.7	4.705	A
3	612	153	1030	615	609	441	0.0	0.8	5.163	A
4	3	0.86	1639	3	5	6	0.0	0.0	2.392	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1023	256	605	1018	1026	1002	1.6	1.5	4.682	A
2	1412	353	52	1409	1404	1572	1.7	2.0	4.699	A
3	610	152	1002	607	604	459	0.8	1.0	5.116	A
4	3	0.83	1604	3	4	5	0.0	0.0	2.758	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1035	259	611	1033	1032	1020	1.5	1.3	4.777	A
2	1402	351	55	1401	1411	1589	2.0	2.0	4.866	A
3	615	154	1022	612	615	433	1.0	1.1	5.203	A
4	2	0.48	1629	2	2	5	0.0	0.0	2.826	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1035	259	615	1037	1029	1047	1.3	1.5	4.771	A
2	1429	357	58	1428	1415	1593	2.0	1.9	4.922	A
3	616	154	1048	616	611	439	1.1	0.9	5.166	A
4	4	0.92	1658	4	3	5	0.0	0.0	1.909	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	523	1071	0.488	524	512	0.0	0.8	4.611	A
			2	1, 2, 3, 4	519	1071	0.485	518	513	0.0	0.8	4.725	A
	Exit	1	1		1029			1029	1010	0.0	0.0	0.000	A
2	Entry	1	1	3	399	1653	0.241	401	401	0.0	0.2	2.903	A
			2	1, 2, 4	1012	1653	0.612	1013	995	0.0	1.5	5.430	A
		2	1	(1, 2, 3, 4)	1411			1411	1403	0.0	0.0	0.000	A
	Exit	1	1		1598			1598	1579	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	295	847	0.348	297	294	0.0	0.4	5.143	A
			2	2, 3	317	847	0.374	318	315	0.0	0.4	5.182	A
		2	1	(1, 2, 3, 4)	612			612	612	0.0	0.0	0.000	A
	Exit	1	1		441			441	442	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	3	1515	0.002	3	5	0.0	0.0	2.392	A
	Exit	1	1		6			6	5	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	510	1075	0.474	507	511	0.8	0.7	4.621	A
			2	1, 2, 3, 4	513	1075	0.477	511	515	0.8	0.7	4.742	A
	Exit	1	1		1002			1002	1013	0.0	0.0	0.000	A
2	Entry	1	1	3	420	1657	0.254	420	406	0.2	0.4	2.911	A
			2	1, 2, 4	992	1657	0.599	989	999	1.5	1.7	5.425	A
		2	1	(1, 2, 3, 4)	1412			1412	1406	0.0	0.0	0.000	A
	Exit	1	1		1572			1572	1576	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	294	860	0.342	294	293	0.4	0.4	5.005	A
			2	2, 3	316	860	0.367	313	311	0.4	0.6	5.220	A
		2	1	(1, 2, 3, 4)	610			610	605	0.0	0.0	0.000	A
	Exit	1	1		459			459	444	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	3	1548	0.002	3	4	0.0	0.0	2.758	A
	Exit	1	1		5			5	4	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	514	1072	0.479	513	514	0.7	0.6	4.731	A
			2	1, 2, 3, 4	521	1072	0.486	520	518	0.7	0.7	4.821	A
	Exit	1	1		1020			1020	1028	0.0	0.0	0.000	A
2	Entry	1	1	3	394	1655	0.238	393	396	0.4	0.5	2.928	A
			2	1, 2, 4	1008	1655	0.609	1008	1015	1.7	1.5	5.623	A
		2	1	(1, 2, 3, 4)	1402			1402	1411	0.0	0.0	0.000	A
	Exit	1	1		1589			1589	1589	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	296	851	0.348	295	295	0.4	0.5	5.173	A
			2	2, 3	319	851	0.374	317	320	0.6	0.6	5.230	A
		2	1	(1, 2, 3, 4)	615			615	616	0.0	0.0	0.000	A
	Exit	1	1		433			433	438	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	2	1524	0.001	2	2	0.0	0.0	2.826	A
	Exit	1	1		5			5	5	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	521	1070	0.487	521	513	0.6	0.8	4.711	A
			2	1, 2, 3, 4	514	1070	0.480	515	516	0.7	0.7	4.831	A
	Exit	1	1		1047			1047	1024	0.0	0.0	0.000	A
2	Entry	1	1	3	397	1653	0.240	399	405	0.5	0.2	2.813	A

			2	1, 2, 4	1032	1653	0.624	1029	1009	1.5	1.7	5.768	A
		2	1	(1, 2, 3, 4)	1429			1429	1414	0.0	0.0	0.000	A
	Exit	1	1		1593			1593	1582	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	296	839	0.352	295	295	0.5	0.4	5.058	A
			2	2, 3	321	839	0.382	321	317	0.6	0.5	5.266	A
		2	1	(1, 2, 3, 4)	616			616	610	0.0	0.0	0.000	A
	Exit	1	1		439			439	447	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	4	1497	0.002	4	3	0.0	0.0	1.909	A
	Exit	1	1		5			5	5	0.0	0.0	0.000	A

Proposed Layout - 2022 Base + Committed, PM 1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Proposed Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	8.63	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	623	110.00
2	572	0.00
3	1210	106.00
4	1219	0.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	2022 Base + Committed	PM 1	FLAT	16:00	17:00	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	501	100.000
2		FLAT	✓	2291	100.000
3		FLAT	✓	345	100.000
4		FLAT	✓	12	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	18	482	0	1
	2	919	0	1371	1
	3	0	316	25	4
	4	3	2	7	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	3.25	0.6	A	508	508
2	10.49	7.4	B	2294	2294
3	4.40	0.6	A	343	343
4	2.09	0.0	A	12	12

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	512	128	350	510	500	950	0.0	0.6	3.235	A
2	2290	572	52	2286	2278	809	0.0	6.1	8.729	A
3	346	86	948	346	348	1390	0.0	0.5	4.402	A
4	13	3	1287	13	14	7	0.0	0.0	2.059	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	504	126	348	504	505	963	0.6	0.5	3.213	A
2	2317	579	57	2312	2286	795	6.1	6.0	9.015	A
3	345	86	960	343	343	1409	0.5	0.5	4.208	A
4	14	3	1298	13	12	6	0.0	0.0	1.962	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	511	128	344	510	499	934	0.5	0.5	3.249	A
2	2287	572	49	2280	2278	805	6.0	6.9	9.854	A
3	340	85	933	339	344	1396	0.5	0.6	4.300	A
4	11	3	1268	11	10	5	0.0	0.0	1.921	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service

1	505	126	345	503	499	928	0.5	0.6	3.210	A
2	2281	570	50	2268	2281	798	6.9	7.4	10.491	B
3	341	85	927	339	343	1391	0.6	0.5	4.301	A
4	11	3	1261	11	12	5	0.0	0.0	2.091	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	**Entry**	**1**	**1**	2	251	1203	0.209	250	247	0.0	0.3	3.197	A
			2	1, 2, 3, 4	261	1203	0.217	260	253	0.0	0.3	3.272	A
	Exit	**1**	**1**		950			950	947	0.0	0.0	0.000	A
2	**Entry**	**1**	**1**	3	1363	1657	0.823	1357	1351	0.0	4.9	11.199	B
			2	1, 2, 4	927	1657	0.559	929	927	0.0	1.2	5.098	A
		2	**1**	(1, 2, 3, 4)	2290			2290	2303	0.0	0.0	0.000	A
	Exit	**1**	**1**		809			809	804	0.0	0.0	0.000	A
3	**Entry**	**1**	**1**	1, 2, 4	163	885	0.185	163	165	0.0	0.2	4.394	A
			2	2, 3	182	885	0.206	182	182	0.0	0.3	4.409	A
		2	**1**	(1, 2, 3, 4)	346			346	350	0.0	0.0	0.000	A
	Exit	**1**	**1**		1390			1390	1384	0.0	0.0	0.000	A
4	**Entry**	**1**	**1**	1, 2, 3, 4	13	1848	0.007	13	14	0.0	0.0	2.059	A
	Exit	**1**	**1**		7			7	6	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	**Entry**	**1**	**1**	2	242	1204	0.201	241	243	0.3	0.3	3.226	A
			2	1, 2, 3, 4	262	1204	0.218	263	262	0.3	0.2	3.201	A
	Exit	**1**	**1**		963			963	937	0.0	0.0	0.000	A
2	**Entry**	**1**	**1**	3	1382	1654	0.836	1373	1371	4.9	4.9	11.817	B
			2	1, 2, 4	936	1654	0.566	939	915	1.2	1.1	4.815	A
		2	**1**	(1, 2, 3, 4)	2317			2317	2285	0.0	0.0	0.000	A
	Exit	**1**	**1**		795			795	800	0.0	0.0	0.000	A
3	**Entry**	**1**	**1**	1, 2, 4	161	879	0.183	161	163	0.2	0.2	4.224	A
			2	2, 3	184	879	0.209	183	180	0.3	0.2	4.194	A
		2	**1**	(1, 2, 3, 4)	345			345	343	0.0	0.0	0.000	A
	Exit	**1**	**1**		1409			1409	1404	0.0	0.0	0.000	A
4	**Entry**	**1**	**1**	1, 2, 3, 4	14	1838	0.007	13	12	0.0	0.0	1.962	A

	Exit	1	1		6			6	6	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	252	1206	0.209	252	244	0.3	0.2	3.252	A
			2	1, 2, 3, 4	259	1206	0.214	258	255	0.2	0.2	3.246	A
	Exit	1	1		934			934	937	0.0	0.0	0.000	A
2	Entry	1	1	3	1374	1658	0.829	1366	1360	4.9	5.5	13.160	B
			2	1, 2, 4	913	1658	0.551	914	917	1.1	1.4	4.949	A
		2	1	(1, 2, 3, 4)	2287			2287	2281	0.0	0.0	0.000	A
	Exit	1	1		805			805	796	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	163	891	0.182	163	163	0.2	0.2	4.179	A
			2	2, 3	177	891	0.199	176	180	0.2	0.3	4.409	A
		2	1	(1, 2, 3, 4)	340			340	344	0.0	0.0	0.000	A
	Exit	1	1		1396			1396	1392	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	11	1866	0.006	11	10	0.0	0.0	1.921	A
	Exit	1	1		5			5	5	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	243	1206	0.202	243	242	0.2	0.2	3.204	A
			2	1, 2, 3, 4	261	1206	0.217	259	257	0.2	0.3	3.216	A
	Exit	1	1		928			928	929	0.0	0.0	0.000	A
2	Entry	1	1	3	1371	1658	0.827	1362	1374	5.5	5.8	14.216	B
			2	1, 2, 4	910	1658	0.549	906	907	1.4	1.6	4.875	A
		2	1	(1, 2, 3, 4)	2281			2281	2283	0.0	0.0	0.000	A
	Exit	1	1		798			798	796	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	165	895	0.184	164	162	0.2	0.2	4.222	A
			2	2, 3	176	895	0.197	176	181	0.3	0.2	4.371	A
		2	1	(1, 2, 3, 4)	341			341	342	0.0	0.0	0.000	A
	Exit	1	1		1391			1391	1405	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	11	1873	0.006	11	12	0.0	0.0	2.091	A
	Exit	1	1		5			5	6	0.0	0.0	0.000	A

Proposed Layout - 2022 Base + Committed, PM 2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Proposed Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	11.21	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	623	110.00
2	572	0.00
3	1210	106.00
4	1219	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	2022 Base + Committed	PM 2	FLAT	16:30	17:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	506	100.000
2		FLAT	✓	2378	100.000
3		FLAT	✓	333	100.000
4		FLAT	✓	9	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	26	478	0	2
	2	898	0	1479	1
	3	0	299	31	3
	4	3	1	5	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	3.27	0.5	A	511	511
2	13.92	9.6	B	2371	2371
3	4.45	0.5	A	336	336
4	2.04	0.0	A	9	9

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	518	130	345	517	512	931	0.0	0.5	3.208	A
2	2378	594	69	2377	2344	793	0.0	9.6	13.160	B
3	341	85	930	340	334	1516	0.0	0.5	4.333	A
4	11	3	1265	11	11	5	0.0	0.0	1.931	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	497	124	336	497	502	919	0.5	0.5	3.270	A
2	2360	590	62	2364	2365	771	9.6	8.0	13.493	B
3	332	83	919	332	328	1506	0.5	0.4	4.403	A
4	9	2	1246	9	9	5	0.0	0.0	1.945	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	516	129	339	518	514	925	0.5	0.4	3.168	A
2	2372	593	64	2365	2371	793	8.0	9.1	13.521	B
3	338	84	925	336	333	1504	0.4	0.4	4.300	A
4	8	2	1256	8	9	5	0.0	0.0	2.006	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	513	128	334	512	509	923	0.4	0.5	3.216	A
2	2376	594	65	2376	2374	781	9.1	9.6	13.916	B
3	331	83	923	331	329	1518	0.4	0.4	4.454	A
4	8	2	1249	8	9	4	0.0	0.0	2.039	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	244	1206	0.202	243	245	0.0	0.3	3.186	A
			2	1, 2, 3, 4	275	1206	0.228	275	268	0.0	0.2	3.227	A
	Exit	1	1		931			931	926	0.0	0.0	0.000	A
2	Entry	1	1	3	1475	1647	0.896	1477	1449	0.0	8.3	18.223	C
			2	1, 2, 4	902	1647	0.548	900	895	0.0	1.3	4.834	A
		2	1	(1, 2, 3, 4)	2378			2378	2382	0.0	0.0	0.000	A
	Exit	1	1		793			793	784	0.0	0.0	0.000	A

3	Entry	1	1	1, 2, 4	160	893	0.179	159	155	0.0	0.2	4.207	A
			2	2, 3	181	893	0.203	181	179	0.0	0.2	4.443	A
		2	1	(1, 2, 3, 4)	341			341	336	0.0	0.0	0.000	A
	Exit	1	1		1516			1516	1486	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	11	1869	0.006	11	11	0.0	0.0	1.931	A
	Exit	1	1		5			5	6	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	236	1210	0.195	237	240	0.3	0.2	3.246	A
			2	1, 2, 3, 4	260	1210	0.215	259	262	0.2	0.3	3.292	A
	Exit	1	1		919			919	918	0.0	0.0	0.000	A
2	Entry	1	1	3	1464	1651	0.887	1469	1474	8.3	7.0	18.865	C
			2	1, 2, 4	896	1651	0.543	894	891	1.3	1.1	4.623	A
		2	1	(1, 2, 3, 4)	2360			2360	2358	0.0	0.0	0.000	A
	Exit	1	1		771			771	769	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	161	898	0.179	160	155	0.2	0.2	4.274	A
			2	2, 3	171	898	0.191	172	173	0.2	0.2	4.518	A
		2	1	(1, 2, 3, 4)	332			332	327	0.0	0.0	0.000	A
	Exit	1	1		1506			1506	1511	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	9	1887	0.005	9	9	0.0	0.0	1.945	A
	Exit	1	1		5			5	5	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	248	1209	0.206	249	245	0.2	0.2	3.180	A
			2	1, 2, 3, 4	268	1209	0.222	268	269	0.3	0.2	3.158	A
	Exit	1	1		925			925	929	0.0	0.0	0.000	A
2	Entry	1	1	3	1478	1650	0.896	1468	1471	7.0	8.1	18.917	C
			2	1, 2, 4	894	1650	0.542	897	900	1.1	1.1	4.671	A
		2	1	(1, 2, 3, 4)	2372			2372	2375	0.0	0.0	0.000	A
	Exit	1	1		793			793	786	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	157	895	0.175	156	158	0.2	0.2	4.211	A
			2	2, 3	181	895	0.202	180	176	0.2	0.3	4.381	A
		2	1	(1, 2, 3, 4)	338			338	333	0.0	0.0	0.000	A
	Exit	1	1		1504			1504	1506	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	8	1878	0.004	8	9	0.0	0.0	2.006	A
	Exit	1	1		5			5	6	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	248	1211	0.205	247	247	0.2	0.2	3.195	A
			2	1, 2, 3, 4	265	1211	0.219	265	262	0.2	0.3	3.236	A
	Exit	1	1		923			923	929	0.0	0.0	0.000	A
2	Entry	1	1	3	1478	1649	0.896	1481	1474	8.1	8.1	19.489	C
			2	1, 2, 4	898	1649	0.545	895	900	1.1	1.5	4.863	A
		2	1	(1, 2, 3, 4)	2376			2376	2376	0.0	0.0	0.000	A
	Exit	1	1		781			781	777	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	153	896	0.170	153	155	0.2	0.2	4.490	A
			2	2, 3	179	896	0.199	178	174	0.3	0.3	4.423	A
		2	1	(1, 2, 3, 4)	331			331	329	0.0	0.0	0.000	A
	Exit	1	1		1518			1518	1510	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	8	1884	0.004	8	9	0.0	0.0	2.039	A
	Exit	1	1		4			4	5	0.0	0.0	0.000	A

Proposed Layout - 2022 Base + Committed + Dev, AM 1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Proposed Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	7.58	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms
[same as above]

Roundabout Geometry
[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	638	110.00
2	572	0.00
3	1210	106.00
4	1219	0.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	2022 Base + Committed + Dev	AM 1	FLAT	07:00	08:00	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	1135	100.000
2		FLAT	✓	1505	100.000
3		FLAT	✓	596	100.000
4		FLAT	✓	517	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	12	871	0	252
	2	1085	0	386	34
	3	0	356	8	232
	4	243	53	221	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	5.55	1.8	A	1131	1131
2	10.38	4.3	B	1507	1507
3	8.25	1.5	A	596	596
4	3.13	0.5	A	515	515

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1127	282	642	1125	1125	1337	0.0	1.8	5.548	A
2	1504	376	495	1504	1489	1272	0.0	4.3	9.713	A
3	596	149	1381	595	590	618	0.0	1.4	7.662	A
4	518	130	1460	519	518	516	0.0	0.4	3.052	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1126	281	634	1130	1134	1337	1.8	1.7	5.543	A
2	1501	375	488	1502	1508	1276	4.3	4.3	10.377	B
3	588	147	1379	588	594	611	1.4	1.4	8.210	A
4	511	128	1459	511	515	508	0.4	0.5	3.126	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1124	281	640	1126	1130	1363	1.7	1.6	5.484	A
2	1517	379	490	1525	1514	1275	4.3	3.9	9.990	A
3	602	150	1401	600	593	614	1.4	1.4	8.053	A
4	519	130	1484	519	518	518	0.5	0.5	3.092	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1149	287	634	1151	1136	1343	1.6	1.7	5.527	A
2	1505	376	496	1506	1502	1289	3.9	4.3	9.970	A
3	597	149	1394	596	601	608	1.4	1.5	8.246	A
4	513	128	1465	513	515	525	0.5	0.4	3.059	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	506	1055	0.480	505	505	0.0	0.8	5.163	A
			2	1, 2, 3, 4	621	1055	0.588	620	620	0.0	1.1	5.862	A
	Exit	1	1		1337			1337	1324	0.0	0.0	0.000	A
2	Entry	1	1	3	386	1406	0.275	386	385	0.0	0.4	3.516	A
			2	1, 2, 4	1117	1406	0.795	1118	1104	0.0	3.9	11.850	B
		2	1	(1, 2, 3, 4)	1504			1504	1506	0.0	0.0	0.000	A
	Exit	1	1		1272			1272	1271	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	365	686	0.532	365	363	0.0	0.9	8.389	A
			2	2, 3	231	686	0.337	230	227	0.0	0.4	6.496	A
		2	1	(1, 2, 3, 4)	596			596	595	0.0	0.0	0.000	A
	Exit	1	1		618			618	616	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	518	1684	0.308	519	518	0.0	0.4	3.052	A
	Exit	1	1		516			516	510	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	507	1059	0.478	509	511	0.8	0.7	5.090	A
			2	1, 2, 3, 4	619	1059	0.585	621	623	1.1	1.0	5.913	A
	Exit	1	1		1337			1337	1345	0.0	0.0	0.000	A
2	Entry	1	1	3	384	1410	0.273	384	385	0.4	0.4	3.528	A

			2	1, 2, 4	1117	1410	0.792	1118	1122	3.9	3.9	12.729	B
		2	1	(1, 2, 3, 4)	1501			1501	1508	0.0	0.0	0.000	A
	Exit	1	1		1276			1276	1278	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	356	687	0.518	356	361	0.9	1.0	9.105	A
			2	2, 3	232	687	0.337	232	233	0.4	0.4	6.824	A
		2	1	(1, 2, 3, 4)	588			588	594	0.0	0.0	0.000	A
	Exit	1	1		611			611	612	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	511	1685	0.304	511	515	0.4	0.5	3.126	A
	Exit	1	1		508			508	516	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	501	1056	0.474	501	505	0.7	0.7	5.074	A
			2	1, 2, 3, 4	623	1056	0.590	624	625	1.0	1.0	5.815	A
	Exit	1	1		1363			1363	1345	0.0	0.0	0.000	A
2	Entry	1	1	3	387	1408	0.275	387	389	0.4	0.4	3.576	A
			2	1, 2, 4	1130	1408	0.802	1137	1125	3.9	3.6	12.209	B
		2	1	(1, 2, 3, 4)	1517			1517	1512	0.0	0.0	0.000	A
	Exit	1	1		1275			1275	1276	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	365	677	0.539	364	362	1.0	0.9	8.829	A
			2	2, 3	237	677	0.349	236	231	0.4	0.5	6.843	A
		2	1	(1, 2, 3, 4)	602			602	593	0.0	0.0	0.000	A
	Exit	1	1		614			614	619	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	519	1662	0.313	519	518	0.5	0.5	3.092	A
	Exit	1	1		518			518	515	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	517	1059	0.488	517	507	0.7	0.7	5.136	A
			2	1, 2, 3, 4	632	1059	0.597	634	629	1.0	1.0	5.843	A
	Exit	1	1		1343			1343	1339	0.0	0.0	0.000	A
2	Entry	1	1	3	381	1405	0.271	382	385	0.4	0.3	3.544	A
			2	1, 2, 4	1124	1405	0.800	1124	1117	3.6	3.9	12.192	B
		2	1	(1, 2, 3, 4)	1505			1505	1504	0.0	0.0	0.000	A
	Exit	1	1		1289			1289	1280	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	366	680	0.538	365	368	0.9	1.0	9.015	A
			2	2, 3	231	680	0.339	231	233	0.5	0.5	7.033	A
		2	1	(1, 2, 3, 4)	597			597	602	0.0	0.0	0.000	A
	Exit	1	1		608			608	612	0.0	0.0	0.000	A

4	**Entry**	**1**	**1**	1, 2, 3, 4	513	1680	0.305	513	515	0.5	0.4	3.059	A
	Exit	**1**	**1**		525			525	523	0.0	0.0	0.000	A

Proposed Layout - 2022 Base + Committed + Dev, AM 2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Proposed Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	8.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	885	110.00
2	572	0.00
3	1210	106.00
4	1219	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	2022 Base + Committed + Dev	AM 2	FLAT	07:30	08:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	1241	100.000
2		FLAT	✓	1419	100.000
3		FLAT	✓	848	100.000
4		FLAT	✓	560	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	13	969	0	259
	2	982	0	394	43
	3	0	549	39	260
	4	263	68	229	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	8.37	2.9	A	1232	1232
2	8.72	4.0	A	1411	1411
3	9.64	2.3	A	841	841
4	3.64	0.6	A	560	560

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1222	306	879	1232	1228	1247	0.0	2.4	8.366	A
2	1409	352	546	1411	1410	1565	0.0	2.9	7.949	A
3	836	209	1291	840	837	666	0.0	2.1	8.798	A
4	559	140	1564	562	561	567	0.0	0.5	3.638	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1239	310	883	1244	1226	1268	2.4	2.9	8.075	A
2	1434	358	538	1427	1433	1589	2.9	4.0	8.724	A
3	843	211	1307	844	839	658	2.1	2.3	9.519	A
4	563	141	1590	562	557	561	0.5	0.6	3.535	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1213	303	862	1218	1229	1248	2.9	2.5	7.971	A
2	1412	353	549	1406	1410	1531	4.0	3.4	8.049	A
3	845	211	1288	846	851	667	2.3	1.9	9.638	A
4	563	141	1545	565	563	589	0.6	0.4	3.605	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1253	313	873	1247	1248	1241	2.5	2.9	8.233	A
2	1389	347	533	1387	1403	1587	3.4	3.1	8.341	A
3	839	210	1278	844	838	642	1.9	2.1	9.288	A
4	553	138	1559	556	555	563	0.4	0.4	3.561	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queu	End queu	Delay (s)	Unsignalised level of service

					(PCU/hr)					e (PCU)	e (PCU)		
1	Entry	1	1	2	566	929	0.609	570	569	0.0	1.1	7.834	A
			2	1, 2, 3, 4	656	929	0.707	661	659	0.0	1.3	8.826	A
	Exit	1	1		1247			1247	1249	0.0	0.0	0.000	A
2	Entry	1	1	3	395	1377	0.287	395	396	0.0	0.4	3.591	A
			2	1, 2, 4	1014	1377	0.736	1017	1013	0.0	2.4	9.643	A
		2	1	(1, 2, 3, 4)	1409			1409	1421	0.0	0.0	0.000	A
	Exit	1	1		1565			1565	1562	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	472	728	0.648	474	471	0.0	1.2	9.330	A
			2	2, 3	365	728	0.502	366	366	0.0	0.9	8.111	A
		2	1	(1, 2, 3, 4)	836			836	846	0.0	0.0	0.000	A
	Exit	1	1		666			666	665	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	559	1586	0.353	562	561	0.0	0.5	3.638	A
	Exit	1	1		567			567	559	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	574	927	0.619	576	568	1.1	1.3	7.539	A
			2	1, 2, 3, 4	665	927	0.717	668	658	1.3	1.6	8.537	A
	Exit	1	1		1268			1268	1263	0.0	0.0	0.000	A
2	Entry	1	1	3	394	1381	0.285	395	400	0.4	0.4	3.769	A
			2	1, 2, 4	1040	1381	0.753	1032	1033	2.4	3.6	10.632	B
		2	1	(1, 2, 3, 4)	1434			1434	1437	0.0	0.0	0.000	A
	Exit	1	1		1589			1589	1571	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	463	720	0.643	464	464	1.2	1.3	10.391	B
			2	2, 3	380	720	0.528	379	375	0.9	1.0	8.441	A
		2	1	(1, 2, 3, 4)	843			843	840	0.0	0.0	0.000	A
	Exit	1	1		658			658	664	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	563	1562	0.361	562	557	0.5	0.6	3.535	A
	Exit	1	1		561			561	557	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	569	937	0.608	570	572	1.3	1.1	7.340	A
			2	1, 2, 3, 4	644	937	0.687	648	657	1.6	1.5	8.519	A
	Exit	1	1		1248			1248	1251	0.0	0.0	0.000	A
2	Entry	1	1	3	400	1375	0.291	400	396	0.4	0.4	3.685	A
			2	1, 2, 4	1011	1375	0.735	1006	1013	3.6	2.9	9.760	A

		2	1	(1, 2, 3, 4)	1412			1412	1407	0.0	0.0	0.000	A
	Exit	1	1		1531			1531	1568	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	472	729	0.648	474	474	1.3	1.1	10.463	B
			2	2, 3	373	729	0.512	372	377	1.0	0.8	8.600	A
		2	1	(1, 2, 3, 4)	845			845	849	0.0	0.0	0.000	A
	Exit	1	1		667			667	666	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	563	1604	0.351	565	563	0.6	0.4	3.605	A
	Exit	1	1		589			589	567	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	585	932	0.628	582	578	1.1	1.3	7.818	A
			2	1, 2, 3, 4	668	932	0.718	665	671	1.5	1.6	8.591	A
	Exit	1	1		1241			1241	1247	0.0	0.0	0.000	A
2	Entry	1	1	3	374	1384	0.270	376	386	0.4	0.3	3.591	A
			2	1, 2, 4	1014	1384	0.733	1010	1017	2.9	2.7	10.154	B
		2	1	(1, 2, 3, 4)	1389			1389	1402	0.0	0.0	0.000	A
	Exit	1	1		1587			1587	1590	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	468	734	0.638	471	466	1.1	1.2	10.215	B
			2	2, 3	370	734	0.505	373	372	0.8	0.9	8.124	A
		2	1	(1, 2, 3, 4)	839			839	838	0.0	0.1	0.004	A
	Exit	1	1		642			642	650	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	553	1591	0.348	556	555	0.4	0.4	3.561	A
	Exit	1	1		563			563	557	0.0	0.0	0.000	A

Proposed Layout - 2022 Base + Committed + Dev, PM 1

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Proposed Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 2 - Lane Simulation	Arm 2: Q at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	30.67	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	623	110.00
2	572	0.00
3	1210	106.00
4	1219	0.00

Slope / Intercept / Capacity

[same as above]

Lane Simulation: Arm options

[same as above]

Lanes

[same as above]

Entry Lane slope and intercept

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	2022 Base + Committed + Dev	PM 1	FLAT	16:00	17:00	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	745	100.000
2		FLAT	✓	2292	100.000
3		FLAT	✓	549	100.000
4		FLAT	✓	551	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	18	458	0	269
	2	898	0	1341	53
	3	0	301	25	223
	4	228	41	282	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	4.70	1.0	A	743	743
2	51.59	36.8	F	2287	2287
3	6.96	1.3	A	550	550
4	2.81	0.4	A	556	556

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	747	187	648	746	745	1139	0.0	1.0	4.698	A
2	2300	575	587	2244	2213	807	0.0	21.5	24.489	C
3	555	139	1231	557	547	1600	0.0	0.9	6.781	A
4	542	136	1244	543	552	544	0.0	0.4	2.665	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	735	184	655	734	738	1155	1.0	1.0	4.617	A
2	2279	570	585	2270	2261	803	21.5	27.5	41.250	E
3	555	139	1238	553	549	1618	0.9	1.0	6.722	A
4	560	140	1250	560	556	541	0.4	0.4	2.699	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	738	184	661	737	747	1153	1.0	1.0	4.633	A
2	2293	573	598	2285	2275	800	27.5	32.7	50.323	F
3	552	138	1238	549	549	1646	1.0	1.3	6.964	A
4	564	141	1249	565	556	538	0.4	0.4	2.813	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	753	188	652	752	741	1145	1.0	1.0	4.670	A
2	2277	569	604	2261	2270	800	32.7	36.8	51.587	F
3	539	135	1239	539	555	1625	1.3	1.0	6.675	A
4	558	139	1237	560	554	542	0.4	0.4	2.725	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:00 - 16:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	275	1053	0.262	275	278	0.0	0.3	4.068	A
			2	1, 2, 3, 4	472	1053	0.448	471	467	0.0	0.7	5.073	A
	Exit	1	1		1139			1139	1144	0.0	0.0	0.000	A
2	Entry	1	1	3	1356	1354	1.002	1301	1265	0.0	19.2	35.623	E
			2	1, 2, 4	944	1354	0.697	944	948	0.0	2.3	8.873	A
		2	1	(1, 2, 3, 4)	2300			2300	2299	0.0	0.0	0.000	A
	Exit	1	1		807			807	800	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	340	755	0.451	342	339	0.0	0.6	7.365	A
			2	2, 3	214	755	0.284	215	209	0.0	0.3	5.831	A
		2	1	(1, 2, 3, 4)	555			555	551	0.0	0.0	0.000	A
	Exit	1	1		1600			1600	1570	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	542	1889	0.287	543	552	0.0	0.4	2.665	A
	Exit	1	1		544			544	542	0.0	0.0	0.000	A

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	276	1049	0.263	275	275	0.3	0.3	3.986	A
			2	1, 2, 3, 4	459	1049	0.438	459	463	0.7	0.7	4.991	A
	Exit	1	1		1155			1155	1141	0.0	0.0	0.000	A
2	Entry	1	1	3	1321	1355	0.975	1309	1316	19.2	25.3	64.015	F
			2	1, 2, 4	958	1355	0.707	961	946	2.3	2.2	8.970	A
		2	1	(1, 2, 3, 4)	2279			2279	2285	0.0	0.0	0.000	A
	Exit	1	1		803			803	800	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	349	752	0.464	347	342	0.6	0.7	7.301	A
			2	2, 3	206	752	0.274	207	208	0.3	0.3	5.769	A
		2	1	(1, 2, 3, 4)	555			555	550	0.0	0.0	0.000	A
	Exit	1	1		1618			1618	1625	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	560	1883	0.297	560	556	0.4	0.4	2.699	A
	Exit	1	1		541			541	539	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	274	1046	0.262	275	281	0.3	0.3	4.053	A
			2	1, 2, 3, 4	463	1046	0.443	463	466	0.7	0.7	4.983	A
	Exit	1	1		1153			1153	1152	0.0	0.0	0.000	A
2	Entry	1	1	3	1334	1347	0.990	1329	1318	25.3	30.1	79.790	F
			2	1, 2, 4	959	1347	0.712	956	956	2.2	2.7	9.202	A
		2	1	(1, 2, 3, 4)	2293			2293	2296	0.0	0.0	0.000	A
	Exit	1	1		800			800	803	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	339	752	0.450	336	340	0.7	0.9	7.595	A
			2	2, 3	213	752	0.283	213	209	0.3	0.4	5.936	A
		2	1	(1, 2, 3, 4)	552			552	550	0.0	0.0	0.000	A
	Exit	1	1		1646			1646	1628	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	564	1884	0.299	565	556	0.4	0.4	2.813	A
	Exit	1	1		538			538	544	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	281	1051	0.267	281	277	0.3	0.3	4.036	A
			2	1, 2, 3, 4	472	1051	0.449	471	465	0.7	0.7	5.048	A
	Exit	1	1		1145			1145	1141	0.0	0.0	0.000	A
2	Entry	1	1	3	1323	1344	0.984	1310	1322	30.1	34.3	83.403	F

			2	1, 2, 4	954	1344	0.710	951	948	2.7	2.5	8.658	A
		2	1	(1, 2, 3, 4)	2277			2277	2286	0.0	0.0	0.000	A
	Exit	1	1		800			800	807	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	336	751	0.447	335	342	0.9	0.7	7.249	A
			2	2, 3	203	751	0.271	204	213	0.4	0.3	5.756	A
		2	1	(1, 2, 3, 4)	539			539	554	0.0	0.0	0.000	A
	Exit	1	1		1625			1625	1631	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	558	1895	0.294	560	554	0.4	0.4	2.725	A
	Exit	1	1		542			542	542	0.0	0.0	0.000	A

Proposed Layout - 2022 Base + Committed + Dev, PM 2

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - Proposed Layout [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm 2 - Lane Simulation	Arm 2: Q at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Geometry	Arm 2 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 3 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	M62 J11	Large Roundabout		1, 2, 3, 4	78.50	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

[same as above]

Roundabout Geometry

[same as above]

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
1	623	110.00
2	572	0.00
3	1210	106.00
4	1219	0.00

Slope / Intercept / Capacity
[same as above]

Lane Simulation: Arm options
[same as above]

Lanes
[same as above]

Entry Lane slope and intercept
[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	2022 Base + Committed + Dev	PM 2	FLAT	16:30	17:30	60	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (PCU/hr)	Scaling Factor (%)
1		FLAT	✓	733	100.000
2		FLAT	✓	2378	100.000
3		FLAT	✓	525	100.000
4		FLAT	✓	519	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	26	454	0	253
	2	878	0	1447	53
	3	0	284	31	210
	4	211	46	262	0

Vehicle Mix

HV %s

		To			
		1	2	3	4
From	1	0	0	0	0
	2	0	0	0	0
	3	0	0	0	0
	4	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max Delay (s)	Max Q (PCU)	Max LOS	Av. Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	4.64	1.0	A	731	731
2	133.25	108.3	F	2394	2394
3	6.62	1.0	A	532	532
4	2.69	0.5	A	513	513

Main Results for each time segment

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	752	188	652	752	750	1102	0.0	0.8	4.598	A
2	2365	591	592	2293	2247	813	0.0	35.1	37.826	E
3	536	134	1215	539	523	1670	0.0	1.0	5.990	A
4	527	132	1225	530	519	529	0.0	0.1	2.574	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	741	185	597	743	751	1133	0.8	1.0	4.630	A
2	2408	602	567	2294	2269	772	35.1	64.7	81.184	F
3	530	133	1248	532	532	1613	1.0	0.8	6.623	A
4	493	123	1238	491	493	542	0.1	0.5	2.589	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	710	178	617	711	726	1153	1.0	0.8	4.643	A
2	2415	604	561	2314	2310	767	64.7	82.8	116.176	F
3	533	133	1242	536	535	1632	0.8	0.9	6.299	A
4	519	130	1254	516	516	524	0.5	0.5	2.687	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Throughput (exit) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service

1	720	180	631	718	740	1096	0.8	1.0	4.538	A
2	2388	597	554	2291	2262	795	82.8	108.3	133.253	F
3	530	132	1187	534	525	1659	0.9	0.7	6.297	A
4	511	128	1217	510	516	503	0.5	0.3	2.504	A

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	280	1050	0.266	281	279	0.0	0.2	4.075	A
			2	1, 2, 3, 4	472	1050	0.449	471	471	0.0	0.6	4.908	A
	Exit	1	1		1102			1102	1104	0.0	0.0	0.000	A
2	Entry	1	1	3	1442	1351	1.067	1359	1327	0.0	33.7	56.727	F
			2	1, 2, 4	923	1351	0.683	934	919	0.0	1.3	7.944	A
		2	1	(1, 2, 3, 4)	2365			2365	2387	0.0	0.0	0.000	A
	Exit	1	1		813			813	797	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	332	762	0.435	332	323	0.0	0.7	6.447	A
			2	2, 3	204	762	0.268	206	201	0.0	0.3	5.254	A
		2	1	(1, 2, 3, 4)	536			536	527	0.0	0.0	0.000	A
	Exit	1	1		1670			1670	1620	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	527	1907	0.277	530	519	0.0	0.1	2.574	A
	Exit	1	1		529			529	518	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	278	1079	0.258	280	281	0.2	0.2	3.926	A
			2	1, 2, 3, 4	462	1079	0.428	463	471	0.6	0.7	5.050	A
	Exit	1	1		1133			1133	1099	0.0	0.0	0.000	A
2	Entry	1	1	3	1455	1365	1.066	1334	1335	33.7	62.0	128.105	F
			2	1, 2, 4	953	1365	0.698	961	934	1.3	2.7	8.830	A
		2	1	(1, 2, 3, 4)	2408			2408	2388	0.0	0.0	0.000	A
	Exit	1	1		772			772	791	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	331	747	0.443	333	333	0.7	0.6	7.119	A
			2	2, 3	199	747	0.266	199	200	0.3	0.2	5.797	A
		2	1	(1, 2, 3, 4)	530			530	532	0.0	0.0	0.000	A
	Exit	1	1		1613			1613	1620	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	493	1894	0.260	491	493	0.1	0.5	2.589	A

	Exit	1	1		542			542	535	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	260	1068	0.243	261	267	0.2	0.3	3.951	A
			2	1, 2, 3, 4	451	1068	0.422	450	459	0.7	0.6	5.046	A
	Exit	1	1		1153			1153	1123	0.0	0.0	0.000	A
2	Entry	1	1	3	1452	1369	1.061	1344	1372	62.0	80.7	185.778	F
			2	1, 2, 4	963	1369	0.704	970	938	2.7	2.1	8.513	A
		2	1	(1, 2, 3, 4)	2415			2415	2382	0.0	0.0	0.000	A
	Exit	1	1		767			767	777	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	328	750	0.438	330	333	0.6	0.6	6.823	A
			2	2, 3	205	750	0.273	205	203	0.2	0.3	5.441	A
		2	1	(1, 2, 3, 4)	533			533	536	0.0	0.0	0.000	A
	Exit	1	1		1632			1632	1659	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	519	1879	0.276	516	516	0.5	0.5	2.687	A
	Exit	1	1		524			524	528	0.0	0.0	0.000	A

17:15 - 17:30

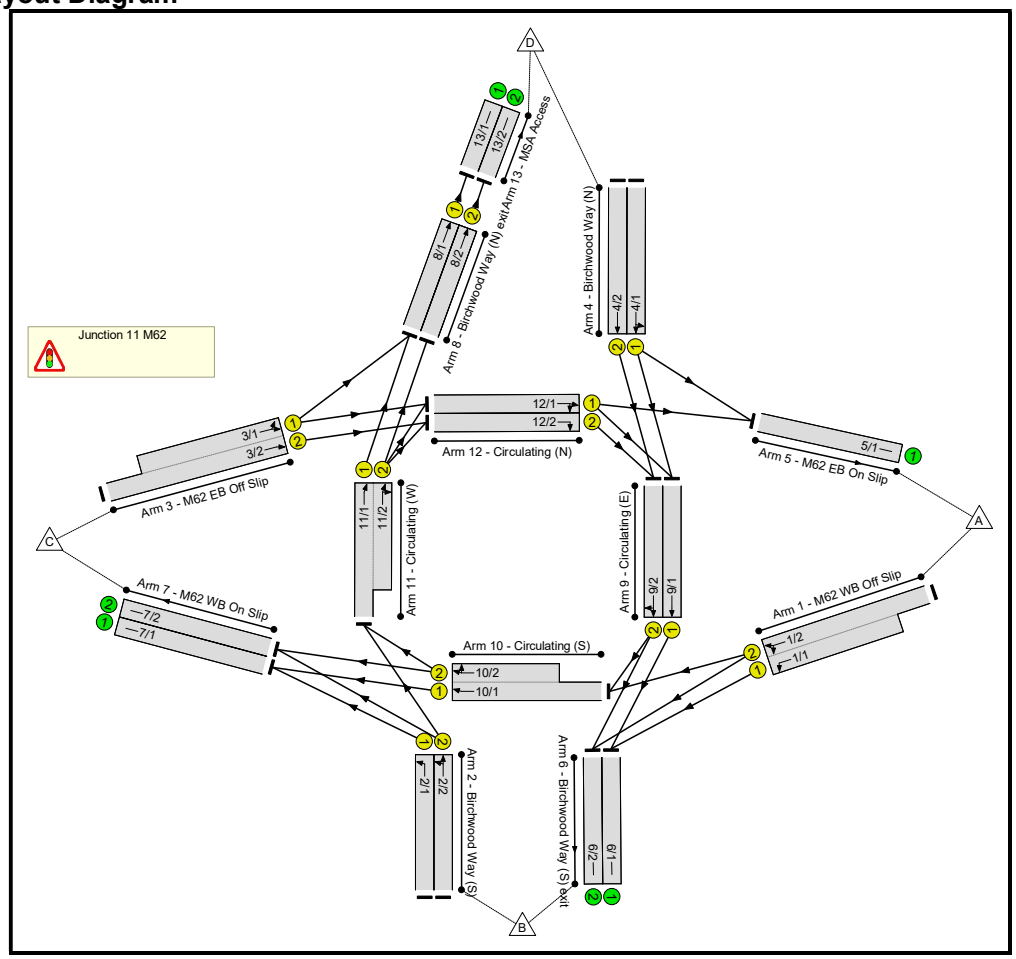
Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Av. throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	Entry	1	1	2	273	1061	0.258	272	274	0.3	0.4	3.852	A
			2	1, 2, 3, 4	447	1061	0.421	446	466	0.6	0.6	4.941	A
	Exit	1	1		1096			1096	1096	0.0	0.0	0.000	A
2	Entry	1	1	3	1456	1372	1.061	1372	1353	80.7	104.8	227.394	F
			2	1, 2, 4	923	1372	0.673	920	908	2.1	2.2	7.907	A
		2	1	(1, 2, 3, 4)	2388			2379	2359	0.0	1.3	0.389	A
	Exit	1	1		795			795	791	0.0	0.0	0.000	A
3	Entry	1	1	1, 2, 4	324	775	0.418	325	327	0.6	0.4	6.696	A
			2	2, 3	206	775	0.265	209	197	0.3	0.3	5.637	A
		2	1	(1, 2, 3, 4)	530			530	524	0.0	0.0	0.000	A
	Exit	1	1		1659			1659	1641	0.0	0.0	0.000	A
4	Entry	1	1	1, 2, 3, 4	511	1914	0.267	510	516	0.5	0.3	2.504	A
	Exit	1	1		503			503	515	0.0	0.0	0.000	A

Full Input Data And Results

User and Project Details

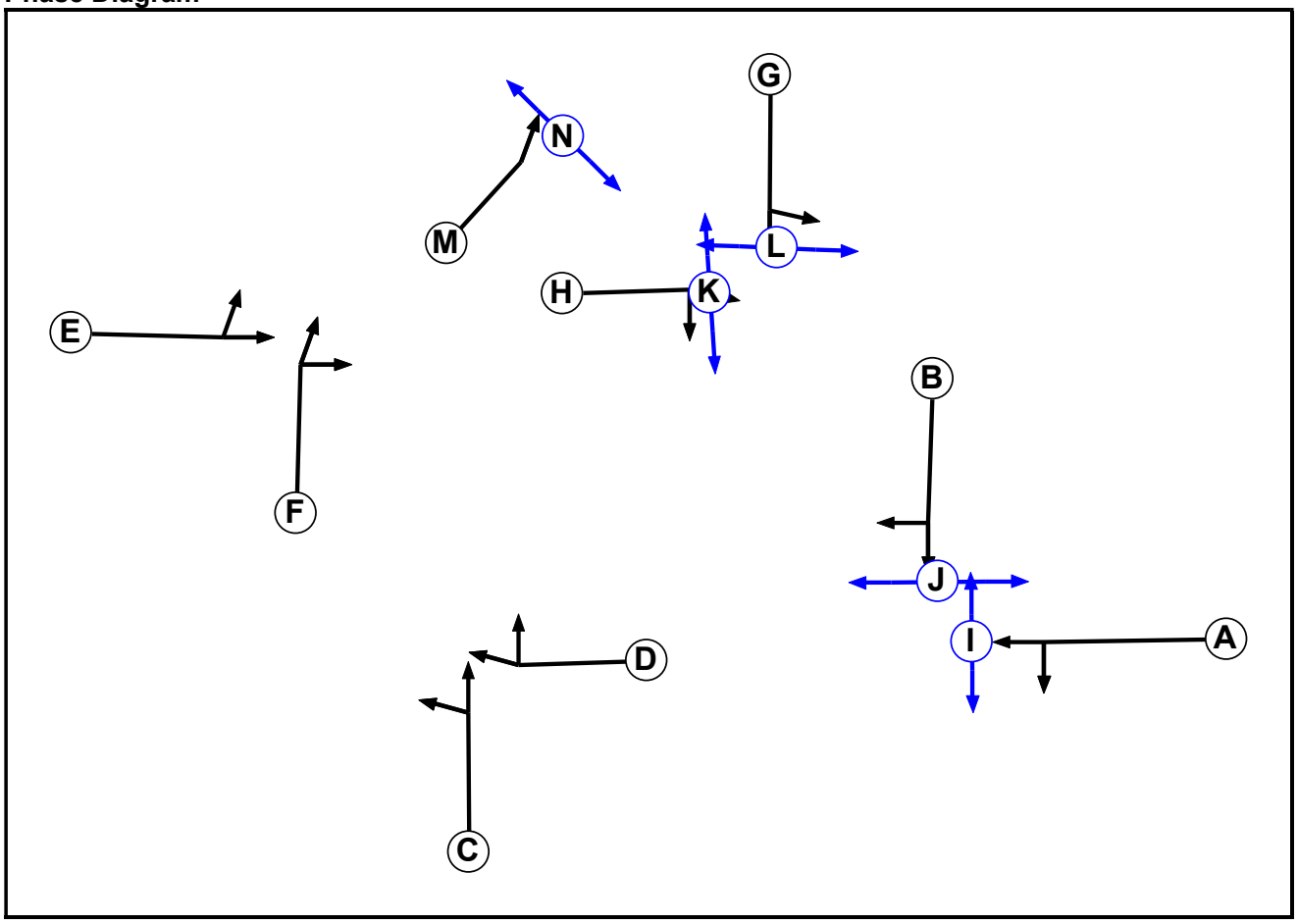
Project:	**Warrington MSA**
Title:	**Junction 11 M62**
Location:	
Additional detail:	
File name:	Jnct 11 - M62 (SK-024) - Q limits & 1s start lag.lsg3x
Author:	HB
Company:	i-Transport
Address:	Manchester

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	2
B	Traffic	1		7	4
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	1
H	Traffic	4		7	2
I	Pedestrian	1		4	4
J	Pedestrian	1		5	5
K	Pedestrian	4		6	6
L	Pedestrian	4		5	5
M	Traffic	5		7	7
N	Pedestrian	5		5	5

Full Input Data And Results

Phase Intergreens Matrix

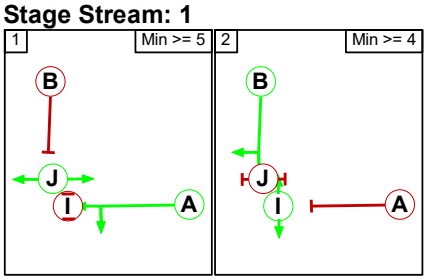
		Starting Phase													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
Terminating Phase	A		5	-	-	-	-	-	-	5	-	-	-	-	-
	B	5		-	-	-	-	-	-	-	5	-	-	-	-
	C	-	-		5	-	-	-	-	-	-	-	-	-	-
	D	-	-	5		-	-	-	-	-	-	-	-	-	-
	E	-	-	-	-		5	-	-	-	-	-	-	-	-
	F	-	-	-	-	5		-	-	-	-	-	-	-	-
	G	-	-	-	-	-	-		5	-	-	-	5	-	-
	H	-	-	-	-	-	-	5		-	-	5	-	-	-
	I	8	-	-	-	-	-	-	-		-	-	-	-	-
	J	-	10	-	-	-	-	-	-	-		-	-	-	-
	K	-	-	-	-	-	-	-	11	-	-		-	-	-
	L	-	-	-	-	-	-	10	-	-	-	-		-	-
	M	-	-	-	-	-	-	-	-	-	-	-	-		5
	N	-	-	-	-	-	-	-	-	-	-	-	-	9	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A J
1	2	B I
2	1	C
2	2	D
3	1	E
3	2	F
4	1	G K
4	2	H L
5	1	M
5	2	N

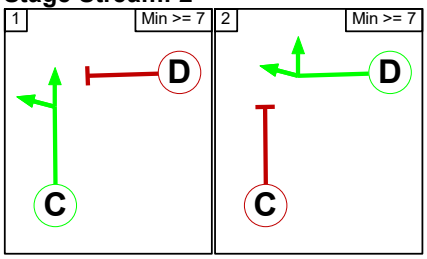
Stage Diagram

Stage Stream: 1

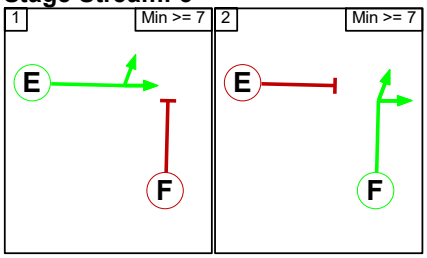


Full Input Data And Results

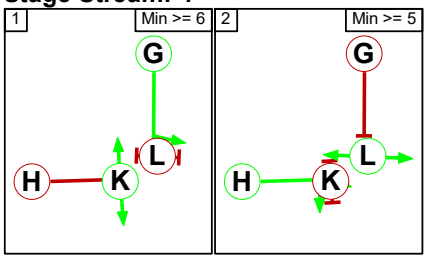
Stage Stream: 2



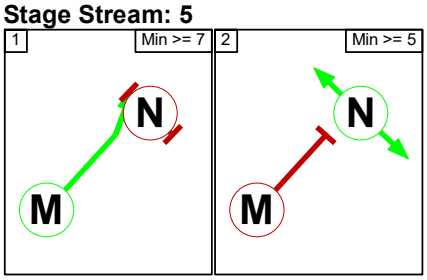
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	A	Losing	5	5
2	1	B	Losing	3	3

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Full Input Data And Results

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	G	Losing	6	6
2	1	H	Losing	5	5

Stage Stream: 5

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

Stage Stream: 1

		To Stage	
		1	2
From Stage	1		10
	2	8	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		5
	2	5	

Stage Stream: 3

		To Stage	
		1	2
From Stage	1		5
	2	5	

Stage Stream: 4

		To Stage	
		1	2
From Stage	1		11
	2	10	

Stage Stream: 5

		To Stage	
		1	2
From Stage	1		5
	2	9	

Full Input Data And Results

Lane Input Data

Junction: Junction 11 M62												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (M62 WB Off Slip)	U	A	1	3	52.2	User	1982	-	-	-	-	-
1/2 (M62 WB Off Slip)	U	A	1	3	60.0	User	2126	-	-	-	-	-
2/1 (Birchwood Way (S))	U	C	1	3	60.0	User	2016	-	-	-	-	-
2/2 (Birchwood Way (S))	U	C	1	3	60.0	User	2154	-	-	-	-	-
3/1 (M62 EB Off Slip)	U	E	1	3	47.0	User	1921	-	-	-	-	-
3/2 (M62 EB Off Slip)	U	E	1	3	60.0	User	2088	-	-	-	-	-
4/1 (Birchwood Way (N))	U	G	1	3	60.0	User	2037	-	-	-	-	-
4/2 (Birchwood Way (N))	U	G	1	3	60.0	User	2181	-	-	-	-	-
8/1 (Birchwood Way (N) exit)	U	M	1	3	20.0	User	2073	-	-	-	-	-
8/2 (Birchwood Way (N) exit)	U	M	1	3	20.0	User	2217	-	-	-	-	-
9/1 (Circulating (E))	U	B	1	3	25.2	User	2105	-	-	-	-	-
9/2 (Circulating (E))	U	B	1	3	25.2	User	2226	-	-	-	-	-
10/1 (Circulating (S))	U	D	1	3	17.4	User	2024	-	-	-	-	-
10/2 (Circulating (S))	U	D	1	3	8.7	User	2163	-	-	-	-	-
11/1 (Circulating (W))	U	F	1	3	25.2	User	2049	-	-	-	-	-
11/2 (Circulating (W))	U	F	1	3	18.3	User	2163	-	-	-	-	-
12/1 (Circulating (N))	U	H	1	3	17.4	User	2100	-	-	-	-	-
12/2 (Circulating (N))	U	H	1	3	17.4	User	2238	-	-	-	-	-

Full Input Data And Results

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 with Development AM1'	07:00	08:00	01:00	
2: '2022 with Development PM1'	16:00	17:00	01:00	
3: '2022 with Development AM2'	07:30	08:30	01:00	
4: '2022 with Development PM2'	16:30	17:30	01:00	

Scenario 1: '2022 with Development AM1' (FG1: '2022 with Development AM1', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	12	871	0	252	1135
	B	1085	0	386	34	1505
	C	0	356	8	232	596
	D	243	53	221	0	517
	Tot.	1340	1280	615	518	3753

Lane Saturation Flows

Junction: Junction 11 M62
No data to display

Scenario 2: '2022 with Development AM2' (FG3: '2022 with Development AM2', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	13	969	0	259	1241
	B	982	0	394	43	1419
	C	0	549	39	260	848
	D	263	68	229	0	560
	Tot.	1258	1586	662	562	4068

Lane Saturation Flows

Junction: Junction 11 M62
No data to display

Full Input Data And Results

Scenario 3: '2022 with Development PM1' (FG2: '2022 with Development PM1', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	18	458	0	269	745
	B	898	0	1341	53	2292
	C	0	301	25	223	549
	D	228	41	282	0	551
	Tot.	1144	800	1648	545	4137

Lane Saturation Flows

Junction: Junction 11 M62
No data to display

Scenario 4: '2022 with Development PM2' (FG4: '2022 with Development PM2', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	26	454	0	253	733
	B	878	0	1447	53	2378
	C	0	284	31	210	525
	D	211	46	262	0	519
	Tot.	1115	784	1740	516	4155

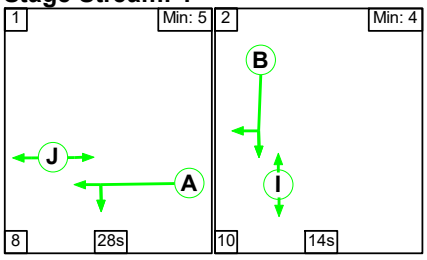
Lane Saturation Flows

Junction: Junction 11 M62
No data to display

Scenario 1: '2022 with Development AM1' (FG1: '2022 with Development AM1', Plan 1: 'Network Control Plan 1')

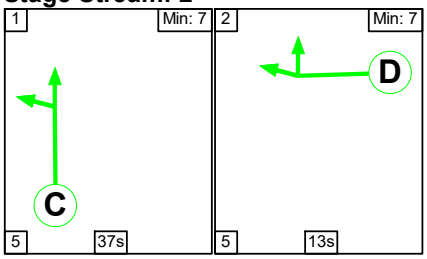
Stage Sequence Diagram

Stage Stream: 1

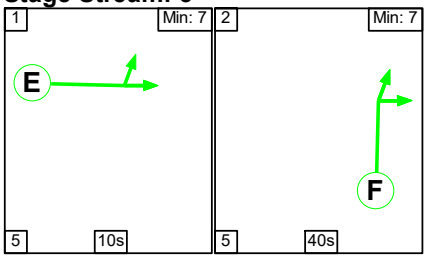


Full Input Data And Results

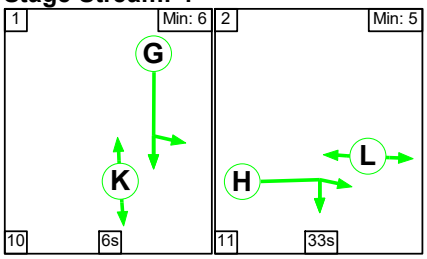
Stage Stream: 2



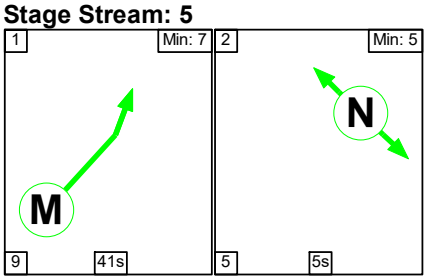
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	28	14
Change Point	30	6

Stage Stream: 2

Stage	1	2
Duration	37	13
Change Point	54	36

Stage Stream: 3

Stage	1	2
Duration	10	40
Change Point	47	2

Full Input Data And Results

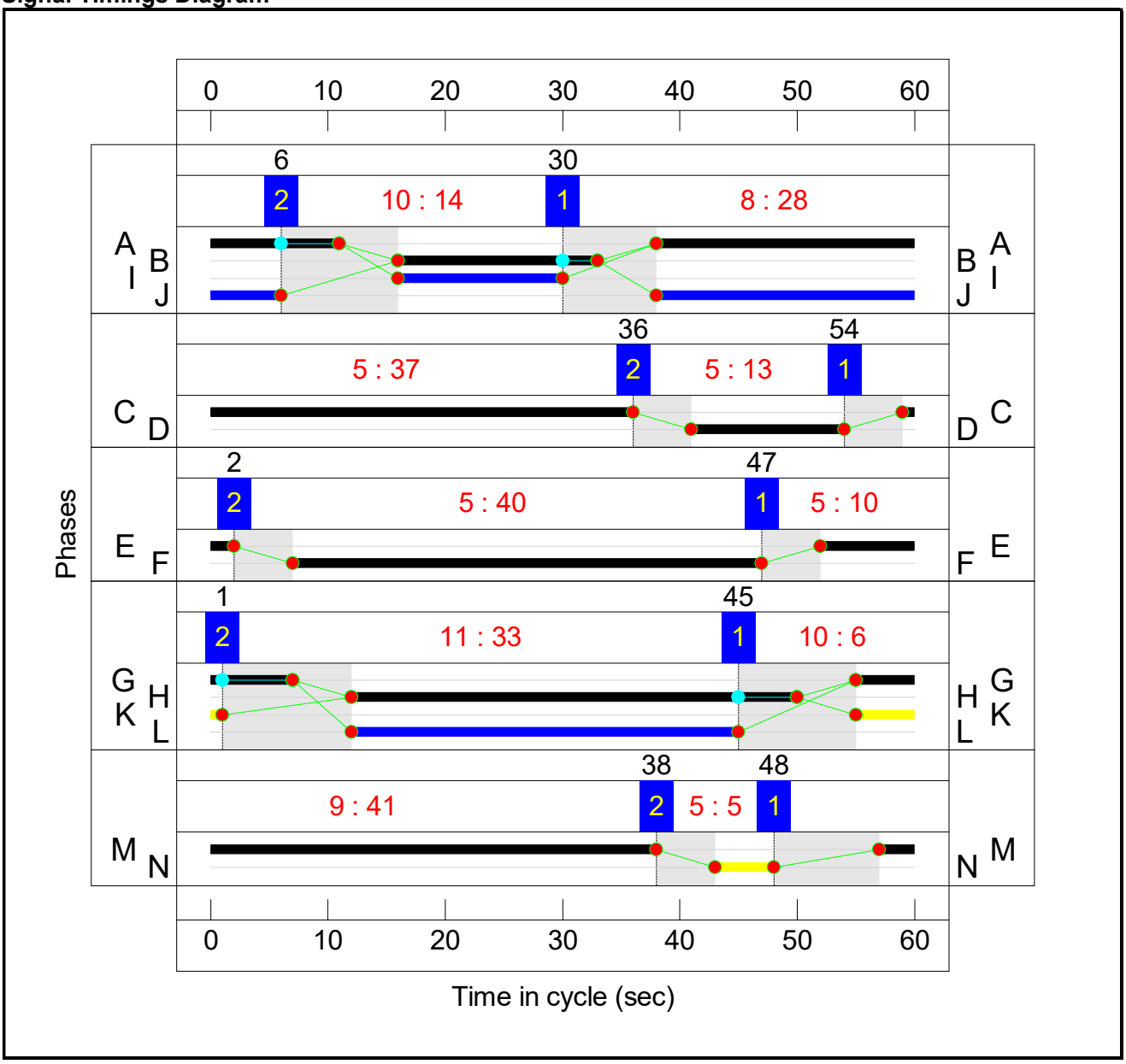
Stage Stream: 4

Stage	1	2
Duration	6	33
Change Point	45	1

Stage Stream: 5

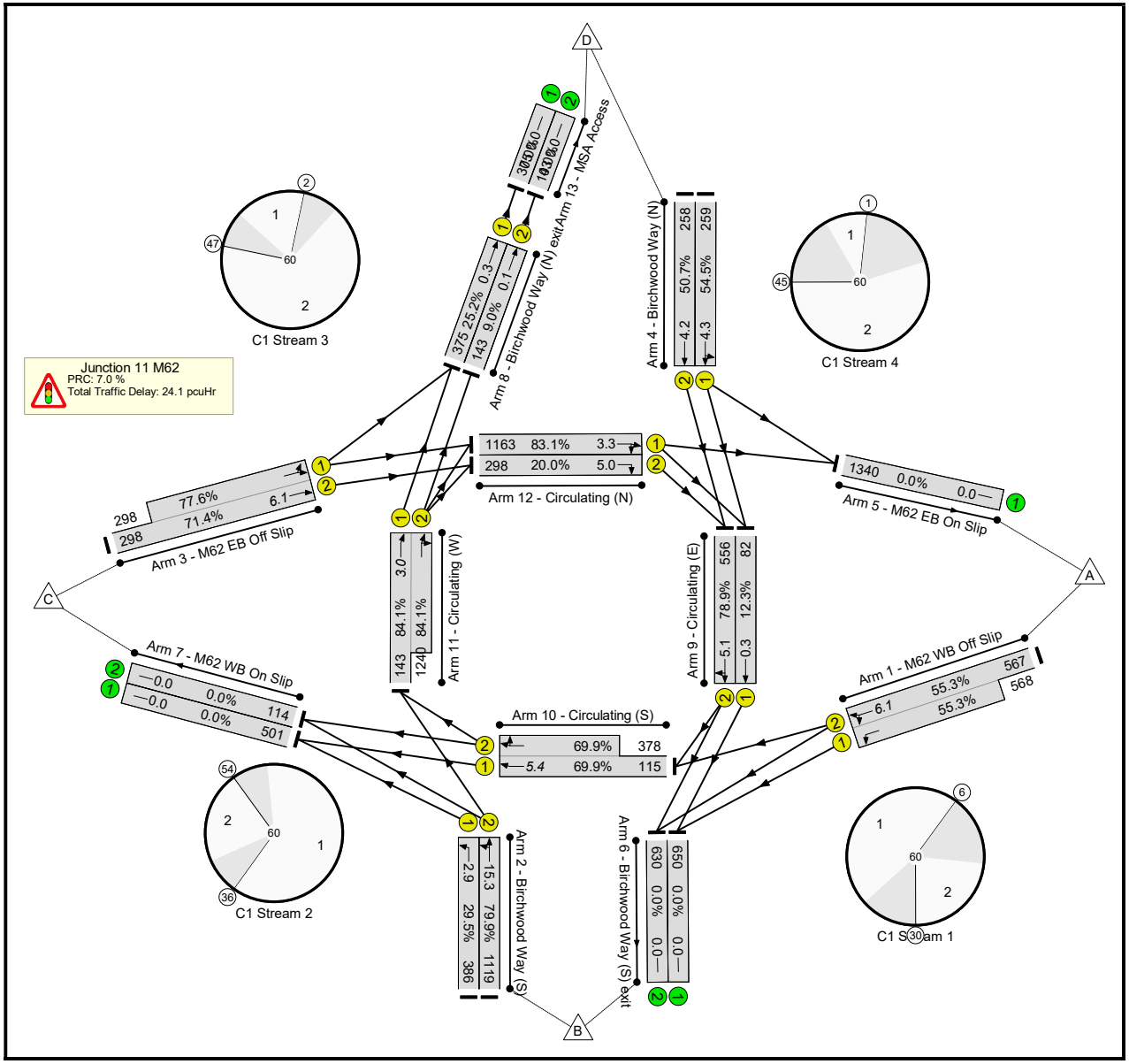
Stage	1	2
Duration	41	5
Change Point	48	38

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 11 M62	-	-	**N/A**	-	-		-	-	-	-	-	-	**84.1%**
Junction 11 M62	-	-	**N/A**	-	-		-	-	-	-	-	-	**84.1%**
1/2+1/1	M62 WB Off Slip Left Ahead	U	1	N/A	A		1	33	-	1135	2126:1982	1025+1027	55.3 : 55.3%
2/1	Birchwood Way (S) Left	U	2	N/A	C		1	37	-	386	2016	1310	29.5%
2/2	Birchwood Way (S) Left Ahead	U	2	N/A	C		1	37	-	1119	2154	1400	79.9%
3/2+3/1	M62 EB Off Slip Left Ahead	U	3	N/A	E		1	10	-	596	2088:1921	418+384	71.4 : 77.6%
4/1	Birchwood Way (N) Left Ahead	U	4	N/A	G		1	12	-	259	2037	475	54.5%
4/2	Birchwood Way (N) Ahead	U	4	N/A	G		1	12	-	258	2181	509	50.7%
8/1	Birchwood Way (N) exit Ahead	U	5	N/A	M		1	41	-	375	2073	1486	25.2%
8/2	Birchwood Way (N) exit Ahead	U	5	N/A	M		1	41	-	143	2217	1589	9.0%
9/1	Circulating (E) Ahead	U	1	N/A	B		1	17	-	82	2105	667	12.3%
9/2	Circulating (E) Ahead Right	U	1	N/A	B		1	17	-	556	2226	705	78.9%
10/1+10/2	Circulating (S) Ahead Right	U	2	N/A	D		1	13	-	493	2024:2163	165+541	69.9 : 69.9%
11/1+11/2	Circulating (W) Ahead Right	U	3	N/A	F		1	40	-	1383	2049:2163	170+1475	84.1 : 84.1%
12/1	Circulating (N) Ahead Right	U	4	N/A	H		1	38	-	1163	2100	1400	83.1%
12/2	Circulating (N) Right	U	4	N/A	H		1	38	-	298	2238	1492	20.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**17.4**	**6.7**	**0.0**	**24.1**	**-**	**-**	**-**	**-**
Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**17.4**	**6.7**	**0.0**	**24.1**	**-**	**-**	**-**	**-**
1/2+1/1	1135	1135	-	-	-	2.3	0.6	-	2.9	9.2	5.5	0.6	6.1
2/1	386	386	-	-	-	0.5	0.2	-	0.7	6.5	2.7	0.2	2.9
2/2	1119	1119	-	-	-	2.4	2.0	-	4.3	14.0	13.4	2.0	15.3
3/2+3/1	596	596	-	-	-	3.7	1.4	-	5.2	31.2	4.6	1.4	6.1
4/1	259	259	-	-	-	1.5	0.6	-	2.0	28.5	3.7	0.6	4.3
4/2	258	258	-	-	-	1.4	0.5	-	1.9	27.2	3.7	0.5	4.2
8/1	375	375	-	-	-	0.0	0.2	-	0.2	1.8	0.1	0.2	0.3
8/2	143	143	-	-	-	0.0	0.0	-	0.1	1.6	0.1	0.0	0.1
9/1	82	82	-	-	-	0.1	0.0	-	0.1	3.5	0.3	0.0	0.3
9/2	556	556	-	-	-	0.9	0.0	-	0.9	5.9	5.1	0.0	5.1
10/1+10/2	493	493	-	-	-	2.1	1.1	-	3.3	23.7	4.3	1.1	5.4
11/1+11/2	1383	1383	-	-	-	0.8	0.0	-	0.8	2.2	3.0	0.0	3.0
12/1	1163	1163	-	-	-	0.7	0.0	-	0.7	2.1	3.3	0.0	3.3
12/2	298	298	-	-	-	1.0	0.0	-	1.0	11.5	5.0	0.0	5.0

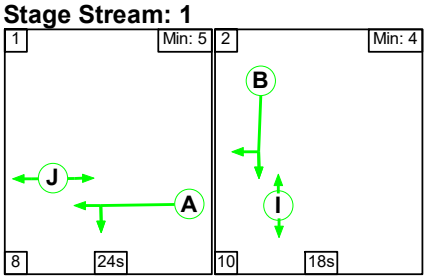
C1	Stream: 1 PRC for Signalled Lanes (%):	14.1	Total Delay for Signalled Lanes (pcuHr):	3.89	Cycle Time (s):	60
C1	Stream: 2 PRC for Signalled Lanes (%):	12.6	Total Delay for Signalled Lanes (pcuHr):	8.29	Cycle Time (s):	60
C1	Stream: 3 PRC for Signalled Lanes (%):	7.0	Total Delay for Signalled Lanes (pcuHr):	6.00	Cycle Time (s):	60
C1	Stream: 4 PRC for Signalled Lanes (%):	8.3	Total Delay for Signalled Lanes (pcuHr):	5.64	Cycle Time (s):	60
C1	Stream: 5 PRC for Signalled Lanes (%):	256.6	Total Delay for Signalled Lanes (pcuHr):	0.25	Cycle Time (s):	60
	PRC Over All Lanes (%):	7.0	Total Delay Over All Lanes(pcuHr):	24.06		

Full Input Data And Results

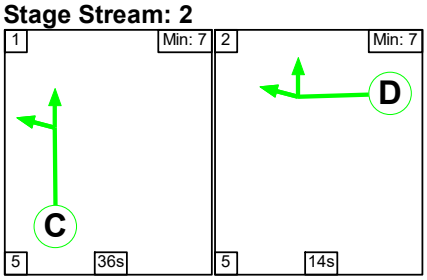
Scenario 2: '2022 with Development AM2' (FG3: '2022 with Development AM2', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

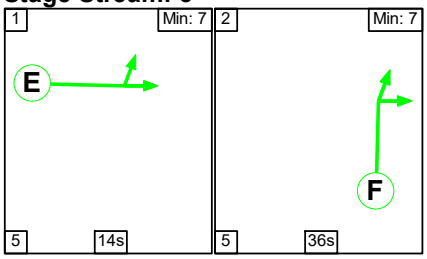
Stage Stream: 1



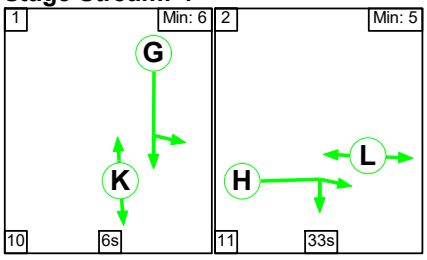
Stage Stream: 2



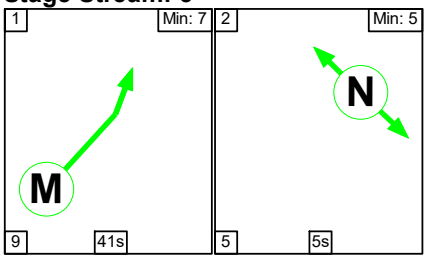
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	24	18
Change Point	15	47

Full Input Data And Results

Stage Stream: 2

Stage	1	2
Duration	36	14
Change Point	46	27

Stage Stream: 3

Stage	1	2
Duration	14	36
Change Point	33	52

Stage Stream: 4

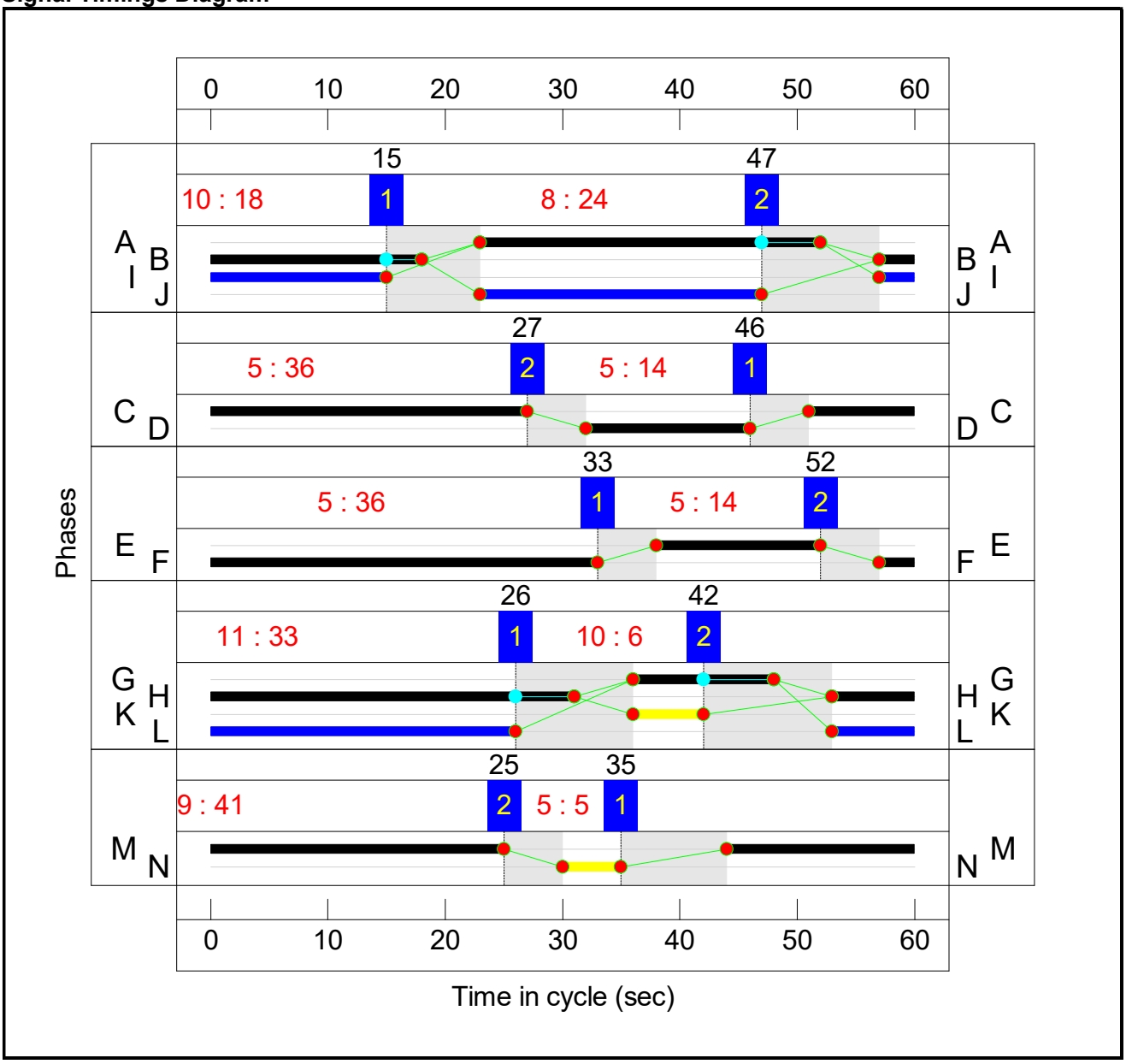
Stage	1	2
Duration	6	33
Change Point	26	42

Stage Stream: 5

Stage	1	2
Duration	41	5
Change Point	35	25

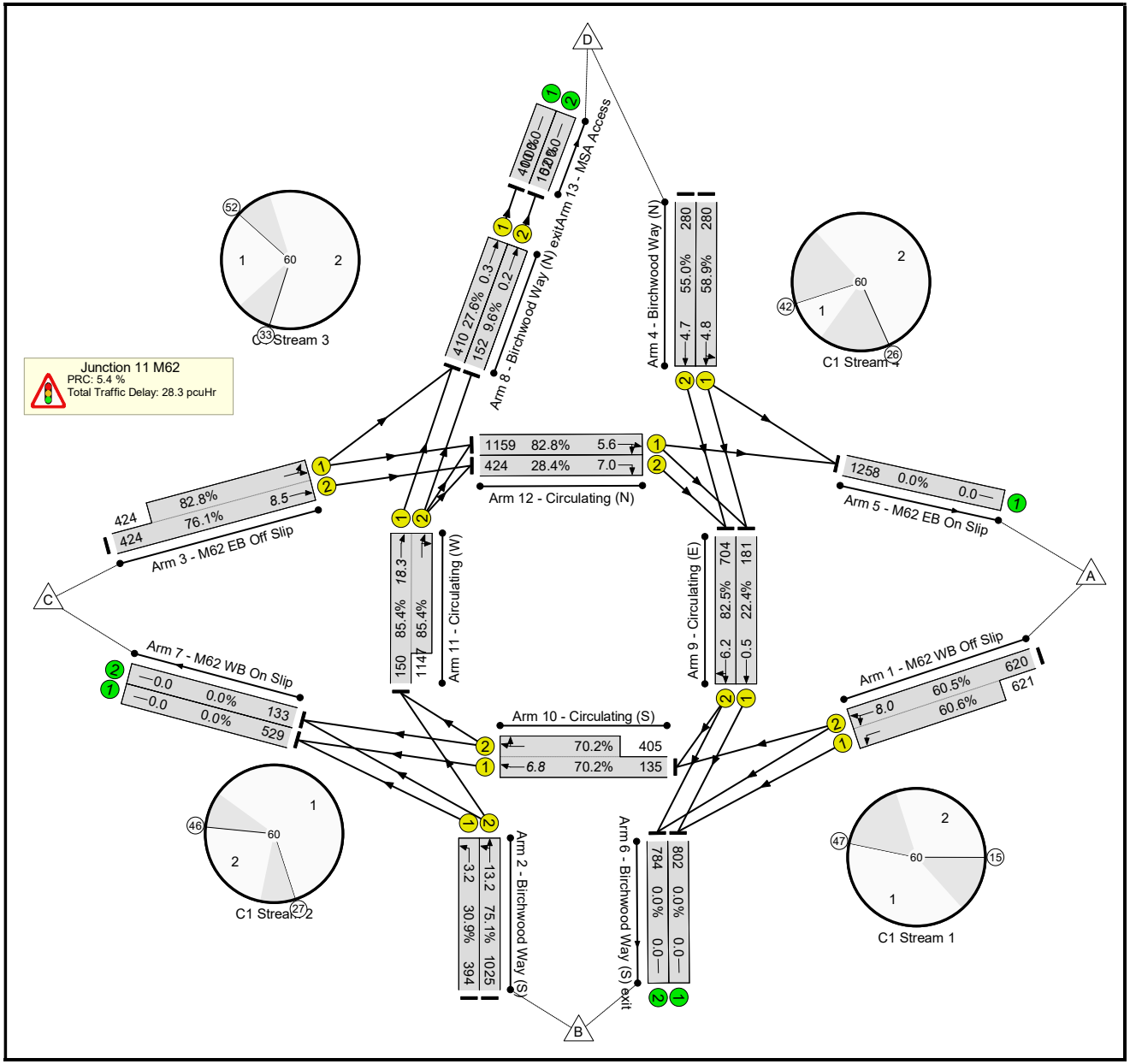
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 11 M62	-	-	**N/A**	-	-		-	-	-	-	-	-	**85.4%**
Junction 11 M62	-	-	**N/A**	-	-		-	-	-	-	-	-	**85.4%**
1/2+1/1	M62 WB Off Slip Left Ahead	U	1	N/A	A		1	29	-	1241	2126:1982	1025+1024	60.5 : 60.6%
2/1	Birchwood Way (S) Left	U	2	N/A	C		1	36	-	394	2016	1277	30.9%
2/2	Birchwood Way (S) Left Ahead	U	2	N/A	C		1	36	-	1025	2154	1364	75.1%
3/2+3/1	M62 EB Off Slip Left Ahead	U	3	N/A	E		1	14	-	848	2088:1921	557+512	76.1 : 82.8%
4/1	Birchwood Way (N) Left Ahead	U	4	N/A	G		1	12	-	280	2037	475	58.9%
4/2	Birchwood Way (N) Ahead	U	4	N/A	G		1	12	-	280	2181	509	55.0%
8/1	Birchwood Way (N) exit Ahead	U	5	N/A	M		1	41	-	410	2073	1486	27.6%
8/2	Birchwood Way (N) exit Ahead	U	5	N/A	M		1	41	-	152	2217	1589	9.6%
9/1	Circulating (E) Ahead	U	1	N/A	B		1	21	-	181	2105	807	22.4%
9/2	Circulating (E) Ahead Right	U	1	N/A	B		1	21	-	704	2226	853	82.5%
10/1+10/2	Circulating (S) Ahead Right	U	2	N/A	D		1	14	-	540	2024:2163	192+577	70.2 : 70.2%
11/1+11/2	Circulating (W) Ahead Right	U	3	N/A	F		1	36	-	1297	2049:2163	176+1344	85.4 : 85.4%
12/1	Circulating (N) Ahead Right	U	4	N/A	H		1	38	-	1159	2100	1400	82.8%
12/2	Circulating (N) Right	U	4	N/A	H		1	38	-	424	2238	1492	28.4%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**21.2**	**7.1**	**0.0**	**28.3**	**-**	**-**	**-**	**-**
Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**21.2**	**7.1**	**0.0**	**28.3**	**-**	**-**	**-**	**-**
1/2+1/1	1241	1241	-	-	-	3.5	0.8	-	4.2	12.3	7.2	0.8	8.0
2/1	394	394	-	-	-	0.5	0.2	-	0.8	7.1	3.0	0.2	3.2
2/2	1025	1025	-	-	-	2.2	1.5	-	3.7	13.0	11.7	1.5	13.2
3/2+3/1	848	848	-	-	-	4.8	1.9	-	6.7	28.5	6.6	1.9	8.5
4/1	280	280	-	-	-	1.6	0.7	-	2.3	29.6	4.1	0.7	4.8
4/2	280	280	-	-	-	1.6	0.6	-	2.2	28.1	4.0	0.6	4.7
8/1	410	410	-	-	-	0.0	0.2	-	0.2	1.9	0.1	0.2	0.3
8/2	152	152	-	-	-	0.0	0.1	-	0.1	1.8	0.1	0.1	0.2
9/1	181	181	-	-	-	0.2	0.0	-	0.2	3.1	0.5	0.0	0.5
9/2	704	704	-	-	-	0.9	0.0	-	0.9	4.7	6.2	0.0	6.2
10/1+10/2	540	540	-	-	-	2.5	1.2	-	3.7	24.8	5.7	1.2	6.8
11/1+11/2	1297	1297	-	-	-	1.3	0.0	-	1.3	3.7	18.3	0.0	18.3
12/1	1159	1159	-	-	-	1.2	0.0	-	1.2	3.8	5.6	0.0	5.6
12/2	424	424	-	-	-	0.8	0.0	-	0.8	6.4	7.0	0.0	7.0

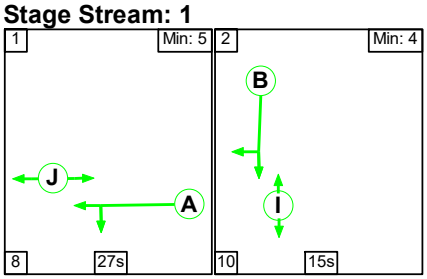
C1	Stream: 1 PRC for Signalled Lanes (%):	9.1	Total Delay for Signalled Lanes (pcuHr):	5.31	Cycle Time (s):	60		
C1	Stream: 2 PRC for Signalled Lanes (%):	19.8	Total Delay for Signalled Lanes (pcuHr):	8.18	Cycle Time (s):	60		
C1	Stream: 3 PRC for Signalled Lanes (%):	5.4	Total Delay for Signalled Lanes (pcuHr):	8.04	Cycle Time (s):	60		
C1	Stream: 4 PRC for Signalled Lanes (%):	8.7	Total Delay for Signalled Lanes (pcuHr):	6.45	Cycle Time (s):	60		
C1	Stream: 5 PRC for Signalled Lanes (%):	226.1	Total Delay for Signalled Lanes (pcuHr):	0.29	Cycle Time (s):	60		
	PRC Over All Lanes (%):	5.4	Total Delay Over All Lanes(pcuHr):	28.27				

Full Input Data And Results

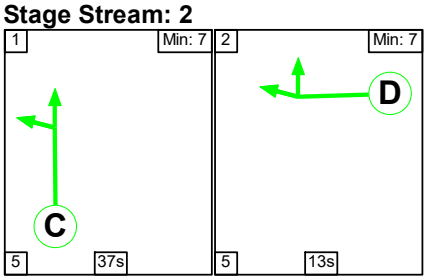
Scenario 3: '2022 with Development PM1' (FG2: '2022 with Development PM1', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

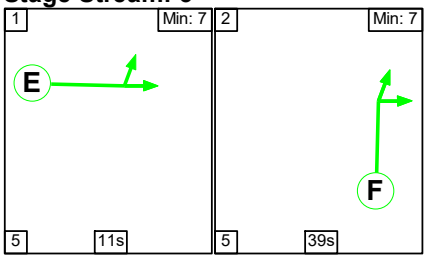
Stage Stream: 1



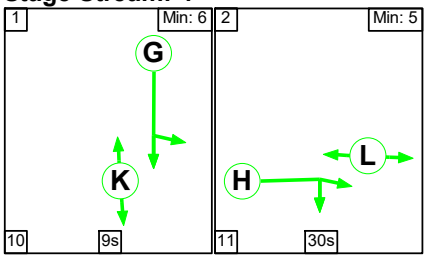
Stage Stream: 2



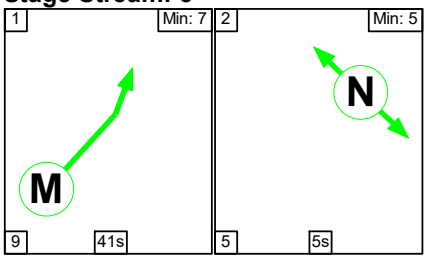
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	27	15
Change Point	0	35

Full Input Data And Results

Stage Stream: 2

Stage	1	2
Duration	37	13
Change Point	26	8

Stage Stream: 3

Stage	1	2
Duration	11	39
Change Point	19	35

Stage Stream: 4

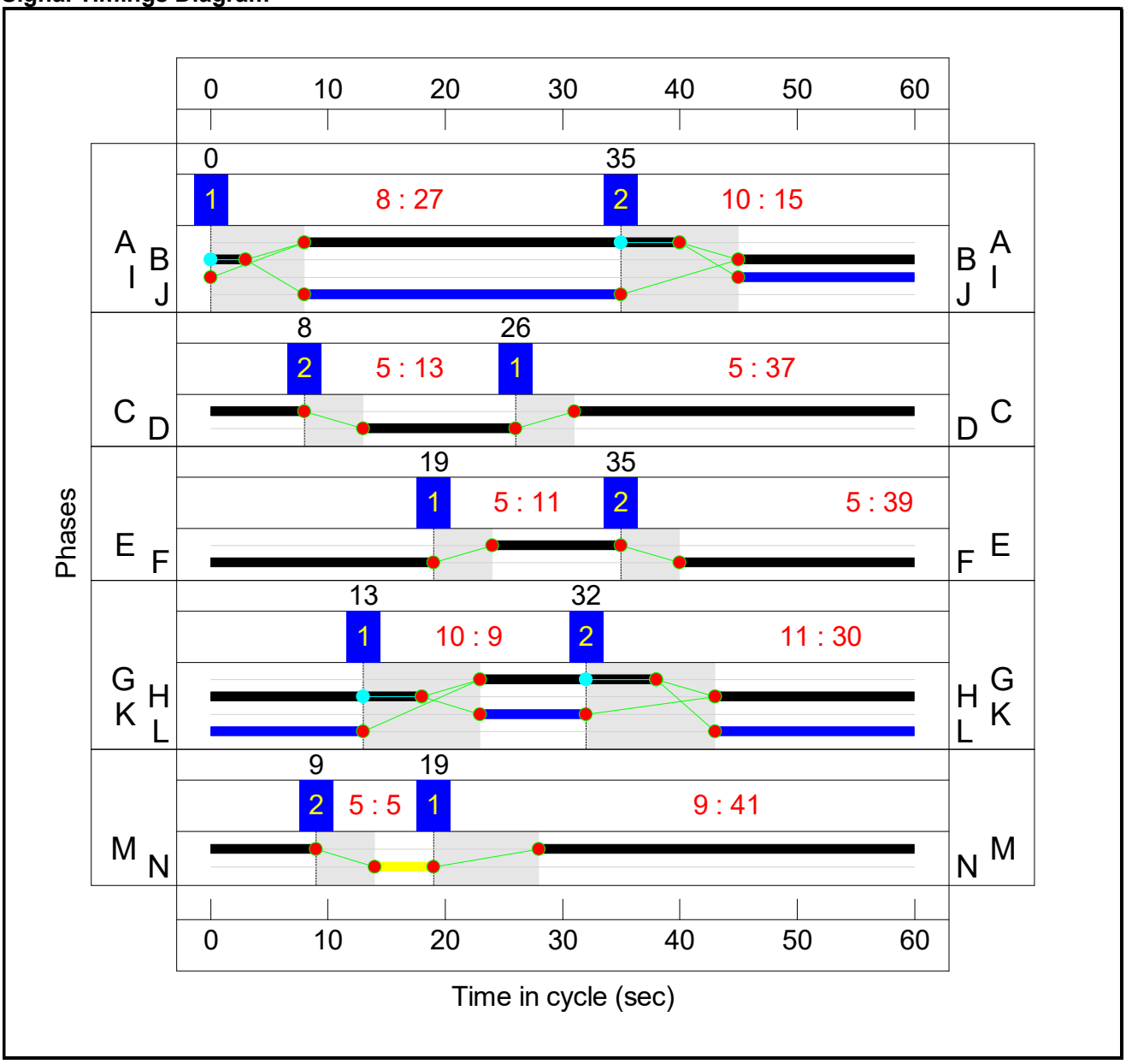
Stage	1	2
Duration	9	30
Change Point	13	32

Stage Stream: 5

Stage	1	2
Duration	41	5
Change Point	19	9

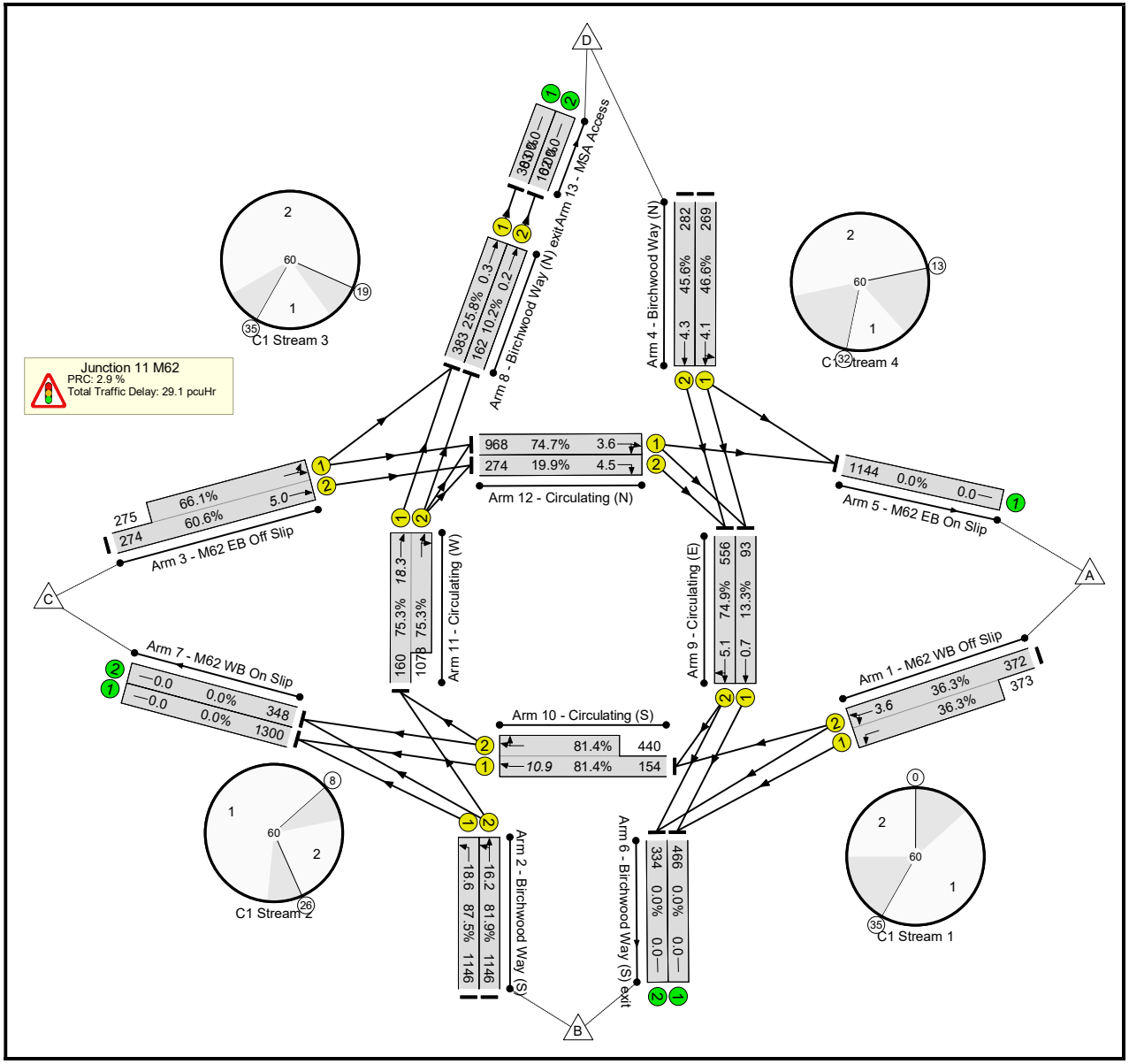
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 11 M62	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.5%**
Junction 11 M62	-	-	**N/A**	-	-		-	-	-	-	-	-	**87.5%**
1/2+1/1	M62 WB Off Slip Left Ahead	U	1	N/A	A		1	32	-	745	2126:1982	1024+1027	36.3 : 36.3%
2/1	Birchwood Way (S) Left	U	2	N/A	C		1	37	-	1146	2016	1310	87.5%
2/2	Birchwood Way (S) Left Ahead	U	2	N/A	C		1	37	-	1146	2154	1400	81.9%
3/2+3/1	M62 EB Off Slip Left Ahead	U	3	N/A	E		1	11	-	549	2088:1921	452+416	60.6 : 66.1%
4/1	Birchwood Way (N) Left Ahead	U	4	N/A	G		1	15	-	269	2037	577	46.6%
4/2	Birchwood Way (N) Ahead	U	4	N/A	G		1	15	-	282	2181	618	45.6%
8/1	Birchwood Way (N) exit Ahead	U	5	N/A	M		1	41	-	383	2073	1486	25.8%
8/2	Birchwood Way (N) exit Ahead	U	5	N/A	M		1	41	-	162	2217	1589	10.2%
9/1	Circulating (E) Ahead	U	1	N/A	B		1	18	-	93	2105	702	13.3%
9/2	Circulating (E) Ahead Right	U	1	N/A	B		1	18	-	556	2226	742	74.9%
10/1+10/2	Circulating (S) Ahead Right	U	2	N/A	D		1	13	-	594	2024:2163	189+541	81.4 : 81.4%
11/1+11/2	Circulating (W) Ahead Right	U	3	N/A	F		1	39	-	1238	2049:2163	213+1432	75.3 : 75.3%
12/1	Circulating (N) Ahead Right	U	4	N/A	H		1	35	-	968	2100	1295	74.7%
12/2	Circulating (N) Right	U	4	N/A	H		1	35	-	274	2238	1380	19.9%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**19.2**	**9.9**	**0.0**	**29.1**	**-**	**-**	**-**	**-**
Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**19.2**	**9.9**	**0.0**	**29.1**	**-**	**-**	**-**	**-**
1/2+1/1	745	745	-	-	-	1.4	0.3	-	1.7	8.3	3.3	0.3	3.6
2/1	1146	1146	-	-	-	2.7	3.3	-	6.1	19.0	15.3	3.3	18.6
2/2	1146	1146	-	-	-	2.5	2.2	-	4.7	14.8	14.0	2.2	16.2
3/2+3/1	549	549	-	-	-	3.3	0.9	-	4.1	26.9	4.1	0.9	5.0
4/1	269	269	-	-	-	1.3	0.4	-	1.8	23.6	3.7	0.4	4.1
4/2	282	282	-	-	-	1.4	0.4	-	1.8	23.1	3.8	0.4	4.3
8/1	383	383	-	-	-	0.0	0.2	-	0.2	1.9	0.2	0.2	0.3
8/2	162	162	-	-	-	0.0	0.1	-	0.1	1.9	0.2	0.1	0.2
9/1	93	93	-	-	-	0.1	0.0	-	0.1	5.3	0.7	0.0	0.7
9/2	556	556	-	-	-	1.0	0.0	-	1.0	6.7	5.1	0.0	5.1
10/1+10/2	594	594	-	-	-	2.7	2.1	-	4.8	29.0	8.8	2.1	10.9
11/1+11/2	1238	1238	-	-	-	0.9	0.0	-	0.9	2.8	18.3	0.0	18.3
12/1	968	968	-	-	-	1.0	0.0	-	1.0	3.5	3.6	0.0	3.6
12/2	274	274	-	-	-	0.8	0.0	-	0.8	10.4	4.5	0.0	4.5

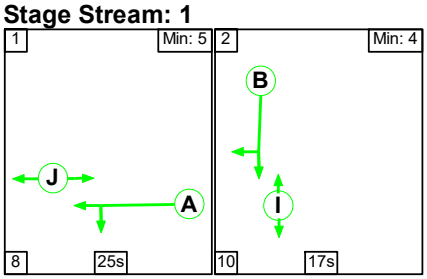
C1	Stream: 1 PRC for Signalled Lanes (%):	20.1	Total Delay for Signalled Lanes (pcuHr):	2.88	Cycle Time (s):	60		
C1	Stream: 2 PRC for Signalled Lanes (%):	2.9	Total Delay for Signalled Lanes (pcuHr):	15.57	Cycle Time (s):	60		
C1	Stream: 3 PRC for Signalled Lanes (%):	19.6	Total Delay for Signalled Lanes (pcuHr):	5.06	Cycle Time (s):	60		
C1	Stream: 4 PRC for Signalled Lanes (%):	20.4	Total Delay for Signalled Lanes (pcuHr):	5.31	Cycle Time (s):	60		
C1	Stream: 5 PRC for Signalled Lanes (%):	249.1	Total Delay for Signalled Lanes (pcuHr):	0.29	Cycle Time (s):	60		
	PRC Over All Lanes (%):	2.9	Total Delay Over All Lanes(pcuHr):	29.11				

Full Input Data And Results

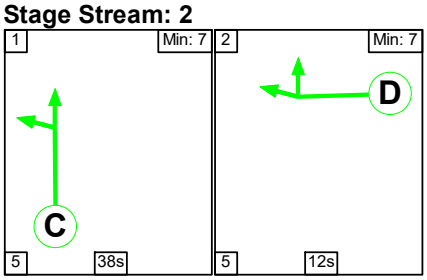
Scenario 4: '2022 with Development PM2' (FG4: '2022 with Development PM2', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

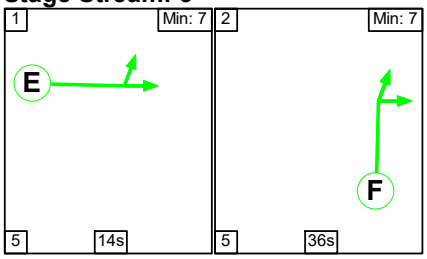
Stage Stream: 1



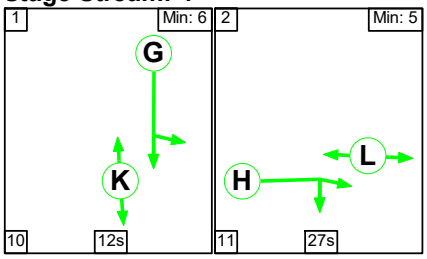
Stage Stream: 2



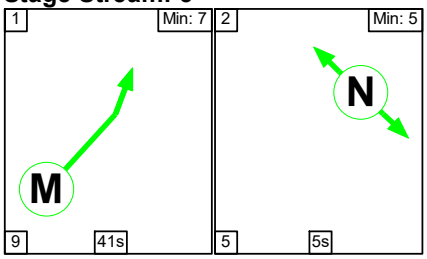
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2
Duration	25	17
Change Point	15	48

Full Input Data And Results

Stage Stream: 2

Stage	1	2
Duration	38	12
Change Point	37	20

Stage Stream: 3

Stage	1	2
Duration	14	36
Change Point	24	43

Stage Stream: 4

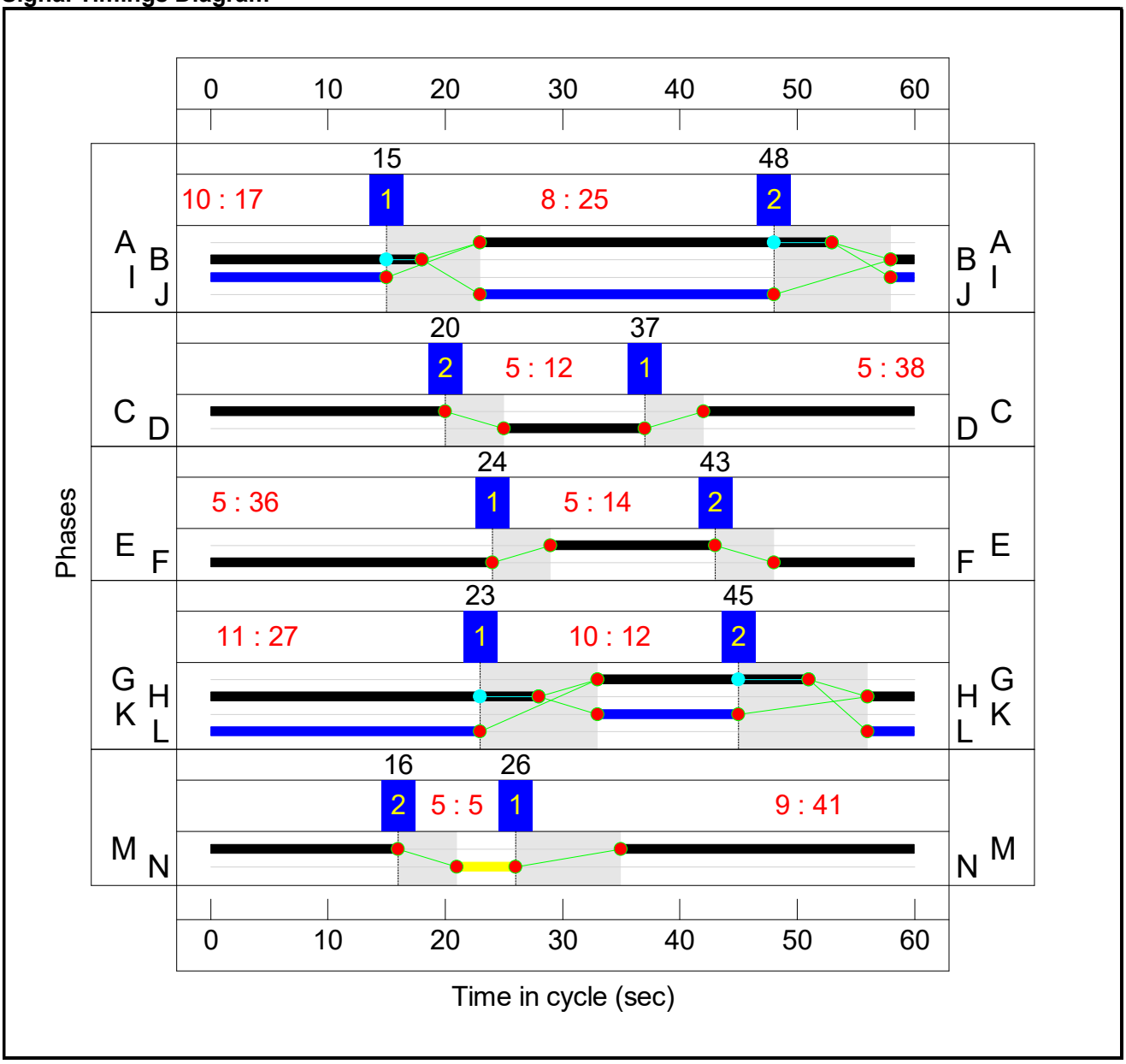
Stage	1	2
Duration	12	27
Change Point	23	45

Stage Stream: 5

Stage	1	2
Duration	41	5
Change Point	26	16

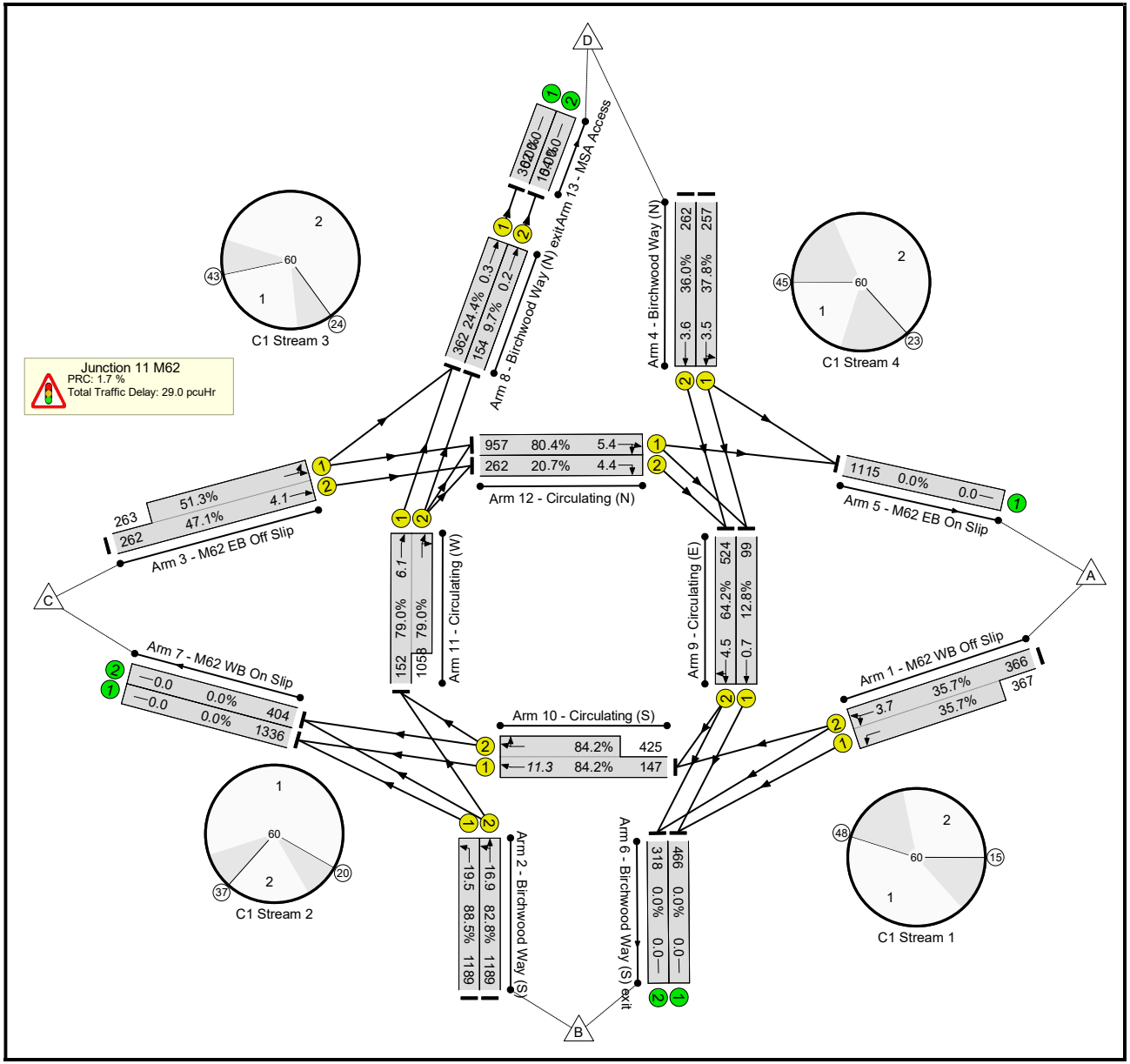
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 11 M62	-	-	**N/A**	-	-		-	-	-	-	-	-	**88.5%**
Junction 11 M62	-	-	**N/A**	-	-		-	-	-	-	-	-	**88.5%**
1/2+1/1	M62 WB Off Slip Left Ahead	U	1	N/A	A		1	30	-	733	2126:1982	1024+1027	35.7 : 35.7%
2/1	Birchwood Way (S) Left	U	2	N/A	C		1	38	-	1189	2016	1344	88.5%
2/2	Birchwood Way (S) Left Ahead	U	2	N/A	C		1	38	-	1189	2154	1436	82.8%
3/2+3/1	M62 EB Off Slip Left Ahead	U	3	N/A	E		1	14	-	525	2088:1921	557+512	47.1 : 51.3%
4/1	Birchwood Way (N) Left Ahead	U	4	N/A	G		1	18	-	257	2037	679	37.8%
4/2	Birchwood Way (N) Ahead	U	4	N/A	G		1	18	-	262	2181	727	36.0%
8/1	Birchwood Way (N) exit Ahead	U	5	N/A	M		1	41	-	362	2073	1486	24.4%
8/2	Birchwood Way (N) exit Ahead	U	5	N/A	M		1	41	-	154	2217	1589	9.7%
9/1	Circulating (E) Ahead	U	1	N/A	B		1	20	-	99	2105	772	12.8%
9/2	Circulating (E) Ahead Right	U	1	N/A	B		1	20	-	524	2226	816	64.2%
10/1+10/2	Circulating (S) Ahead Right	U	2	N/A	D		1	12	-	572	2024:2163	175+505	84.2 : 84.2%
11/1+11/2	Circulating (W) Ahead Right	U	3	N/A	F		1	36	-	1210	2049:2163	193+1340	79.0 : 79.0%
12/1	Circulating (N) Ahead Right	U	4	N/A	H		1	32	-	957	2100	1190	80.4%
12/2	Circulating (N) Right	U	4	N/A	H		1	32	-	262	2238	1268	20.7%

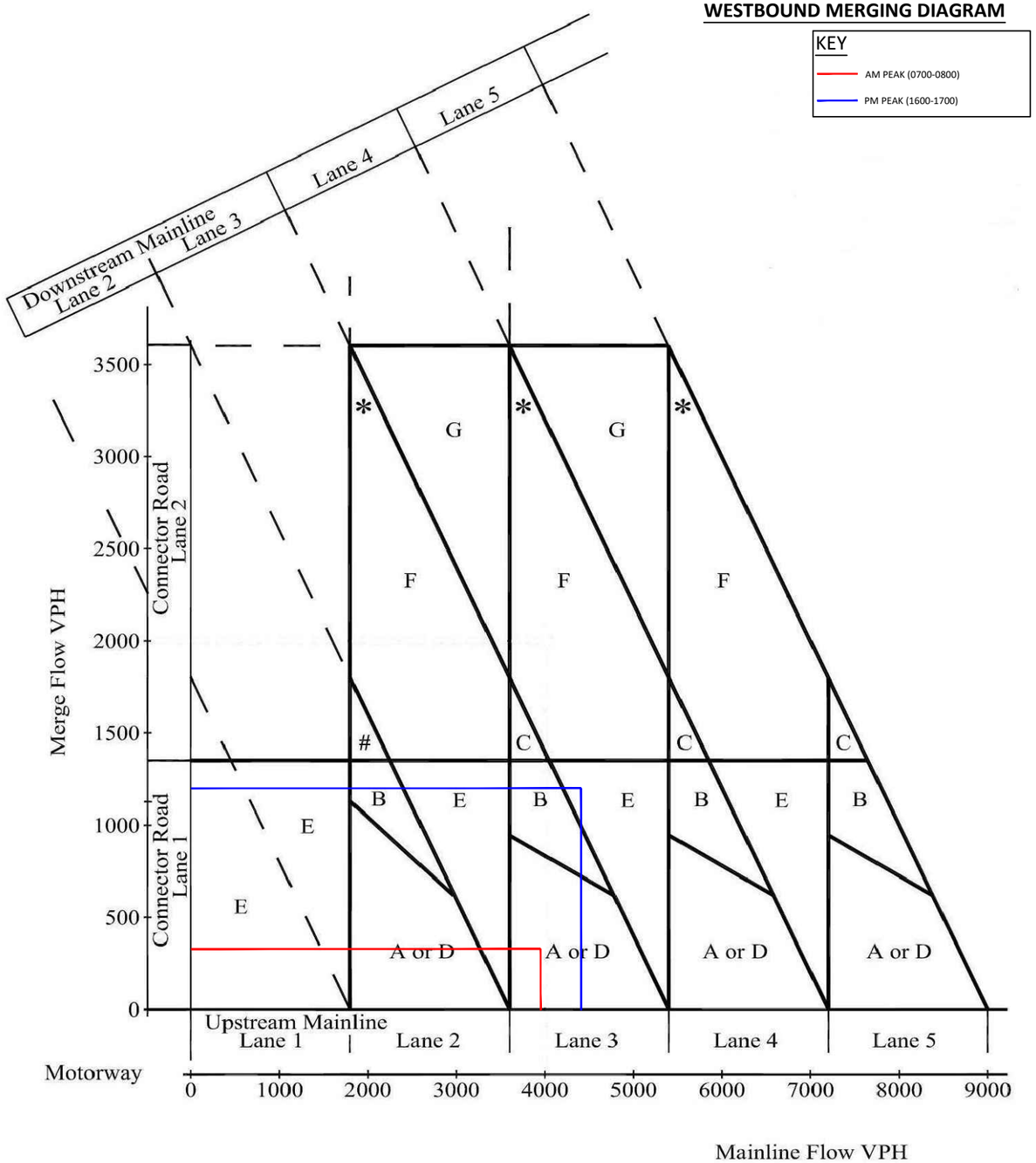
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**18.9**	**10.1**	**0.0**	**29.0**	**-**	**-**	**-**	**-**
Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**18.9**	**10.1**	**0.0**	**29.0**	**-**	**-**	**-**	**-**
1/2+1/1	733	733	-	-	-	1.6	0.3	-	1.9	9.3	3.5	0.3	3.7
2/1	1189	1189	-	-	-	2.7	3.7	-	6.3	19.2	15.9	3.7	19.5
2/2	1189	1189	-	-	-	2.5	2.4	-	4.8	14.6	14.5	2.4	16.9
3/2+3/1	525	525	-	-	-	2.7	0.5	-	3.2	21.9	3.7	0.5	4.1
4/1	257	257	-	-	-	1.1	0.3	-	1.4	19.5	3.2	0.3	3.5
4/2	262	262	-	-	-	1.1	0.3	-	1.4	19.0	3.3	0.3	3.6
8/1	362	362	-	-	-	0.0	0.2	-	0.2	1.9	0.2	0.2	0.3
8/2	154	154	-	-	-	0.0	0.1	-	0.1	2.0	0.2	0.1	0.2
9/1	99	99	-	-	-	0.1	0.0	-	0.1	4.5	0.7	0.0	0.7
9/2	524	524	-	-	-	0.9	0.0	-	0.9	6.5	4.5	0.0	4.5
10/1+10/2	572	572	-	-	-	2.6	2.5	-	5.1	32.3	8.8	2.5	11.3
11/1+11/2	1210	1210	-	-	-	1.3	0.0	-	1.3	4.0	6.1	0.0	6.1
12/1	957	957	-	-	-	0.8	0.0	-	0.8	3.2	5.4	0.0	5.4
12/2	262	262	-	-	-	1.3	0.0	-	1.3	18.0	4.4	0.0	4.4

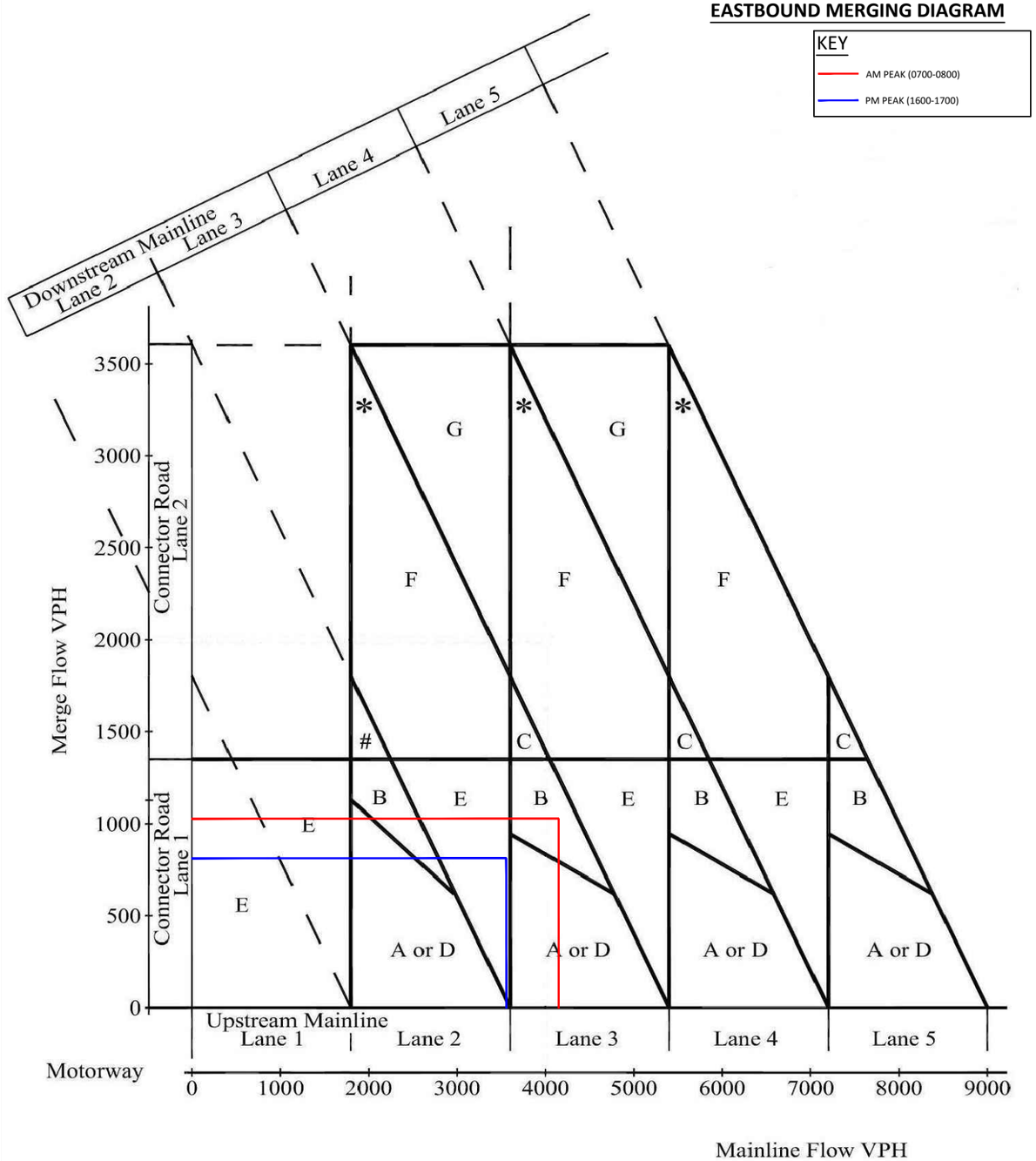
C1	Stream: 1 PRC for Signalled Lanes (%):	40.2	Total Delay for Signalled Lanes (pcuHr):	2.97	Cycle Time (s):	60		
C1	Stream: 2 PRC for Signalled Lanes (%):	1.7	Total Delay for Signalled Lanes (pcuHr):	16.30	Cycle Time (s):	60		
C1	Stream: 3 PRC for Signalled Lanes (%):	14.0	Total Delay for Signalled Lanes (pcuHr):	4.53	Cycle Time (s):	60		
C1	Stream: 4 PRC for Signalled Lanes (%):	11.9	Total Delay for Signalled Lanes (pcuHr):	4.93	Cycle Time (s):	60		
C1	Stream: 5 PRC for Signalled Lanes (%):	269.4	Total Delay for Signalled Lanes (pcuHr):	0.28	Cycle Time (s):	60		
	PRC Over All Lanes (%):	1.7	Total Delay Over All Lanes(pcuHr):	29.01				

APPENDIX 10.A. Merge / Diverge Diagrams

WESTBOUND MERGING DIAGRAM



EASTBOUND MERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO A: BASE 2018 MERGE PROVISION (0700-0800 & 1600-1700)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

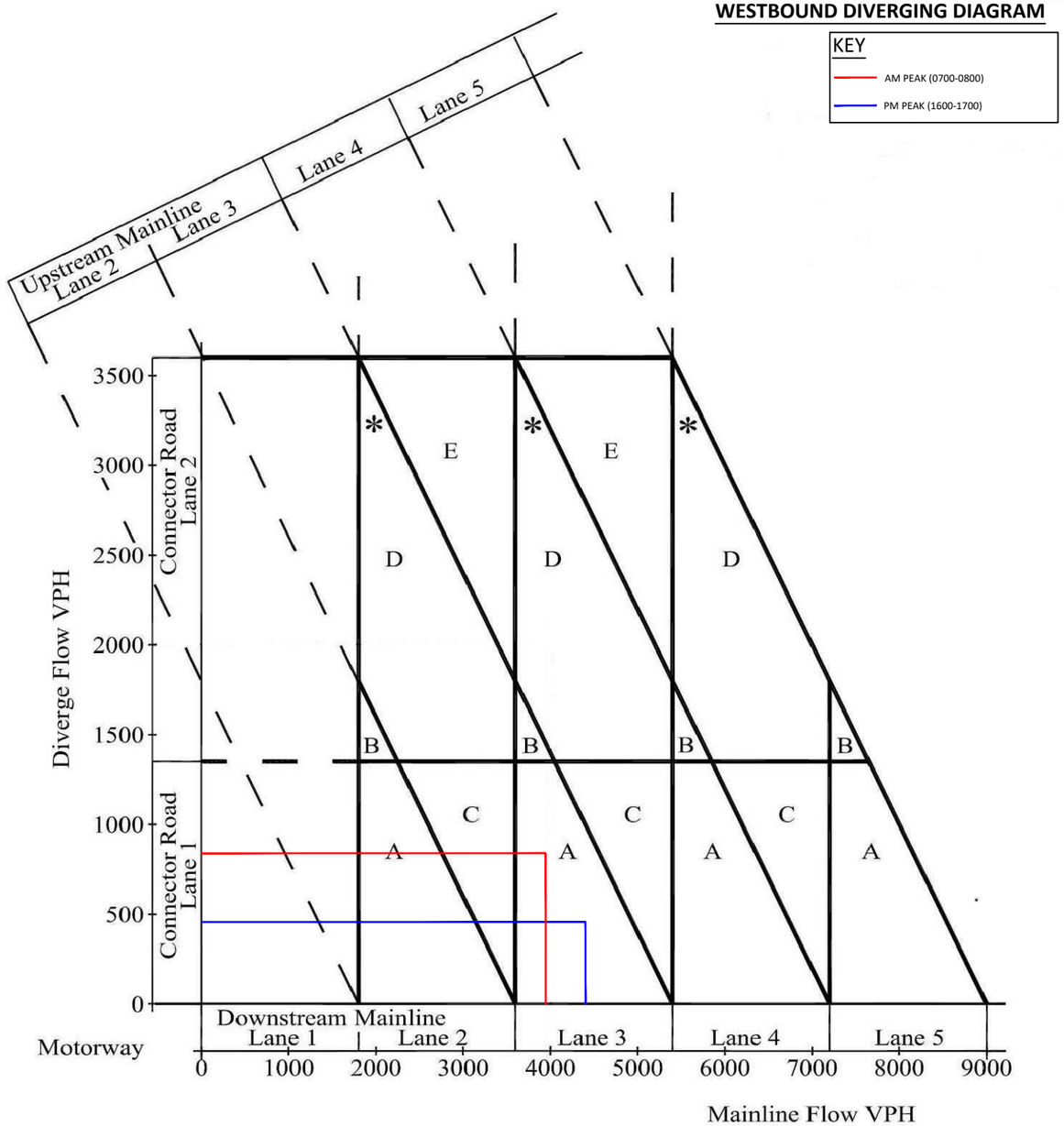
SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	29.01.19

DRAWING No: APPENDIX 10.A (1)

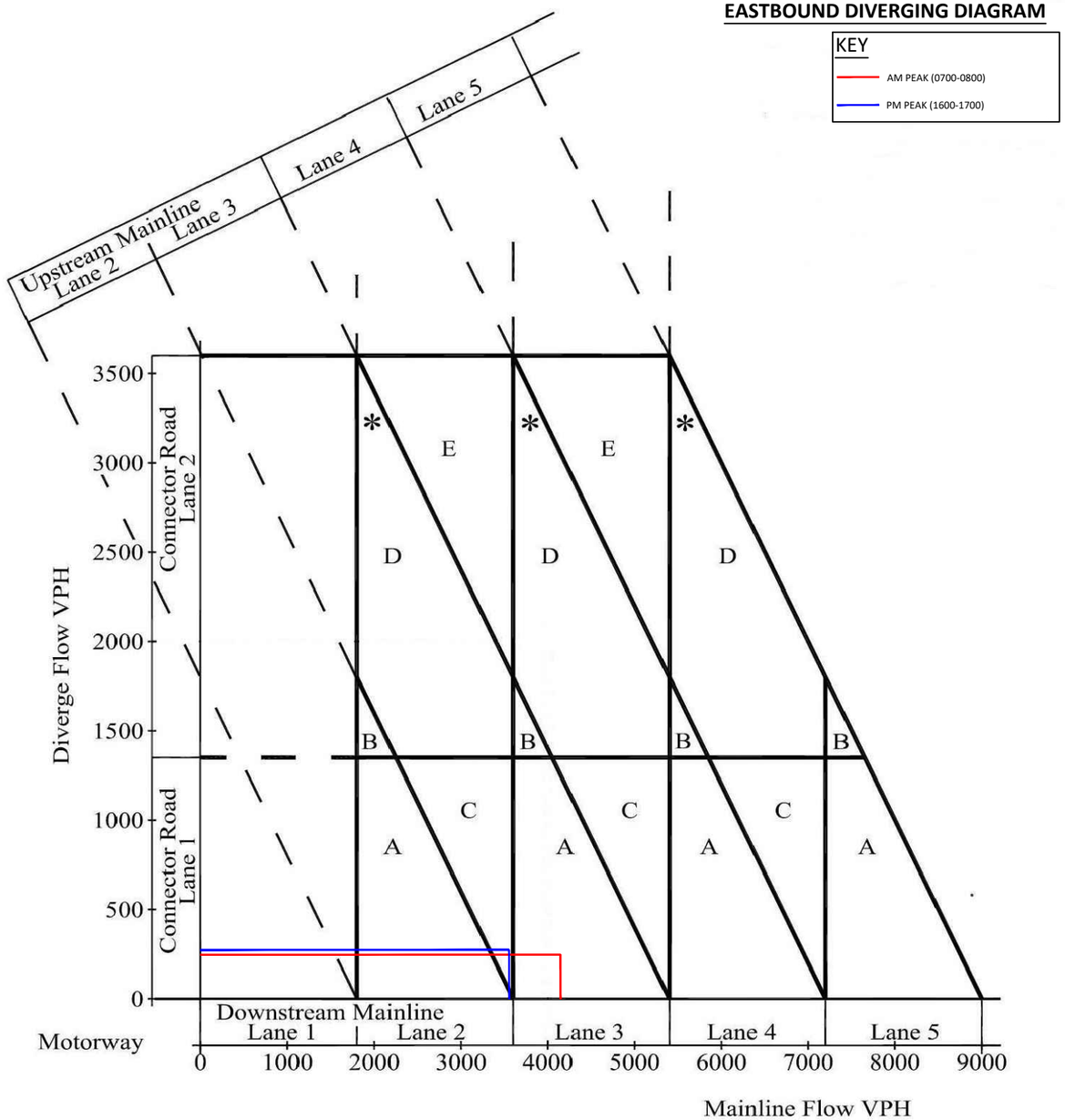
PROJECT No: ITM12377

REV:

WESTBOUND DIVERGING DIAGRAM



EASTBOUND DIVERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO A: BASE 2018 DIVERGE PROVISION (0700-0800 & 1600-1700)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
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FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	29.01.19

DRAWING No: APPENDIX 10.A (2)

PROJECT No:	REV:
ITM12377	

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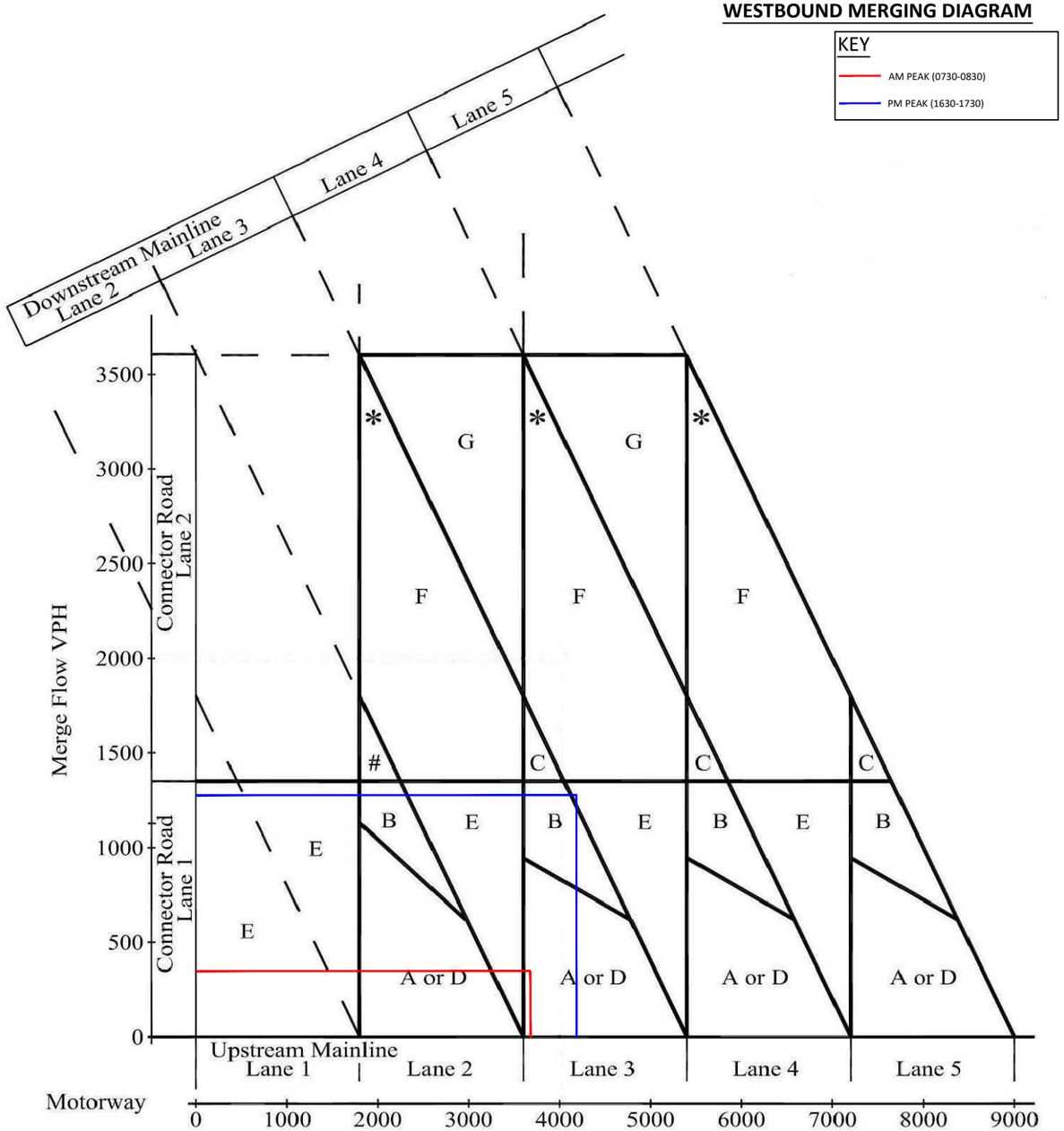
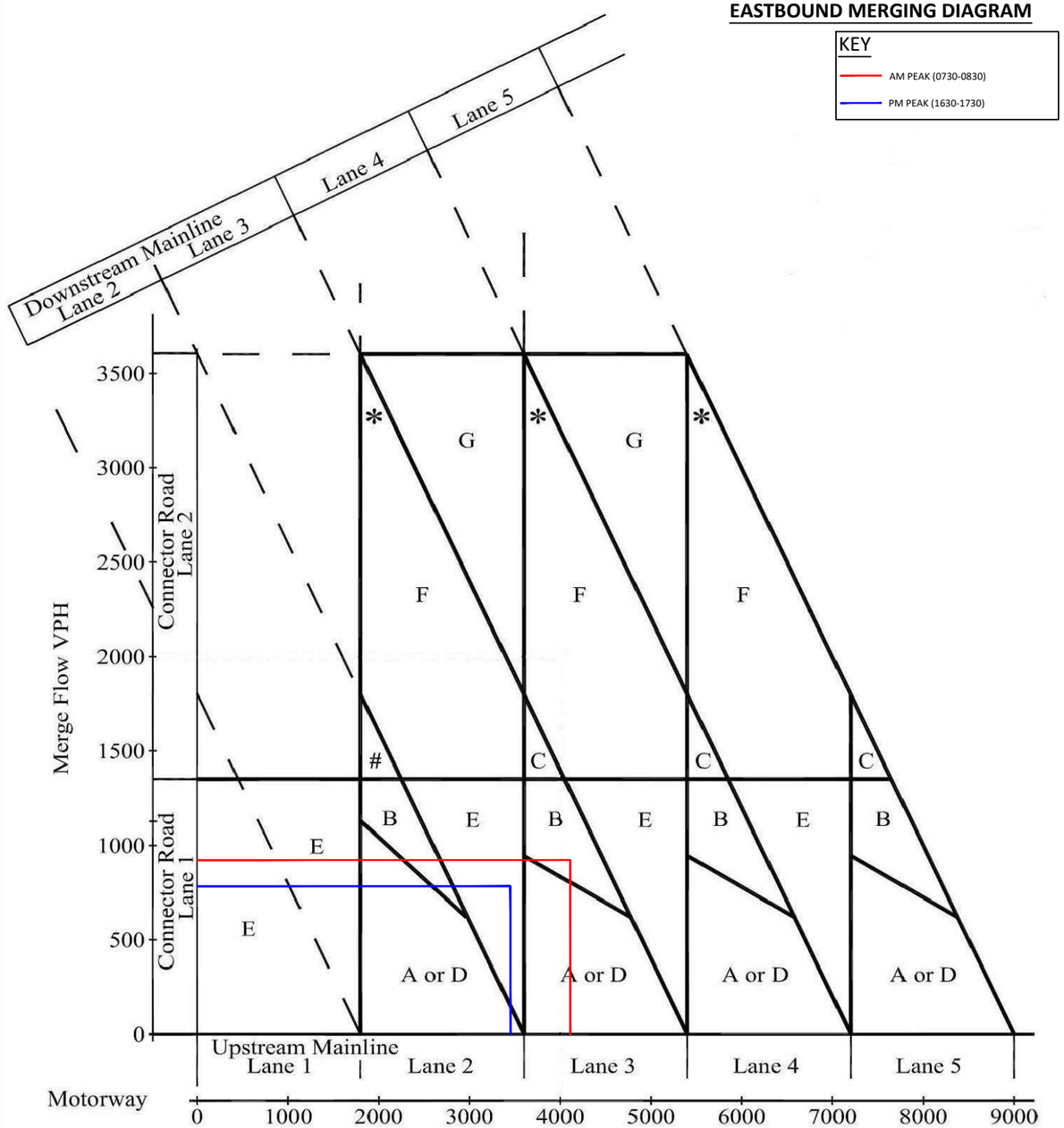


EASTBOUND MERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO A: BASE 2018 MERGE PROVISION (0730-0830 & 1630-1730)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	09.04.19

DRAWING No: APPENDIX 10.A (3)

PROJECT No: ITM12377

REV:

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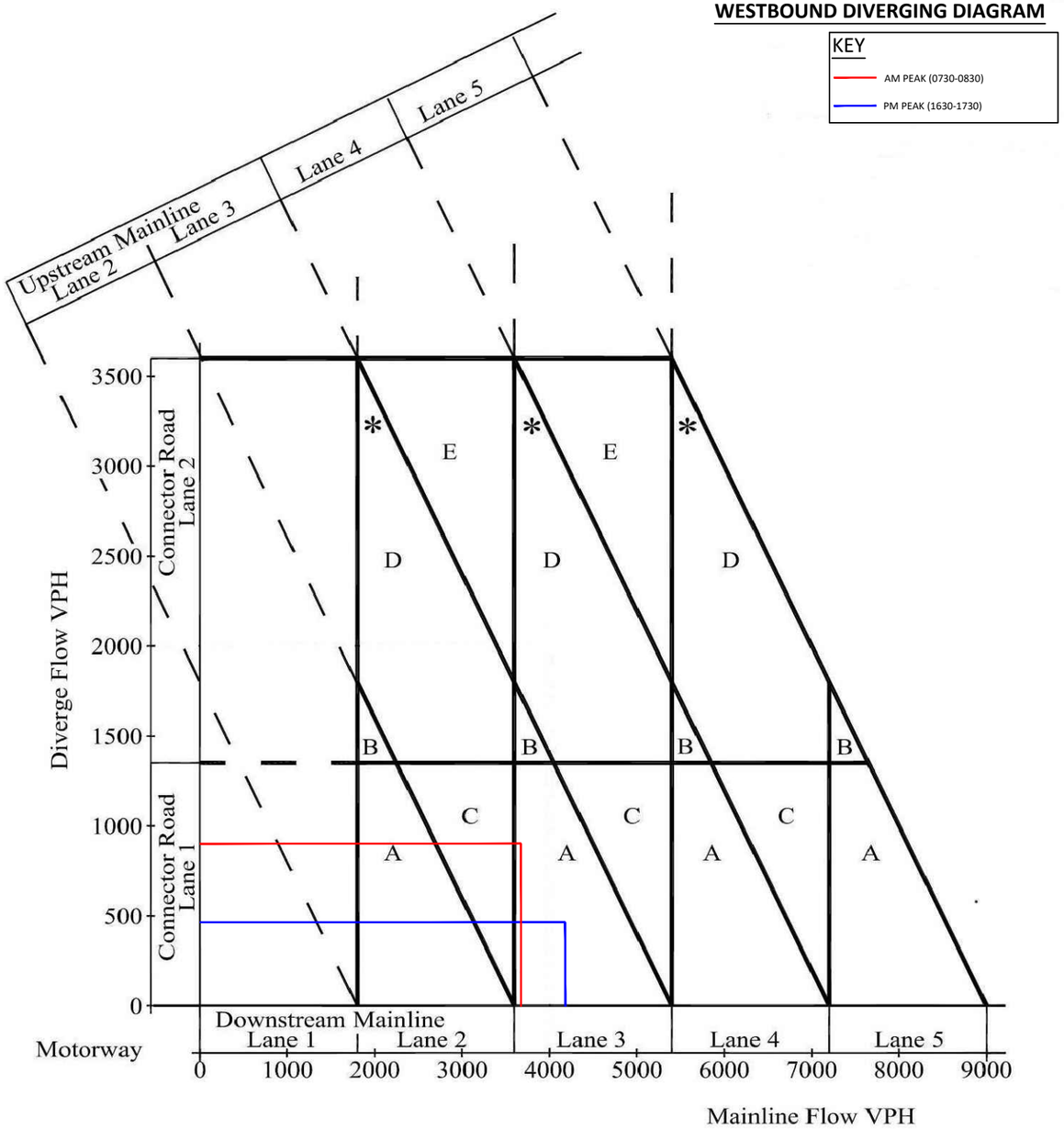
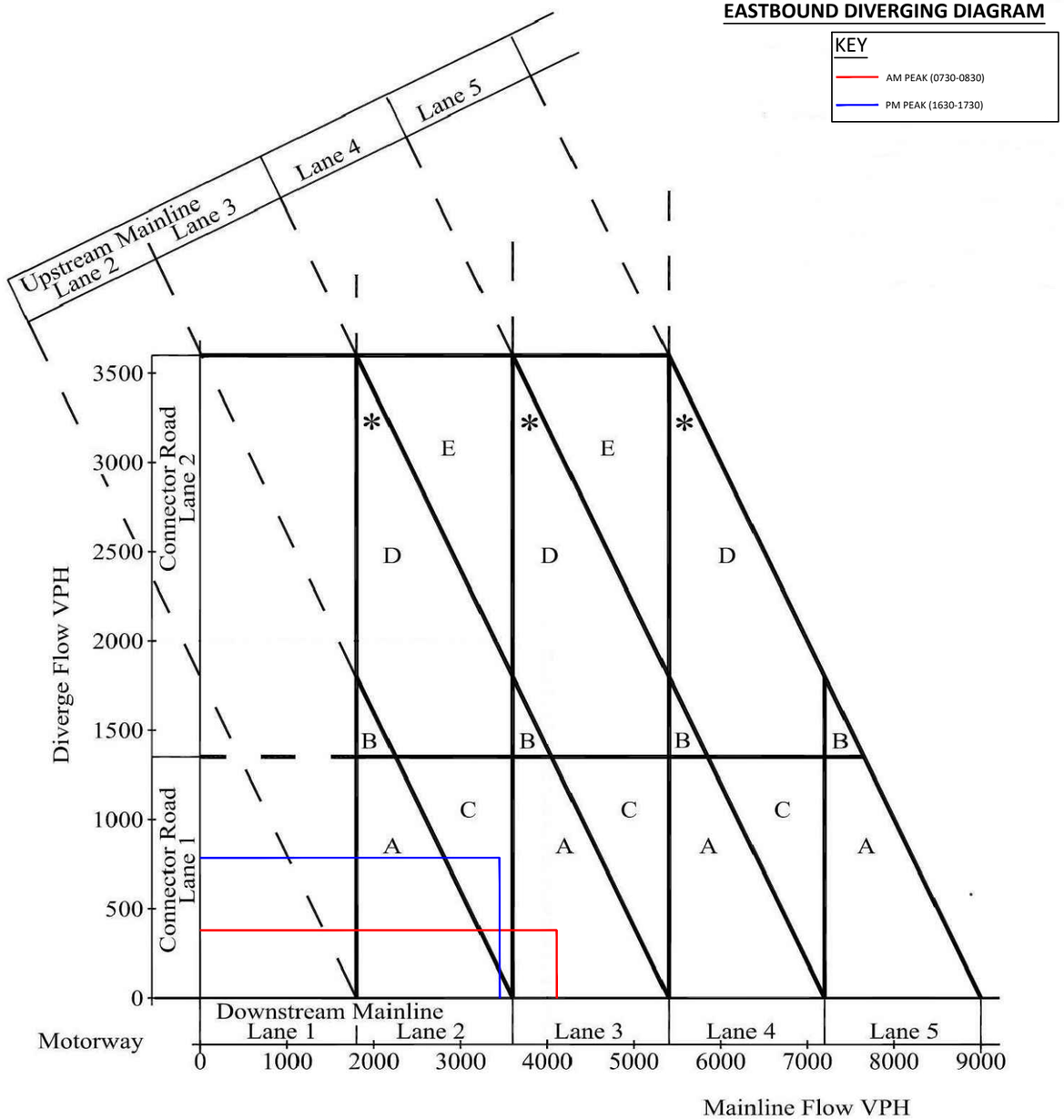


EASTBOUND DIVERGING DIAGRAM



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STATUS: DRAFT

TITLE: M62 J11 - SCENARIO A: BASE 2018 DIVERGE PROVISION (0730-0830 & 1630-1730)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	09.04.19

DRAWING No: APPENDIX 10.A (4)

PROJECT No: ITM12377

REV:

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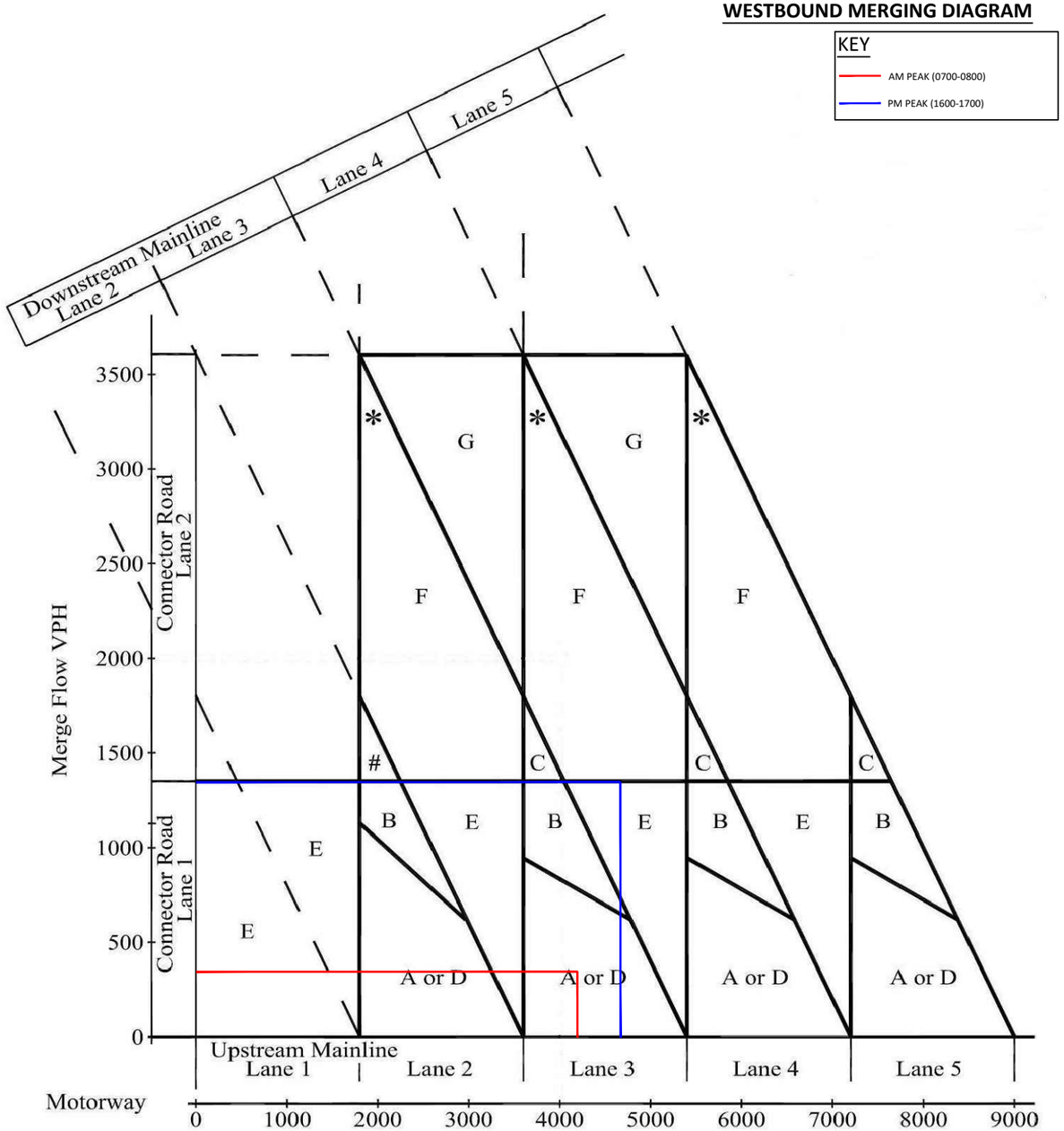
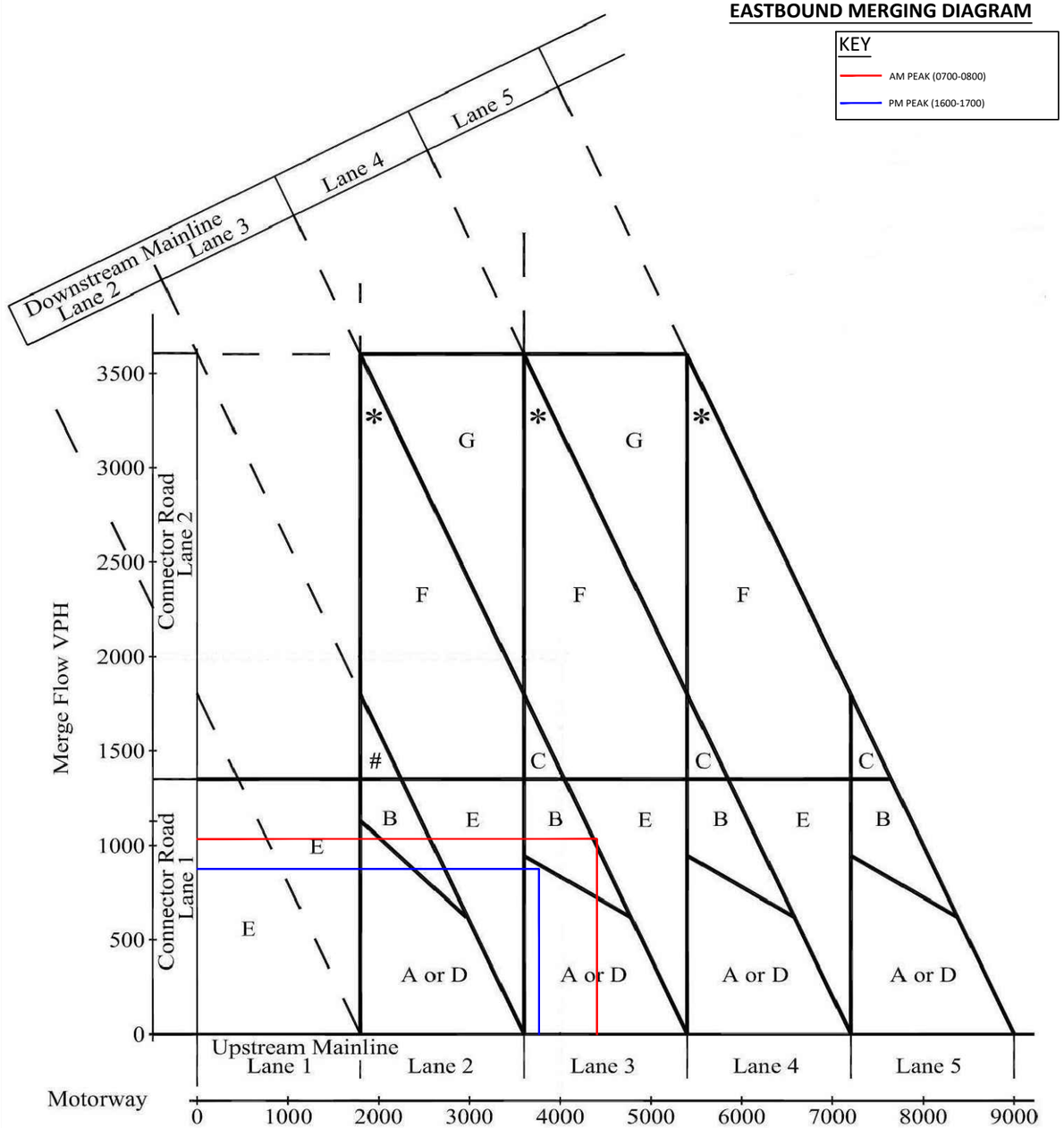


EASTBOUND MERGING DIAGRAM



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STATUS: DRAFT

TITLE: M62 J11 - SCENARIO B: BASE 2022 + COMMITTED MERGE PROVISION (0700-0800 & 1600-1700)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

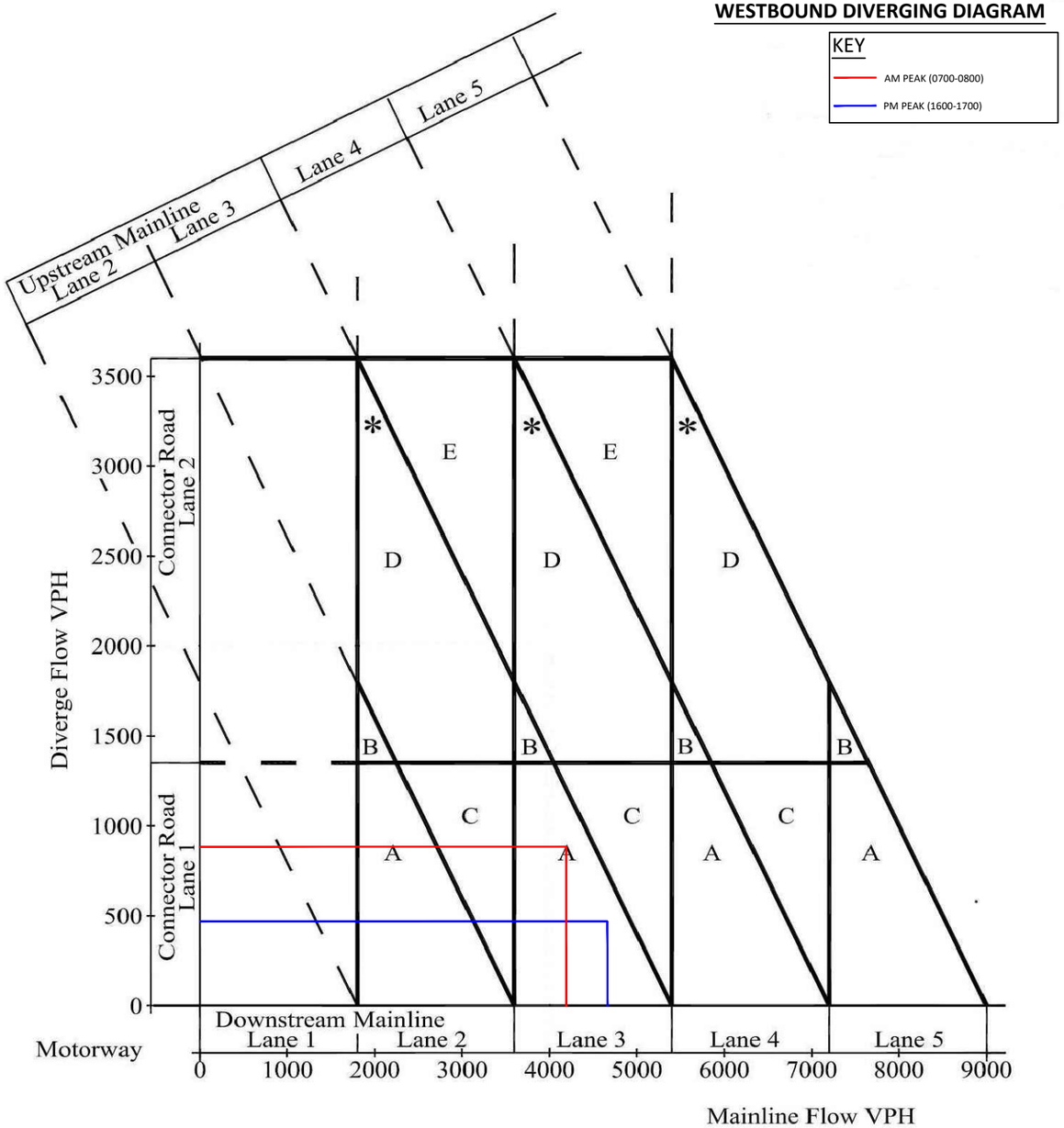
SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	29.01.19

DRAWING No: APPENDIX 10.A (5)

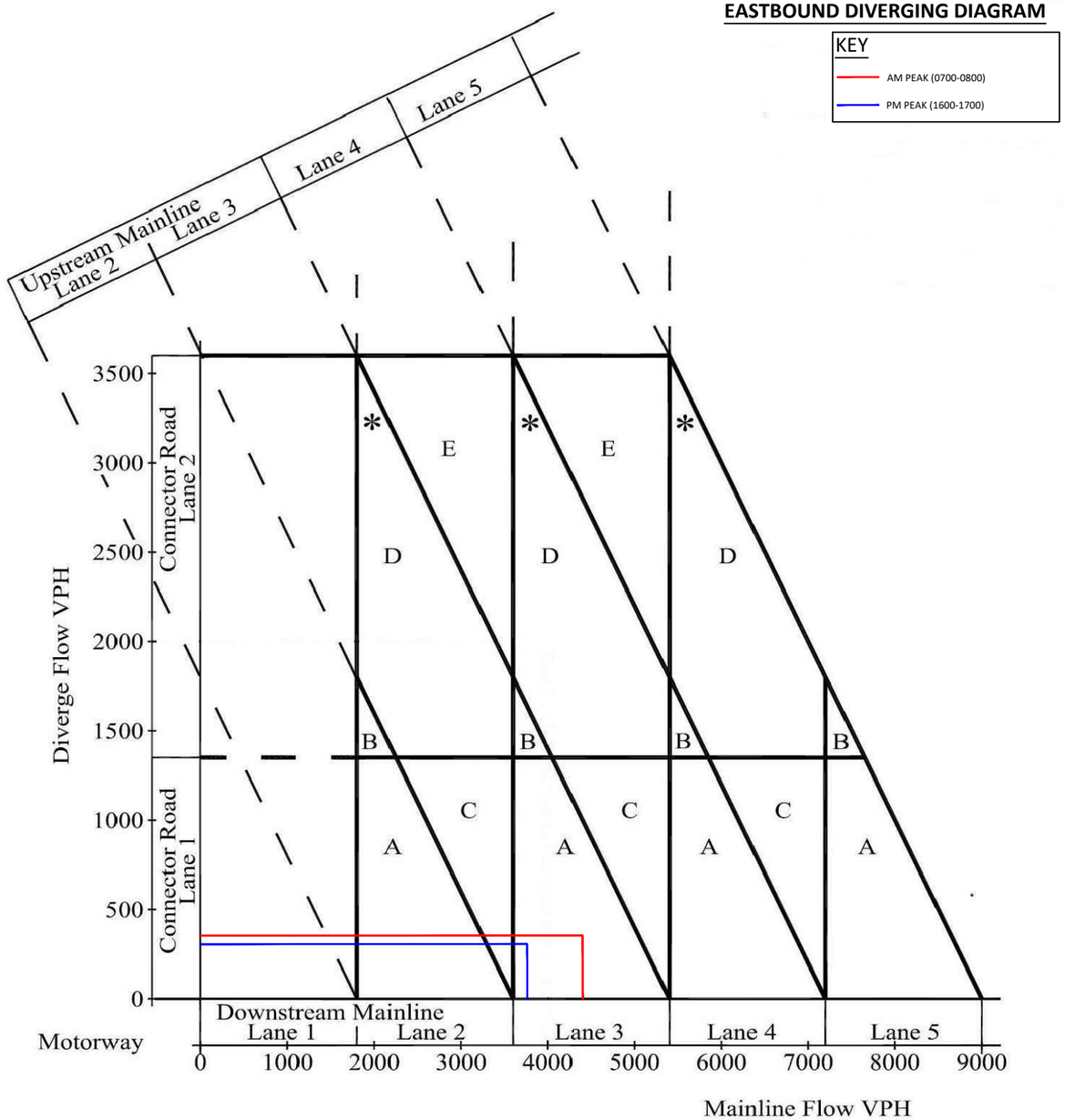
PROJECT No: ITM12377

REV:

WESTBOUND DIVERGING DIAGRAM



EASTBOUND DIVERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO B: BASE 2022 + COMMITTED DIVERGE PROVISION (0700-0800 & 1600-1700)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

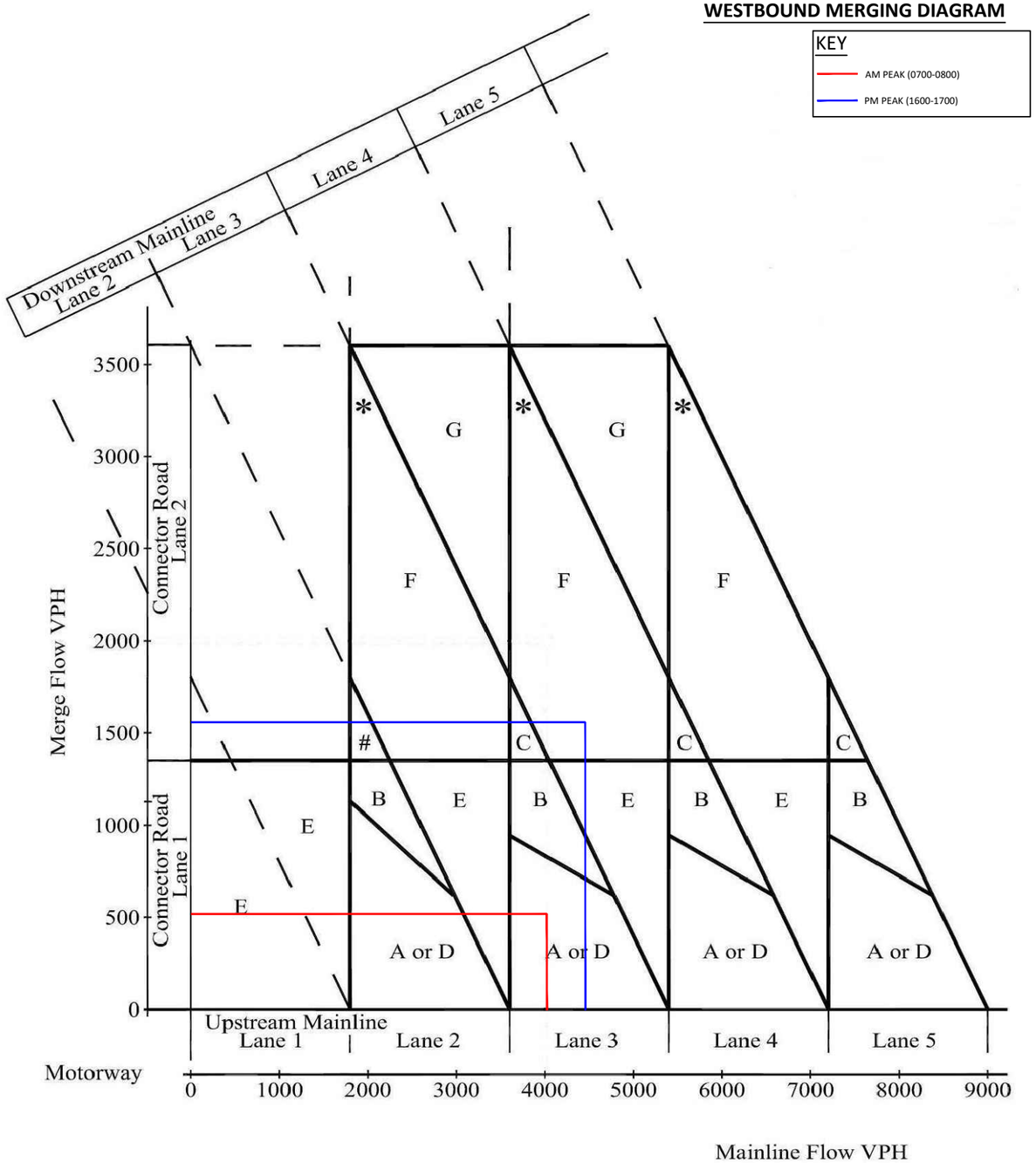
SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	29.01.19

DRAWING No: APPENDIX 10.A (6)

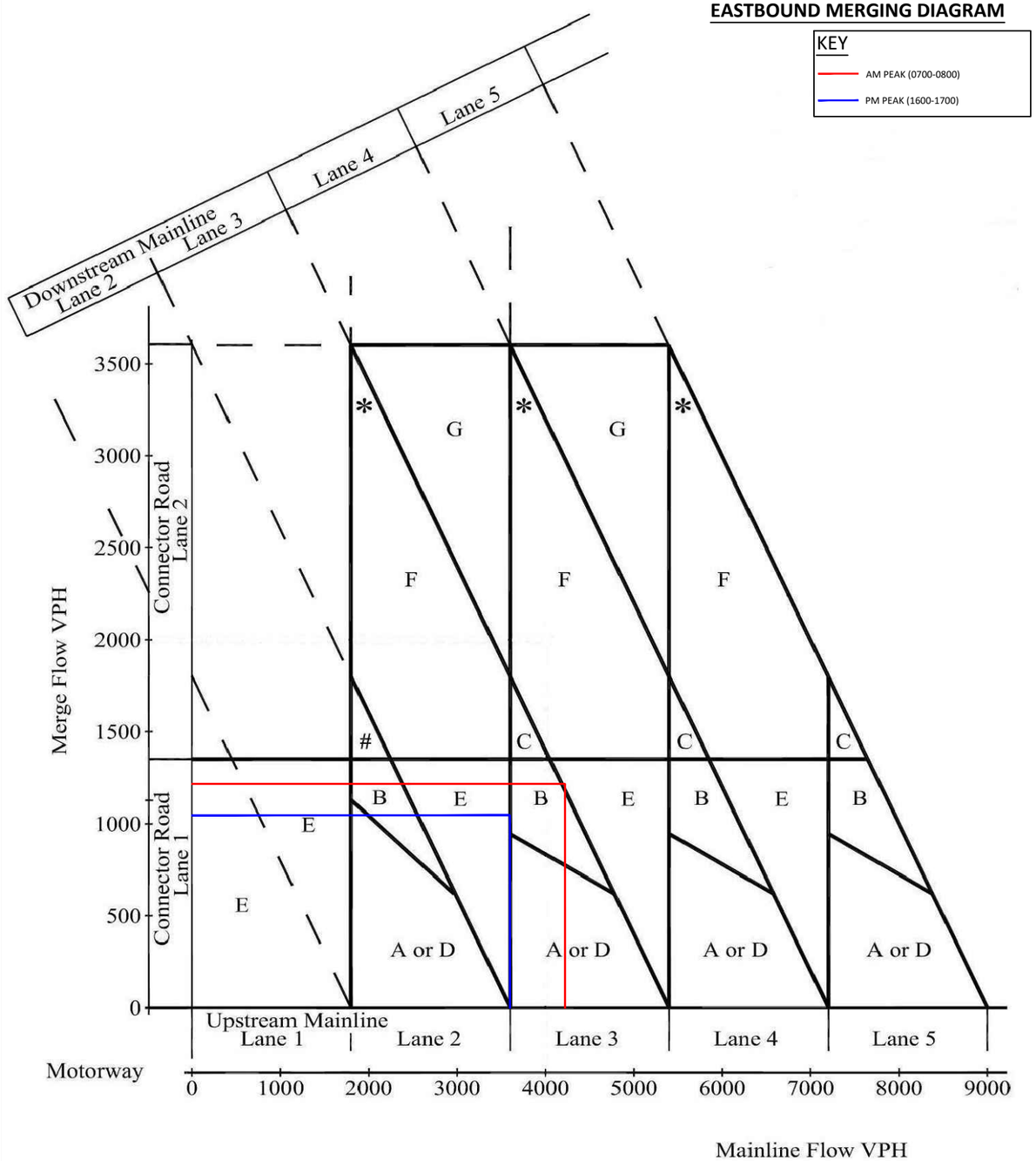
PROJECT No: ITM12377

REV:

WESTBOUND MERGING DIAGRAM



EASTBOUND MERGING DIAGRAM



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STATUS: DRAFT

TITLE: M62 J11 - SCENARIO D: BASE 2022 + COMMITTED+ DEVELOPMENT MERGE PROVISION (0700-0800 & 1600-1700)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

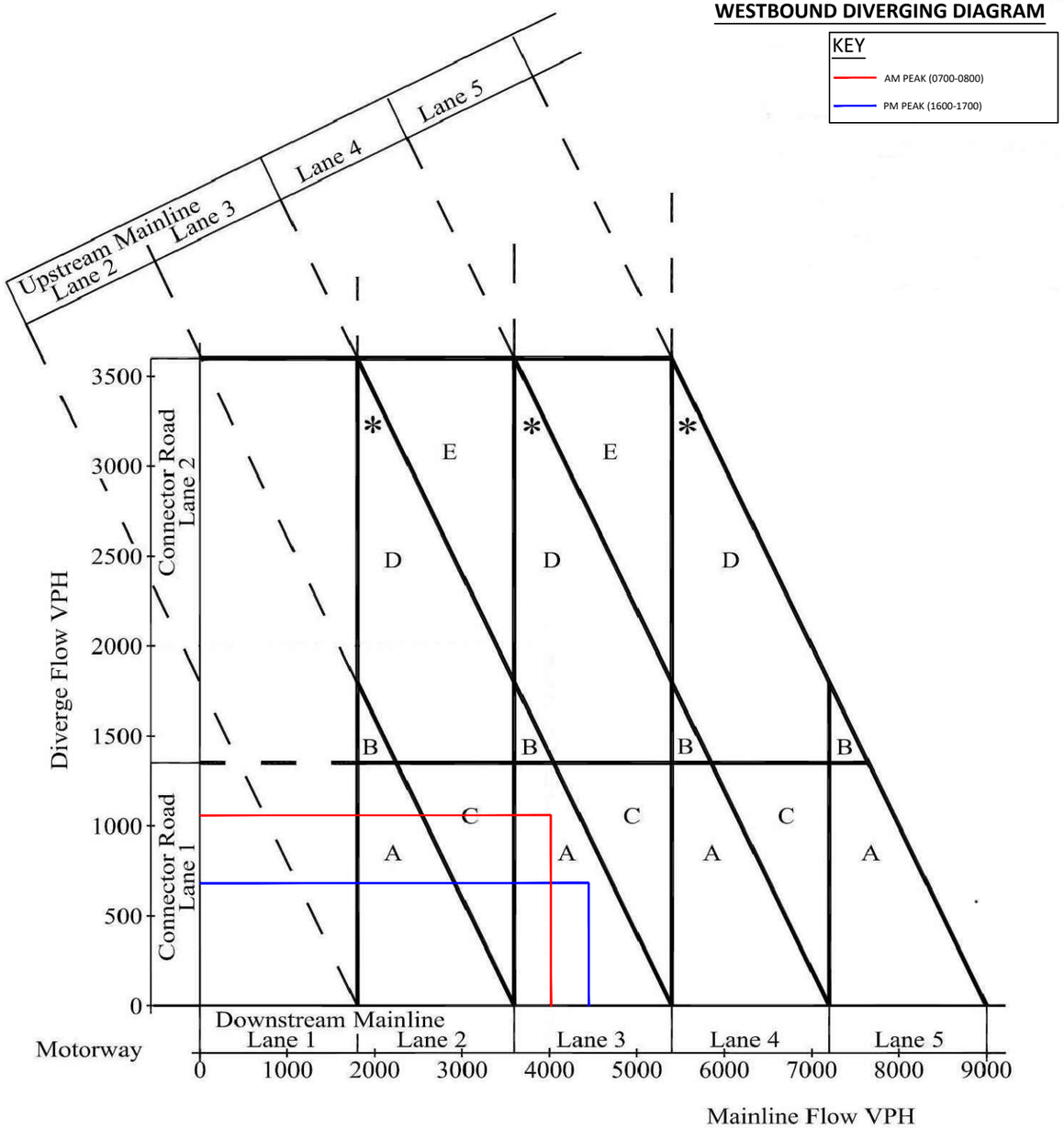
SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	29.01.19

DRAWING No: APPENDIX 10.A (7)

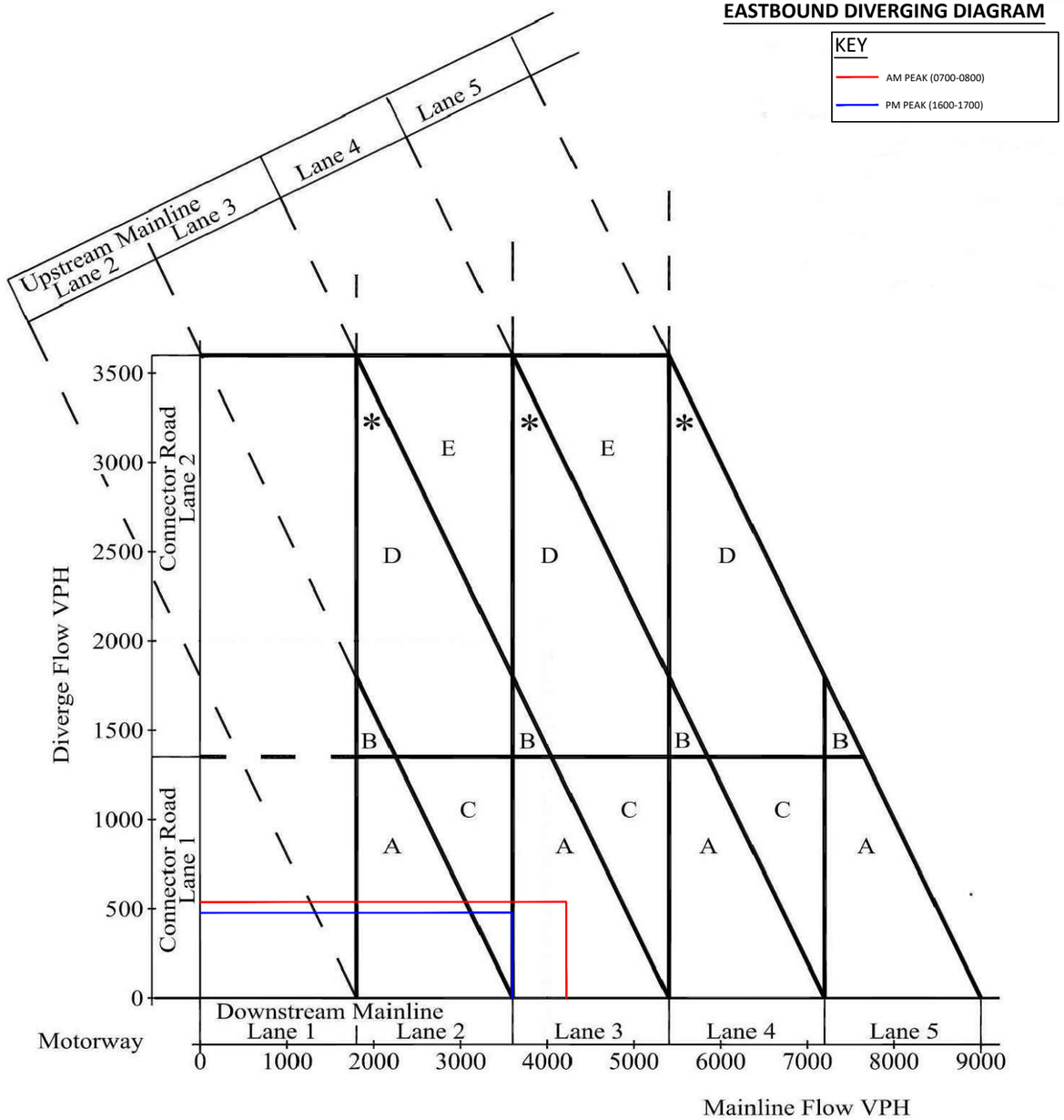
PROJECT No: ITM12377

REV:

WESTBOUND DIVERGING DIAGRAM



EASTBOUND DIVERGING DIAGRAM



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STATUS: DRAFT

TITLE: M62 J11 - SCENARIO D: BASE 2022 + COMMITTED + DEVELOPMENT DIVERGE PROVISION (0700-0800 & 1600-1700)

PROJECT: M62 J11 WARRINGTON MSA

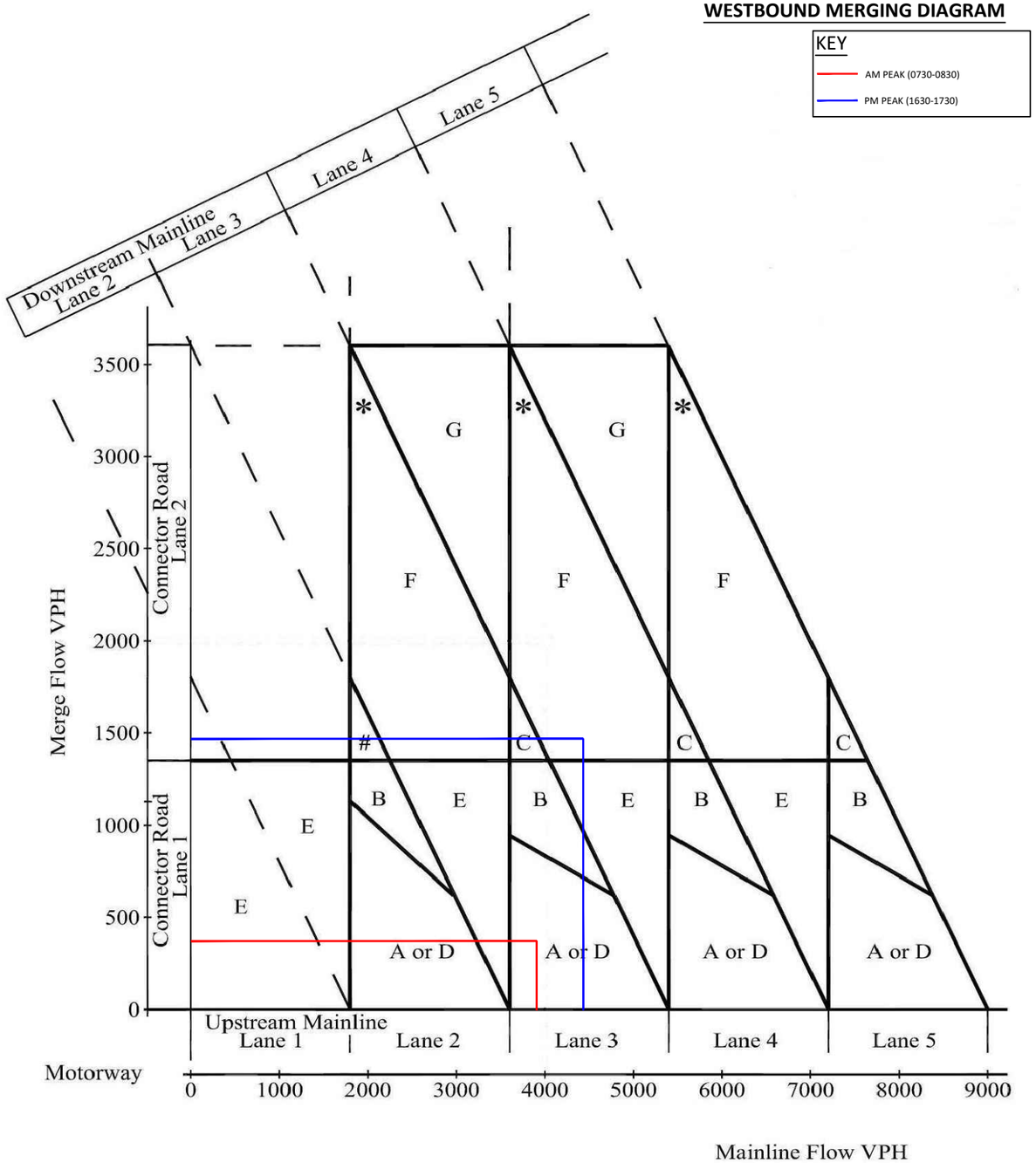
CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	29.01.19

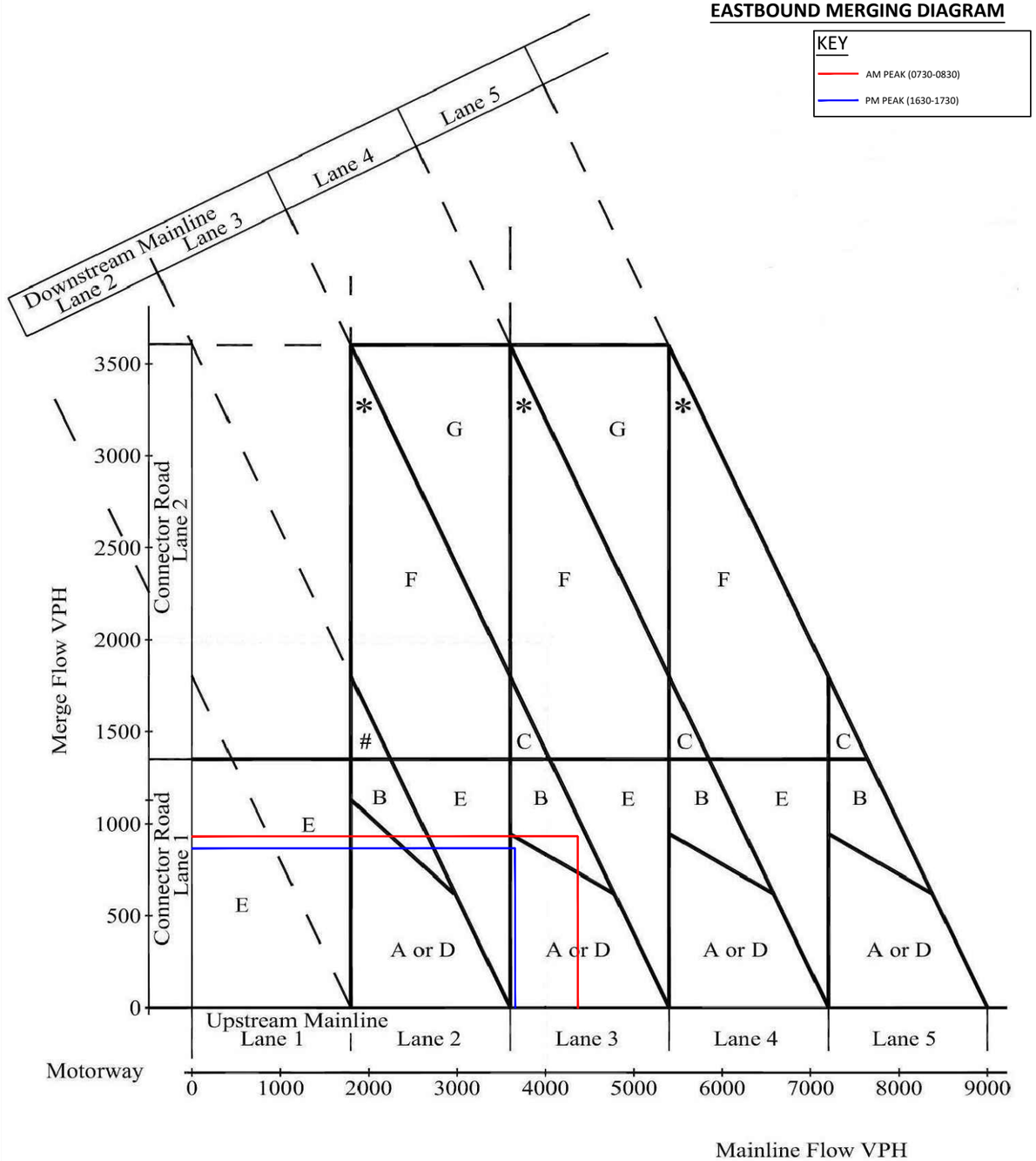
DRAWING No: APPENDIX 10.A (8)

PROJECT No:	REV:
ITM12377	

WESTBOUND MERGING DIAGRAM



EASTBOUND MERGING DIAGRAM



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STATUS: DRAFT

TITLE: M62 J11 - SCENARIO B: BASE 2022 + COMMITTED MERGE PROVISION (0730-0830 & 1630-1730)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

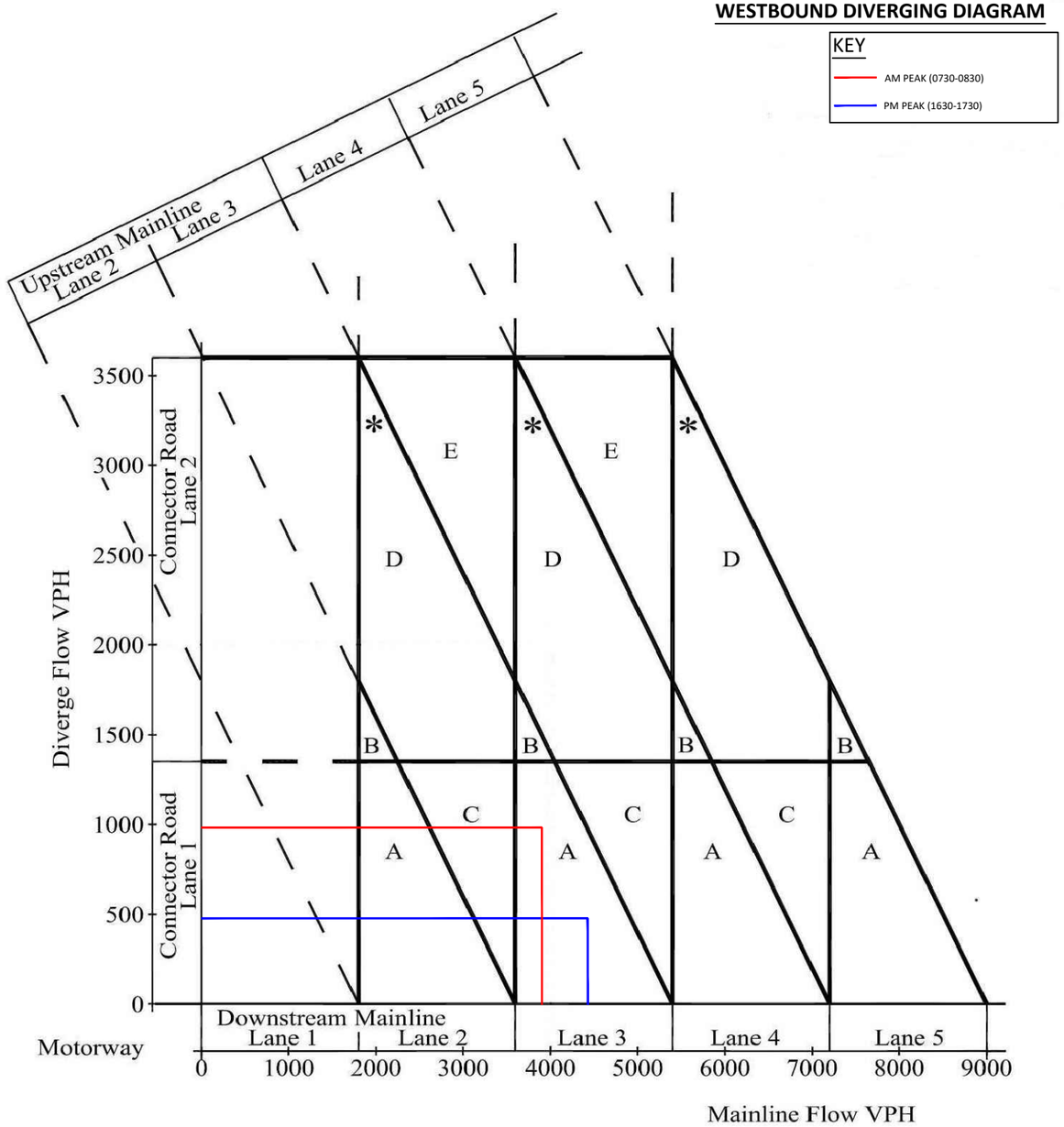
SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	09.04.19

DRAWING No: APPENDIX 10.A (9)

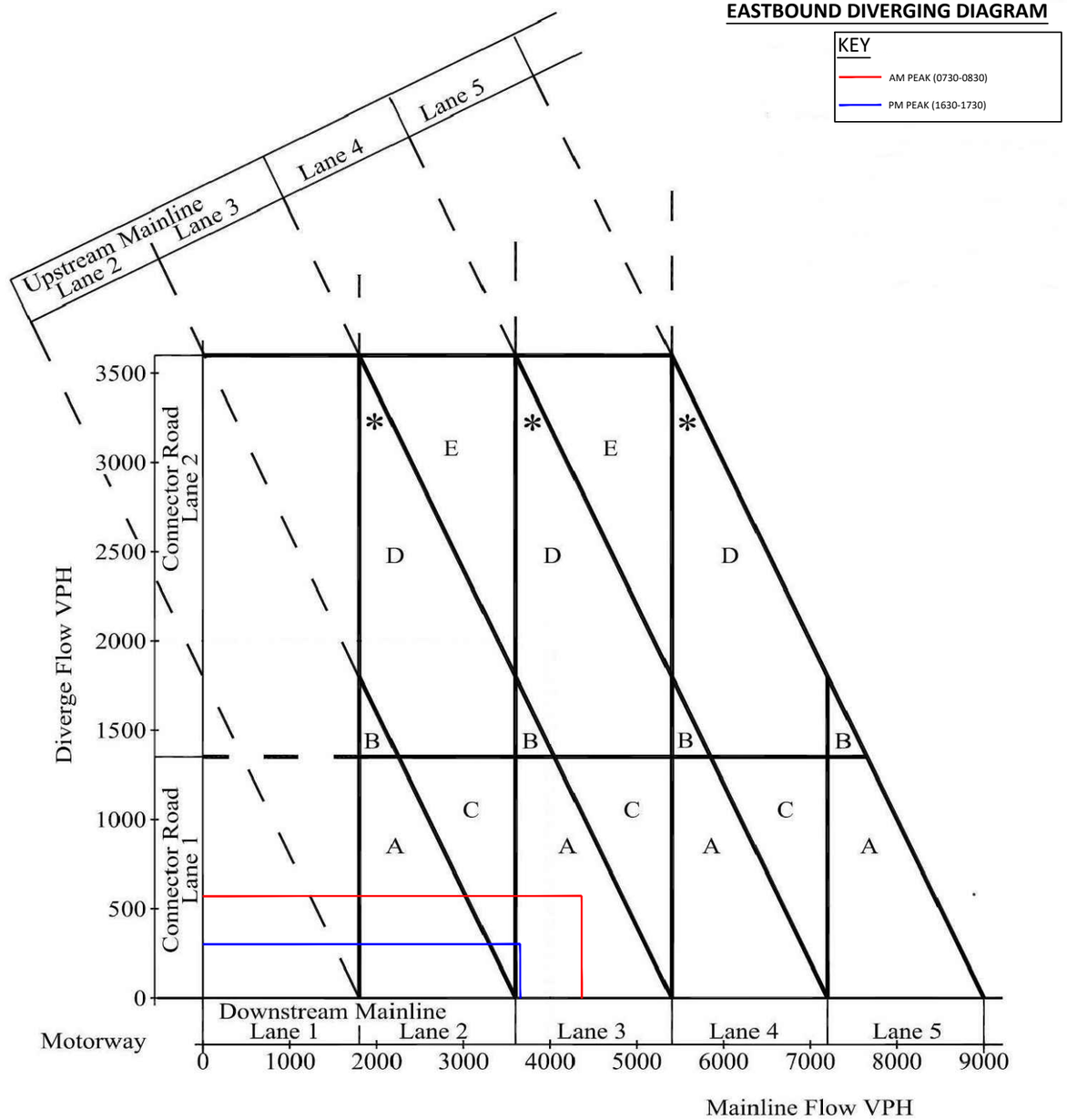
PROJECT No: ITM12377

REV:

WESTBOUND DIVERGING DIAGRAM



EASTBOUND DIVERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO B: BASE 2022 + COMMITTED DIVERGE PROVISION (0730-0830 & 1630-1730)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

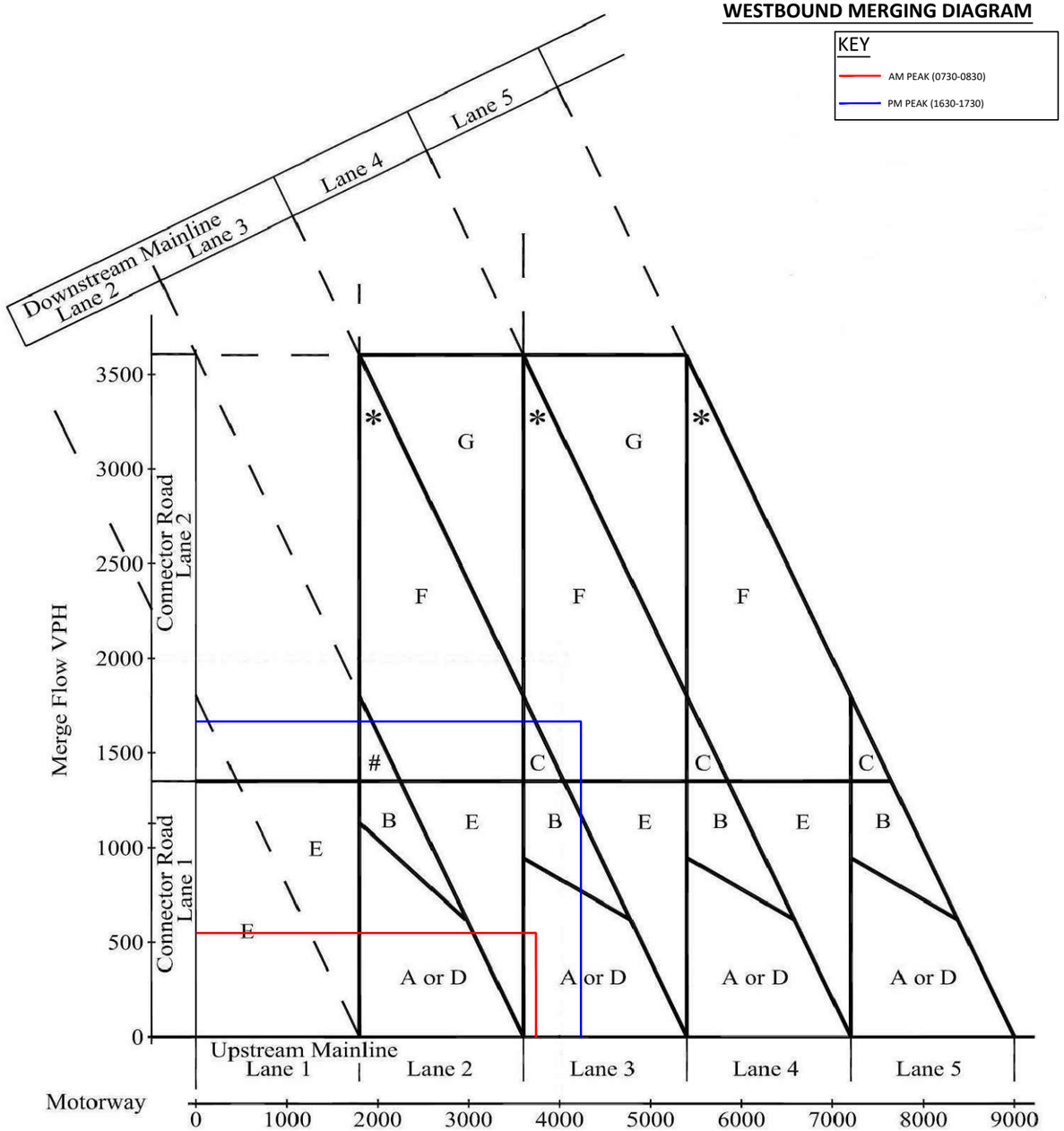
SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	09.04.19

DRAWING No: APPENDIX 10.A (10)

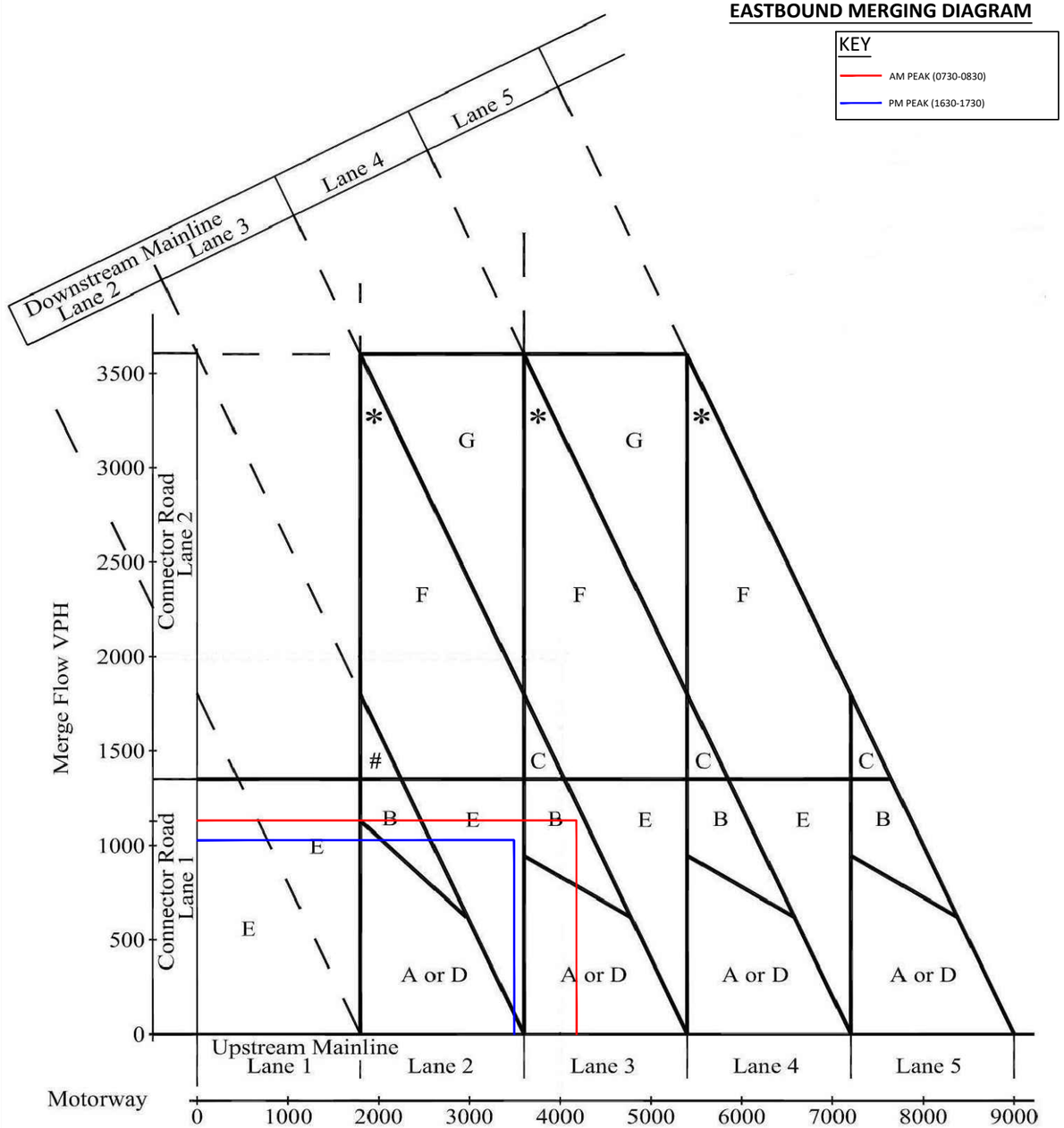
PROJECT No: ITM12377

REV:

WESTBOUND MERGING DIAGRAM



EASTBOUND MERGING DIAGRAM



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STATUS: DRAFT

TITLE: M62 J11 - SCENARIO D: BASE 2022 + COMMITTED+ DEVELOPMENT MERGE PROVISION (0730-0830 & 1630-1730)

SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	09.04.19

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

DRAWING No: APPENDIX 10.A (11)

PROJECT No: ITM12377

REV:

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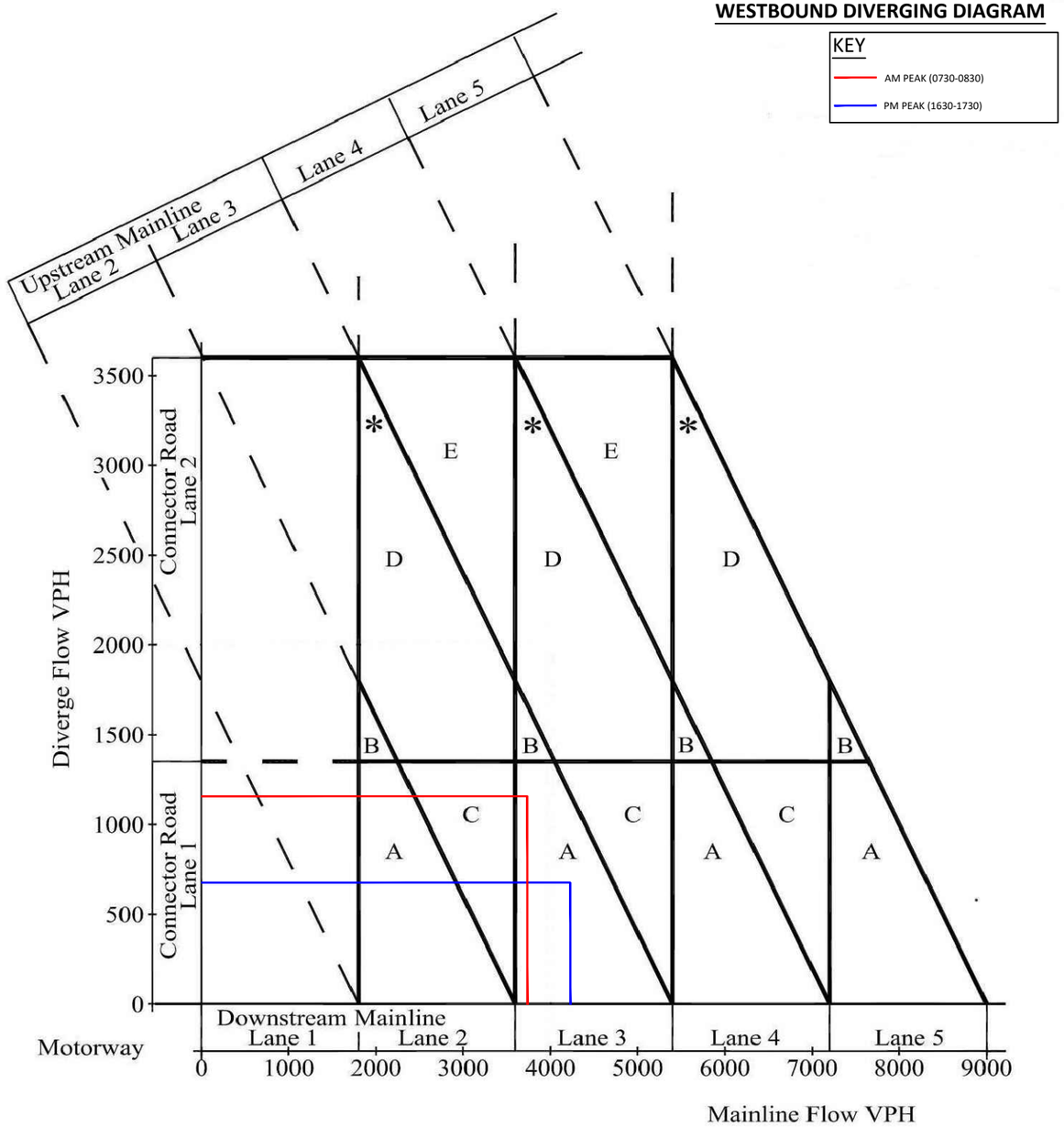
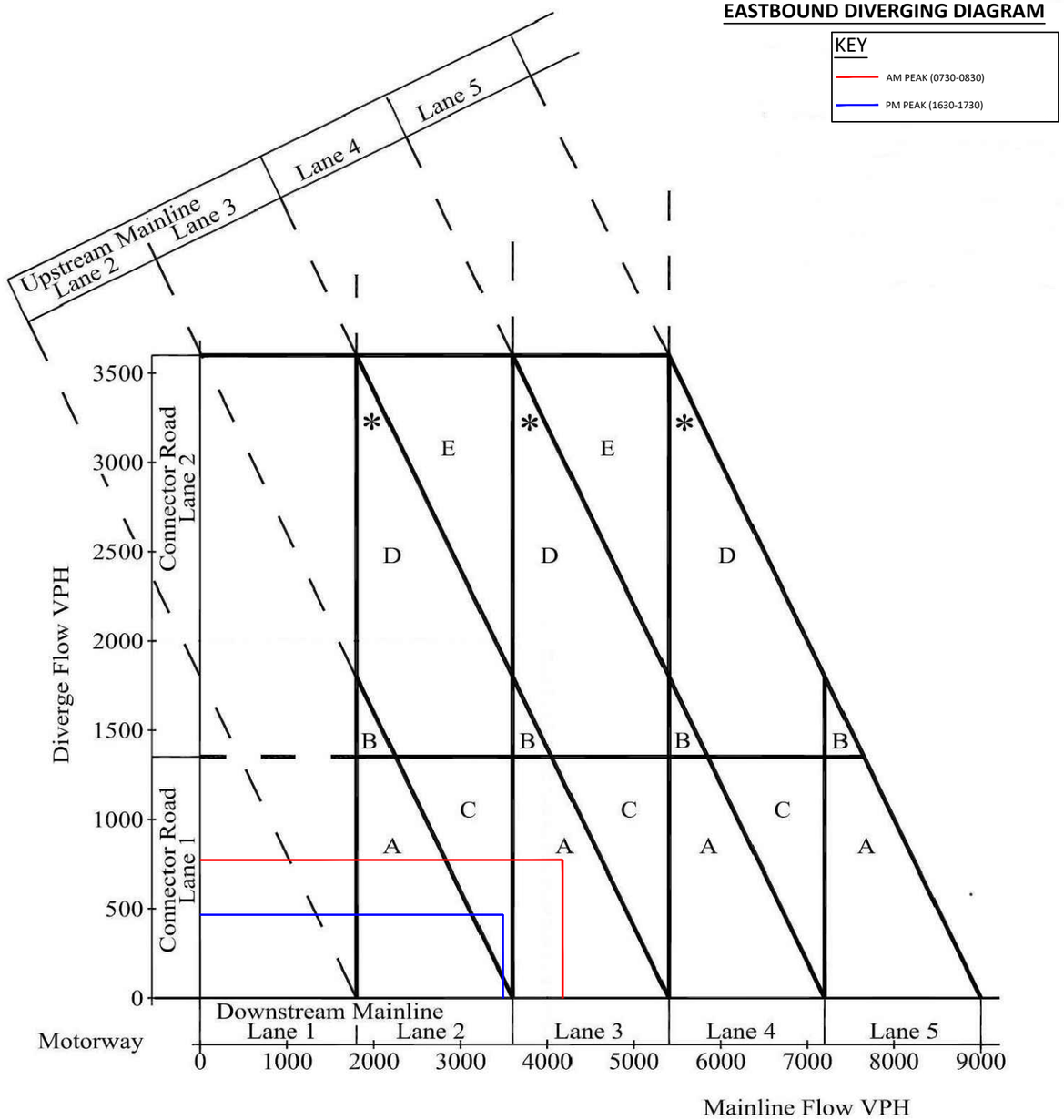


EASTBOUND DIVERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO D: BASE 2022 + COMMITTED + DEVELOPMENT DIVERGE PROVISION (0730-0830 & 1630-1730)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	09.04.19

DRAWING No: APPENDIX 10.A (12)

PROJECT No: ITM12377

REV:

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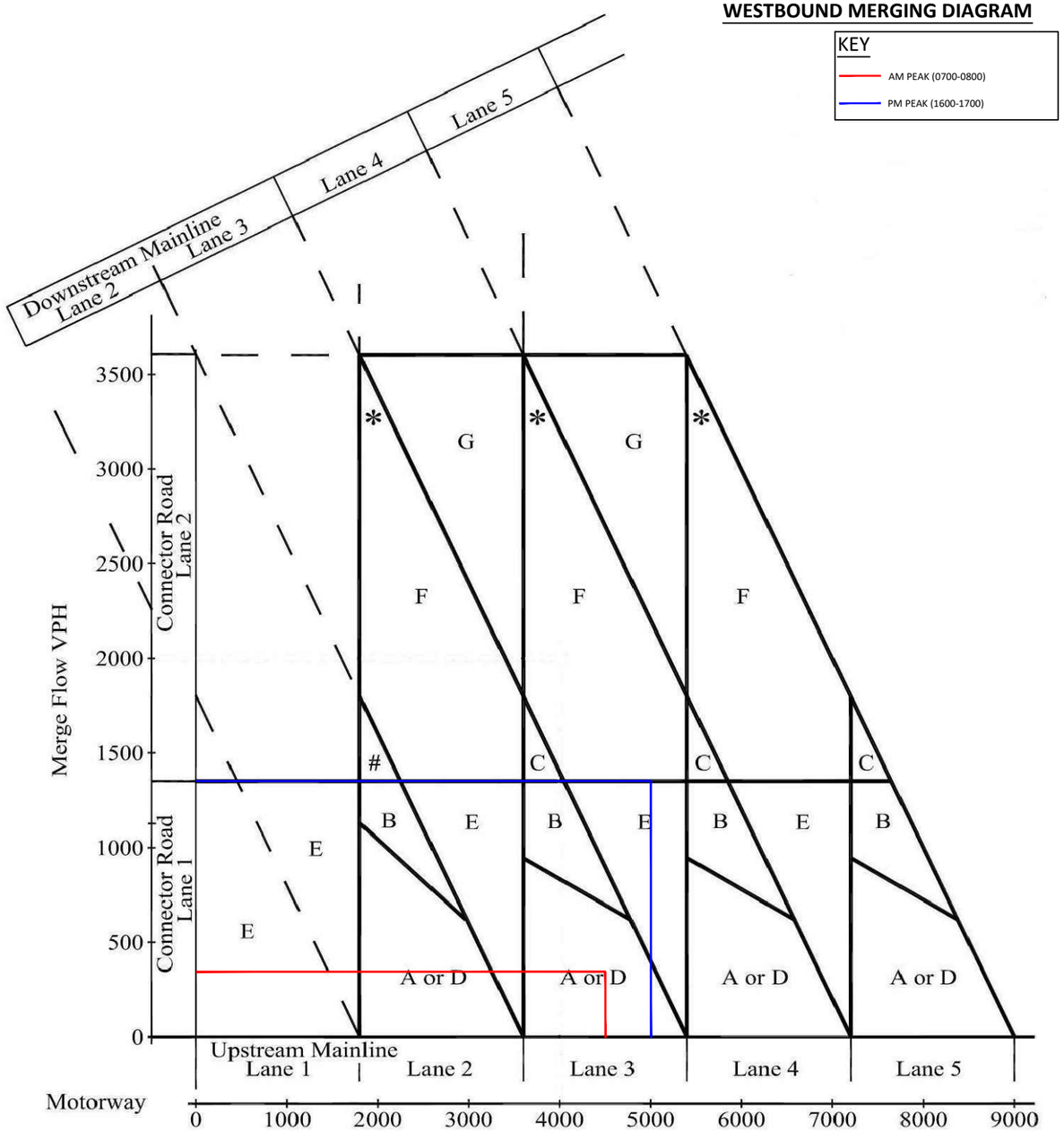

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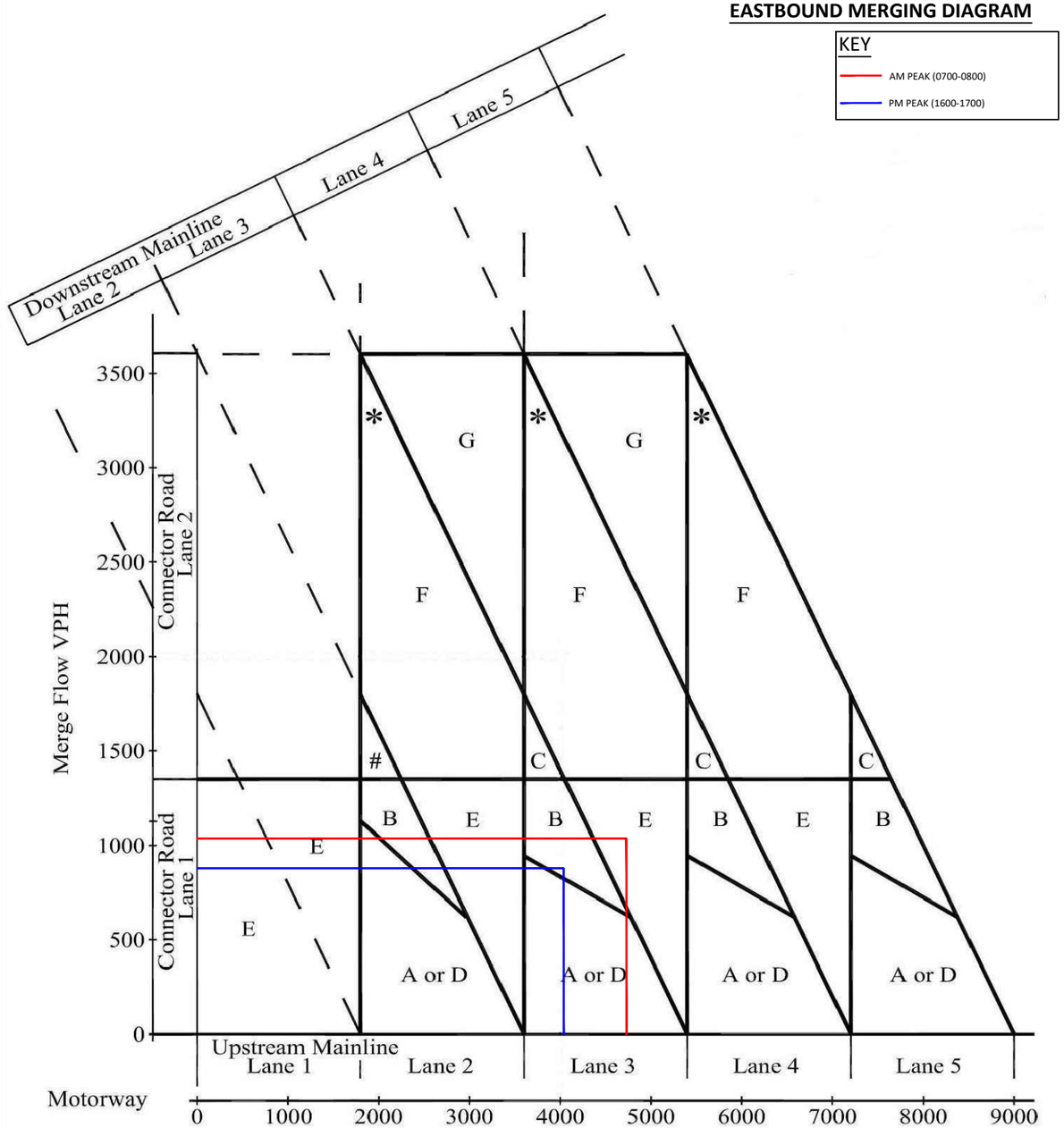

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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO B: BASE 2029 + COMMITTED MERGE PROVISION (0700-0800 & 1600-1700)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	09.04.19

DRAWING No: APPENDIX 10.A (13)

PROJECT No: ITM12377

REV:

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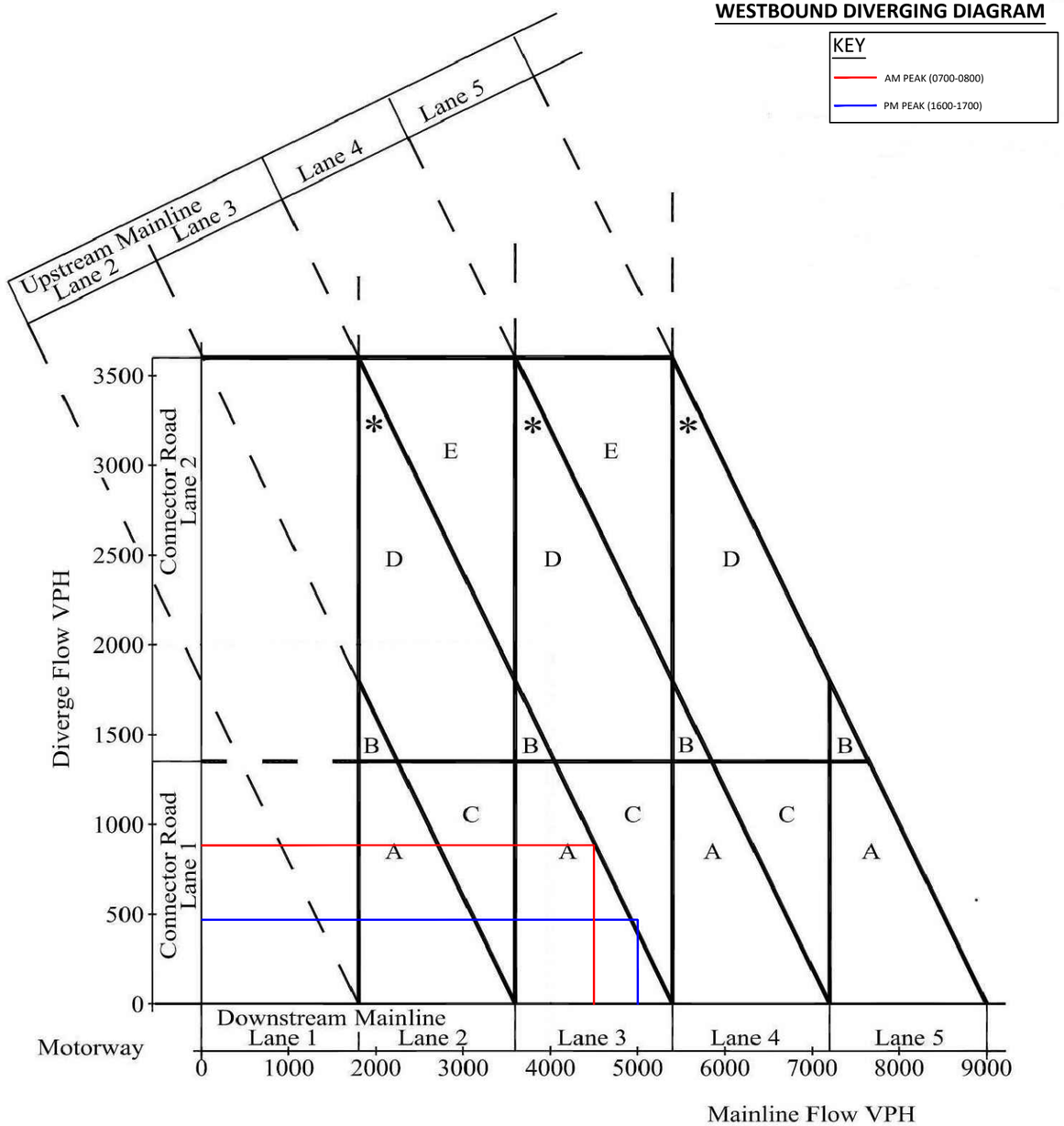
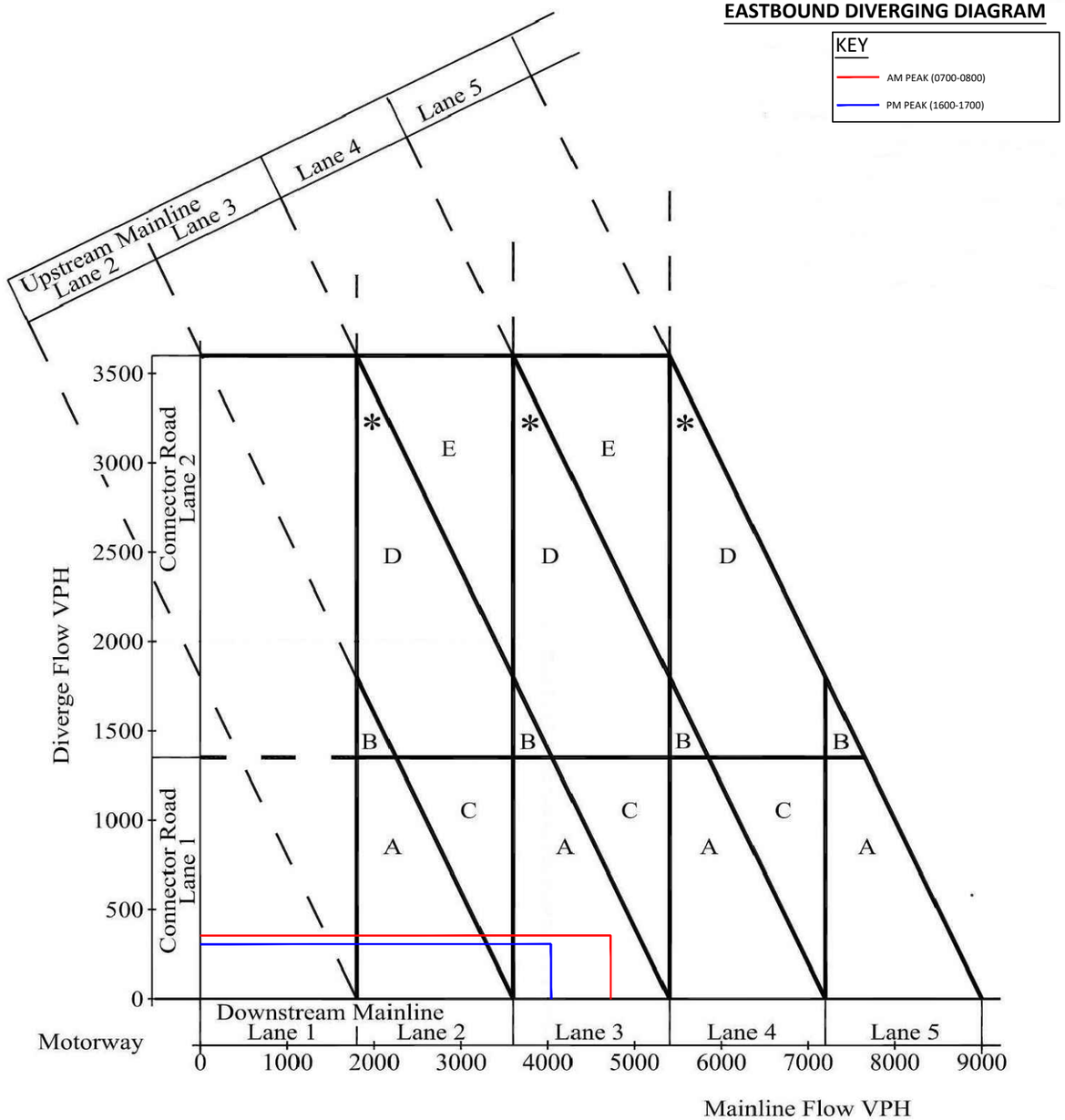


EASTBOUND DIVERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO B: BASE 2029 + COMMITTED DIVERGE PROVISION (0700-0800 & 1600-1700)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

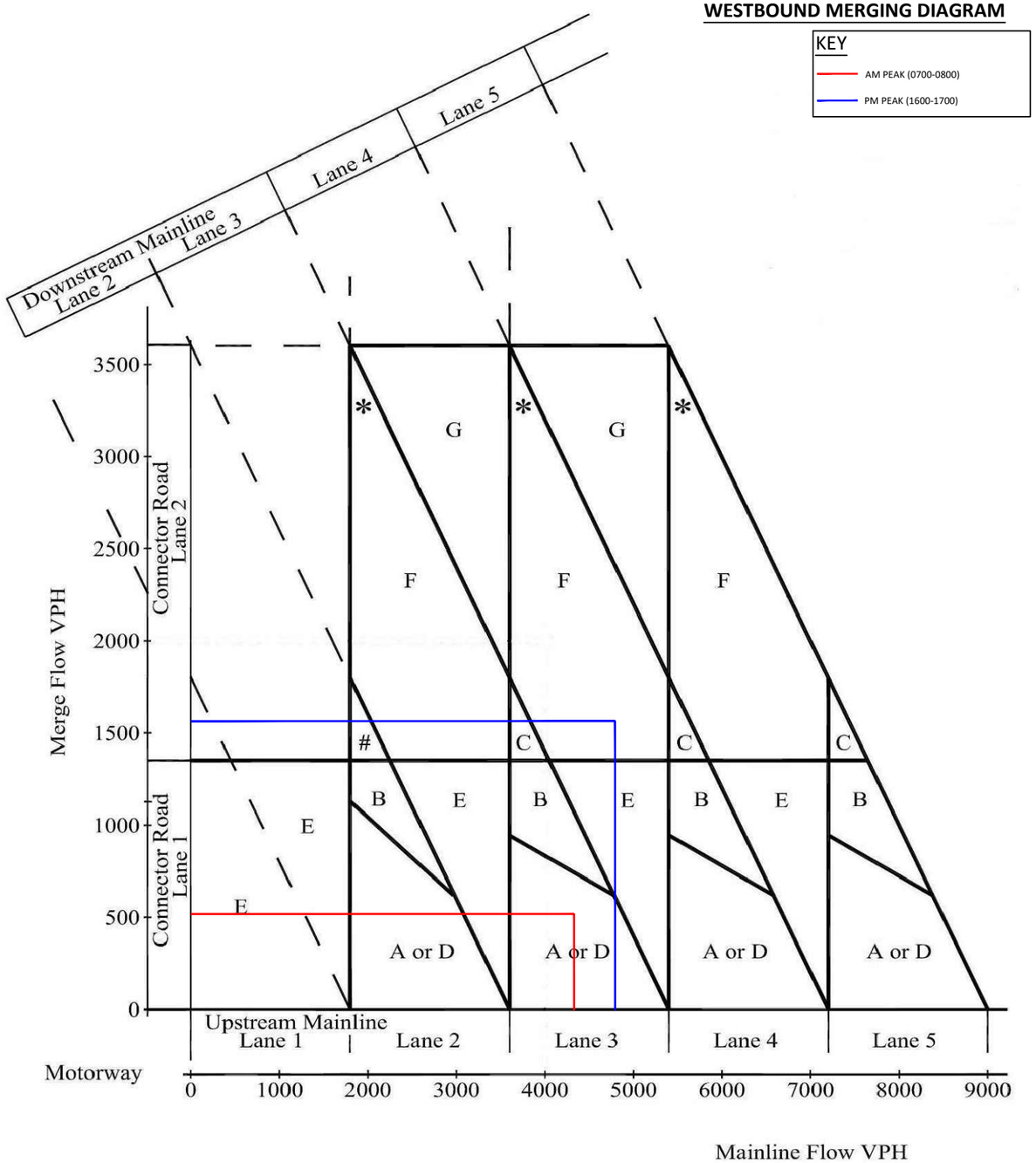
SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	09.04.19

DRAWING No: APPENDIX 10.A (14)

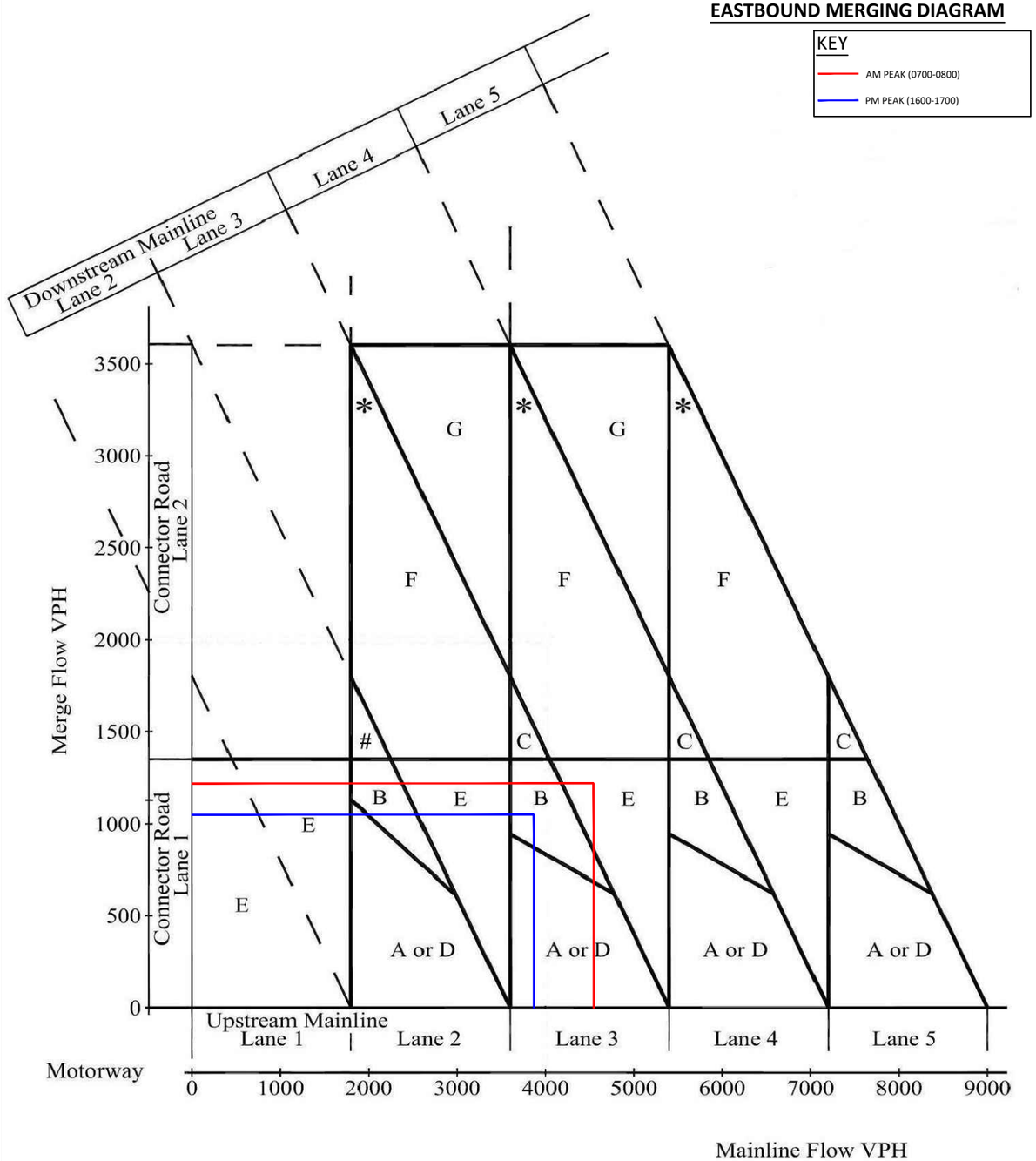
PROJECT No: ITM12377

REV:

WESTBOUND MERGING DIAGRAM



EASTBOUND MERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO D: BASE 2029 + COMMITTED+ DEVELOPMENT MERGE PROVISION (0700-0800 & 1600-1700)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
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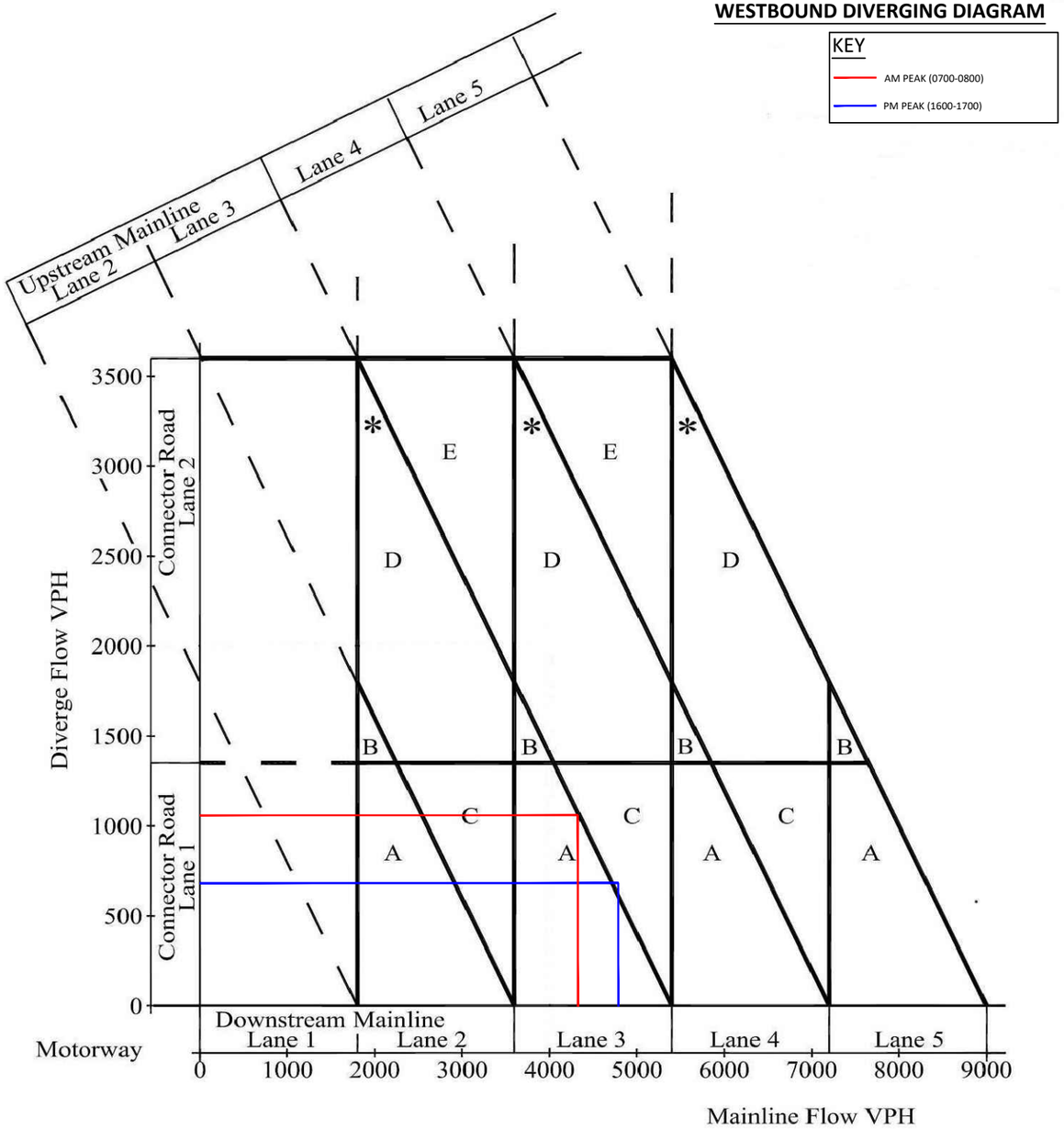
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	09.04.19

DRAWING No: APPENDIX 10.A (15)

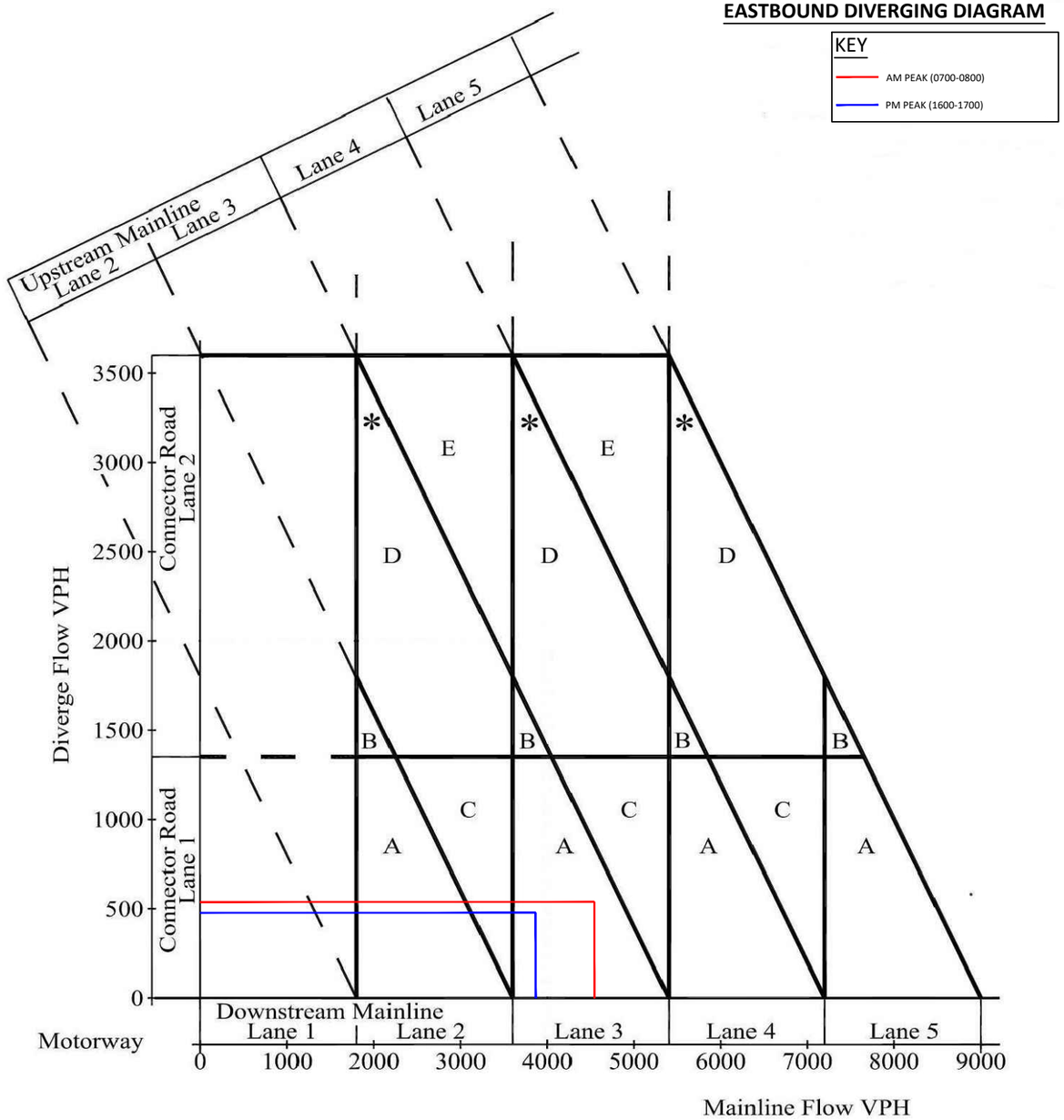
PROJECT No: ITM12377

REV:

WESTBOUND DIVERGING DIAGRAM



EASTBOUND DIVERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

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PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

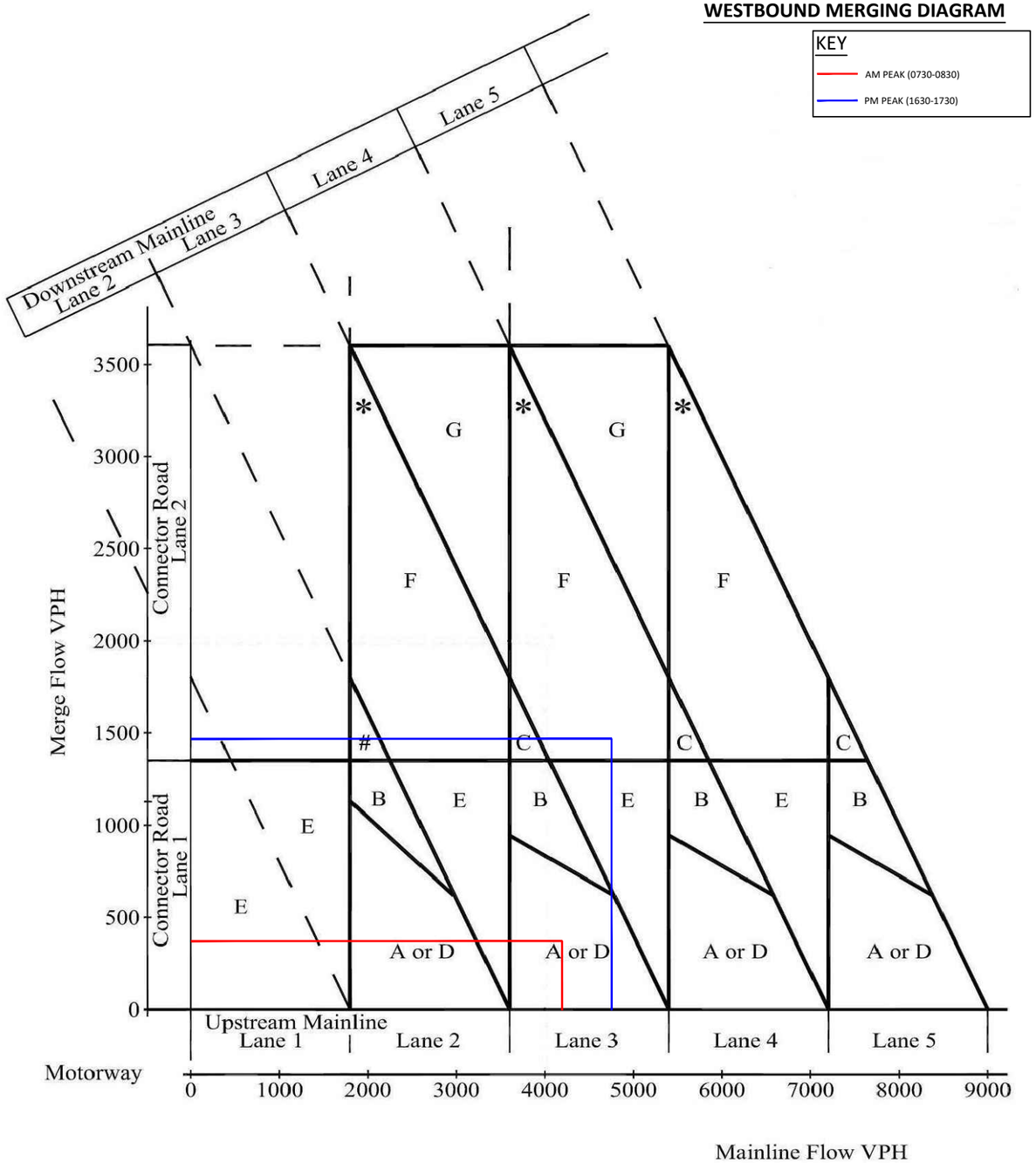
SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	09.04.19

DRAWING No: APPENDIX 10.A (16)

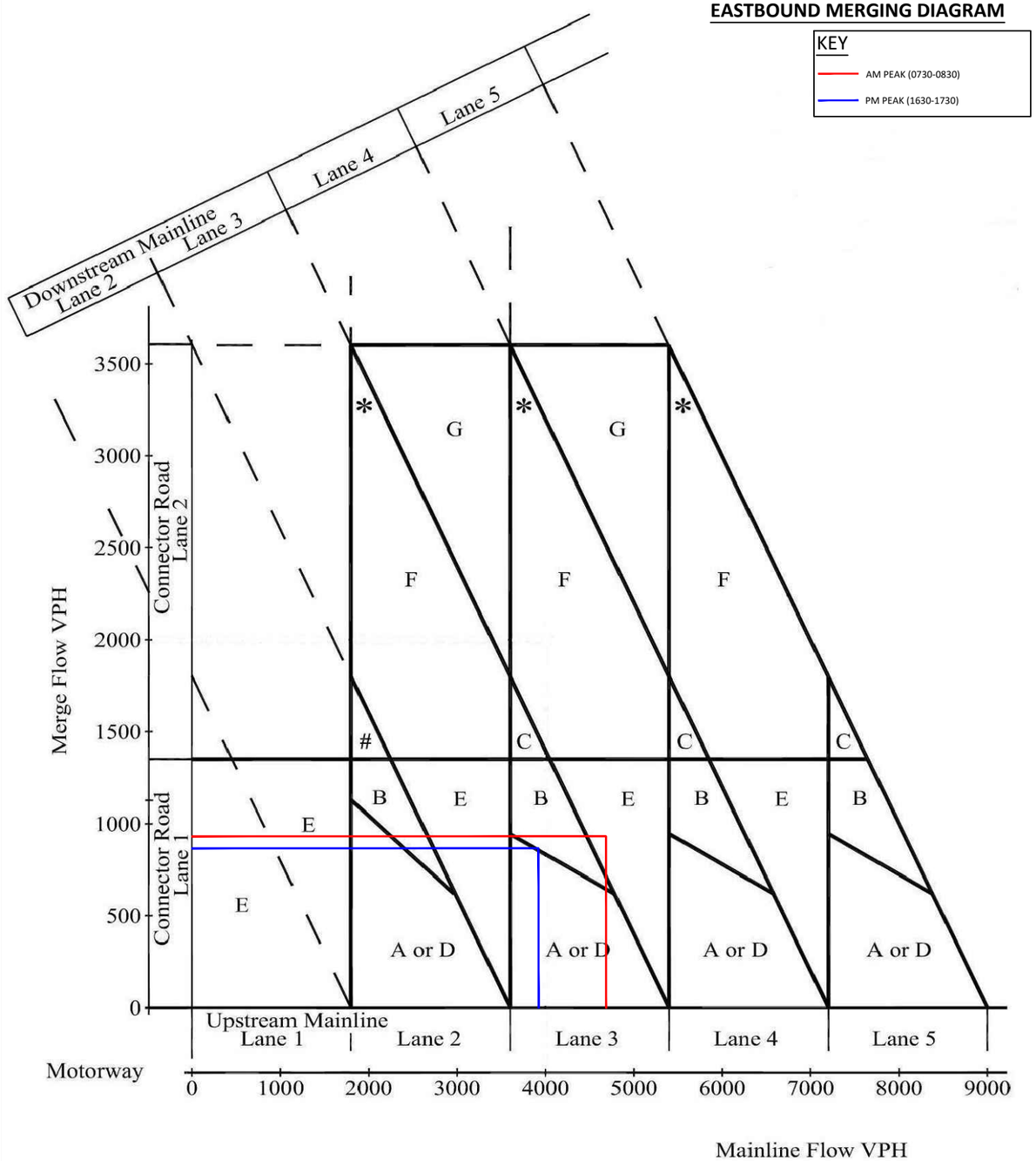
PROJECT No: ITM12377

REV:

WESTBOUND MERGING DIAGRAM



EASTBOUND MERGING DIAGRAM



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STATUS: DRAFT

TITLE: M62 J11 - SCENARIO B: BASE 2029 + COMMITTED MERGE PROVISION (0730-0830 & 1630-1730)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
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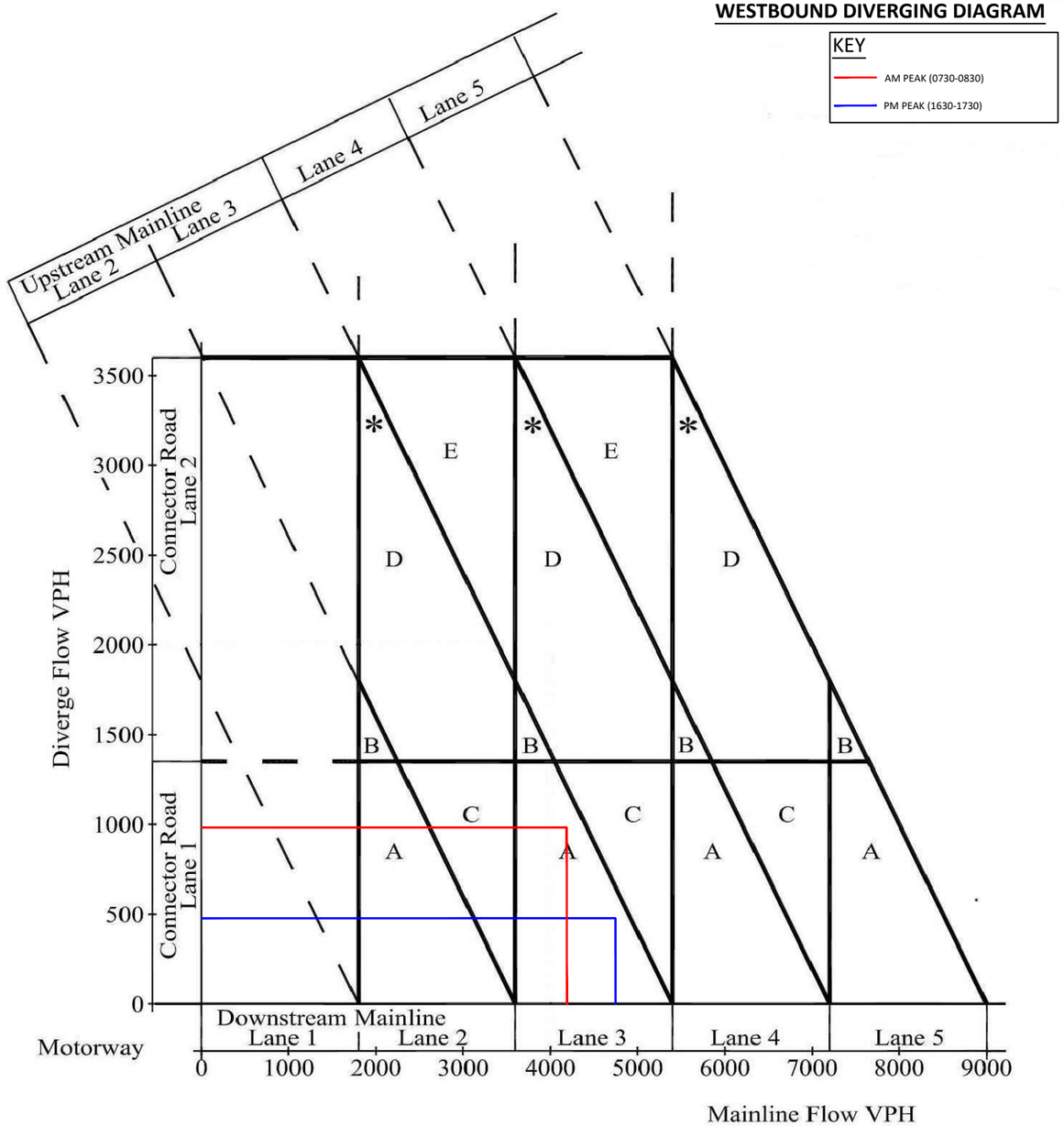
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	09.04.19

DRAWING No: APPENDIX 10.A (17)

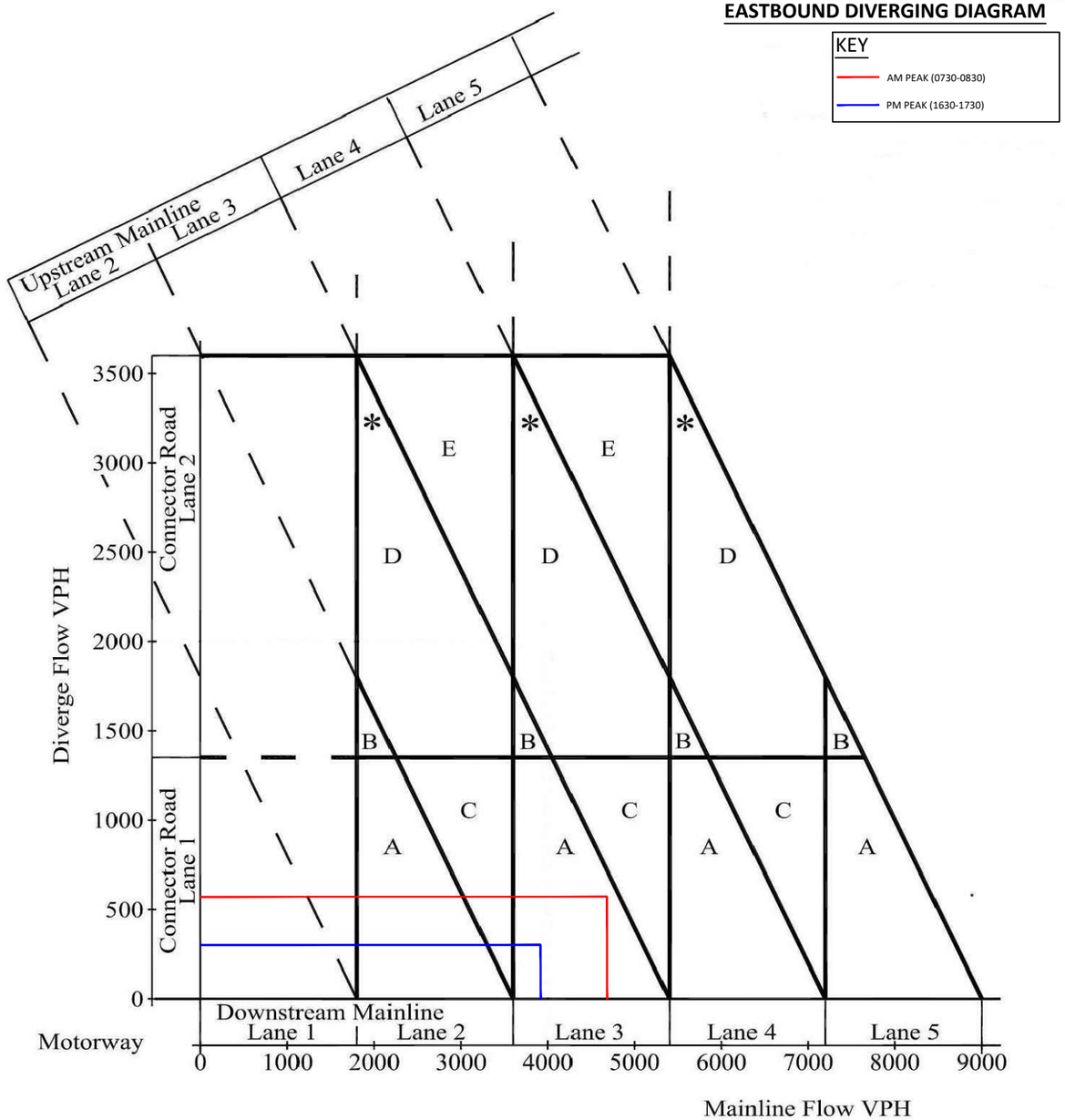
PROJECT No: ITM12377

REV:

WESTBOUND DIVERGING DIAGRAM



EASTBOUND DIVERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

TITLE: M62 J11 - SCENARIO B: BASE 2029 + COMMITTED DIVERGE PROVISION (0730-0830 & 1630-1730)

PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
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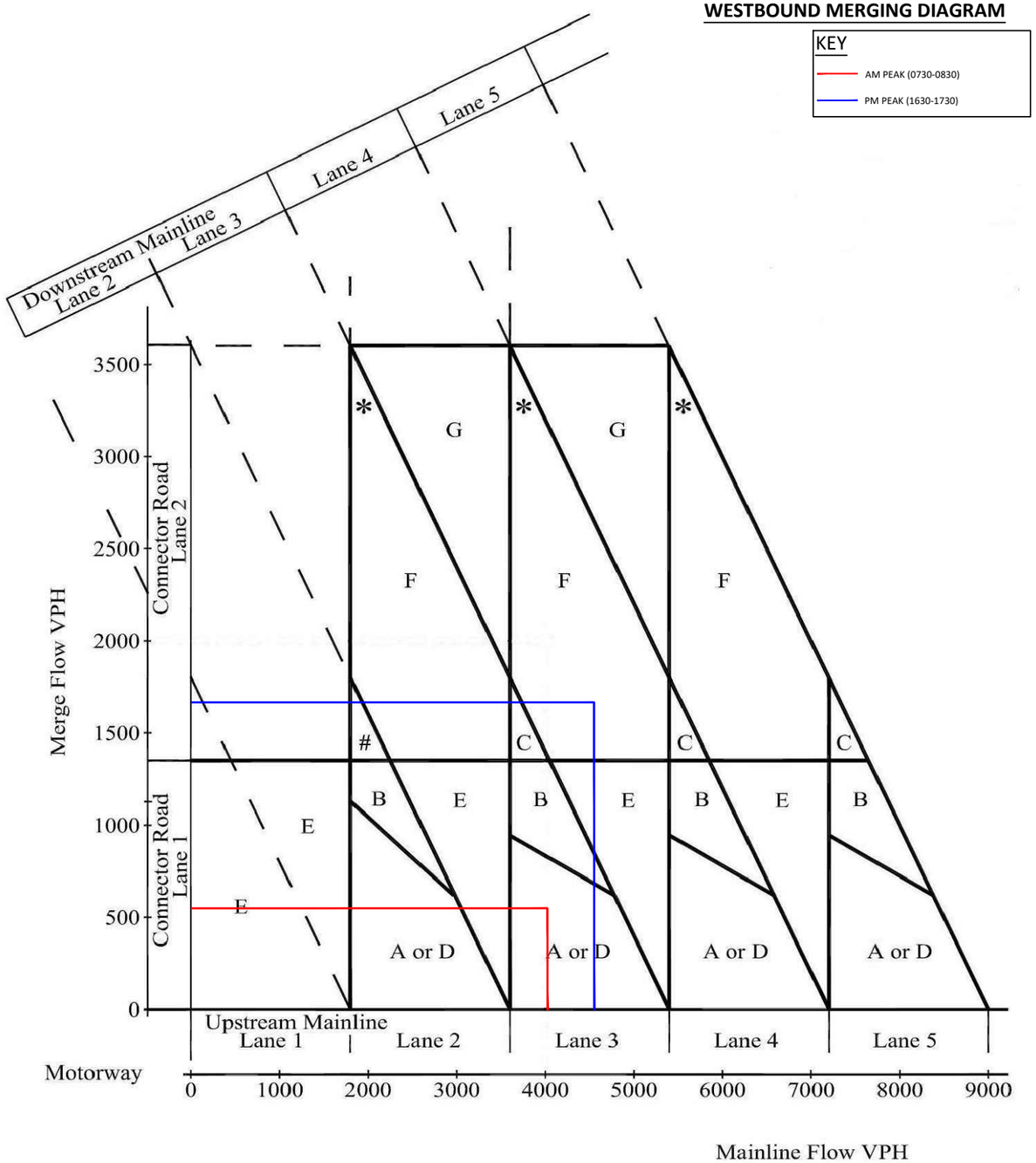
FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	09.04.19

DRAWING No: APPENDIX 10.A (18)

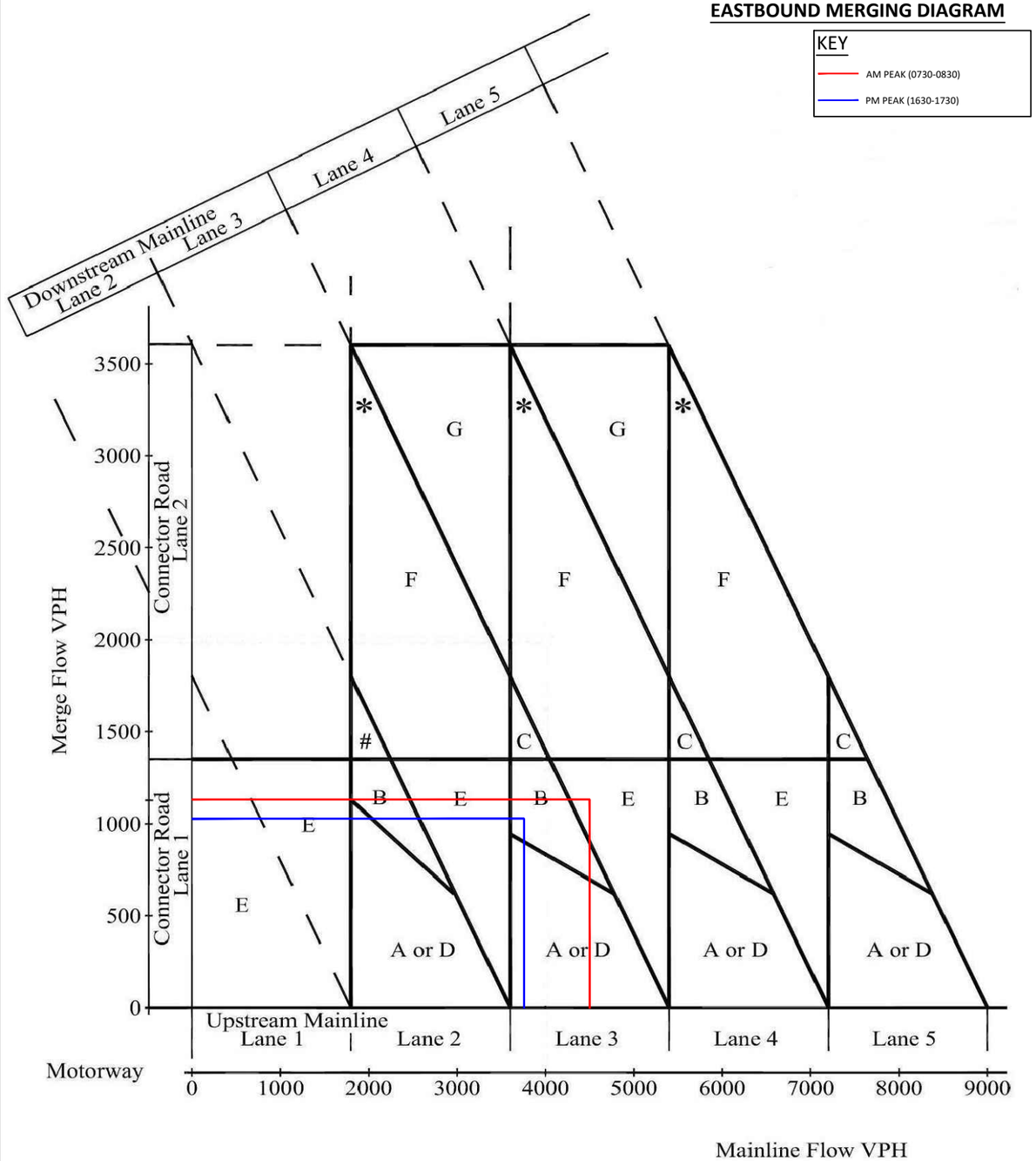
PROJECT No: ITM12377

REV:

WESTBOUND MERGING DIAGRAM



EASTBOUND MERGING DIAGRAM



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REV	DATE	BY	DESCRIPTION	CHK	APD

STATUS: DRAFT

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PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

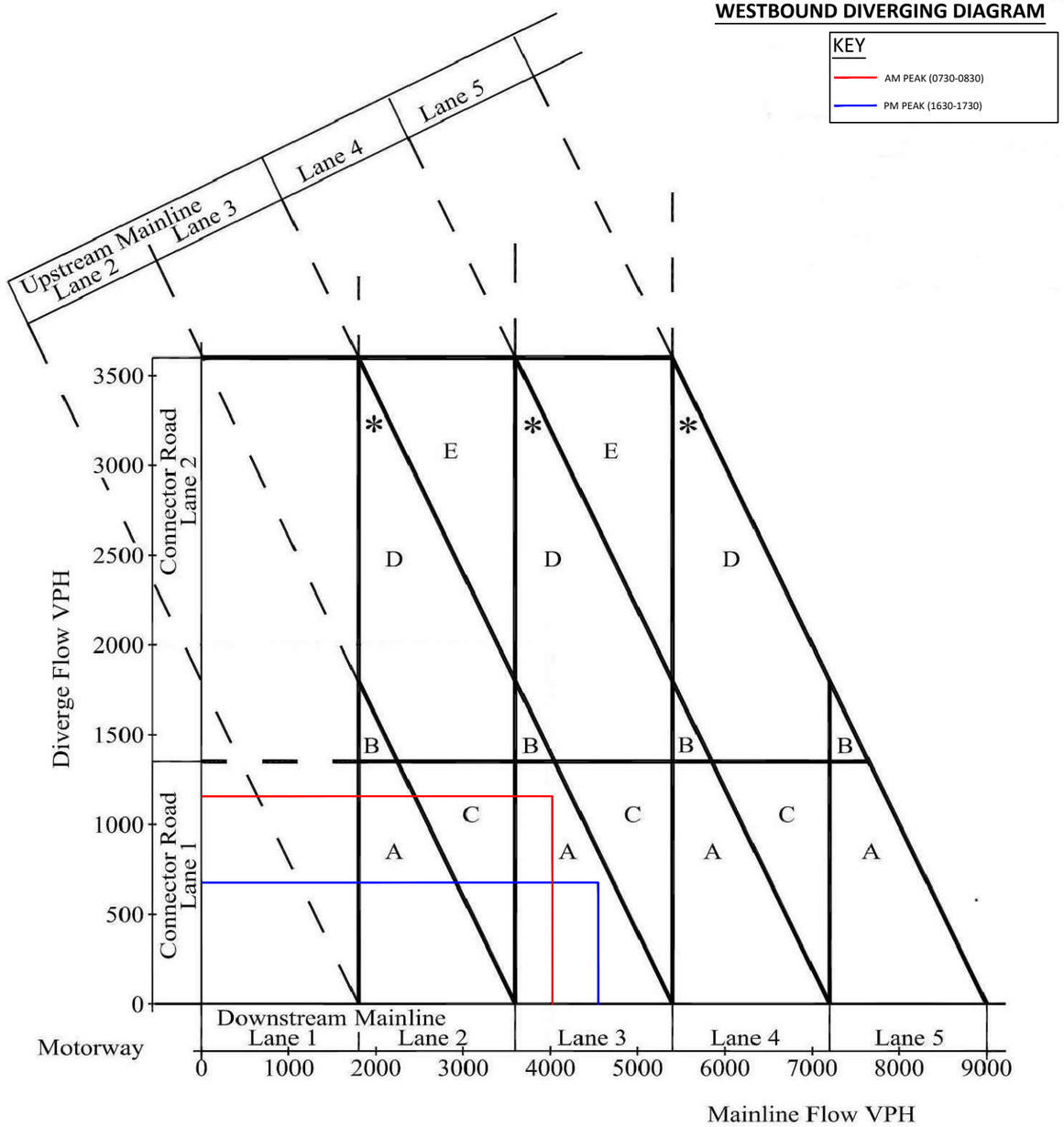
SCALE @ A3:	CHECKED:	APPROVED:
NOT TO SCALE	SE	SE
FILE REF:	DRAWN:	DATE:
FIGURE 1	JB	09.04.19

DRAWING No: APPENDIX 10.A (19)

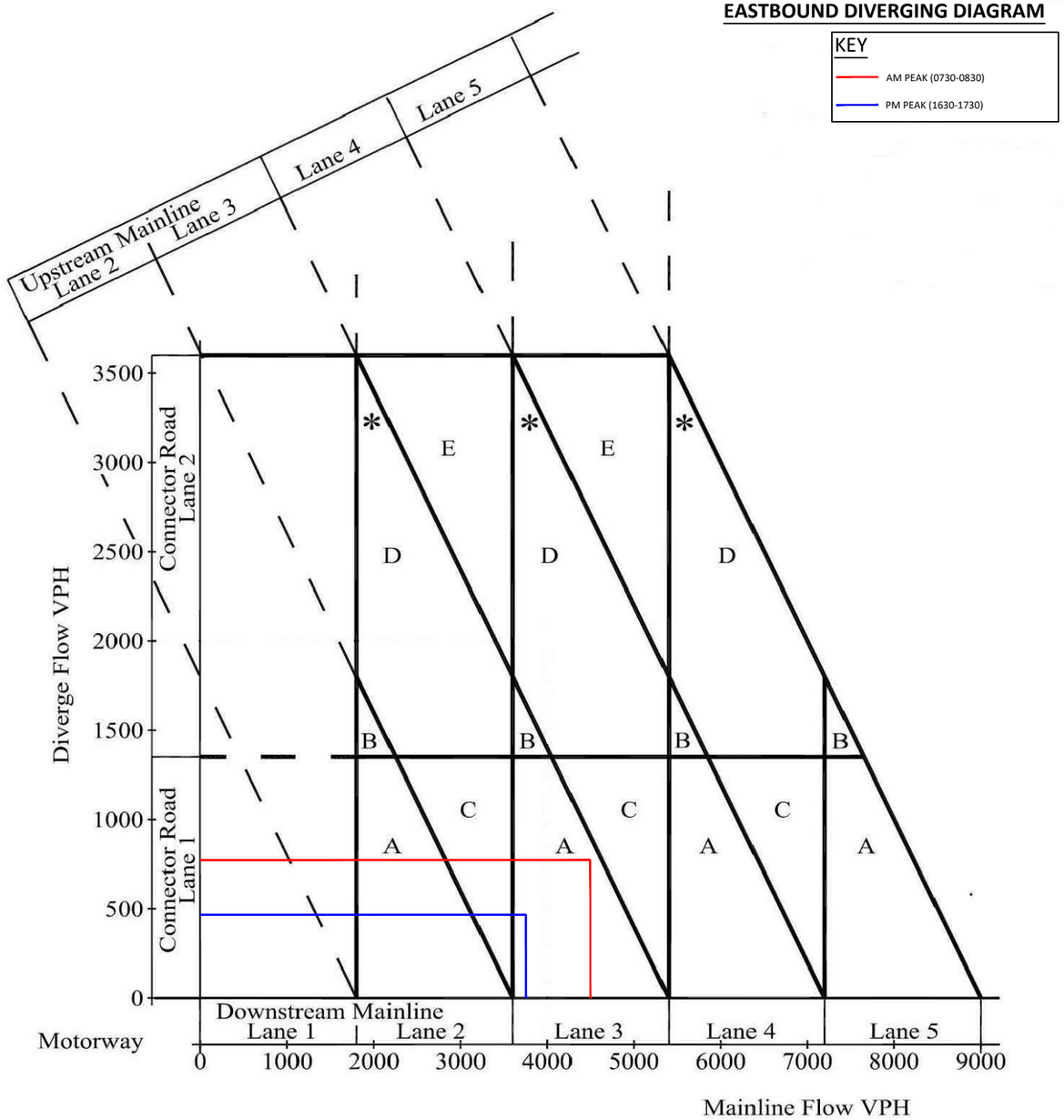
PROJECT No: ITM12377

REV:

WESTBOUND DIVERGING DIAGRAM



EASTBOUND DIVERGING DIAGRAM



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PROJECT: M62 J11 WARRINGTON MSA

CLIENT: EXTRA GROUP LTD

SCALE @ A3:	CHECKED:	APPROVED:
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FILE REF:	DRAWN:	DATE:
FIGURE 2	JB	09.04.19

DRAWING No: APPENDIX 10.A (20)

PROJECT No: ITM12377

REV:

APPENDIX 10.B. Weaving Calculations

Base 2018

Background

M6 J21A - M62 J11 AM Peak Hour (07:00-08:00)

2956		Upstream mainline	
1447		Upstream on-slip	
4154		Downstream mainline	
249		Downstream off-slip	
	2806	Mainline to mainline	Flow 4
	150	Mainline to off-slip	Flow 3
	1348	On-slip to mainline	Flow 2
7%	99	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	
	0%	Up Stream / Downstream difference	

Qnw	2905	Total non-weaving flow in vph
Qw1	1348	Major weaving flow in vph
Qw2	150	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.58	

Background

M6 J21A - M62 J11 PM Peak Hour (16:00-17:00)

3379		Upstream mainline	
459		Upstream on-slip	
3561		Downstream mainline	
276		Downstream off-slip	
	3174	Mainline to mainline	Flow 4
	205	Mainline to off-slip	Flow 3
	387	On-slip to mainline	Flow 2
16%	72	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	
	0%	Up Stream / Downstream difference	

Qnw	3246	Total non-weaving flow in vph
Qw1	387	Major weaving flow in vph
Qw2	205	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.32	

Background

M62 J11 - M6J21A AM Peak Hour (07:00-08:00)

3948		Upstream mainline	
331		Upstream on-slip	
2491		Downstream mainline	
1788		Downstream off-slip	
	2325	Mainline to mainline	Flow 4
91%	1624	Mainline to off-slip	Flow 3
	166	On-slip to mainline	Flow 2
	164	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	
	0%	Up Stream / Downstream difference	

Qnw	2489	Total non-weaving flow in vph
Qw1	1624	Major weaving flow in vph
Qw2	166	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	2.56	

Background

M62 J11 - M6J21A PM Peak Hour (16:00-17:00)

4404		Upstream mainline	
1210		Upstream on-slip	
3192		Downstream mainline	
2421		Downstream off-slip	
	2433	Mainline to mainline	Flow 4
81%	1970	Mainline to off-slip	Flow 3
	759	On-slip to mainline	Flow 2
	451	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	
	0%	Up Stream / Downstream difference	

Qnw	2884	Total non-weaving flow in vph
Qw1	1970	Major weaving flow in vph
Qw2	759	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	3.96	

Base 2018

Background

M6 J21A - M62 J11 AM Peak Hour (07:30-08:30)

3115		Upstream mainline	
1383		Upstream on-slip	
4116		Downstream mainline	
382		Downstream off-slip	
	2864	Mainline to mainline	Flow 4
	251	Mainline to off-slip	Flow 3
	1253	On-slip to mainline	Flow 2
9%	131	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	
	0%	Up Stream / Downstream difference	

Qnw	2994	Total non-weaving flow in vph
Qw1	1253	Major weaving flow in vph
Qw2	251	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.73	

Background

M6 J21A - M62 J11 PM Peak Hour (16:30-17:30)

3272		Upstream mainline	
459		Upstream on-slip	
3457		Downstream mainline	
274		Downstream off-slip	
	3088	Mainline to mainline	Flow 4
	184	Mainline to off-slip	Flow 3
	369	On-slip to mainline	Flow 2
20%	90	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	
	0%	Up Stream / Downstream difference	

Qnw	3179	Total non-weaving flow in vph
Qw1	369	Major weaving flow in vph
Qw2	184	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.24	

Background

M62 J11 - M6J21A AM Peak Hour (07:30-08:30)

3676		Upstream mainline	
351		Upstream on-slip	
2304		Downstream mainline	
1723		Downstream off-slip	
	2097	Mainline to mainline	Flow 4
92%	1579	Mainline to off-slip	Flow 3
	207	On-slip to mainline	Flow 2
	145	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	
	0%	Up Stream / Downstream difference	

Qnw	2242	Total non-weaving flow in vph
Qw1	1579	Major weaving flow in vph
Qw2	207	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	2.47	

Background

M62 J11 - M6J21A PM Peak Hour (16:30-17:30)

4181		Upstream mainline	
1281		Upstream on-slip	
3143		Downstream mainline	
2319		Downstream off-slip	
	2285	Mainline to mainline	Flow 4
82%	1896	Mainline to off-slip	Flow 3
	858	On-slip to mainline	Flow 2
	423	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	
	0%	Up Stream / Downstream difference	

Qnw	2708	Total non-weaving flow in vph
Qw1	1896	Major weaving flow in vph
Qw2	858	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	3.99	

Base 2022

M6 J21A - M62 J11 AM Peak Hour (07:00-08:00)

3194		Upstream mainline	
1573		Upstream on-slip	
4411		Downstream mainline	
356		Downstream off-slip	
	2980	Mainline to mainline	Flow 4
	214	Mainline to off-slip	Flow 3
	1432	On-slip to mainline	Flow 2
	141	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3121	Total non-weaving flow in vph	
Qw1	1432	Major weaving flow in vph	
Qw2	214	Minor weaving flow in vph	
D	1800	Maximum mainline flow	
Lmin	2000	Desirable minimum weaving length	
Lact	2450	Actual weaving length	
N	2.84		

M6 J21A - M62 J11 PM Peak Hour (16:00-17:00)

3590		Upstream mainline	
490		Upstream on-slip	
3773		Downstream mainline	
307		Downstream off-slip	
	3363	Mainline to mainline	Flow 4
	228	Mainline to off-slip	Flow 3
	410	On-slip to mainline	Flow 2
	80	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3443	Total non-weaving flow in vph	
Qw1	410	Major weaving flow in vph	
Qw2	228	Minor weaving flow in vph	
D	1800	Maximum mainline flow	
Lmin	2000	Desirable minimum weaving length	
Lact	2450	Actual weaving length	
N	2.47		

M62 J11 - M6J21A AM Peak Hour (07:00-08:00)

4192		Upstream mainline	
347		Upstream on-slip	
2643		Downstream mainline	
1897		Downstream off-slip	
	2468	Mainline to mainline	Flow 4
	1724	Mainline to off-slip	Flow 3
	174	On-slip to mainline	Flow 2
	172	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2641	Total non-weaving flow in vph	
Qw1	1724	Major weaving flow in vph	
Qw2	174	Minor weaving flow in vph	
D	1800	Maximum mainline flow	
Lmin	2000	Desirable minimum weaving length	
Lact	1610	Actual weaving length	
N	2.72		

M62 J11 - M6J21A PM Peak Hour (16:00-17:00)

4665		Upstream mainline	
1356		Upstream on-slip	
3429		Downstream mainline	
2592		Downstream off-slip	
	2578	Mainline to mainline	Flow 4
	2087	Mainline to off-slip	Flow 3
	851	On-slip to mainline	Flow 2
	505	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3083	Total non-weaving flow in vph	
Qw1	2087	Major weaving flow in vph	
Qw2	851	Minor weaving flow in vph	
D	1800	Maximum mainline flow	
Lmin	2000	Desirable minimum weaving length	
Lact	1610	Actual weaving length	
N	4.29		

Base 2022

M6 J21A - M62 J11 AM Peak Hour (07:30-08:30)

3418		Upstream mainline	
1526		Upstream on-slip	
4371		Downstream mainline	
573		Downstream off-slip	
	3041	Mainline to mainline	Flow 4
	377	Mainline to off-slip	Flow 3
	1330	On-slip to mainline	Flow 2
	196	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3237	Total non-weaving flow in vph
Qw1	1330	Major weaving flow in vph
Qw2	377	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	3.09	

M6 J21A - M62 J11 PM Peak Hour (16:30-17:30)

3475		Upstream mainline	
490		Upstream on-slip	
3662		Downstream mainline	
304		Downstream off-slip	
	3271	Mainline to mainline	Flow 4
	204	Mainline to off-slip	Flow 3
	390	On-slip to mainline	Flow 2
	100	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3371	Total non-weaving flow in vph
Qw1	390	Major weaving flow in vph
Qw2	204	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.39	

M62 J11 - M6J21A AM Peak Hour (07:30-08:30)

3904		Upstream mainline	
374		Upstream on-slip	
2448		Downstream mainline	
1830		Downstream off-slip	
	2227	Mainline to mainline	Flow 4
	1676	Mainline to off-slip	Flow 3
	220	On-slip to mainline	Flow 2
	154	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2381	Total non-weaving flow in vph
Qw1	1676	Major weaving flow in vph
Qw2	220	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	2.62	

M62 J11 - M6J21A PM Peak Hour (16:30-17:30)

4429		Upstream mainline	
1473		Upstream on-slip	
3407		Downstream mainline	
2495		Downstream off-slip	
	2421	Mainline to mainline	Flow 4
	2009	Mainline to off-slip	Flow 3
	987	On-slip to mainline	Flow 2
	487	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2907	Total non-weaving flow in vph
Qw1	2009	Major weaving flow in vph
Qw2	987	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	4.38	

Base 2029

M6 J21A - M62 J11 AM Peak Hour (07:00-08:00)

3413		Upstream mainline	
1678		Upstream on-slip	
4735		Downstream mainline	
356		Downstream off-slip	
	3198	Mainline to mainline	Flow 4
	214	Mainline to off-slip	Flow 3
	1537	On-slip to mainline	Flow 2
	141	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3340	Total non-weaving flow in vph
Qw1	1537	Major weaving flow in vph
Qw2	214	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	3.02	

M6 J21A - M62 J11 PM Peak Hour (16:00-17:00)

3833		Upstream mainline	
520		Upstream on-slip	
4045		Downstream mainline	
307		Downstream off-slip	
	3606	Mainline to mainline	Flow 4
	228	Mainline to off-slip	Flow 3
	440	On-slip to mainline	Flow 2
	80	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3685	Total non-weaving flow in vph
Qw1	440	Major weaving flow in vph
Qw2	228	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.62	

M62 J11 - M6J21A AM Peak Hour (07:00-08:00)

4500		Upstream mainline	
347		Upstream on-slip	
2824		Downstream mainline	
2023		Downstream off-slip	
	2650	Mainline to mainline	Flow 4
	1851	Mainline to off-slip	Flow 3
	174	On-slip to mainline	Flow 2
	172	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2822	Total non-weaving flow in vph
Qw1	1851	Major weaving flow in vph
Qw2	174	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	2.89	

M62 J11 - M6J21A PM Peak Hour (16:00-17:00)

5002		Upstream mainline	
1356		Upstream on-slip	
3615		Downstream mainline	
2743		Downstream off-slip	
	2764	Mainline to mainline	Flow 4
	2238	Mainline to off-slip	Flow 3
	851	On-slip to mainline	Flow 2
	505	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3269	Total non-weaving flow in vph
Qw1	2238	Major weaving flow in vph
Qw2	851	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	4.48	

Base 2029

M6 J21A - M62 J11 AM Peak Hour (07:30-08:30)

3641		Upstream mainline	
1624		Upstream on-slip	
4692		Downstream mainline	
573		Downstream off-slip	
	3264	Mainline to mainline	Flow 4
	377	Mainline to off-slip	Flow 3
	1428	On-slip to mainline	Flow 2
	196	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3460	Total non-weaving flow in vph
Qw1	1428	Major weaving flow in vph
Qw2	377	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	3.27	

M6 J21A - M62 J11 PM Peak Hour (16:30-17:30)

3711		Upstream mainline	
519		Upstream on-slip	
3926		Downstream mainline	
304		Downstream off-slip	
	3508	Mainline to mainline	Flow 4
	204	Mainline to off-slip	Flow 3
	419	On-slip to mainline	Flow 2
	100	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3608	Total non-weaving flow in vph
Qw1	419	Major weaving flow in vph
Qw2	204	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.53	

M62 J11 - M6J21A AM Peak Hour (07:30-08:30)

4190		Upstream mainline	
374		Upstream on-slip	
2611		Downstream mainline	
1953		Downstream off-slip	
	2391	Mainline to mainline	Flow 4
	1799	Mainline to off-slip	Flow 3
	220	On-slip to mainline	Flow 2
	154	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2545	Total non-weaving flow in vph
Qw1	1799	Major weaving flow in vph
Qw2	220	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	2.78	

M62 J11 - M6J21A PM Peak Hour (16:30-17:30)

4749		Upstream mainline	
1473		Upstream on-slip	
3582		Downstream mainline	
2640		Downstream off-slip	
	2595	Mainline to mainline	Flow 4
	2154	Mainline to off-slip	Flow 3
	987	On-slip to mainline	Flow 2
	487	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3082	Total non-weaving flow in vph
Qw1	2154	Major weaving flow in vph
Qw2	987	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	4.55	

2022 Base + Committed+ Development

M6 J21A - M62 J11 AM Peak Hour (07:00-08:00)

3194		Upstream mainline	
1573		Upstream on-slip	
4227		Downstream mainline	
540		Downstream off-slip	
	2855	Mainline to mainline	Flow 4
	339	Mainline to off-slip	Flow 3
	1372	On-slip to mainline	Flow 2
	201	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3056	Total non-weaving flow in vph
Qw1	1372	Major weaving flow in vph
Qw2	339	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.96	

M6 J21A - M62 J11 PM Peak Hour (16:00-17:00)

3590		Upstream mainline	
490		Upstream on-slip	
3601		Downstream mainline	
479		Downstream off-slip	
	3210	Mainline to mainline	Flow 4
	380	Mainline to off-slip	Flow 3
	391	On-slip to mainline	Flow 2
	98	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3308	Total non-weaving flow in vph
Qw1	391	Major weaving flow in vph
Qw2	380	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.61	

M62 J11 - M6J21A AM Peak Hour (07:00-08:00)

4018		Upstream mainline	
522		Upstream on-slip	
2643		Downstream mainline	
1897		Downstream off-slip	
	2366	Mainline to mainline	Flow 4
	1652	Mainline to off-slip	Flow 3
	277	On-slip to mainline	Flow 2
	245	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2610	Total non-weaving flow in vph
Qw1	1652	Major weaving flow in vph
Qw2	277	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	2.83	

M62 J11 - M6J21A PM Peak Hour (16:00-17:00)

4452		Upstream mainline	
1569		Upstream on-slip	
3429		Downstream mainline	
2592		Downstream off-slip	
	2460	Mainline to mainline	Flow 4
	1992	Mainline to off-slip	Flow 3
	968	On-slip to mainline	Flow 2
	601	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3061	Total non-weaving flow in vph
Qw1	1992	Major weaving flow in vph
Qw2	968	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	4.42	

2022 Base + Development

M6 J21A - M62 J11 AM Peak Hour (07:30-08:30)

3427		Upstream mainline	
1531		Upstream on-slip	
4184		Downstream mainline	
775		Downstream off-slip	
	2911	Mainline to mainline	Flow 4
	517	Mainline to off-slip	Flow 3
	1273	On-slip to mainline	Flow 2
	258	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3169	Total non-weaving flow in vph
Qw1	1273	Major weaving flow in vph
Qw2	517	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	3.22	

M6 J21A - M62 J11 PM Peak Hour (16:30-17:30)

3475		Upstream mainline	
490		Upstream on-slip	
3505		Downstream mainline	
460		Downstream off-slip	
	3131	Mainline to mainline	Flow 4
	344	Mainline to off-slip	Flow 3
	374	On-slip to mainline	Flow 2
	117	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3248	Total non-weaving flow in vph
Qw1	374	Major weaving flow in vph
Qw2	344	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.51	

M62 J11 - M6J21A AM Peak Hour (07:30-08:30)

3737		Upstream mainline	
553		Upstream on-slip	
2455		Downstream mainline	
1836		Downstream off-slip	
	2132	Mainline to mainline	Flow 4
	1605	Mainline to off-slip	Flow 3
	322	On-slip to mainline	Flow 2
	231	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2363	Total non-weaving flow in vph
Qw1	1605	Major weaving flow in vph
Qw2	322	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	2.74	

M62 J11 - M6J21A PM Peak Hour (16:30-17:30)

4240		Upstream mainline	
1671		Upstream on-slip	
3414		Downstream mainline	
2498		Downstream off-slip	
	2317	Mainline to mainline	Flow 4
	1923	Mainline to off-slip	Flow 3
	1097	On-slip to mainline	Flow 2
	575	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2892	Total non-weaving flow in vph
Qw1	1923	Major weaving flow in vph
Qw2	1097	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	4.50	

2029 Base + Development

M6 J21A - M62 J11 AM Peak Hour (07:00-08:00)

3413		Upstream mainline	
1678		Upstream on-slip	
4551		Downstream mainline	
540		Downstream off-slip	
	3074	Mainline to mainline	Flow 4
	339	Mainline to off-slip	Flow 3
	1477	On-slip to mainline	Flow 2
	201	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3275	Total non-weaving flow in vph
Qw1	1477	Major weaving flow in vph
Qw2	339	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	3.14	

M6 J21A - M62 J11 PM Peak Hour (16:00-17:00)

3833		Upstream mainline	
520		Upstream on-slip	
3874		Downstream mainline	
479		Downstream off-slip	
	3453	Mainline to mainline	Flow 4
	380	Mainline to off-slip	Flow 3
	421	On-slip to mainline	Flow 2
	98	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3551	Total non-weaving flow in vph
Qw1	421	Major weaving flow in vph
Qw2	380	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	2450	Actual weaving length
N	2.76	

M62 J11 - M6J21A AM Peak Hour (07:00-08:00)

4326		Upstream mainline	
522		Upstream on-slip	
2824		Downstream mainline	
2023		Downstream off-slip	
	2547	Mainline to mainline	Flow 4
	1779	Mainline to off-slip	Flow 3
	277	On-slip to mainline	Flow 2
	245	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2791	Total non-weaving flow in vph
Qw1	1779	Major weaving flow in vph
Qw2	277	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	3.00	

M62 J11 - M6J21A PM Peak Hour (16:00-17:00)

4789		Upstream mainline	
1569		Upstream on-slip	
3615		Downstream mainline	
2743		Downstream off-slip	
	2646	Mainline to mainline	Flow 4
	2142	Mainline to off-slip	Flow 3
	968	On-slip to mainline	Flow 2
	601	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3247	Total non-weaving flow in vph
Qw1	2142	Major weaving flow in vph
Qw2	968	Minor weaving flow in vph
D	1800	Maximum mainline flow
Lmin	2000	Desirable minimum weaving length
Lact	1610	Actual weaving length
N	4.61	

2029 Base + Development

M6 J21A - M62 J11 AM Peak Hour (07:30-08:30)

3651		Upstream mainline	
1629		Upstream on-slip	
4505		Downstream mainline	
775		Downstream off-slip	
	3134	Mainline to mainline	Flow 4
	517	Mainline to off-slip	Flow 3
	1371	On-slip to mainline	Flow 2
	258	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3392	Total non-weaving flow in vph	
Qw1	1371	Major weaving flow in vph	
Qw2	517	Minor weaving flow in vph	
D	1800	Maximum mainline flow	
Lmin	2000	Desirable minimum weaving length	
Lact	2450	Actual weaving length	
N	3.40		

M6 J21A - M62 J11 PM Peak Hour (16:30-17:30)

3711		Upstream mainline	
519		Upstream on-slip	
3769		Downstream mainline	
460		Downstream off-slip	
	3368	Mainline to mainline	Flow 4
	344	Mainline to off-slip	Flow 3
	402	On-slip to mainline	Flow 2
	117	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3484	Total non-weaving flow in vph	
Qw1	402	Major weaving flow in vph	
Qw2	344	Minor weaving flow in vph	
D	1800	Maximum mainline flow	
Lmin	2000	Desirable minimum weaving length	
Lact	2450	Actual weaving length	
N	2.66		

M62 J11 - M6J21A AM Peak Hour (07:30-08:30)

4024		Upstream mainline	
553		Upstream on-slip	
2618		Downstream mainline	
1959		Downstream off-slip	
	2296	Mainline to mainline	Flow 4
	1728	Mainline to off-slip	Flow 3
	322	On-slip to mainline	Flow 2
	231	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	2527	Total non-weaving flow in vph	
Qw1	1728	Major weaving flow in vph	
Qw2	322	Minor weaving flow in vph	
D	1800	Maximum mainline flow	
Lmin	2000	Desirable minimum weaving length	
Lact	1610	Actual weaving length	
N	2.90		

M62 J11 - M6J21A PM Peak Hour (16:30-17:30)

4560		Upstream mainline	
1671		Upstream on-slip	
3589		Downstream mainline	
2643		Downstream off-slip	
	2492	Mainline to mainline	Flow 4
	2068	Mainline to off-slip	Flow 3
	1097	On-slip to mainline	Flow 2
	575	On-slip to off-slip	Flow 1
	Ok	Upstream checks	
	Ok	Downstream checks	

Qnw	3067	Total non-weaving flow in vph	
Qw1	2068	Major weaving flow in vph	
Qw2	1097	Minor weaving flow in vph	
D	1800	Maximum mainline flow	
Lmin	2000	Desirable minimum weaving length	
Lact	1610	Actual weaving length	
N	4.68		

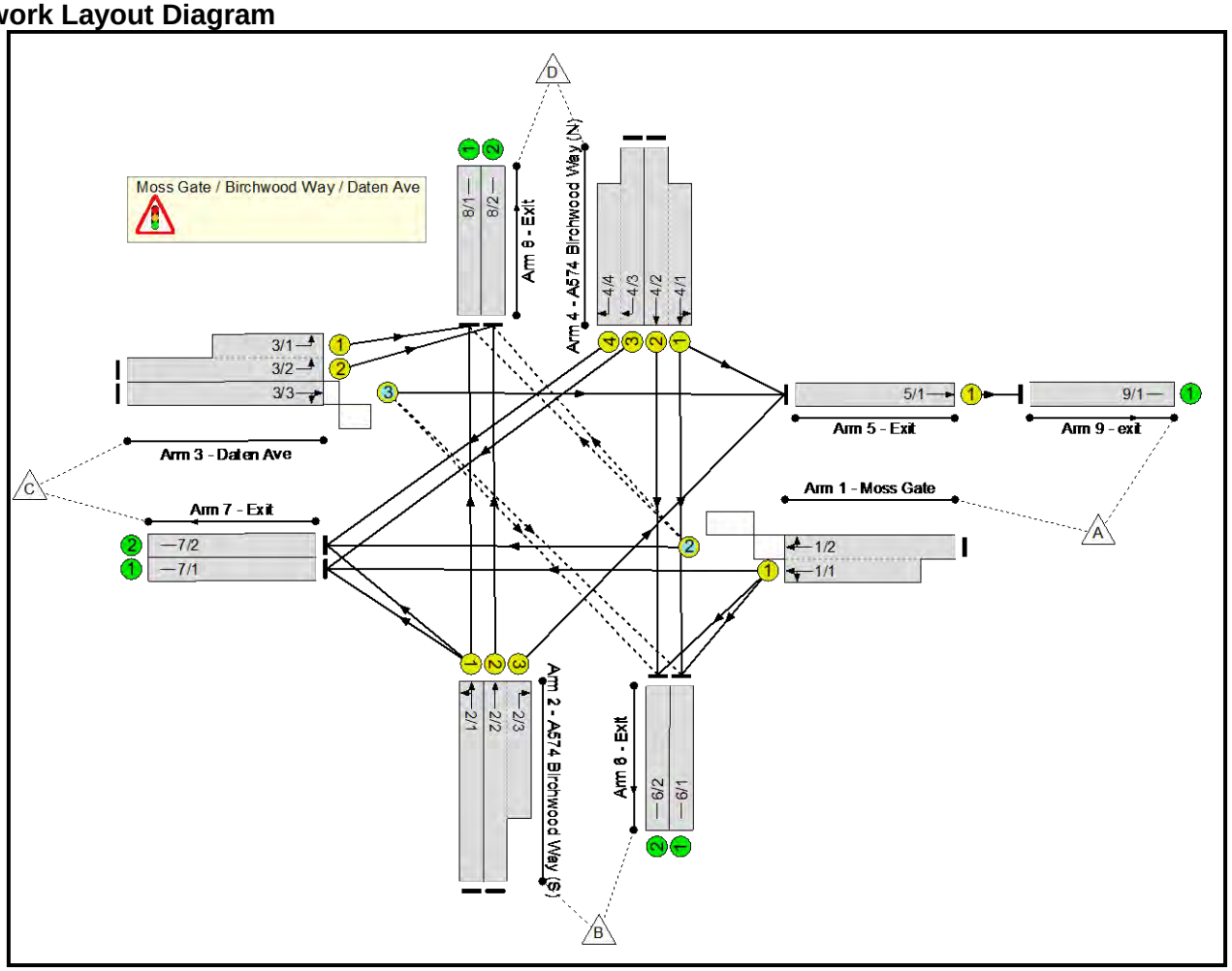
APPENDIX 11.A. Birchwood Way / Daten Avenue LINSIG Model

Full Input Data And Results

User and Project Details

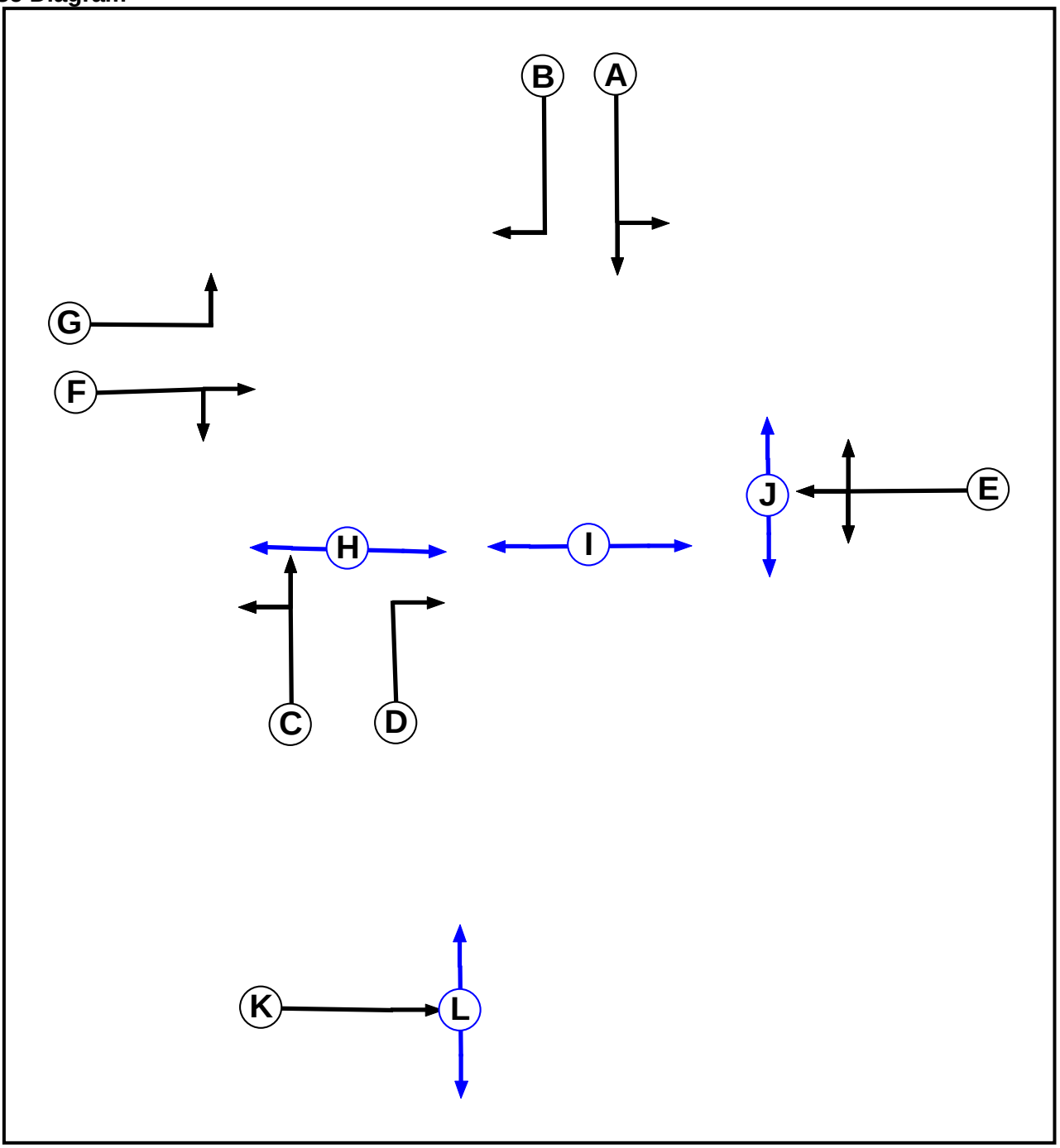
Project:	**Warrington MSA**
Title:	**Warrington**
Location:	
Site Ref(s):	ITM12377
Date Started:	26-11-2018
Additional detail:	
File name:	Moss Gate_Birchwood Way_Daten Ave.lsg3x
Author:	HB
Company:	i-Transport LLP
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	1		7	7
D	Traffic	1		7	7
E	Traffic	1		7	7
F	Traffic	1		7	7
G	Traffic	1		7	7
H	Pedestrian	1		7	7
I	Pedestrian	1		7	7
J	Pedestrian	1		7	7
K	Traffic	2		7	7
L	Pedestrian	2		5	5

Phase Intergreens Matrix

		Starting Phase											
		A	B	C	D	E	F	G	H	I	J	K	L
Terminating Phase	A		-	-	8	7	7	-	-	11	-	-	-
	B	-		8	-	7	7	-	-	11	-	-	-
	C	-	10		-	9	9	11	7	-	-	-	-
	D	10	-	-		7	7	-	7	-	-	-	-
	E	7	7	9	9		-	10	-	9	5	-	-
	F	9	9	7	7	-		-	-	12	5	-	-
	G	-	-	5	-	5	-		-	-	-	-	-
	H	-	-	0	0	-	-	-		-	-	-	-
	I	0	0	-	-	0	0	-	-		-	-	-
	J	-	-	-	-	0	0	-	-	-		-	-
	K	-	-	-	-	-	-	-	-	-	-		5
	L	-	-	-	-	-	-	-	-	-	-	0	

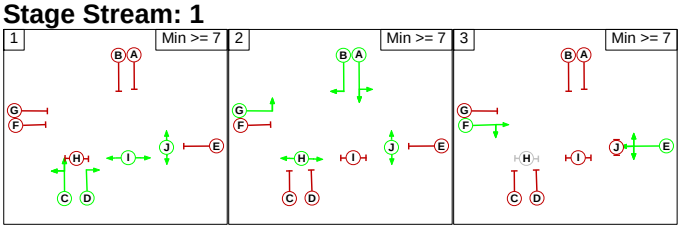
Phases in Stage

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

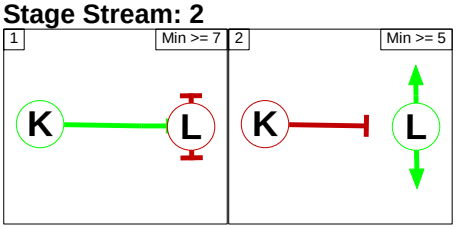
Full Input Data And Results

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

Stage Stream: 1

		To Stage		
		1	2	3
From Stage	1		11	9
	2	11		7
	3	12	10	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		5
	2	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Moss Gate / Birchwood Way / Daten Ave											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/2 (Moss Gate)	8/1 (Right)	1440	0	3/3	1.09	To 5/1 (Ahead)	5.00	3.00	0.50	5	3.00
	8/2 (Right)	1440	0	3/3	1.09	To 5/1 (Ahead)					
3/3 (Daten Ave)	6/1 (Right)	1440	0	1/1	1.09	To 6/1 (Left) To 6/2 (Left) To 7/1 (Ahead)	3.00	2.00	0.50	3	2.00
				1/2	1.09	To 7/2 (Ahead)					
	6/2 (Right)	1440	0	1/1	1.09	To 6/1 (Left) To 6/2 (Left) To 7/1 (Ahead)					
				1/2	1.09	To 7/2 (Ahead)					

Full Input Data And Results

Lane Input Data

Junction: Moss Gate / Birchwood Way / Daten Ave

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (Moss Gate)	U	E	2	3	10.4	Geom	-	3.40	0.00	Y	Arm 6 Left	12.50
											Arm 7 Ahead	Inf
1/2 (Moss Gate)	O	E	2	3	60.0	Geom	-	3.50	0.00	N	Arm 7 Ahead	Inf
											Arm 8 Right	15.00
2/1 (A574 Birchwood Way (S))	U	C	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Left	12.50
											Arm 8 Ahead	Inf
2/2 (A574 Birchwood Way (S))	U	C	2	3	60.0	Geom	-	3.70	0.00	N	Arm 8 Ahead	Inf
2/3 (A574 Birchwood Way (S))	U	D	2	3	8.7	Geom	-	3.50	0.00	Y	Arm 5 Right	22.50
3/1 (Daten Ave)	U	G	2	3	7.0	Geom	-	4.40	0.00	Y	Arm 8 Left	40.00
3/2 (Daten Ave)	U	G	2	3	15.0	Geom	-	4.80	0.00	N	Arm 8 Left	40.00
3/3 (Daten Ave)	O	F	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	12.50
4/1 (A574 Birchwood Way (N))	U	A	2	3	20.9	Geom	-	3.90	0.00	Y	Arm 5 Left	15.00
											Arm 6 Ahead	Inf
4/2 (A574 Birchwood Way (N))	U	A	2	3	60.0	Geom	-	3.20	0.00	N	Arm 6 Ahead	Inf
4/3 (A574 Birchwood Way (N))	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 7 Right	17.50
4/4 (A574 Birchwood Way (N))	U	B	2	3	17.4	Geom	-	3.50	0.00	N	Arm 7 Right	15.00
5/1 (Exit)	U	K	2	3	60.0	Geom	-	4.00	0.00	Y	Arm 9 Ahead	Inf
6/1 (Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2 (Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

7/1 (Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/2 (Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2 (Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (exit)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 Base Flow AM'	07:30	08:30	01:00	
2: '2018 Base Flow PM'	16:45	17:45	01:00	
3: '2022 Base + Committed AM'	07:30	08:30	01:00	
4: '2022 Base + Committed PM'	16:45	17:45	01:00	
5: '2022 Base + Committed + Dev AM '	07:30	08:30	01:00	
6: '2022 Base + Committed + Dev PM'	16:45	17:45	01:00	

Full Input Data And Results

Scenario 1: '2018 Base AM' (FG1: '2018 Base Flow AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	72	108	237	417
	B	11	0	87	564	662
	C	34	17	0	573	624
	D	67	622	619	0	1308
	Tot.	112	711	814	1374	3011

Traffic Lane Flows

Lane	Scenario 1: 2018 Base AM
Junction: Moss Gate / Birchwood Way / Daten Ave	
1/1 (short)	179
1/2 (with short)	417(In) 238(Out)
2/1	298
2/2 (with short)	364(In) 353(Out)
2/3 (short)	11
3/1 (short)	275
3/2 (with short)	573(In) 298(Out)
3/3	51
4/1 (short)	335
4/2 (with short)	689(In) 354(Out)
4/3 (with short)	619(In) 301(Out)
4/4 (short)	318
5/1	112
6/1	313
6/2	398
7/1	452
7/2	362
8/1	605
8/2	769
9/1	112

Full Input Data And Results

Lane Saturation Flows

Junction: Moss Gate / Birchwood Way / Daten Ave								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Moss Gate)	3.40	0.00	Y	Arm 6 Left	12.50	40.2 %	1865	1865
				Arm 7 Ahead	Inf	59.8 %		
1/2 (Moss Gate)	3.50	0.00	N	Arm 7 Ahead	Inf	0.4 %	1914	1914
				Arm 8 Right	15.00	99.6 %		
2/1 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 7 Left	12.50	29.2 %	1898	1898
				Arm 8 Ahead	Inf	70.8 %		
2/2 (A574 Birchwood Way (S))	3.70	0.00	N	Arm 8 Ahead	Inf	100.0 %	2125	2125
2/3 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 5 Right	22.50	100.0 %	1842	1842
3/1 (Daten Ave)	4.40	0.00	Y	Arm 8 Left	40.00	100.0 %	1981	1981
3/2 (Daten Ave)	4.80	0.00	N	Arm 8 Left	40.00	100.0 %	2154	2154
3/3 (Daten Ave)	3.50	0.00	Y	Arm 5 Ahead	Inf	66.7 %	1889	1889
				Arm 6 Right	12.50	33.3 %		
4/1 (A574 Birchwood Way (N))	3.90	0.00	Y	Arm 5 Left	15.00	20.0 %	1966	1966
				Arm 6 Ahead	Inf	80.0 %		
4/2 (A574 Birchwood Way (N))	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
4/3 (A574 Birchwood Way (N))	3.50	0.00	Y	Arm 7 Right	17.50	100.0 %	1810	1810
4/4 (A574 Birchwood Way (N))	3.50	0.00	N	Arm 7 Right	15.00	100.0 %	1914	1914
5/1 (Exit)	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 2: '2022 Base + Committed AM ' (FG3: '2022 Base + Committed AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	107	113	237	457
	B	15	0	87	587	689
	C	35	17	0	582	634
	D	67	814	701	0	1582
	Tot.	117	938	901	1406	3362

Traffic Lane Flows

Lane	Scenario 2: 2022 Base + Committed AM
Junction: Moss Gate / Birchwood Way / Daten Ave	
1/1 (short)	215
1/2 (with short)	457(In) 242(Out)
2/1	311
2/2 (with short)	378(In) 363(Out)
2/3 (short)	15
3/1 (short)	279
3/2 (with short)	582(In) 303(Out)
3/3	52
4/1 (short)	430
4/2 (with short)	881(In) 451(Out)
4/3 (with short)	701(In) 341(Out)
4/4 (short)	360
5/1	117
6/1	426
6/2	512
7/1	493
7/2	408
8/1	622
8/2	784
9/1	117

Full Input Data And Results

Lane Saturation Flows

Junction: Moss Gate / Birchwood Way / Daten Ave								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Moss Gate)	3.40	0.00	Y	Arm 6 Left	12.50	49.8 %	1845	1845
				Arm 7 Ahead	Inf	50.2 %		
1/2 (Moss Gate)	3.50	0.00	N	Arm 7 Ahead	Inf	2.1 %	1917	1917
				Arm 8 Right	15.00	97.9 %		
2/1 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 7 Left	12.50	28.0 %	1901	1901
				Arm 8 Ahead	Inf	72.0 %		
2/2 (A574 Birchwood Way (S))	3.70	0.00	N	Arm 8 Ahead	Inf	100.0 %	2125	2125
2/3 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 5 Right	22.50	100.0 %	1842	1842
3/1 (Daten Ave)	4.40	0.00	Y	Arm 8 Left	40.00	100.0 %	1981	1981
3/2 (Daten Ave)	4.80	0.00	N	Arm 8 Left	40.00	100.0 %	2154	2154
3/3 (Daten Ave)	3.50	0.00	Y	Arm 5 Ahead	Inf	67.3 %	1891	1891
				Arm 6 Right	12.50	32.7 %		
4/1 (A574 Birchwood Way (N))	3.90	0.00	Y	Arm 5 Left	15.00	15.6 %	1974	1974
				Arm 6 Ahead	Inf	84.4 %		
4/2 (A574 Birchwood Way (N))	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
4/3 (A574 Birchwood Way (N))	3.50	0.00	Y	Arm 7 Right	17.50	100.0 %	1810	1810
4/4 (A574 Birchwood Way (N))	3.50	0.00	N	Arm 7 Right	15.00	100.0 %	1914	1914
5/1 (Exit)	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 3: '2022 Base + Committed + Dev AM' (FG5: '2022 Base + Committed + Dev AM ', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	107	113	237	457
	B	15	0	87	593	695
	C	35	17	0	584	636
	D	68	815	701	0	1584
	Tot.	118	939	901	1414	3372

Traffic Lane Flows

Lane	Scenario 3: 2022 Base + Committed + Dev AM
Junction: Moss Gate / Birchwood Way / Daten Ave	
1/1 (short)	215
1/2 (with short)	457(In) 242(Out)
2/1	312
2/2 (with short)	383(In) 368(Out)
2/3 (short)	15
3/1 (short)	280
3/2 (with short)	584(In) 304(Out)
3/3	52
4/1 (short)	430
4/2 (with short)	883(In) 453(Out)
4/3 (with short)	701(In) 341(Out)
4/4 (short)	360
5/1	118
6/1	425
6/2	514
7/1	493
7/2	408
8/1	624
8/2	790
9/1	118

Full Input Data And Results

Lane Saturation Flows

Junction: Moss Gate / Birchwood Way / Daten Ave								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Moss Gate)	3.40	0.00	Y	Arm 6 Left	12.50	49.8 %	1845	1845
				Arm 7 Ahead	Inf	50.2 %		
1/2 (Moss Gate)	3.50	0.00	N	Arm 7 Ahead	Inf	2.1 %	1917	1917
				Arm 8 Right	15.00	97.9 %		
2/1 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 7 Left	12.50	27.9 %	1901	1901
				Arm 8 Ahead	Inf	72.1 %		
2/2 (A574 Birchwood Way (S))	3.70	0.00	N	Arm 8 Ahead	Inf	100.0 %	2125	2125
2/3 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 5 Right	22.50	100.0 %	1842	1842
3/1 (Daten Ave)	4.40	0.00	Y	Arm 8 Left	40.00	100.0 %	1981	1981
3/2 (Daten Ave)	4.80	0.00	N	Arm 8 Left	40.00	100.0 %	2154	2154
3/3 (Daten Ave)	3.50	0.00	Y	Arm 5 Ahead	Inf	67.3 %	1891	1891
				Arm 6 Right	12.50	32.7 %		
4/1 (A574 Birchwood Way (N))	3.90	0.00	Y	Arm 5 Left	15.00	15.8 %	1974	1974
				Arm 6 Ahead	Inf	84.2 %		
4/2 (A574 Birchwood Way (N))	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
4/3 (A574 Birchwood Way (N))	3.50	0.00	Y	Arm 7 Right	17.50	100.0 %	1810	1810
4/4 (A574 Birchwood Way (N))	3.50	0.00	N	Arm 7 Right	15.00	100.0 %	1914	1914
5/1 (Exit)	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 4: '2018 Base PM' (FG2: '2018 Base Flow PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	30	76	270	376
	B	35	0	9	934	978
	C	39	27	0	892	958
	D	163	274	315	0	752
	Tot.	237	331	400	2096	3064

Traffic Lane Flows

Lane	Scenario 4: 2018 Base PM
Junction: Moss Gate / Birchwood Way / Daten Ave	
1/1 (short)	106
1/2 (with short)	376(In) 270(Out)
2/1	455
2/2 (with short)	523(In) 488(Out)
2/3 (short)	35
3/1 (short)	414
3/2 (with short)	892(In) 478(Out)
3/3	66
4/1 (short)	206
4/2 (with short)	437(In) 231(Out)
4/3 (with short)	315(In) 153(Out)
4/4 (short)	162
5/1	237
6/1	72
6/2	259
7/1	234
7/2	166
8/1	995
8/2	1101
9/1	237

Full Input Data And Results

Lane Saturation Flows

Junction: Moss Gate / Birchwood Way / Daten Ave								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Moss Gate)	3.40	0.00	Y	Arm 6 Left	12.50	28.3 %	1891	1891
				Arm 7 Ahead	Inf	71.7 %		
1/2 (Moss Gate)	3.50	0.00	N	Arm 7 Ahead	Inf	0.0 %	1914	1914
				Arm 8 Right	15.00	100.0 %		
2/1 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 7 Left	12.50	2.0 %	1960	1960
				Arm 8 Ahead	Inf	98.0 %		
2/2 (A574 Birchwood Way (S))	3.70	0.00	N	Arm 8 Ahead	Inf	100.0 %	2125	2125
2/3 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 5 Right	22.50	100.0 %	1842	1842
3/1 (Daten Ave)	4.40	0.00	Y	Arm 8 Left	40.00	100.0 %	1981	1981
3/2 (Daten Ave)	4.80	0.00	N	Arm 8 Left	40.00	100.0 %	2154	2154
3/3 (Daten Ave)	3.50	0.00	Y	Arm 5 Ahead	Inf	59.1 %	1873	1873
				Arm 6 Right	12.50	40.9 %		
4/1 (A574 Birchwood Way (N))	3.90	0.00	Y	Arm 5 Left	15.00	79.1 %	1858	1858
				Arm 6 Ahead	Inf	20.9 %		
4/2 (A574 Birchwood Way (N))	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
4/3 (A574 Birchwood Way (N))	3.50	0.00	Y	Arm 7 Right	17.50	100.0 %	1810	1810
4/4 (A574 Birchwood Way (N))	3.50	0.00	N	Arm 7 Right	15.00	100.0 %	1914	1914
5/1 (Exit)	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 5: '2022 Base + Committed PM' (FG4: '2022 Base + Committed PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	36	77	270	383
	B	72	0	9	1126	1207
	C	43	27	0	974	1044
	D	163	304	328	0	795
	Tot.	278	367	414	2370	3429

Traffic Lane Flows

Lane	Scenario 5: 2022 Base + Committed PM
Junction: Moss Gate / Birchwood Way / Daten Ave	
1/1 (short)	113
1/2 (with short)	383(In) 270(Out)
2/1	556
2/2 (with short)	651(In) 579(Out)
2/3 (short)	72
3/1 (short)	365
3/2 (with short)	974(In) 609(Out)
3/3	70
4/1 (short)	221
4/2 (with short)	467(In) 246(Out)
4/3 (with short)	328(In) 159(Out)
4/4 (short)	169
5/1	278
6/1	90
6/2	277
7/1	241
7/2	173
8/1	1047
8/2	1323
9/1	278

Full Input Data And Results

Lane Saturation Flows

Junction: Moss Gate / Birchwood Way / Daten Ave								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Moss Gate)	3.40	0.00	Y	Arm 6 Left	12.50	31.9 %	1883	1883
				Arm 7 Ahead	Inf	68.1 %		
1/2 (Moss Gate)	3.50	0.00	N	Arm 7 Ahead	Inf	0.0 %	1914	1914
				Arm 8 Right	15.00	100.0 %		
2/1 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 7 Left	12.50	1.6 %	1961	1961
				Arm 8 Ahead	Inf	98.4 %		
2/2 (A574 Birchwood Way (S))	3.70	0.00	N	Arm 8 Ahead	Inf	100.0 %	2125	2125
2/3 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 5 Right	22.50	100.0 %	1842	1842
3/1 (Daten Ave)	4.40	0.00	Y	Arm 8 Left	40.00	100.0 %	1981	1981
3/2 (Daten Ave)	4.80	0.00	N	Arm 8 Left	40.00	100.0 %	2154	2154
3/3 (Daten Ave)	3.50	0.00	Y	Arm 5 Ahead	Inf	61.4 %	1878	1878
				Arm 6 Right	12.50	38.6 %		
4/1 (A574 Birchwood Way (N))	3.90	0.00	Y	Arm 5 Left	15.00	73.8 %	1867	1867
				Arm 6 Ahead	Inf	26.2 %		
4/2 (A574 Birchwood Way (N))	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
4/3 (A574 Birchwood Way (N))	3.50	0.00	Y	Arm 7 Right	17.50	100.0 %	1810	1810
4/4 (A574 Birchwood Way (N))	3.50	0.00	N	Arm 7 Right	15.00	100.0 %	1914	1914
5/1 (Exit)	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 6: '2022 Base + Committed + Dev PM' (FG6: '2022 Base + Committed + Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	36	77	270	383
	B	72	0	9	1126	1207
	C	43	27	0	974	1044
	D	163	310	329	0	802
	Tot.	278	373	415	2370	3436

Traffic Lane Flows

Lane	Scenario 6: 2022 Base + Committed + Dev PM
Junction: Moss Gate / Birchwood Way / Daten Ave	
1/1 (short)	113
1/2 (with short)	383(In) 270(Out)
2/1	556
2/2 (with short)	651(In) 579(Out)
2/3 (short)	72
3/1 (short)	365
3/2 (with short)	974(In) 609(Out)
3/3	70
4/1 (short)	224
4/2 (with short)	473(In) 249(Out)
4/3 (with short)	329(In) 160(Out)
4/4 (short)	169
5/1	278
6/1	93
6/2	280
7/1	242
7/2	173
8/1	1047
8/2	1323
9/1	278

Full Input Data And Results

Lane Saturation Flows

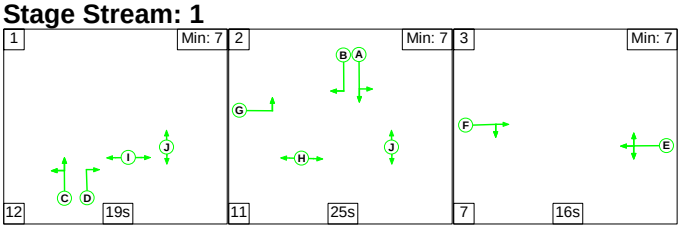
Junction: Moss Gate / Birchwood Way / Daten Ave								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Moss Gate)	3.40	0.00	Y	Arm 6 Left	12.50	31.9 %	1883	1883
				Arm 7 Ahead	Inf	68.1 %		
1/2 (Moss Gate)	3.50	0.00	N	Arm 7 Ahead	Inf	0.0 %	1914	1914
				Arm 8 Right	15.00	100.0 %		
2/1 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 7 Left	12.50	1.6 %	1961	1961
				Arm 8 Ahead	Inf	98.4 %		
2/2 (A574 Birchwood Way (S))	3.70	0.00	N	Arm 8 Ahead	Inf	100.0 %	2125	2125
2/3 (A574 Birchwood Way (S))	3.50	0.00	Y	Arm 5 Right	22.50	100.0 %	1842	1842
3/1 (Daten Ave)	4.40	0.00	Y	Arm 8 Left	40.00	100.0 %	1981	1981
3/2 (Daten Ave)	4.80	0.00	N	Arm 8 Left	40.00	100.0 %	2154	2154
3/3 (Daten Ave)	3.50	0.00	Y	Arm 5 Ahead	Inf	61.4 %	1878	1878
				Arm 6 Right	12.50	38.6 %		
4/1 (A574 Birchwood Way (N))	3.90	0.00	Y	Arm 5 Left	15.00	72.8 %	1869	1869
				Arm 6 Ahead	Inf	27.2 %		
4/2 (A574 Birchwood Way (N))	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
4/3 (A574 Birchwood Way (N))	3.50	0.00	Y	Arm 7 Right	17.50	100.0 %	1810	1810
4/4 (A574 Birchwood Way (N))	3.50	0.00	N	Arm 7 Right	15.00	100.0 %	1914	1914
5/1 (Exit)	4.00	0.00	Y	Arm 9 Ahead	Inf	100.0 %	2015	2015
6/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
6/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
7/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
7/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
8/1 (Exit Lane 1)	Infinite Saturation Flow						Inf	Inf
8/2 (Exit Lane 2)	Infinite Saturation Flow						Inf	Inf
9/1 (exit Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

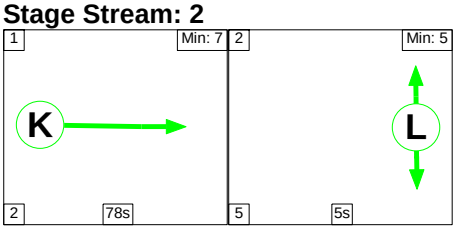
Scenario 1: '2018 Base AM' (FG1: '2018 Base Flow AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

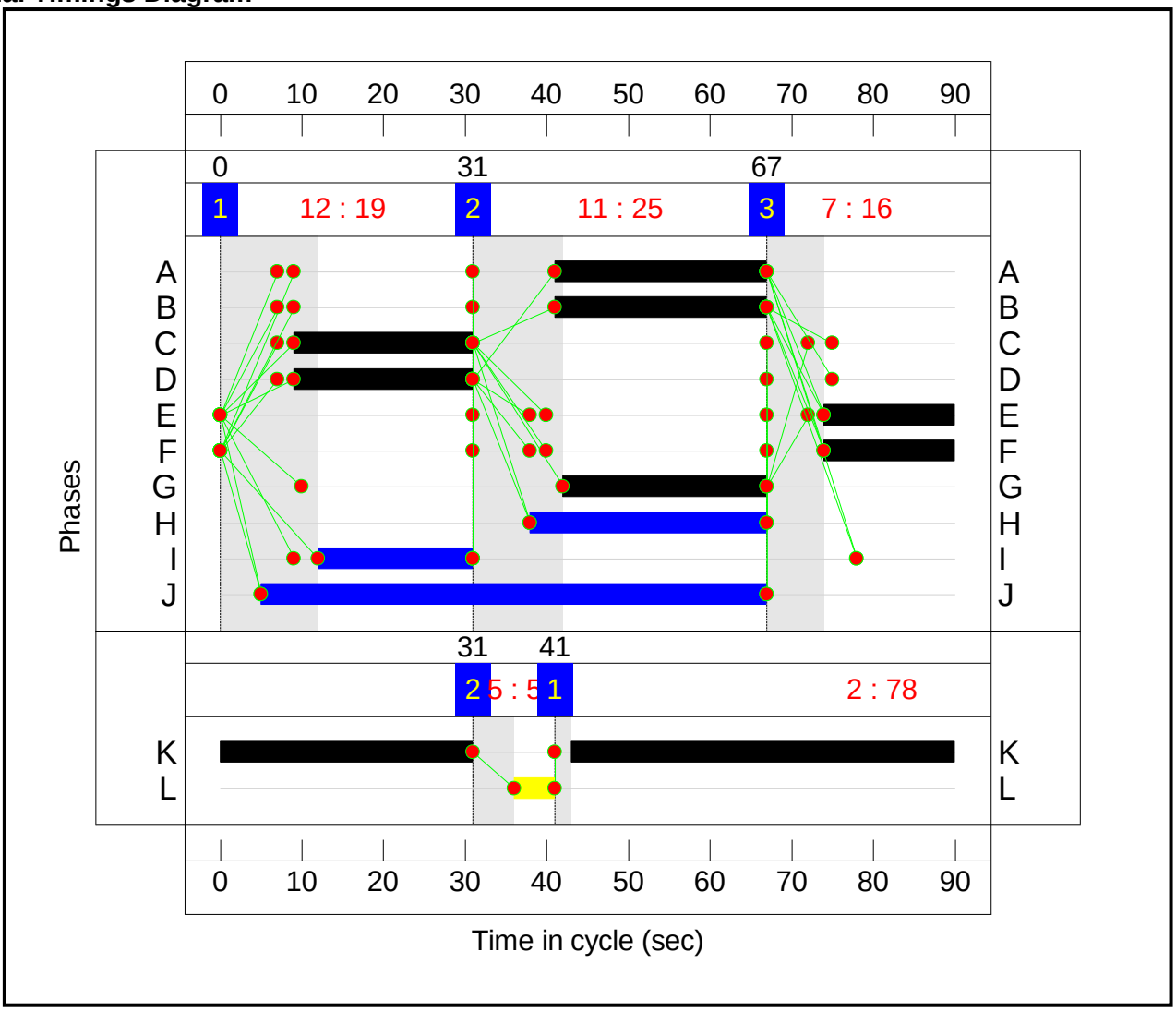
Stage	1	2	3
Duration	19	25	16
Change Point	0	31	67

Stage Stream: 2

Stage	1	2
Duration	78	5
Change Point	41	31

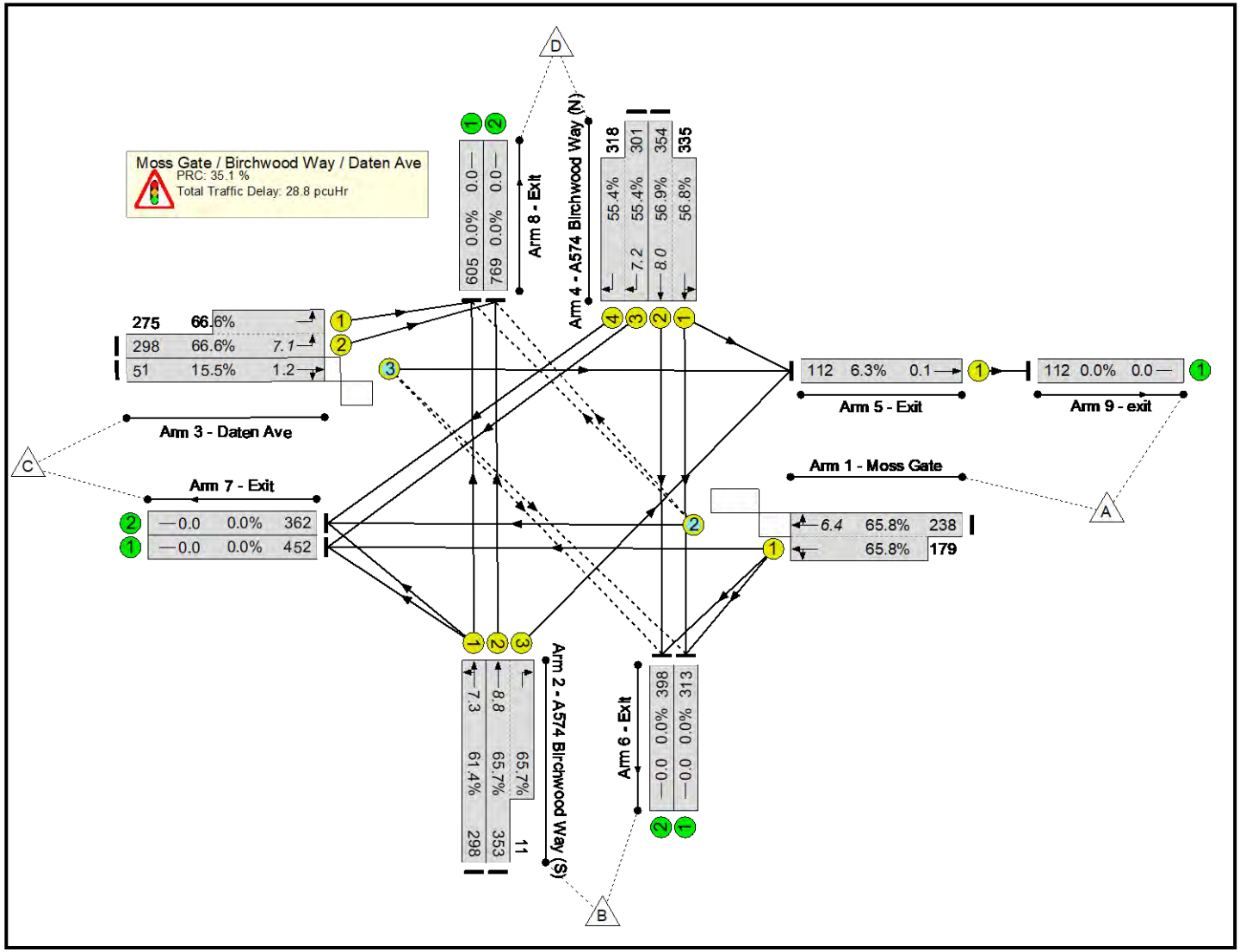
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Warrington	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**66.6%**
Moss Gate / Birchwood Way / Daten Ave	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**66.6%**
1/2+1/1	Moss Gate Left Ahead Right	O+U	1	N/A	E		1	16	-	417	1914:1865	362+272	65.8 : 65.8%
2/1	A574 Birchwood Way (S) Left Ahead	U	1	N/A	C		1	22	-	298	1898	485	61.4%
2/2+2/3	A574 Birchwood Way (S) Right Ahead	U	1	N/A	C D		1	22	-	364	2125:1842	537+17	65.7 : 65.7%
3/2+3/1	Daten Ave Left	U	1	N/A	G		1	25	-	573	2154:1981	447+413	66.6 : 66.6%
3/3	Daten Ave Ahead Right	O	1	N/A	F		1	16	-	51	1889	328	15.5%
4/2+4/1	A574 Birchwood Way (N) Left Ahead	U	1	N/A	A		1	26	-	689	2075:1966	623+590	56.9 : 56.8%
4/3+4/4	A574 Birchwood Way (N) Right	U	1	N/A	B		1	26	-	619	1810:1914	543+574	55.4 : 55.4%
5/1	Exit Ahead	U	2	N/A	K		1	78	-	112	2015	1769	6.3%
6/1	Exit	U	N/A	N/A	-		-	-	-	313	Inf	Inf	0.0%
6/2	Exit	U	N/A	N/A	-		-	-	-	398	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	452	Inf	Inf	0.0%
7/2	Exit	U	N/A	N/A	-		-	-	-	362	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	605	Inf	Inf	0.0%
8/2	Exit	U	N/A	N/A	-		-	-	-	769	Inf	Inf	0.0%
9/1	exit	U	N/A	N/A	-		-	-	-	112	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Warrington	**-**	**-**	**235**	**0**	**19**	**23.6**	**5.1**	**0.1**	**28.8**	**-**	**-**	**-**	**-**
Moss Gate / Birchwood Way / Daten Ave	**-**	**-**	**235**	**0**	**19**	**23.6**	**5.1**	**0.1**	**28.8**	**-**	**-**	**-**	**-**
1/2+1/1	417	417	218	0	19	3.9	1.0	0.1	4.9	42.7	5.5	1.0	6.4
2/1	298	298	-	-	-	2.4	0.8	-	3.2	39.1	6.5	0.8	7.3
2/2+2/3	364	364	-	-	-	3.0	0.9	-	4.0	39.2	7.8	0.9	8.8
3/2+3/1	573	573	-	-	-	4.2	1.0	-	5.2	32.7	6.1	1.0	7.1
3/3	51	51	17	0	0	0.4	0.1	0.0	0.5	38.8	1.1	0.1	1.2
4/2+4/1	689	689	-	-	-	5.1	0.7	-	5.7	30.0	7.4	0.7	8.0
4/3+4/4	619	619	-	-	-	4.5	0.6	-	5.2	30.1	6.6	0.6	7.2
5/1	112	112	-	-	-	0.0	0.0	-	0.0	1.1	0.0	0.0	0.1
6/1	313	313	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	398	398	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	452	452	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	362	362	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	605	605	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	769	769	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	112	112	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

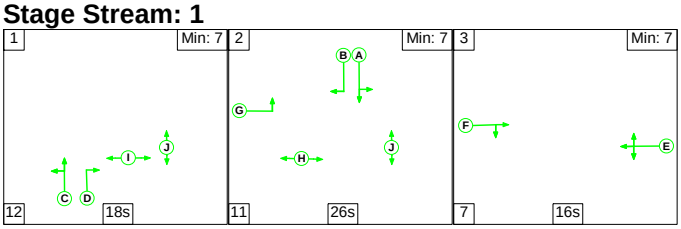
C1 Stream: 1 PRC for Signalled Lanes (%): 35.1 Total Delay for Signalled Lanes (pcuHr): 28.80 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): 1321.3 Total Delay for Signalled Lanes (pcuHr): 0.04 Cycle Time (s): 90
PRC Over All Lanes (%): 35.1 Total Delay Over All Lanes(pcuHr): 28.84

Full Input Data And Results

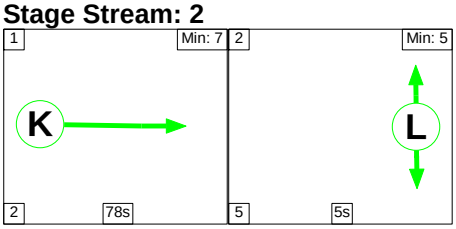
Scenario 2: '2022 Base + Committed AM ' (FG3: '2022 Base + Committed AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

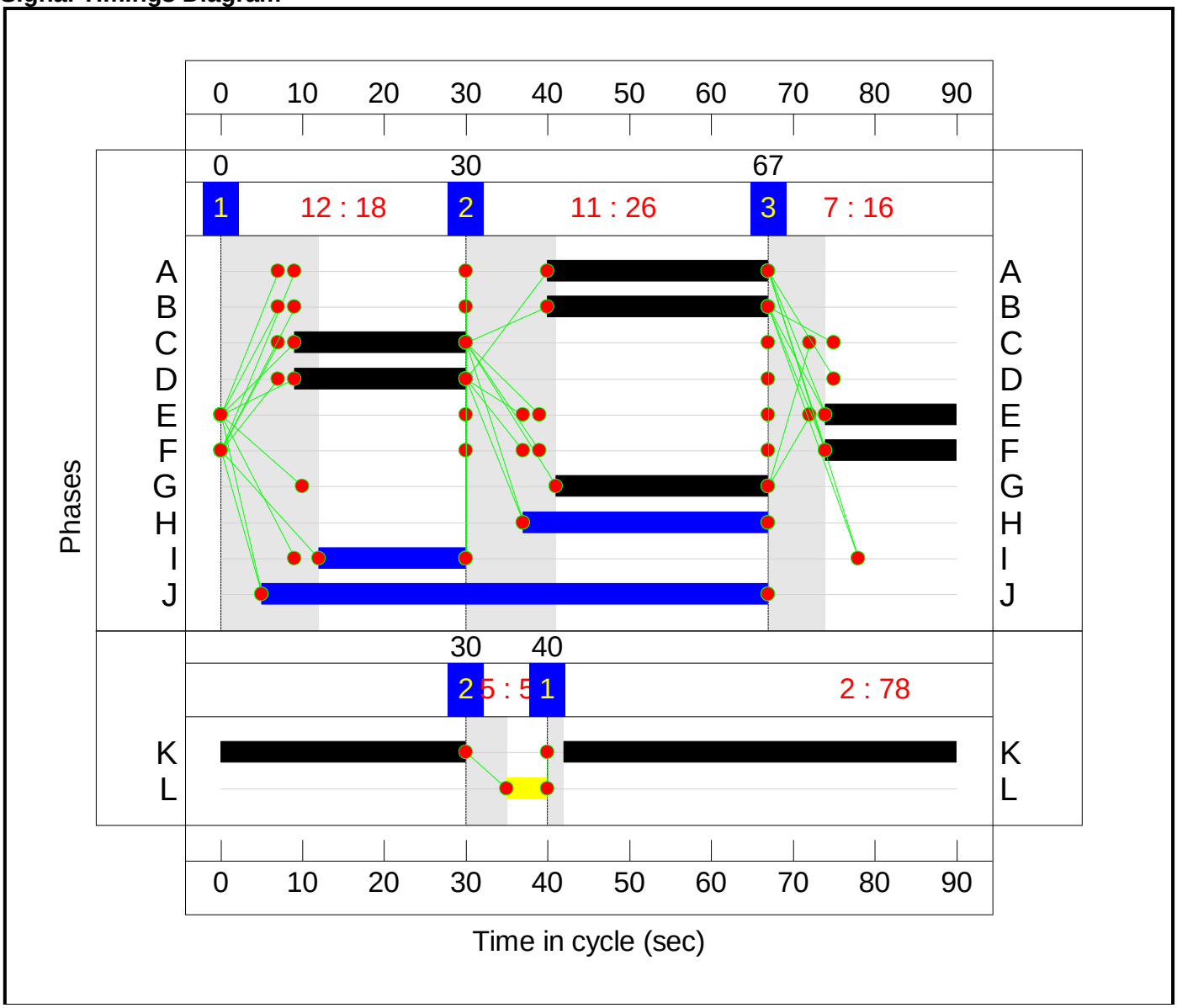
Stage	1	2	3
Duration	18	26	16
Change Point	0	30	67

Stage Stream: 2

Stage	1	2
Duration	78	5
Change Point	40	30

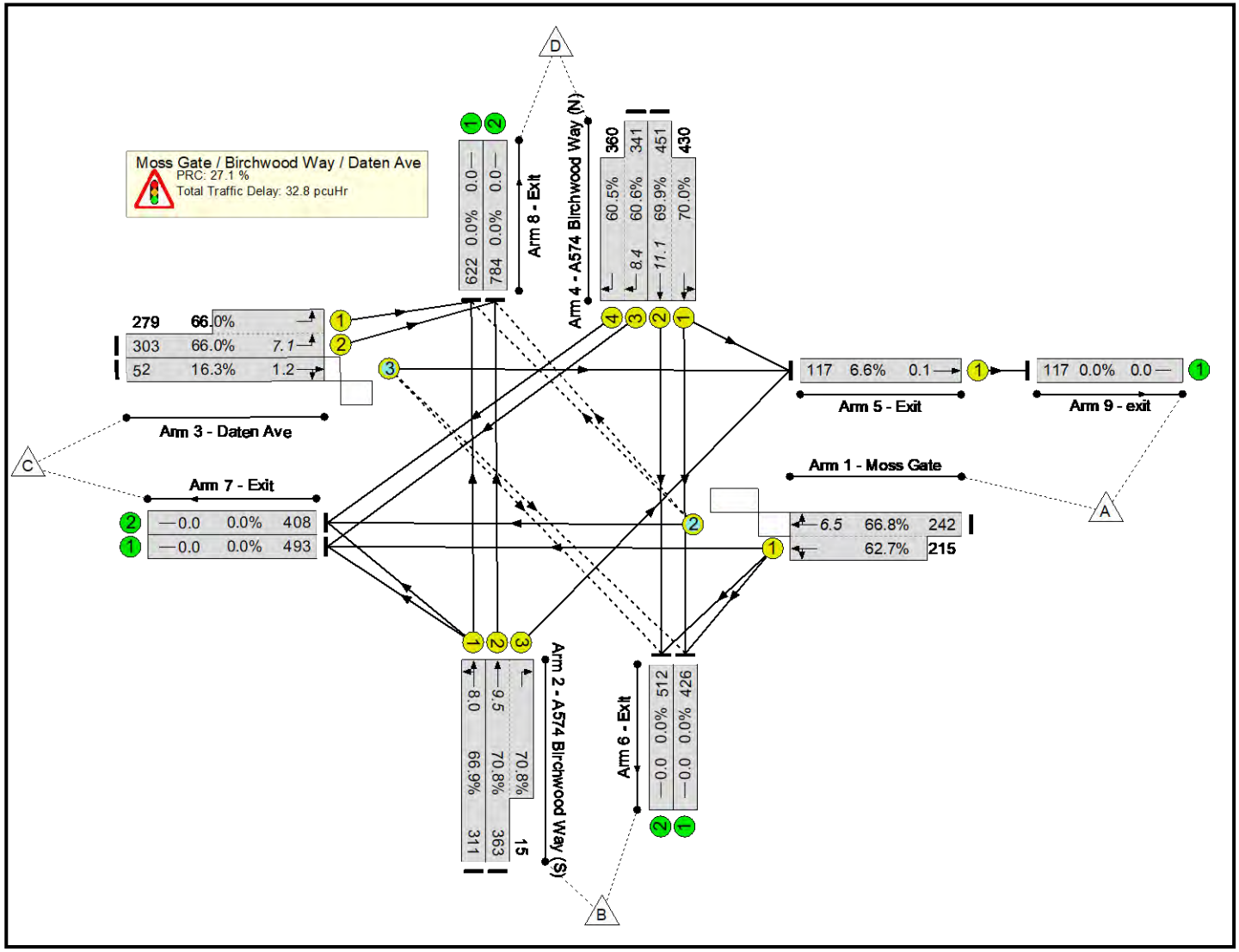
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Warrington	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.8%**
Moss Gate / Birchwood Way / Daten Ave	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.8%**
1/2+1/1	Moss Gate Left Ahead Right	O+U	1	N/A	E		1	16	-	457	1917:1845	362+343	66.8 : 62.7%
2/1	A574 Birchwood Way (S) Left Ahead	U	1	N/A	C		1	21	-	311	1901	465	66.9%
2/2+2/3	A574 Birchwood Way (S) Right Ahead	U	1	N/A	C D		1	21	-	378	2125:1842	513+21	70.8 : 70.8%
3/2+3/1	Daten Ave Left	U	1	N/A	G		1	26	-	582	2154:1981	459+423	66.0 : 66.0%
3/3	Daten Ave Ahead Right	O	1	N/A	F		1	16	-	52	1891	320	16.3%
4/2+4/1	A574 Birchwood Way (N) Left Ahead	U	1	N/A	A		1	27	-	881	2075:1974	646+614	69.9 : 70.0%
4/3+4/4	A574 Birchwood Way (N) Right	U	1	N/A	B		1	27	-	701	1810:1914	563+595	60.6 : 60.5%
5/1	Exit Ahead	U	2	N/A	K		1	78	-	117	2015	1769	6.6%
6/1	Exit	U	N/A	N/A	-		-	-	-	426	Inf	Inf	0.0%
6/2	Exit	U	N/A	N/A	-		-	-	-	512	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	493	Inf	Inf	0.0%
7/2	Exit	U	N/A	N/A	-		-	-	-	408	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	622	Inf	Inf	0.0%
8/2	Exit	U	N/A	N/A	-		-	-	-	784	Inf	Inf	0.0%
9/1	exit	U	N/A	N/A	-		-	-	-	117	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Warrington	**-**	**-**	**234**	**0**	**20**	**26.6**	**6.1**	**0.2**	**32.8**	**-**	**-**	**-**	**-**
Moss Gate / Birchwood Way / Daten Ave	**-**	**-**	**234**	**0**	**20**	**26.6**	**6.1**	**0.2**	**32.8**	**-**	**-**	**-**	**-**
1/2+1/1	457	457	217	0	20	4.3	0.9	0.1	5.3	41.9	5.6	0.9	6.5
2/1	311	311	-	-	-	2.7	1.0	-	3.7	42.3	7.0	1.0	8.0
2/2+2/3	378	378	-	-	-	3.2	1.2	-	4.4	42.2	8.3	1.2	9.5
3/2+3/1	582	582	-	-	-	4.1	1.0	-	5.1	31.6	6.1	1.0	7.1
3/3	52	52	17	0	0	0.4	0.1	0.0	0.6	39.6	1.1	0.1	1.2
4/2+4/1	881	881	-	-	-	6.7	1.2	-	7.8	32.0	9.9	1.2	11.1
4/3+4/4	701	701	-	-	-	5.1	0.8	-	5.9	30.2	7.6	0.8	8.4
5/1	117	117	-	-	-	0.0	0.0	-	0.0	1.2	0.0	0.0	0.1
6/1	426	426	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	512	512	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	622	622	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	784	784	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	117	117	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

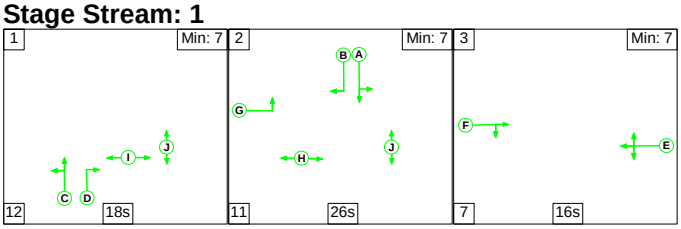
C1 Stream: 1 PRC for Signalled Lanes (%): 27.1 Total Delay for Signalled Lanes (pcuHr): 32.80 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): 1260.6 Total Delay for Signalled Lanes (pcuHr): 0.04 Cycle Time (s): 90
PRC Over All Lanes (%): 27.1 Total Delay Over All Lanes(pcuHr): 32.84

Full Input Data And Results

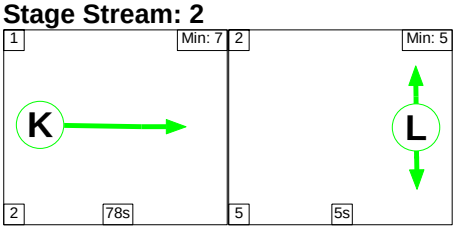
Scenario 3: '2022 Base + Committed + Dev AM' (FG5: '2022 Base + Committed + Dev AM ', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

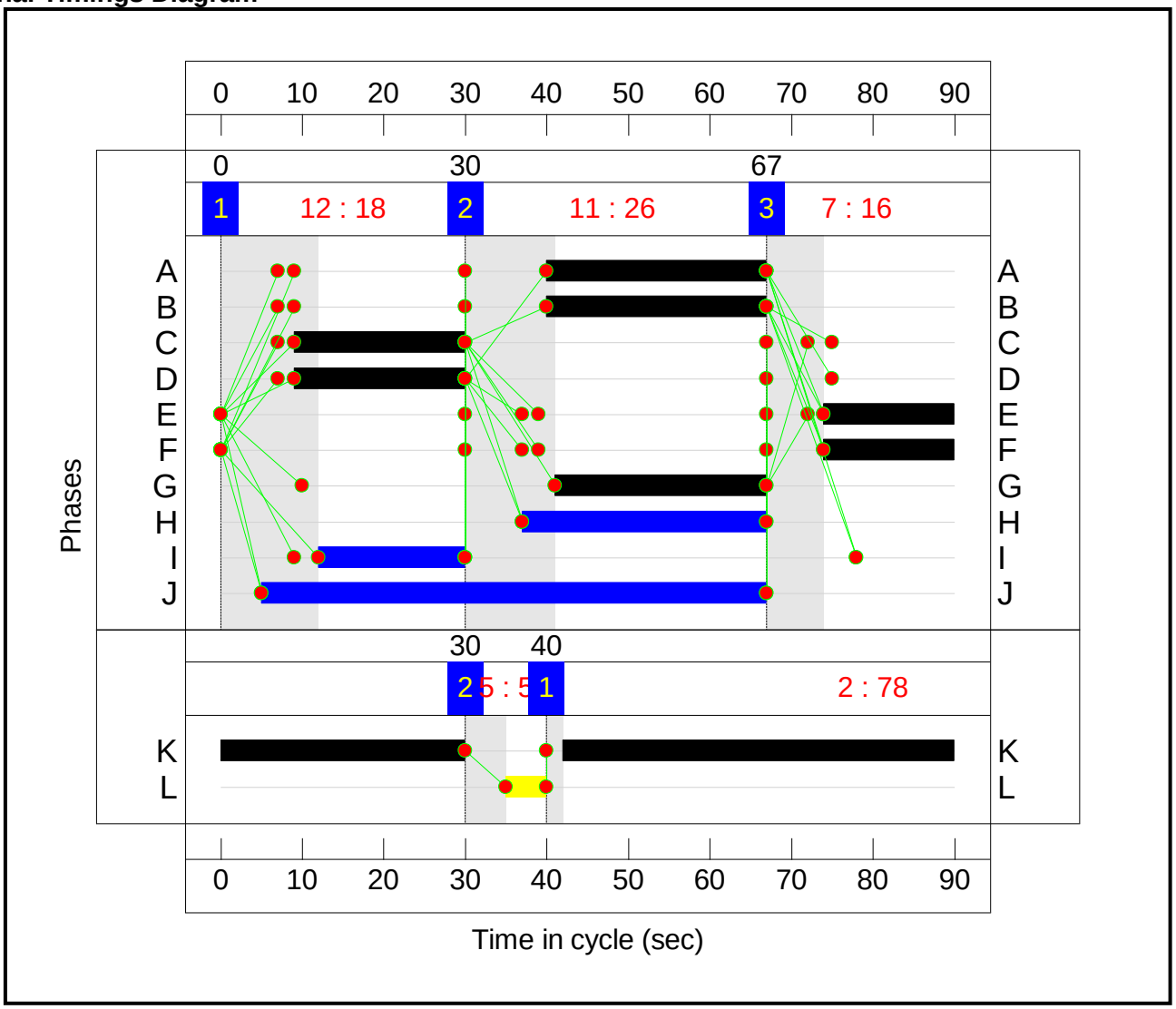
Stage	1	2	3
Duration	18	26	16
Change Point	0	30	67

Stage Stream: 2

Stage	1	2
Duration	78	5
Change Point	40	30

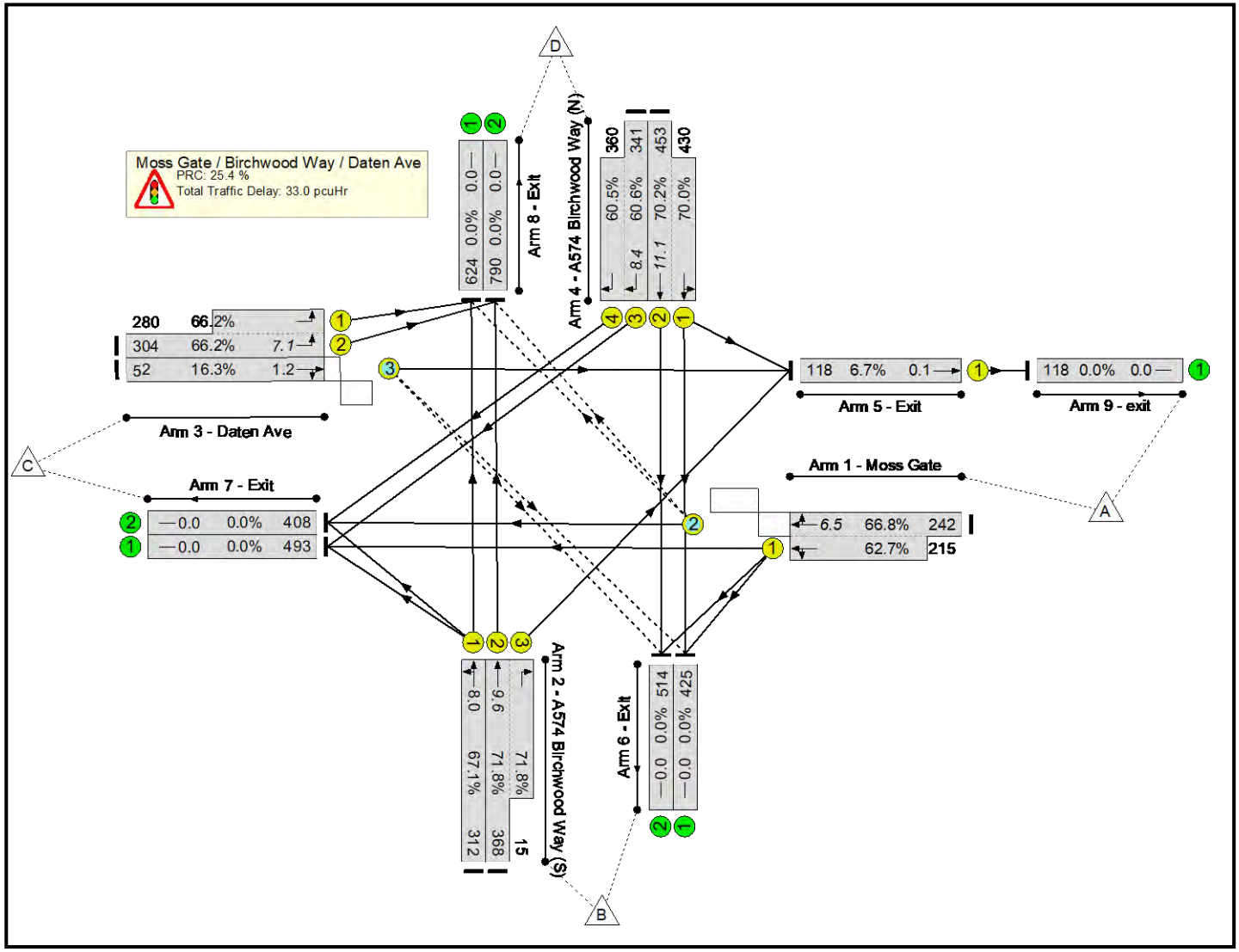
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Warrington	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.8%**
Moss Gate / Birchwood Way / Daten Ave	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**71.8%**
1/2+1/1	Moss Gate Left Ahead Right	O+U	1	N/A	E		1	16	-	457	1917:1845	362+343	66.8 : 62.7%
2/1	A574 Birchwood Way (S) Left Ahead	U	1	N/A	C		1	21	-	312	1901	465	67.1%
2/2+2/3	A574 Birchwood Way (S) Right Ahead	U	1	N/A	C D		1	21	-	383	2125:1842	513+21	71.8 : 71.8%
3/2+3/1	Daten Ave Left	U	1	N/A	G		1	26	-	584	2154:1981	459+423	66.2 : 66.2%
3/3	Daten Ave Ahead Right	O	1	N/A	F		1	16	-	52	1891	320	16.3%
4/2+4/1	A574 Birchwood Way (N) Left Ahead	U	1	N/A	A		1	27	-	883	2075:1974	646+614	70.2 : 70.0%
4/3+4/4	A574 Birchwood Way (N) Right	U	1	N/A	B		1	27	-	701	1810:1914	563+595	60.6 : 60.5%
5/1	Exit Ahead	U	2	N/A	K		1	78	-	118	2015	1769	6.7%
6/1	Exit	U	N/A	N/A	-		-	-	-	425	Inf	Inf	0.0%
6/2	Exit	U	N/A	N/A	-		-	-	-	514	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	493	Inf	Inf	0.0%
7/2	Exit	U	N/A	N/A	-		-	-	-	408	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	624	Inf	Inf	0.0%
8/2	Exit	U	N/A	N/A	-		-	-	-	790	Inf	Inf	0.0%
9/1	exit	U	N/A	N/A	-		-	-	-	118	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Warrington	**-**	**-**	**234**	**0**	**20**	**26.7**	**6.2**	**0.2**	**33.0**	**-**	**-**	**-**	**-**
Moss Gate / Birchwood Way / Daten Ave	**-**	**-**	**234**	**0**	**20**	**26.7**	**6.2**	**0.2**	**33.0**	**-**	**-**	**-**	**-**
1/2+1/1	457	457	217	0	20	4.3	0.9	0.1	5.3	41.9	5.6	0.9	6.5
2/1	312	312	-	-	-	2.7	1.0	-	3.7	42.4	7.0	1.0	8.0
2/2+2/3	383	383	-	-	-	3.3	1.2	-	4.5	42.6	8.4	1.2	9.6
3/2+3/1	584	584	-	-	-	4.2	1.0	-	5.1	31.7	6.2	1.0	7.1
3/3	52	52	17	0	0	0.4	0.1	0.0	0.6	39.6	1.1	0.1	1.2
4/2+4/1	883	883	-	-	-	6.7	1.2	-	7.9	32.1	9.9	1.2	11.1
4/3+4/4	701	701	-	-	-	5.1	0.8	-	5.9	30.2	7.6	0.8	8.4
5/1	118	118	-	-	-	0.0	0.0	-	0.0	1.2	0.0	0.0	0.1
6/1	425	425	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	514	514	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	624	624	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	790	790	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	118	118	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

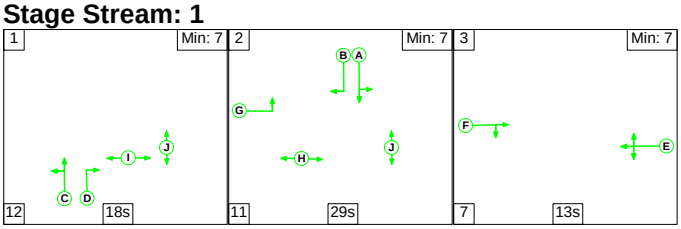
C1 Stream: 1 PRC for Signalled Lanes (%): 25.4 Total Delay for Signalled Lanes (pcuHr): 32.99 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): 1249.0 Total Delay for Signalled Lanes (pcuHr): 0.04 Cycle Time (s): 90
PRC Over All Lanes (%): 25.4 Total Delay Over All Lanes(pcuHr): 33.02

Full Input Data And Results

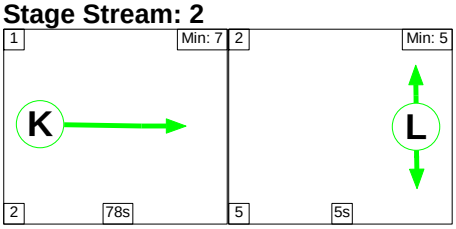
Scenario 4: '2018 Base PM' (FG2: '2018 Base Flow PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

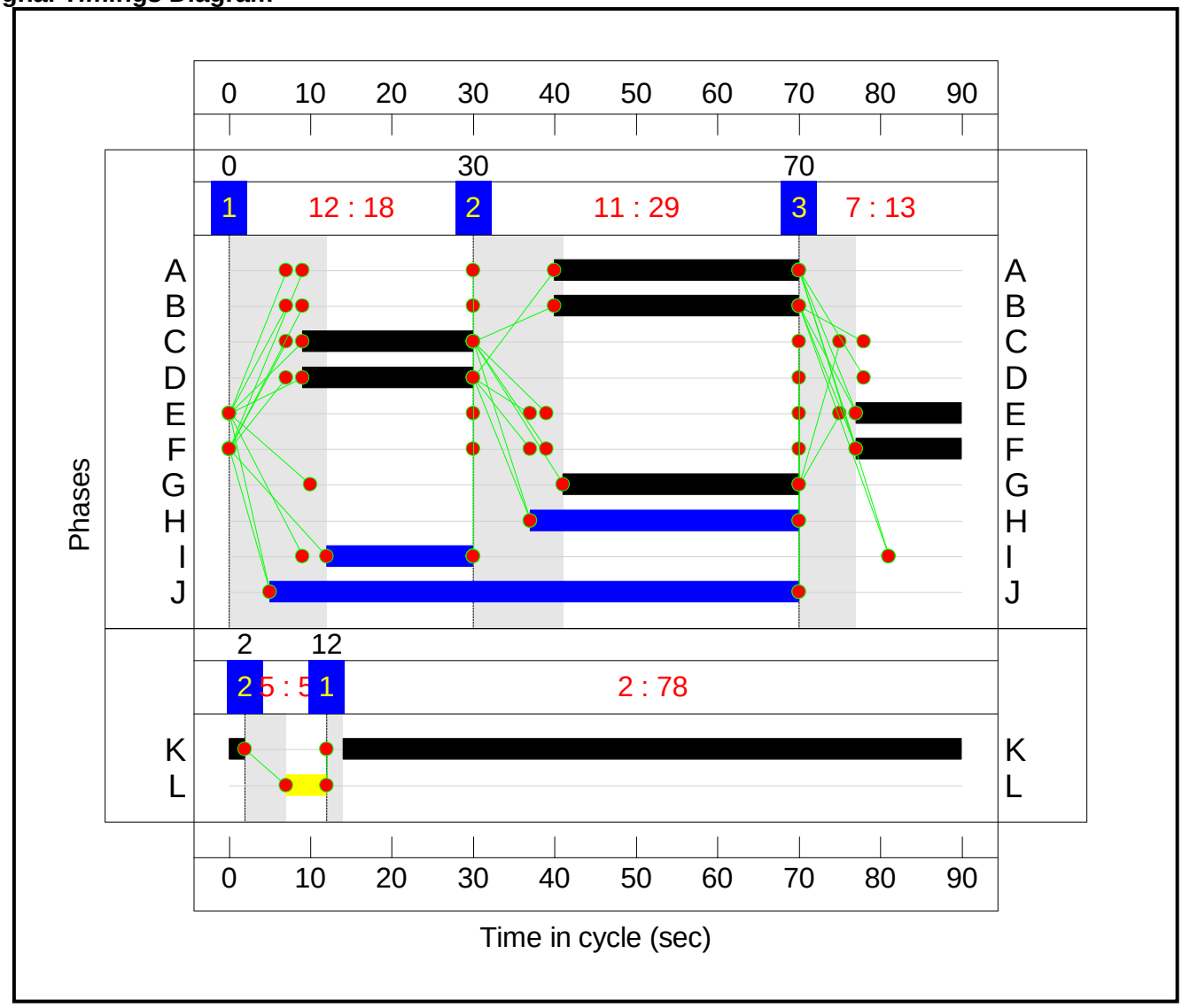
Stage	1	2	3
Duration	18	29	13
Change Point	0	30	70

Stage Stream: 2

Stage	1	2
Duration	78	5
Change Point	12	2

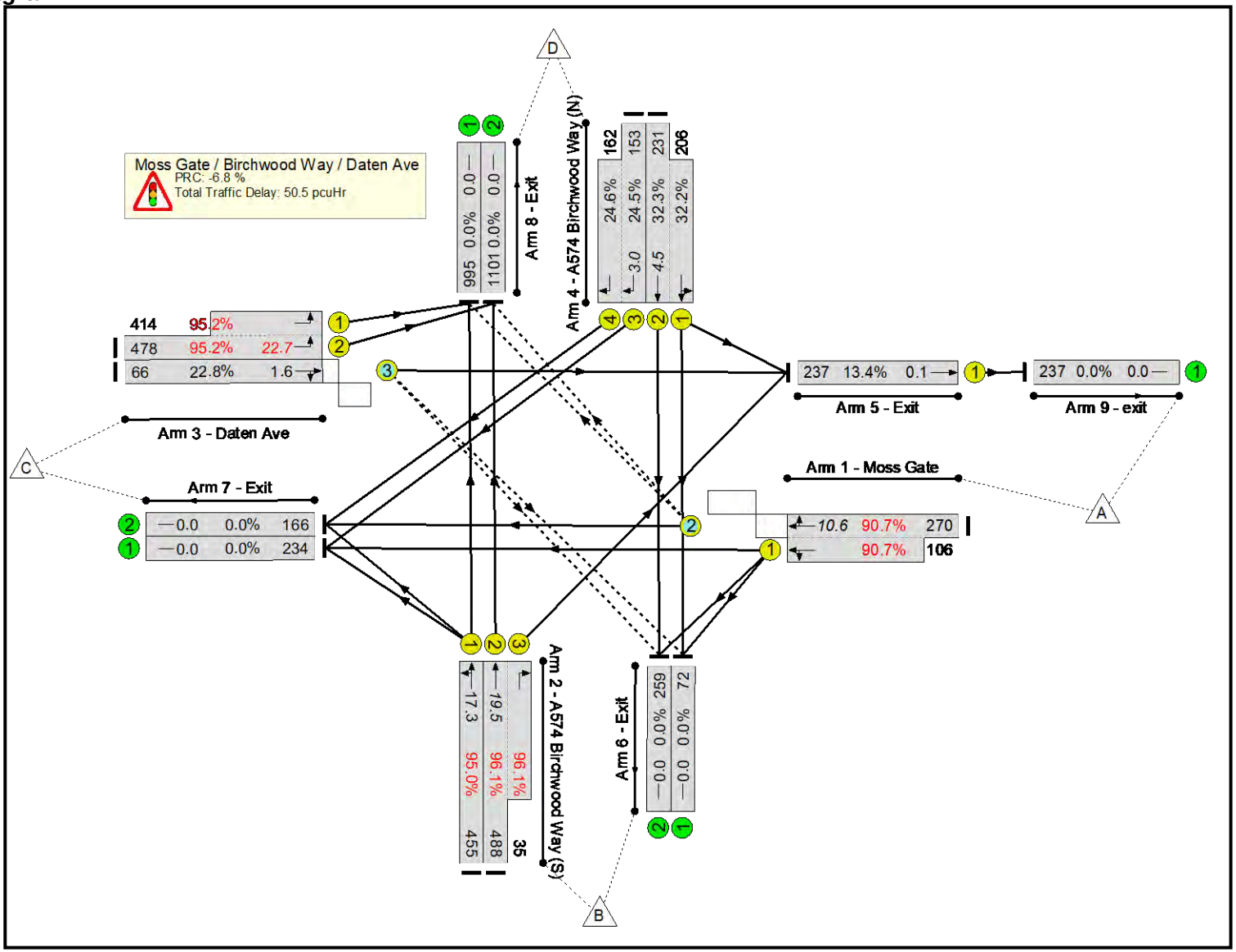
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Warrington	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.1%**
Moss Gate / Birchwood Way / Daten Ave	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.1%**
1/2+1/1	Moss Gate Left Ahead Right	O+U	1	N/A	E		1	13	-	376	1914:1891	298+117	90.7 : 90.7%
2/1	A574 Birchwood Way (S) Left Ahead	U	1	N/A	C		1	21	-	455	1960	479	95.0%
2/2+2/3	A574 Birchwood Way (S) Right Ahead	U	1	N/A	C D		1	21	-	523	2125:1842	508+36	96.1 : 96.1%
3/2+3/1	Daten Ave Left	U	1	N/A	G		1	29	-	892	2154:1981	502+435	95.2 : 95.2%
3/3	Daten Ave Ahead Right	O	1	N/A	F		1	13	-	66	1873	290	22.8%
4/2+4/1	A574 Birchwood Way (N) Left Ahead	U	1	N/A	A		1	30	-	437	2075:1858	715+640	32.3 : 32.2%
4/3+4/4	A574 Birchwood Way (N) Right	U	1	N/A	B		1	30	-	315	1810:1914	623+659	24.5 : 24.6%
5/1	Exit Ahead	U	2	N/A	K		1	78	-	237	2015	1769	13.4%
6/1	Exit	U	N/A	N/A	-		-	-	-	72	Inf	Inf	0.0%
6/2	Exit	U	N/A	N/A	-		-	-	-	259	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	234	Inf	Inf	0.0%
7/2	Exit	U	N/A	N/A	-		-	-	-	166	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	995	Inf	Inf	0.0%
8/2	Exit	U	N/A	N/A	-		-	-	-	1101	Inf	Inf	0.0%
9/1	exit	U	N/A	N/A	-		-	-	-	237	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Warrington	**-**	**-**	**187**	**0**	**110**	**24.6**	**25.7**	**0.2**	**50.5**	**-**	**-**	**-**	**-**
Moss Gate / Birchwood Way / Daten Ave	**-**	**-**	**187**	**0**	**110**	**24.6**	**25.7**	**0.2**	**50.5**	**-**	**-**	**-**	**-**
1/2+1/1	376	376	161	0	109	3.8	4.0	0.2	8.0	76.8	6.6	4.0	10.6
2/1	455	455	-	-	-	4.2	6.2	-	10.5	82.7	11.1	6.2	17.3
2/2+2/3	523	523	-	-	-	4.8	7.3	-	12.2	83.7	12.2	7.3	19.5
3/2+3/1	892	892	-	-	-	6.6	7.5	-	14.1	57.0	15.2	7.5	22.7
3/3	66	66	27	0	0	0.6	0.1	0.0	0.8	42.5	1.4	0.1	1.6
4/2+4/1	437	437	-	-	-	2.6	0.2	-	2.9	23.7	4.2	0.2	4.5
4/3+4/4	315	315	-	-	-	1.8	0.2	-	2.0	23.0	2.9	0.2	3.0
5/1	237	237	-	-	-	0.0	0.1	-	0.1	1.2	0.1	0.1	0.1
6/1	72	72	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	259	259	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	234	234	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	166	166	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	995	995	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	1101	1101	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	237	237	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

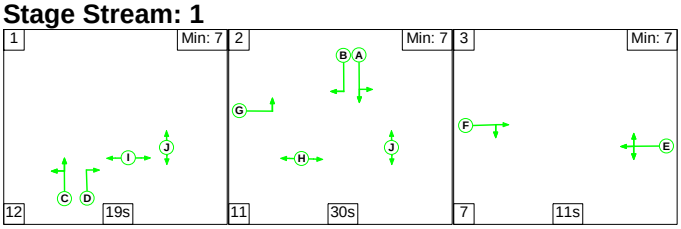
C1 Stream: 1 PRC for Signalled Lanes (%): -6.8 Total Delay for Signalled Lanes (pcuHr): 50.44 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): 571.7 Total Delay for Signalled Lanes (pcuHr): 0.08 Cycle Time (s): 90
PRC Over All Lanes (%): -6.8 Total Delay Over All Lanes(pcuHr): 50.52

Full Input Data And Results

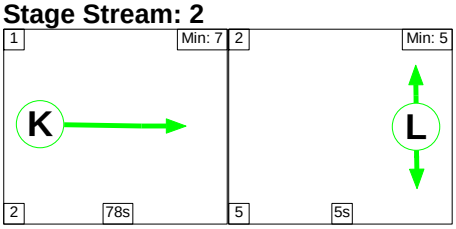
Scenario 5: '2022 Base + Committed PM' (FG4: '2022 Base + Committed PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

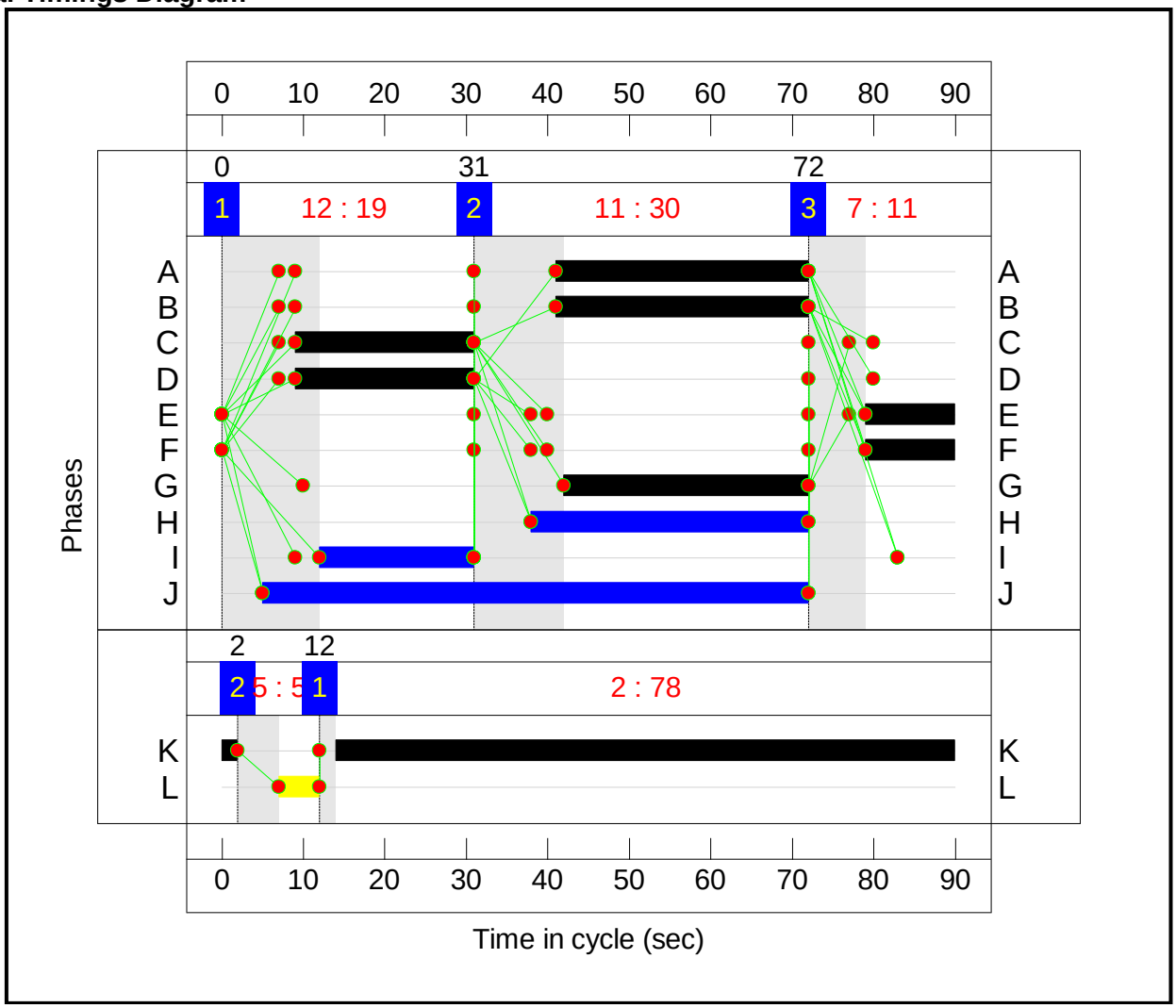
Stage	1	2	3
Duration	19	30	11
Change Point	0	31	72

Stage Stream: 2

Stage	1	2
Duration	78	5
Change Point	12	2

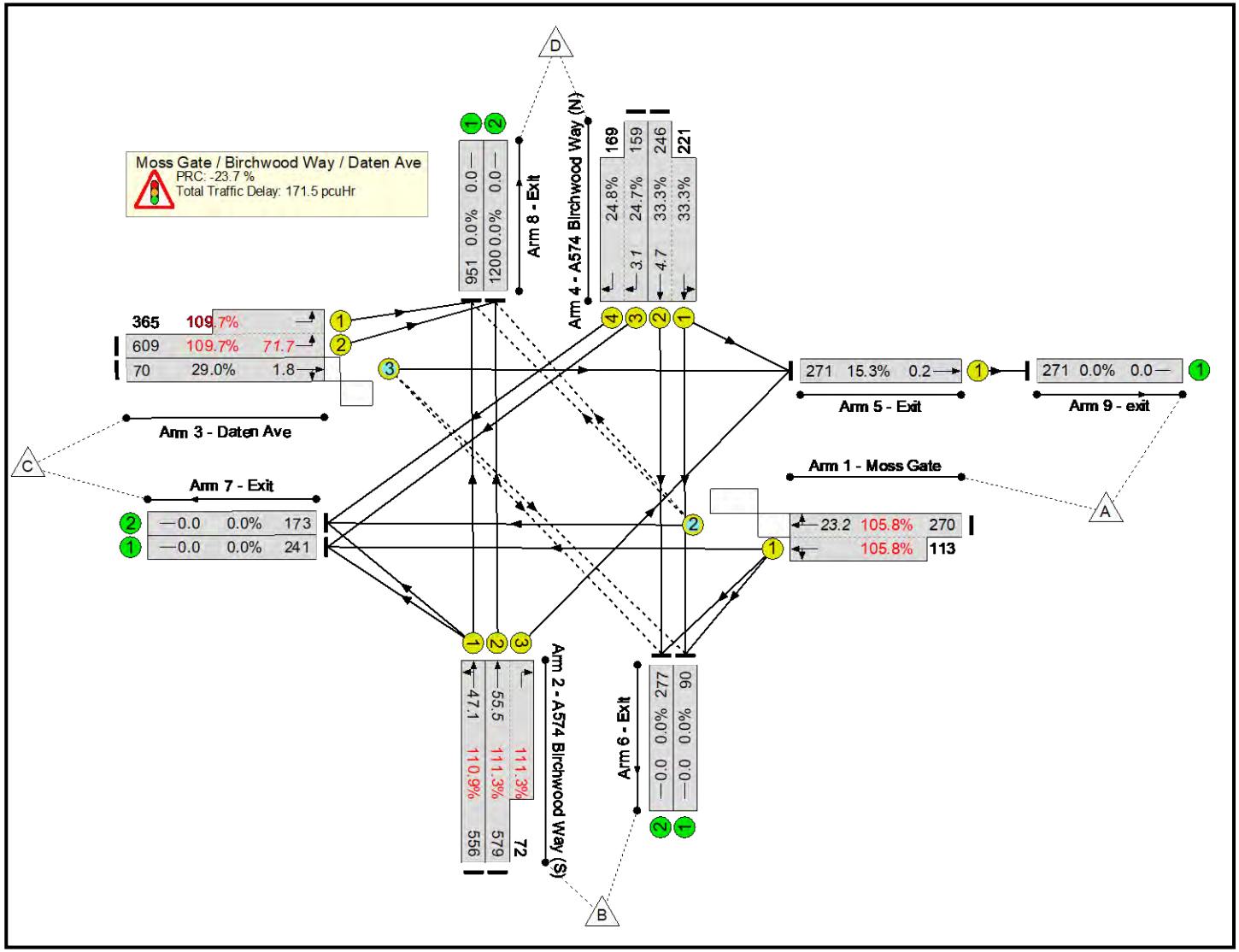
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Warrington	-	-	**N/A**	-	-		-	-	-	-	-	-	**111.3%**
Moss Gate / Birchwood Way / Daten Ave	-	-	**N/A**	-	-		-	-	-	-	-	-	**111.3%**
1/2+1/1	Moss Gate Left Ahead Right	O+U	1	N/A	E		1	11	-	383	1914:1883	255+107	105.8 : 105.8%
2/1	A574 Birchwood Way (S) Left Ahead	U	1	N/A	C		1	22	-	556	1961	501	110.9%
2/2+2/3	A574 Birchwood Way (S) Right Ahead	U	1	N/A	C D		1	22	-	651	2125:1842	520+65	111.3 : 111.3%
3/2+3/1	Daten Ave Left	U	1	N/A	G		1	30	-	974	2154:1981	555+333	109.7 : 109.7%
3/3	Daten Ave Ahead Right	O	1	N/A	F		1	11	-	70	1878	241	29.0%
4/2+4/1	A574 Birchwood Way (N) Left Ahead	U	1	N/A	A		1	31	-	467	2075:1867	738+664	33.3 : 33.3%
4/3+4/4	A574 Birchwood Way (N) Right	U	1	N/A	B		1	31	-	328	1810:1914	644+681	24.7 : 24.8%
5/1	Exit Ahead	U	2	N/A	K		1	78	-	278	2015	1769	15.3%
6/1	Exit	U	N/A	N/A	-		-	-	-	90	Inf	Inf	0.0%
6/2	Exit	U	N/A	N/A	-		-	-	-	277	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	241	Inf	Inf	0.0%
7/2	Exit	U	N/A	N/A	-		-	-	-	173	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	1047	Inf	Inf	0.0%
8/2	Exit	U	N/A	N/A	-		-	-	-	1323	Inf	Inf	0.0%
9/1	exit	U	N/A	N/A	-		-	-	-	278	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Warrington	**-**	**-**	**156**	**0**	**120**	**36.6**	**134.4**	**0.5**	**171.5**	**-**	**-**	**-**	**-**
Moss Gate / Birchwood Way / Daten Ave	**-**	**-**	**156**	**0**	**120**	**36.6**	**134.4**	**0.5**	**171.5**	**-**	**-**	**-**	**-**
1/2+1/1	383	368	130	0	120	4.4	16.4	0.4	21.2	199.6	6.9	16.4	23.2
2/1	556	501	-	-	-	7.6	31.8	-	39.4	255.0	15.3	31.8	47.1
2/2+2/3	651	585	-	-	-	8.9	37.5	-	46.4	256.7	17.9	37.5	55.5
3/2+3/1	974	888	-	-	-	10.4	48.0	-	58.4	215.9	23.7	48.0	71.7
3/3	70	70	27	0	0	0.7	0.2	0.0	0.9	46.8	1.6	0.2	1.8
4/2+4/1	467	467	-	-	-	2.8	0.2	-	3.0	23.1	4.4	0.2	4.7
4/3+4/4	328	328	-	-	-	1.9	0.2	-	2.0	22.3	3.0	0.2	3.1
5/1	271	271	-	-	-	0.0	0.1	-	0.1	1.3	0.1	0.1	0.2
6/1	90	90	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	277	277	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	241	241	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	173	173	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	951	951	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	1200	1200	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	271	271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

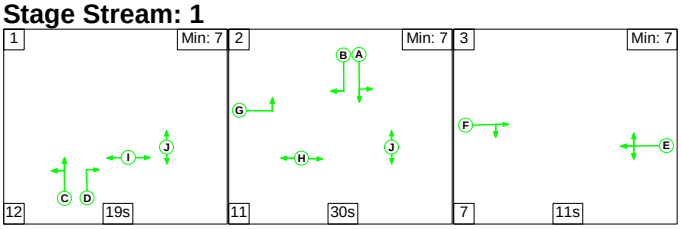
C1 Stream: 1 PRC for Signalled Lanes (%): -23.7 Total Delay for Signalled Lanes (pcuHr): 171.40 Cycle Time (s): 90
C1 Stream: 2 PRC for Signalled Lanes (%): 488.1 Total Delay for Signalled Lanes (pcuHr): 0.10 Cycle Time (s): 90
PRC Over All Lanes (%): -23.7 Total Delay Over All Lanes(pcuHr): 171.50

Full Input Data And Results

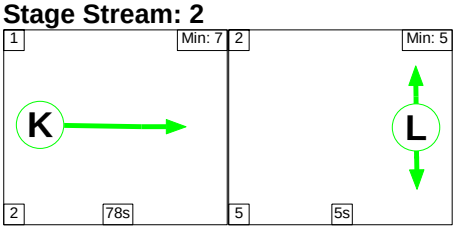
Scenario 6: '2022 Base + Committed + Dev PM' (FG6: '2022 Base + Committed + Dev PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

Stage Stream: 1

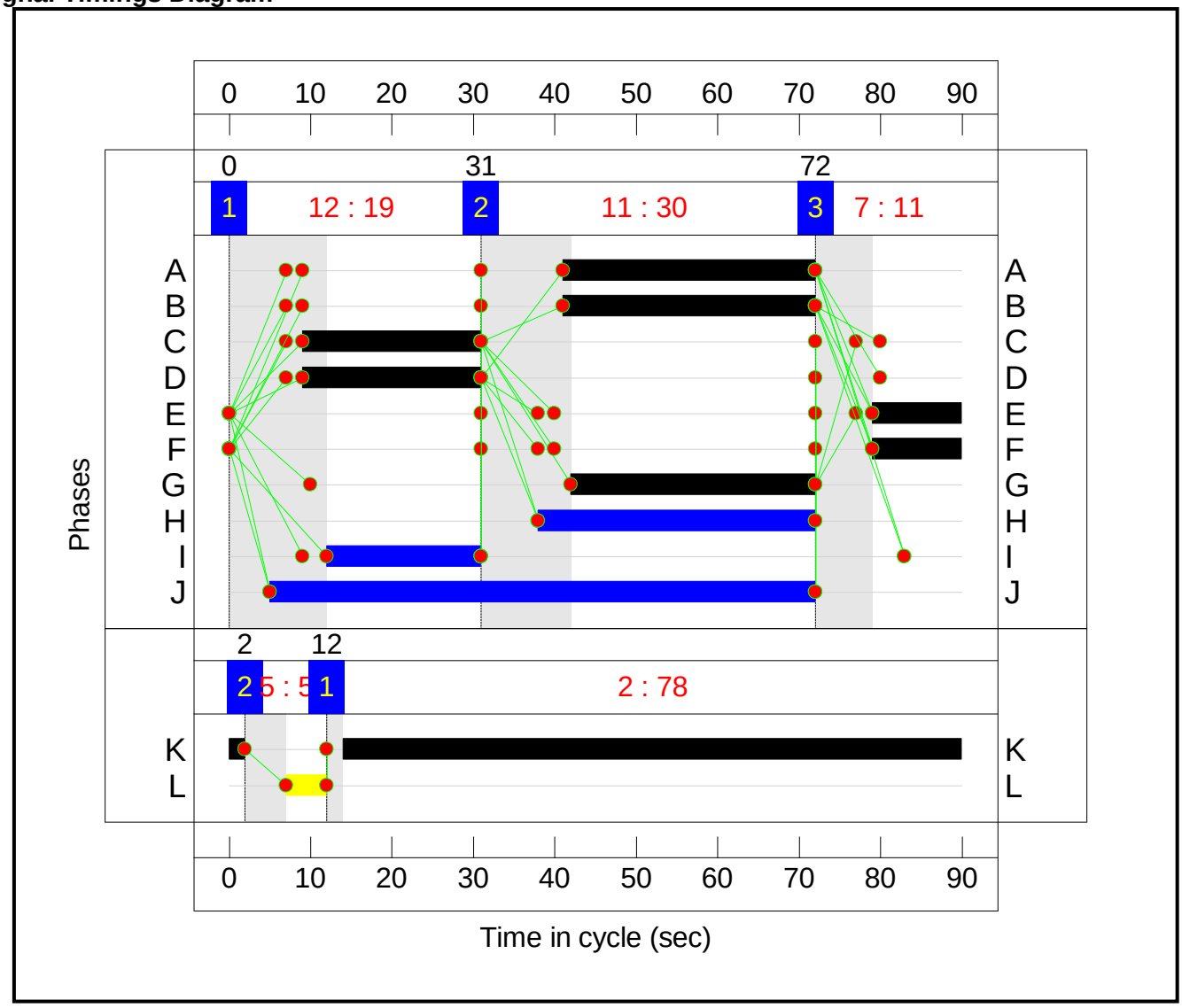
Stage	1	2	3
Duration	19	30	11
Change Point	0	31	72

Stage Stream: 2

Stage	1	2
Duration	78	5
Change Point	12	2

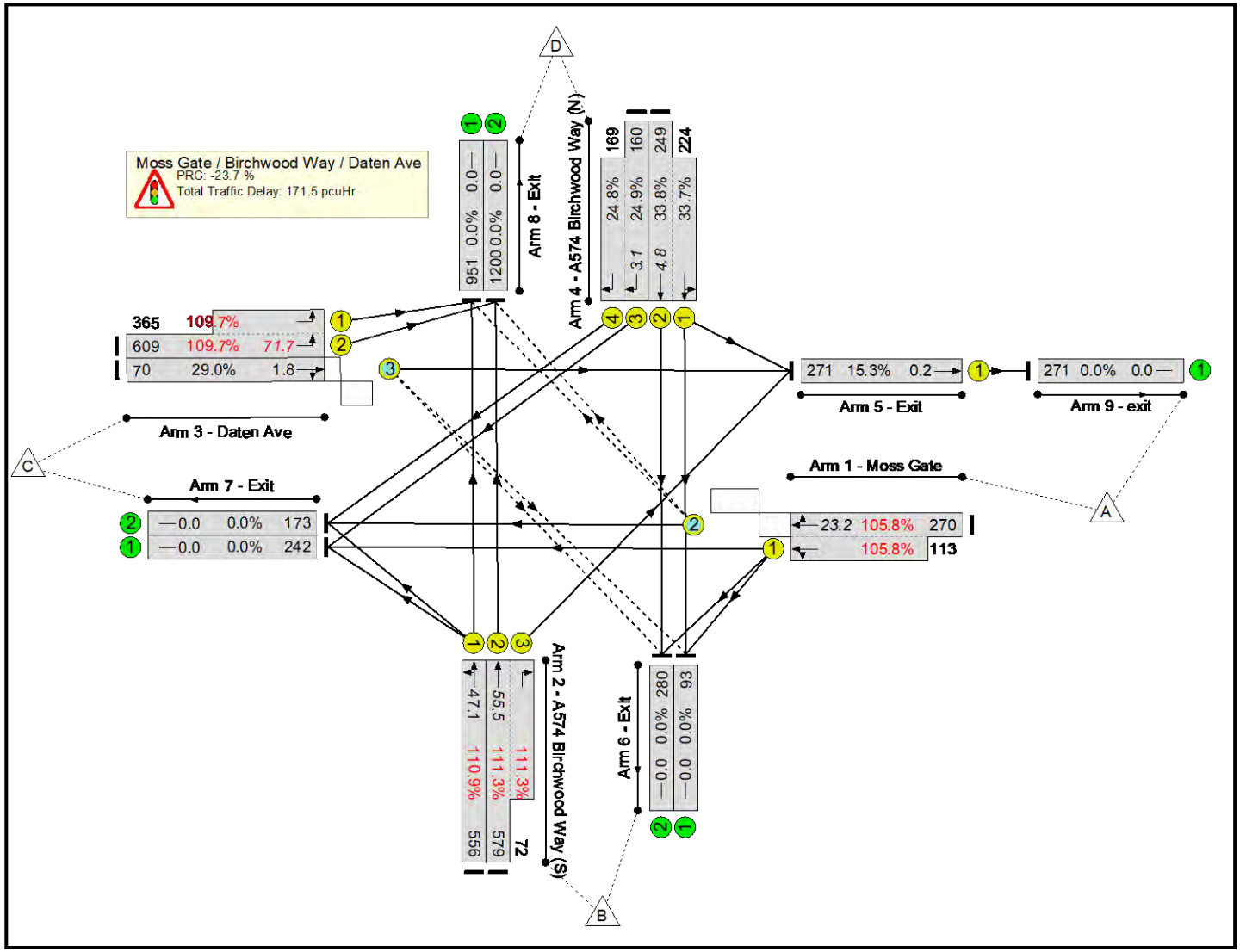
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Warrington	-	-	**N/A**	-	-		-	-	-	-	-	-	**111.3%**
Moss Gate / Birchwood Way / Daten Ave	-	-	**N/A**	-	-		-	-	-	-	-	-	**111.3%**
1/2+1/1	Moss Gate Left Ahead Right	O+U	1	N/A	E		1	11	-	383	1914:1883	255+107	105.8 : 105.8%
2/1	A574 Birchwood Way (S) Left Ahead	U	1	N/A	C		1	22	-	556	1961	501	110.9%
2/2+2/3	A574 Birchwood Way (S) Right Ahead	U	1	N/A	C D		1	22	-	651	2125:1842	520+65	111.3 : 111.3%
3/2+3/1	Daten Ave Left	U	1	N/A	G		1	30	-	974	2154:1981	555+333	109.7 : 109.7%
3/3	Daten Ave Ahead Right	O	1	N/A	F		1	11	-	70	1878	241	29.0%
4/2+4/1	A574 Birchwood Way (N) Left Ahead	U	1	N/A	A		1	31	-	473	2075:1869	738+665	33.8 : 33.7%
4/3+4/4	A574 Birchwood Way (N) Right	U	1	N/A	B		1	31	-	329	1810:1914	644+681	24.9 : 24.8%
5/1	Exit Ahead	U	2	N/A	K		1	78	-	278	2015	1769	15.3%
6/1	Exit	U	N/A	N/A	-		-	-	-	93	Inf	Inf	0.0%
6/2	Exit	U	N/A	N/A	-		-	-	-	280	Inf	Inf	0.0%
7/1	Exit	U	N/A	N/A	-		-	-	-	242	Inf	Inf	0.0%
7/2	Exit	U	N/A	N/A	-		-	-	-	173	Inf	Inf	0.0%
8/1	Exit	U	N/A	N/A	-		-	-	-	1047	Inf	Inf	0.0%
8/2	Exit	U	N/A	N/A	-		-	-	-	1323	Inf	Inf	0.0%
9/1	exit	U	N/A	N/A	-		-	-	-	278	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Warrington	**-**	**-**	**156**	**0**	**120**	**36.7**	**134.4**	**0.5**	**171.5**	**-**	**-**	**-**	**-**
Moss Gate / Birchwood Way / Daten Ave	**-**	**-**	**156**	**0**	**120**	**36.7**	**134.4**	**0.5**	**171.5**	**-**	**-**	**-**	**-**
1/2+1/1	383	368	130	0	120	4.4	16.4	0.4	21.2	199.6	6.9	16.4	23.2
2/1	556	501	-	-	-	7.6	31.8	-	39.4	255.0	15.3	31.8	47.1
2/2+2/3	651	585	-	-	-	8.9	37.5	-	46.4	256.7	17.9	37.5	55.5
3/2+3/1	974	888	-	-	-	10.4	48.0	-	58.4	215.9	23.7	48.0	71.7
3/3	70	70	27	0	0	0.7	0.2	0.0	0.9	46.8	1.6	0.2	1.8
4/2+4/1	473	473	-	-	-	2.8	0.3	-	3.0	23.2	4.5	0.3	4.8
4/3+4/4	329	329	-	-	-	1.9	0.2	-	2.0	22.3	3.0	0.2	3.1
5/1	271	271	-	-	-	0.0	0.1	-	0.1	1.3	0.1	0.1	0.2
6/1	93	93	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	280	280	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	242	242	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/2	173	173	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	951	951	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	1200	1200	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	271	271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 Stream: 1 PRC for Signalled Lanes (%):	-23.7	Total Delay for Signalled Lanes (pcuHr):	171.45	Cycle Time (s):	90
C1 Stream: 2 PRC for Signalled Lanes (%):	488.1	Total Delay for Signalled Lanes (pcuHr):	0.10	Cycle Time (s):	90
PRC Over All Lanes (%):	-23.7	Total Delay Over All Lanes(pcuHr):	171.55		

APPENDIX 12.A. Existing Collision Data

Birchwood Way 5yr Collision Data to July 2018

Number of Accidents - Fatal: 0 Serious: 1 Slight: 15

Casualties	Adults				Children (<16)				Total (inc. unk. age)			
	Fatal	Ser.	Slight	Total	Fatal	Ser.	Slight	Total	Fatal	Ser.	Slight	Total
PEDESTRIANS 00-04 Yr	-	-	-	-	0	0	0	0	0	0	0	0
PEDESTRIANS 05-15 Yr	-	-	-	-	0	0	0	0	0	0	0	0
PEDESTRIANS 16-59 Yr	0	0	0	0	-	-	-	-	0	0	0	0
PEDESTRIANS 60+ Yrs	0	0	0	0	-	-	-	-	0	0	0	0
PEDESTR unknown age	-	-	-	-	-	-	-	-	0	0	0	0
TOTAL PEDESTRIANS	0	0	0	0	0	0	0	0	0	0	0	0
P/CYCLISTS Rider	0	0	0	0	0	1	0	1	0	1	0	1
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
M/C < 50cc Rider	0	0	0	0	0	0	0	0	0	0	0	0
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
M/C 50 to 125 Rider	0	0	0	0	0	0	0	0	0	0	0	0
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
M/C 125 to 500 Rider	0	0	0	0	0	0	0	0	0	0	0	0
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
M/C >500cc Rider	0	0	0	0	0	0	0	0	0	0	0	0
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
Electric M/C Rider	0	0	0	0	0	0	0	0	0	0	0	0
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL 2-WH M/V Rider	0	0	0	0	0	0	0	0	0	0	0	0
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
TAXI Driver	0	0	0	0	0	0	0	0	0	0	0	0
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
CAR Driver	0	0	15	15	0	0	0	0	0	0	15	15
Passenger	0	0	3	3	0	0	0	0	0	0	3	3
MINIBUS 8-16 Driver	0	0	0	0	0	0	0	0	0	0	0	0
PASSENGERS Passenger	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL PRIVATE Driver	0	0	15	15	0	0	0	0	0	0	15	15
VEHICLES Passenger	0	0	3	3	0	0	0	0	0	0	3	3
RIDDEN HORSE Driver	0	0	0	0	0	0	0	0	0	0	0	0
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
AGRICULTURAL Driver	0	0	0	0	0	0	0	0	0	0	0	0
VEHICLE Passenger	0	0	0	0	0	0	0	0	0	0	0	0
TRAM/LIGHT Driver	0	0	0	0	0	0	0	0	0	0	0	0
RAIL Passenger	0	0	0	0	0	0	0	0	0	0	0	0
BUS or COACH Driver	0	0	0	0	0	0	0	0	0	0	0	0
Passenger	0	0	0	0	0	0	0	0	0	0	0	0
GOODS <= 3.5 Driver	0	0	0	0	0	0	0	0	0	0	0	0
TONNES MGW Passenger	0	0	0	0	0	0	0	0	0	0	0	0
GOODS >3.5 & Driver	0	0	0	0	0	0	0	0	0	0	0	0
<7.5 TON. Passenger	0	0	0	0	0	0	0	0	0	0	0	0
GOODS >7.5 Driver	0	0	0	0	0	0	0	0	0	0	0	0
TONNES MGW Passenger	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL GOODS Driver	0	0	0	0	0	0	0	0	0	0	0	0
VEHICLES Passenger	0	0	0	0	0	0	0	0	0	0	0	0
M/CYCLE Driver	0	0	0	0	0	0	0	0	0	0	0	0
UNKNOWN CC Passenger	0	0	0	0	0	0	0	0	0	0	0	0
GOODS UNKNOWN Driver	0	0	0	0	0	0	0	0	0	0	0	0
TONNES Passenger	0	0	0	0	0	0	0	0	0	0	0	0
VEHICLE TYPE Driver	0	0	0	0	0	0	0	0	0	0	0	0
UNKNOWN Passenger	0	0	0	0	0	0	0	0	0	0	0	0
OTHER Driver	0	0	0	0	0	0	0	0	0	0	0	0
VEHICLES Passenger	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL PEDESTRIANS	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL RIDERS/DRIVERS	0	0	15	15	0	1	0	1	0	1	15	16
TOTAL PASSENGERS	0	0	3	3	0	0	0	0	0	0	3	3
GRAND TOTAL	0	0	18	18	0	1	0	1	0	1	18	19

* Number of casualties with unknown age: 0

NOTES

Revn.	Revision Details	Rev by	Chk by	Date:

WARRINGTON
Borough Council
Environment and Transport Directorate
New Town House, Buttermarket Street, Warrington WA1 2NH

Project
Birchwood Way

Drawing Title
Collision Data
5yrs to July 2018

Drawn by	JFisher	e-mail	jfisher@warrington.gov.uk
Approved by	MTune	Telephone	01925 442938
Date	Nov2018	Fax	01925 443255

Sheet 1 of 1

Scales	Drawing No.	Phase / Revision
NTS	TMRS/CS708/001	A

AutoCAD File Ref: 708 Birchwood Way I Transport Plan.dwg

Date: 30-November-2018
Time: 15:37:00

Title: **Birchwood Way 5yr Collision Data to July 2018**

Requested output: **F- Print (Full print) Crash Report**
Date: 30-November-2018

There were 16 reported crashes resulting in injury

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.1		Road **A574** Section	Map ref: E366963 N393188	Parish: District: Warrington
Location				
Description	Description removed.			
Severity SLIGHT	Date: 18/04/2018 Wed 16:15	L	Road Surface Dry Weather Fine	Speed limit 70mph
Slip road		Roundabout No Human control within 50m		

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	entering roundabout	starting	E -> SW	0	female
	did not leave c'way	not requested	front		33
2 car	entering roundabout	waiting to go ahead but held up	E -> SW	0	male
	did not leave c'way	not requested	back		62

Casualty details Crash resulted in 2 casualties

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 2	SLIGHT					male 62
passenger in veh 2	SLIGHT					male 37

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.2		Road **A574** Section	Map ref: E366937 N393260	Parish: District: Warrington
Location				
Description				
Severity SLIGHT	Date: 06/09/2015 Sun 13:34	L	Road Surface Dry Weather Fine	Speed limit 60mph
Roundabout		Roundabout No Human control within 50m		

Vehicle details Crash involved 1 vehicle

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	mid junction	turning right	N -> SE	0	female
	left c'way near-side	positive	nearside		26

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 1	SLIGHT					female 26

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.3		Road **A574** Section	Map ref: E366032 N392636	Parish: District: Warrington
Location				
Description				
Severity SLIGHT	Date: 01/12/2015 Tue 18:05	DRK STL	Road Surface Dry Weather Fine	Speed limit 30mph
Single carriageway		Not at or within 20m of junction No Human control within 50m		

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	not at junction	going ahead other	NE -> SW	0	male
	did not leave c'way	negative	front		22
2 goods > 7.5t	not at junction	going ahead other	SW -> NE	0	male
	did not leave c'way	negative	offside		56

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 1	SLIGHT					male 22

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.4		Road **A574** Section	Map ref: E366860 N393153	Parish: District: Warrington
Location				
Description				
Severity SLIGHT	Date: 19/03/2017 Sun 08:20	L	Road Surface Wet Weather Fine	Speed limit 60mph
Single carriageway		Roundabout No Human control within 50m		

Vehicle details Crash involved 1 vehicle

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	approaching or parked on approach	stopping	SW -> NE	0	male
	left c'way Offside	negative	front		25

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 1	SLIGHT					male 25

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.5		Road **M62** Section	Map ref: E367099 N393301	Parish: District: Warrington
Location				
Description				
Severity SLIGHT	Date: 16/05/2017 Tue 09:09	L	Road Surface Wet Weather Rain	Speed limit 70mph
Slip road		Slip Road No Human control within 50m		

Vehicle details Crash involved 3 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 goods < 3.5t	entering from slip road	stopping	W -> E	0	male
	did not leave c'way	negative	back		48
2 car	entering from slip road	stopping	W -> E	0	female
	did not leave c'way	negative	back		47
3 goods < 3.5t	entering from slip road	going ahead other	W -> E	0	male
	did not leave c'way	negative	front		21

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 2	SLIGHT					female 47

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Birchwood Way 5yr Collision Data to July 2018

No.6		Road **M62** Section	Map ref: E366794 N393294	Parish: District: Warrington
Location				
Description				
Severity SLIGHT	Date: 17/06/2017 Sat 23:45	DRK STU	Road Surface Dry Weather Fine	Speed limit 30mph
Slip road		Slip Road No Human control within 50m		

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 goods < 3.5t	mid junction	stopping	SW -> NE	0	male
	did not leave c'way	not contacted	front		?
2 car	mid junction	stopping	SW -> NE	0	male
	did not leave c'way	not contacted	back		45

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 2	SLIGHT					male 45

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.7		Road **A574** Section	Map ref: E366930 N393192	Parish: District: Warrington
Location				
Description				
Severity SLIGHT	Date: 15/09/2017 Fri 12:15	L	Road Surface Wet Weather Fine	Speed limit 60mph
Roundabout		Slip Road No Human control within 50m		

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 goods > 7.5t	mid junction	stopping	E -> S	0	male
	did not leave c'way	not requested	front		60
2 car	mid junction	waiting to go ahead but held up	W -> S	0	male
	did not leave c'way	not requested	back		61

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 2	SLIGHT					male 61

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.8		Road **M62** Section	Map ref: E366929 N393252	Parish: District: Warrington
Location				
Description	Description Removed.			
Severity SLIGHT	Date: 03/07/2013 Wed 17:21	L	Road Surface Dry Weather Fine	Speed limit 70mph
Slip road		Slip Road No Human control within 50m		

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	entering roundabout	waiting to go ahead but held up	E -> W	0	male
	did not leave c'way	negative	front		29
2 car	entering from slip road	stopping	E -> W	0	male
	did not leave c'way	negative	back		28

Casualty details Crash resulted in 2 casualties

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
passenger in veh 1	SLIGHT					female 27
passenger in veh 2	SLIGHT					male 33

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Birchwood Way 5yr Collision Data to July 2018

No.9		Road **A574** Section	Map ref: E366830 N393317	Parish: District: Warrington
Location				
Description	Description Removed.			
Severity SLIGHT	Date: 31/10/2013 Thu 20:50	DRK STL	Road Surface Wet Weather Fine	Speed limit 30mph
Roundabout		Roundabout No Human control within 50m		

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	mid junction	going ahead other	W -> E	0	male
	did not leave c'way	positive	front		39
2 car	mid junction	going ahead right hand bend	S -> N	0	male
	did not leave c'way	negative	front		46

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 2	SLIGHT					male 46

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.10		Road **M62** Section	Map ref: E366629 N393231	Parish: District: Warrington
Location				
Description	Description Removed.			
Severity SLIGHT	Date: 14/11/2013 Thu 08:38	L	Road Surface Wet Weather Rain Wind	Speed limit 70mph
Dual carriageway	Not at or within 20m of junction No Human control within 50m			

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	not at junction	going ahead other	W -> E	0	male
	did not leave c'way	negative	front		45
2 goods 3.5 - 7.5t	not at junction	going ahead other	W -> E	0	male
	did not leave c'way	not contacted	back		45

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 1	SLIGHT					male 45

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.11		Road **A574** Section	Map ref: E366580 N392968	Parish: District: Warrington
Location				
Description	Description Removed.			
Severity SLIGHT	Date: 08/12/2013 Sun 23:25	DRK STL	Road Surface Dry Weather Fine	Speed limit 50mph
Single carriageway		Not at or within 20m of junction No Human control within 50m		

Vehicle details Crash involved 1 vehicle

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	not at junction	going ahead left hand bend	SW -> NE	0	male
	left c'way near-side	positive	nearside		28

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider	SLIGHT					male
in veh 1						28

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.12		Road **A574** Section	Map ref: E365962 N392540	Parish: District: Warrington
Location				
Description	Description removed.			
Severity SLIGHT	Date: 01/01/2014 Wed 17:10	L	Road Surface Wet Weather Rain Wind	Speed limit 40mph
Roundabout		Roundabout No Human control within 50m		

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	approaching or parked on approach	stopping	S -> N	0	male
	did not leave c'way	negative	front		75
2 car	approaching or parked on approach	waiting to go ahead but held up	S -> N	0	female
	did not leave c'way	negative	back		31

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 2	SLIGHT					female 31

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.13		Road **M62** Section	Map ref: E367178 N393303	Parish: District: Warrington
Location				
Description	Description removed.			
Severity SLIGHT	Date: 20/01/2014 Mon 17:20	DRK NSL	Road Surface Dry Weather Fine	Speed limit 70mph
Dual carriageway	Not at or within 20m of junction No Human control within 50m			

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	not at junction	going ahead other	W -> E	0	male
	left c'way near-side	not contacted	nearside		40
2	not at junction	changing lane to right	W -> SE	0	male
	did not leave c'way	negative	offside		52

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 1	SLIGHT					male 40

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.14		Road **M62** Section	Map ref: E366947 N393253	Parish: District: Warrington
Location				
Description	Description removed.			
Severity SLIGHT	Date: 24/06/2014 Tue 17:52	L	Road Surface Wet Weather Fine	Speed limit 70mph
Dual carriageway	Not at or within 20m of junction No Human control within 50m			

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	not at junction	stopping	E -> W	0	female
	did not leave c'way	negative	front		27
2 car	not at junction	stopping	E -> W	0	female
	did not leave c'way	negative	back		48

Casualty details Crash resulted in 2 casualties

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 1	SLIGHT					female 27
driver/rider in veh 2	SLIGHT					female 48

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.15		Road **M62** Section	Map ref: E366810 N393307	Parish: District: Warrington
Location				
Description	Description removed.			
Severity SLIGHT	Date: 18/05/2015 Mon 10:30	L	Road Surface Wet Weather Fine	Speed limit 70mph
Roundabout		Roundabout No Human control within 50m		

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 car	entering from slip road	going ahead other	SW -> SE	0	female
	did not leave c'way	not contacted	front		?
2 car	entering from slip road	waiting to go ahead but held up	SW -> SE	0	female
	did not leave c'way	not contacted	back		25

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider	SLIGHT					female
in veh 2						25

F - Print Crash Report

Birchwood Way 5yr Collision Data to July 2018

No.16		Road **A574** Section	Map ref: E366033 N392524	Parish: District: Warrington
Location				
Description	Description removed.			
Severity SERIOUS	Date: 19/06/2015 Fri 15:58	L	Road Surface Dry Weather Fine	Speed limit 30mph
Single carriageway	Not at or within 20m of junction No Human control within 50m			

Vehicle details Crash involved 2 vehicles

vehicle type	location	movement	dir	veh hit	sex
registration		b-test	1st hit	damaged	age
1 pedal cycle	not at junction	going ahead other	SW -> NE	0	male
	did not leave c'way	not requested	front		14
2 car	not at junction	going ahead other	NW -> SE	0	male
	did not leave c'way	not requested	offside		33

Casualty details Crash resulted in 1 casualty

class	severity	pedestrian location	dir	seat belt	PSV passenger	sex
		pedestrian movement	school name		**to/from school	age
driver/rider in veh 1	SERIOUS					male 14

Birchwood Way 5yr Collision Data to July 2018

Contributory Factor Information	Number of Accidents					Number of Casualties														
						Drivers			Passengers			Pedestrians			Cyclists			Total			
	Fatal	Ser.	Slight	Dam.	Total	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Total
405 Failed to look properly (Driver/Rider - Error)	0	1	7	0	8	0	0	7	0	0	3	0	0	0	0	1	0	0	1	10	11
501 Impaired by alcohol (Driver/Rider - Impairment)	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4
403 Poor turn or manoeuvre (Driver/Rider - Error)	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	4
406 Failed to judge other person's path/speed (Driver/Rider - Error)	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	3
308 Following too close (Driver/Rider - Injudicious)	0	0	2	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	3
410 Loss of control (Driver/Rider - Error)	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
302 Disobeyed give way or stop sign markings (Driver/Rider - Injudicious)	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
606 Inexperience of driving on the left (Driver/Rider - Behaviour)	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
707 Rain, sleet, snow or fog (Driver/Rider - Vision Affected)	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
203 Defective brakes (Vehicle Defects)	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
999 Other (Special Codes)	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
602 Careless/Reckless (Driver/Rider - Behaviour)	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
109 Animal or object in carriageway (Road Environment Contrib)	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
703 Road layout (Driver/Rider - Vision Affected)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
510 Distraction outside vehicle (Driver/Rider - Impairment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Birchwood Way 5yr Collision Data to July 2018

Contributory Factor Information	Number of Accidents					Number of Casualties															
						Drivers			Passengers			Pedestrians			Cyclists			Total			
	Fatal	Ser.	Slight	Dam.	Total	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Total
705 Dazzling headlights (Driver/Rider - Vision Affected)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
509 Distraction in vehicle (Driver/Rider - Impairment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
704 Buildings, road signs, street furniture (Driver/Rider - Vision Affected)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
702 Vegetation (Driver/Rider - Vision Affected)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
607 Inexperience with vehicle type (Driver/Rider - Behaviour)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
604 Driving too slow for conditions (Driver/Rider - Behaviour)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
605 Inexperienced or learner driver/rider (Driver/Rider - Behaviour)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
601 Aggressive driving (Driver/Rider - Behaviour)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
603 Nervous/Uncertain (Driver/Rider - Behaviour)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
701 Stationary or parked vehicle(s) (Driver/Rider - Vision Affected)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
809 Pedestrian wearing dark clothing at night (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
810 Disability or illness (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
807 Impaired by drugs (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
808 Careless/Reckless (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
901 Stolen vehicle (Special Codes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Birchwood Way 5yr Collision Data to July 2018

Contributory Factor Information	Number of Accidents					Number of Casualties															
						Drivers			Passengers			Pedestrians			Cyclists			Total			
	Fatal	Ser.	Slight	Dam.	Total	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Total
904 Vehicle door opened or closed negiligently (Special Codes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101 Poor or defective road surface (Road Environment Contrib)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
902 Vehicle in course of crime (Special Codes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
903 Emergency vehicle on call (Special Codes)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
806 Impaired by alcohol (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
709 Visor or windscreen dirty, scratched or frosted etc. (Driver/Rider - Vision Affected)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
710 Vehicle blind spot (Driver/Rider - Vision Affected)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
706 Dazzling sun (Driver/Rider - Vision Affected)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
708 Spray from other vehicles (Driver/Rider - Vision Affected)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
801 Crossed road masked by stationary or parked vehicle (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
804 Wrong use of pedestrian crossing (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
805 Dangerous action in carriageway (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
802 Failed to look properly (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
803 Failed to judge vehicle's path/speed (Pedestrian)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
205 Defective or missing mirrors (Vehicle Defects)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Birchwood Way 5yr Collision Data to July 2018

Contributory Factor Information	Number of Accidents					Number of Casualties															
						Drivers			Passengers			Pedestrians			Cyclists			Total			
	Fatal	Ser.	Slight	Dam.	Total	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Total
206 Overloaded or poorly loaded vehicle/trailer (Vehicle Defects)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
202 Defective lights or indicators (Vehicle Defects)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
204 Defective steering or suspension (Vehicle Defects)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
304 Disobeyed pedestrian crossing (Driver/Rider - Injudicious)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
305 Illegal turn or direction of travel (Driver/Rider - Injudicious)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
301 Disobeyed automatic traffic signal (Driver/Rider - Injudicious)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
303 Disobeyed double white line (Driver/Rider - Injudicious)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
201 Tyres illegal, defective or under inflated (Vehicle Defects)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104 Inadequate/Masked signs or road markings (Road Environment Contrib)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105 Defective traffic signals (Road Environment Contrib)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102 Deposit on road e.g. oil, mud, chippings (Road Environment Contrib)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103 Slippery road due to weather (Road Environment Contrib)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108 Road layout e.g. bend, hill or narrow (Road Environment Contrib)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110 Slippery inspection cover or road marking	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106 Traffic calming (Road Environment Contrib)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Birchwood Way 5yr Collision Data to July 2018

Contributory Factor Information	Number of Accidents					Number of Casualties															
						Drivers			Passengers			Pedestrians			Cyclists			Total			
	Fatal	Ser.	Slight	Dam.	Total	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Total
107 Temporary road (Road Environment Contrib)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
503 Fatigue (Driver/Rider - Impairment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
504 Uncorrected, defective eyesight (Driver/Rider - Impairment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
409 Swerved (Driver/Rider - Error)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
502 Impaired by drugs (Driver/Rider - Impairment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
507 Rider wearing dark clothing (Driver/Rider - Impairment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
508 Driver using mobile phone (Driver/Rider - Impairment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
505 Illness or disability, mental or physical (Driver/Rider - Impairment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
506 Not displaying lights at night or poor visibility (Driver/Rider - Impairment)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
408 Sudden braking (Driver/Rider - Error)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
309 Vehicle travelling along pavement (Driver/Rider - Injudicious)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
310 Cyclist entering road from pavement (Driver/Rider - Injudicious)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
306 Exceeding speed limit (Driver/Rider - Injudicious)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
307 Travelling too fast for conditions (Driver/Rider - Injudicious)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
404 Failed to signal/misleading signal (Driver/Rider - Error)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Birchwood Way 5yr Collision Data to July 2018

Contributory Factor Information	Number of Accidents					Number of Casualties														
						Drivers			Passengers			Pedestrians			Cyclists			Total			
	Fatal	Ser.	Slight	Dam.	Total	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Fatal	Ser.	Slight	Total
407 Too close to cyclist, horse or pedestrian (Driver/Rider - Error)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
401 Junction overshoot (Driver/Rider - Error)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
402 Junction restart (Driver/Rider - Error)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	27	0	29	0	0	29	0	0	3	0	0	0	0	2	0	0	2	32	34

NB: Sum of contributory factors only, not actual accident/casualty totals.

Birchwood Way 5yr Collision Data to July 2018

ACCIDENT SEVERITY UPTO 2018

	2013	2014	2015	2016	2017	2018	Total
Fatal	0	0	0	0	0	0	0
Serious	0	0	1	0	0	0	1
Slight	4	3	3	0	4	1	15
Damage	0	0	0	0	0	0	0
Total	4	3	4	0	4	1	16

ACCIDENTS BY MONTH AND YEAR UPTO 2018

	2013	2014	2015	2016	2017	2018	Total
January	0	2	0	0	0	0	2
February	0	0	0	0	0	0	0
March	0	0	0	0	1	0	1
April	0	0	0	0	0	1	1
May	0	0	1	0	1	0	2
June	0	1	1	0	1	0	3
July	1	0	0	0	0	0	1
August	0	0	0	0	0	0	0
September	0	0	1	0	1	0	2
October	1	0	0	0	0	0	1
November	1	0	0	0	0	0	1
December	1	0	1	0	0	0	2
Total	4	3	4	0	4	1	16
%	25%	19%	25%	0%	25%	6%	100%

ACCIDENTS BY DAY AND TIME

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
Midnight - 00:59	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	0	0	0	0	0	0
05:00 - 05:59	0	0	0	0	0	0	0	0
06:00 - 06:59	0	0	0	0	0	0	0	0
07:00 - 07:59	0	0	0	0	0	0	0	0
08:00 - 08:59	1	0	0	0	1	0	0	2
09:00 - 09:59	0	0	1	0	0	0	0	1
10:00 - 10:59	0	1	0	0	0	0	0	1
11:00 - 11:59	0	0	0	0	0	0	0	0
12:00 - 12:59	0	0	0	0	0	1	0	1
13:00 - 13:59	1	0	0	0	0	0	0	1
14:00 - 14:59	0	0	0	0	0	0	0	0
15:00 - 15:59	0	0	0	0	0	1	0	1
16:00 - 16:59	0	0	0	1	0	0	0	1
17:00 - 17:59	0	1	1	2	0	0	0	4
18:00 - 18:59	0	0	1	0	0	0	0	1
19:00 - 19:59	0	0	0	0	0	0	0	0
20:00 - 20:59	0	0	0	0	1	0	0	1
21:00 - 21:59	0	0	0	0	0	0	0	0
22:00 - 22:59	0	0	0	0	0	0	0	0
23:00 - 23:59	1	0	0	0	0	0	1	2
Total	3	2	3	3	2	2	1	16
%	19%	13%	19%	19%	13%	13%	6%	100%

Birchwood Way 5yr Collision Data to July 2018

JUNCTION DETAIL	Number	%
SLIP ROAD	4	25
NOT AT JUNCTION	6	38
ROUNDABOUT AND MINI	6	38
TOTAL	**16**	

JUNCTION CONTROLS	Number	%
GIVE WAY SIGN	10	63
NOT AT JUNCTION	6	38
TOTAL	**16**	

SPEED LIMIT	Number	%
30 MPH	4	25
40 MPH	1	6
50 MPH	1	6
60 MPH	3	19
70 MPH	7	44
TOTAL	**16**	

ROAD CLASS	Number	%
Motorway	7	44
A	9	56
TOTAL	**16**	

NUMBER OF ACCIDENTS INVOLVING PEDESTRIANS	Number	%
	0	0

NUMBER OF ACCIDENTS INVOLVING SKIDDING	Number	%
	3	19

WEATHER	Number	%
FINE	13	81
RAIN	1	6
RAIN WIND	2	13
TOTAL	**16**	

ROAD SURFACE	Number	%
DRY	8	50
WET	8	50
TOTAL	**16**	

LIGHT CONDITIONS	Number	%
Light	11	69
Dark	5	31
TOTAL	**16**	

Birchwood Way 5yr Collision Data to July 2018

CASUALTY SEVERITY UPTO 2018

	2013	2014	2015	2016	2017	2018	Total
Fatal	0	0	0	0	0	0	0
Serious	0	0	1	0	0	0	1
Slight	5	4	3	0	4	2	18
Total	5	4	4	0	4	2	19
%	26%	21%	21%	0%	21%	11%	100%

CASUALTIES BY MONTH AND YEAR UPTO 2018

	2013	2014	2015	2016	2017	2018	Total
January	0	2	0	0	0	0	2
February	0	0	0	0	0	0	0
March	0	0	0	0	1	0	1
April	0	0	0	0	0	2	2
May	0	0	1	0	1	0	2
June	0	2	1	0	1	0	4
July	2	0	0	0	0	0	2
August	0	0	0	0	0	0	0
September	0	0	1	0	1	0	2
October	1	0	0	0	0	0	1
November	1	0	0	0	0	0	1
December	1	0	1	0	0	0	2
Total	5	4	4	0	4	2	19
%	26%	21%	21%	0%	21%	11%	100%

CASUALTIES BY DAY AND TIME

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
Midnight - 00:59	0	0	0	0	0	0	0	0
01:00 - 01:59	0	0	0	0	0	0	0	0
02:00 - 02:59	0	0	0	0	0	0	0	0
03:00 - 03:59	0	0	0	0	0	0	0	0
04:00 - 04:59	0	0	0	0	0	0	0	0
05:00 - 05:59	0	0	0	0	0	0	0	0
06:00 - 06:59	0	0	0	0	0	0	0	0
07:00 - 07:59	0	0	0	0	0	0	0	0
08:00 - 08:59	1	0	0	0	1	0	0	2
09:00 - 09:59	0	0	1	0	0	0	0	1
10:00 - 10:59	0	1	0	0	0	0	0	1
11:00 - 11:59	0	0	0	0	0	0	0	0
12:00 - 12:59	0	0	0	0	0	1	0	1
13:00 - 13:59	1	0	0	0	0	0	0	1
14:00 - 14:59	0	0	0	0	0	0	0	0
15:00 - 15:59	0	0	0	0	0	1	0	1
16:00 - 16:59	0	0	0	2	0	0	0	2
17:00 - 17:59	0	1	2	3	0	0	0	6
18:00 - 18:59	0	0	1	0	0	0	0	1
19:00 - 19:59	0	0	0	0	0	0	0	0
20:00 - 20:59	0	0	0	0	1	0	0	1
21:00 - 21:59	0	0	0	0	0	0	0	0
22:00 - 22:59	0	0	0	0	0	0	0	0
23:00 - 23:59	1	0	0	0	0	0	1	2
Total	3	2	4	5	2	2	1	19
%	16%	11%	21%	26%	11%	11%	5%	100%

Birchwood Way 5yr Collision Data to July 2018

CASUALTIES BY TYPE AND AGE GROUPING

	Unknown Age	0 to 4	5 to 15	16 to 19	20 to 29	30 to 59	60 Plus	Total	%
Pedal Cyclist	0	0	1	0	0	0	0	**1**	5
Car Driver	0	0	0	0	6	7	2	**15**	79
Car Passenger	0	0	0	0	1	2	0	**3**	16
TOTAL	**0**	**0**	**1**	**0**	**7**	**9**	**2**	**19**	
%	0	0	5	0	37	47	11		

Number of Casualties with unknown age: 0

VEHICLES INVOLVED BY TYPE AND AGE OF DRIVER

	1 to 15	16 to 19	20 to 29	30 to 59	60 Plus	Unknown	Total	%
Pedal Cycle	1	0	0	0	0	0	**1**	3
Car	0	0	8	10	3	1	**22**	73
Goods < 3.5T	0	0	1	1	0	1	**3**	10
Goods > 3.5T	0	0	0	2	1	0	**3**	10
Other/Unknown	0	0	0	1	0	0	**1**	3
TOTAL	**1**	**0**	**9**	**14**	**4**	**2**	**30**	
%	3	0	30	47	13	7		

VEHICLE MANOEUVRES

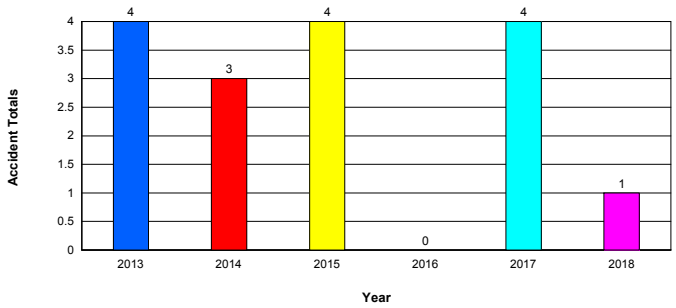
	Number	%
CHANGING LANE TO RIGHT	1	3
GOING AHEAD LEFT HAND BEND	1	3
GOING AHEAD OTHER	10	33
GOING AHEAD RIGHT HAND BEND	1	3
STARTING	1	3
STOPPING	10	33
TURNING RIGHT	1	3
WAITING TO GO AHEAD BUT HELD UP	5	17
TOTAL	**30**	

BREATH TEST

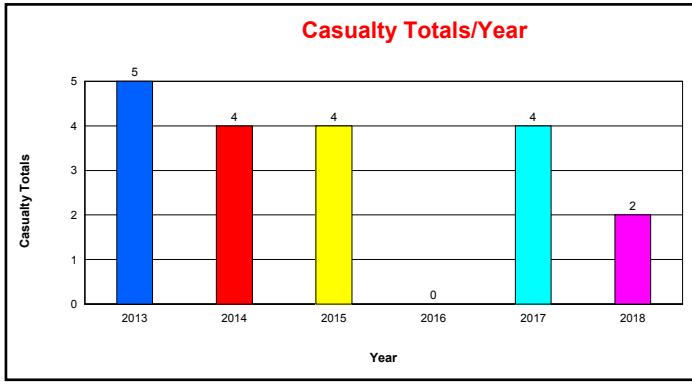
	Number	%
POSITIVE	3	10
NEGATIVE	15	50
NOT REQUESTED	6	20
DRIVER NOT CONTACTED	6	20
TOTAL	**30**	

Birchwood Way 5yr Collision Data to July 2018

Accident Totals/Year

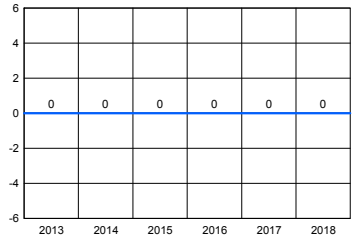


Casualty Totals/Year

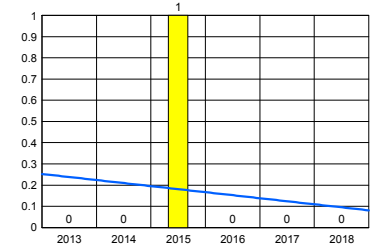


Casualty Data

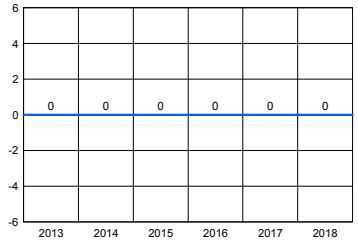
Pedestrians



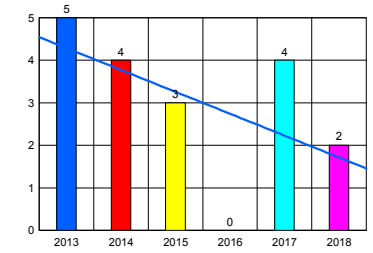
Pedal Cyclists



Motor Cyclists



Car Occupants



Acc	2013	2014	2015	2016	2017	2018	Total
Fatal	0	0	0	0	0	0	0
Serious	0	0	1	0	0	0	1
Slight	4	3	3	0	4	1	15
Damage	0	0	0	0	0	0	0
Total	4	3	4	0	4	1	16

Cas	2013	2014	2015	2016	2017	2018	Total
Fatal	0	0	0	0	0	0	0
Serious	0	0	1	0	0	0	1
Slight	5	4	3	0	4	2	18
Total	5	4	4	0	4	2	19

Birchwood Way 5yr Collision Data to July 2018

		PEDESTRIANS	PEDAL CYCLIST	PTW USER	HACKNEY PRI/HIRE	CAR DRIVER	CAR PASS	GOODS OCCUPANT	PSV	OTHER VEH OCCUPANT	TOTAL
0 to 4	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	0	0	0	0	0	**0**
	TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5 to 15	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	1	0	0	0	0	0	0	0	**1**
	Slight	0	0	0	0	0	0	0	0	0	**0**
	TOTAL	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
16 to 19	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	0	0	0	0	0	**0**
	TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
20 to 29	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	6	1	0	0	0	**7**
	TOTAL	**0**	**0**	**0**	**0**	**6**	**1**	**0**	**0**	**0**	**7**
30 to 59	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	7	2	0	0	0	**9**
	TOTAL	**0**	**0**	**0**	**0**	**7**	**2**	**0**	**0**	**0**	**9**
60+	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	2	0	0	0	0	**2**
	TOTAL	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**
All Ages	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	1	0	0	0	0	0	0	0	**1**
	Slight	0	0	0	0	15	3	0	0	0	**18**
	TOTAL	**0**	**1**	**0**	**0**	**15**	**3**	**0**	**0**	**0**	**19**

Number of Casualties with unknown age: 0

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Appendix 2.2 – Cumulative Development Assessment

HS2 Phase 1 Compund Summary

Compound Type	Location	Estimated Duration (Years.Months)	Estimated duration with busy vehicle movements (Months)	Average Daily Combined 2-way vehicle trips during busy period and within peak month of activity	
				Cars/LGV	HGV
				Range High	Range High
Main	Colne Valley viaduct	5	51	120	20
Satellite	Colne Valley viaduct and south embankment	6.6	11	140	60
Satellite	Ickenham auto-transformer feeder station				
Satellite	Colne Valley viaduct	3.6	40	20	20
Satellite	Colne Valley viaduct storage	3.9	41	60	30
Satellite	Colne Valley viaduct jetty storage	2.9	29	20	20
Satellite	Colne Valley viaduct laydown	2.3	26	20	20
Satellite	Colne Valley viaduct north launch	3.6	14	280	20
Satellite	Colne Valley north embankment	3.6	23	60	60
Main	Chiltern tunnel	8	5	440	920
Satellite	Chiltern tunnel south portal (rail systems)	8			
Satellite	Chalfont St Peter Vent Shaft	7	8	100	20
Satellite	Chalfont St Giles Vent Shaft	7	12	100	40
Satellite	Amersham Vent Shaft	6.6	6	100	100
Satellite	Little Missenden vent shaft	6.3	10	90	60
Satellite	Chiltern tunnel north portal (civil engineering)	4.9	9	110	40
Satellite	Chiltern tunnel north portal (railway systems)	2			
Satellite	South Heath green tunnel (south)	7.9	3.5	190	60
Main	Chilterns (rail systems)				
Satellite	South Heath green tunnel (north)	3.9	13	100	50
Satellite	South Heath tunnel north portal (rail systems)	1.3			
Main	Small Dean viaduct	4.3	42	150	20
Satellite	Leather Lane overbridge	1.3	14	130	10
Satellite	Bowood Lane overbridge	2	18	130	30
Satellite	Wendover Dean viaduct	2	19	50	30
Satellite	Rocky Lane underbridge/Wendover auto-transformer station	6.9	19	60	10
Satellite	Small Dean viaduct launch	2	22	100	30
Satellite	Wendover Green (south)	2.9	32	100	50
Satellite	Wendover green tunnel (south portal) (rail systems)	1.3			
Satellite	Wendover green tunnel (north)	2.6	26	90	50
Satellite	B4009 Nash Lee Road overbridge	7	40	110	90
Satellite	Risborough Road	3	19	200	20
Satellite	Princes Risborough to Aylesbury rail overbridge	2.6	8	120	20
Satellite	Princes Risborough to Aylesbury rail overbridge (west) (rail systems)	0.9			
Satellite	Princes Risborough to Aylesbury rail overbridge (east) (rail systems)				
Satellite	A418 Oxford Road overbridge and Sedrup express feeder auto-transformer station	6.3	13	20	730
Satellite	Thame Valley viaduct	2.3	21	160	50
Main	A41 Bicester Road Embankment/Putlowes auto-transformer station	7	22	260	20
Satellite	A41 Bicester Road overbridge	2.9	16	20	380
Satellite	Station Road overbridge	2.9	16	200	20
Satellite	Woodlands Cutting/Quainton auto-transformer feeder station	7	13	200	60
Main	West Street overbridge	6.9	38	1240	1240
Main	Calvert railhead	8			
Satellite	IMD reception sidings	2			
Satellite	School Hill green overbridge	7.3	37	320	40
Satellite	Aylesbury Link Line	1.9			
Satellite	Chetwode cutting	2.9	14	190	40
Satellite	Chetwode auto-transformer station	1.6			
Satellite	A4421 Buckingham Road overbridge	3	11	140	10
Satellite	A421 London Road overbridge	1.6	7	130	20
Satellite	Featherbed Lane overbridge	5.3	14	130	40
Satellite	Tibbetts Farm express feeder auto transformer station				
Satellite	Westbury viaduct	2	19	120	20
Satellite	A422 Brackley Road overbridge	3	17	50	1430
Satellite	Turweston Green overbridge	1	11	60	10
Main	Brackley south cutting	5.9	32	270	40
Satellite	Whitfield auto-transformer station				
Satellite	Radstone Road overbridge	2.6	1	290	20
Satellite	Greatworth green tunnel	6.6	54	200	120
Main	Chipping Warden green tunnel	5	26	200	1300
Satellite	Thorpe Mandeville cutting,	2	19	60	10
Satellite	Greatworth green tunnel north portal (rail systems)	1.6	9	10	0
Satellite	Lower Thorpe viaduct	2	2	180	1240
Satellite	Culworth cutting	2	15	230	30
Satellite	Danes Moor Auto-transformer site (rail systems)	1.6			
Satellite	Chipping Warden tunnel south portal (rail systems)	1.9	9	30	20
Satellite	Chipping Warden tunnel north portal (rail systems)	2	13	100	20
Satellite	Claydon Road overbridge	2.9	15	160	30
Satellite	Banbury Road Green overbridge and Boddington auto-transformer station	5.9	14	100	30
Main	Oxford Canal North Embankment Main Compound	5	39	245	60
Main	Long Itchington Wood Tunnel Main Compound	3.6	48	180	60
Satellite	Lower Radbourne Farm Accommodation Overbridge Compound	2.5	21	65	30
Satellite	A423 Banbury Road Overbridge (North) Compound	1	11	65	20
Satellite	Windmill Lane Farm Overbridge Compound	4	25	65	30
Satellite	B4451 Kineton Road Overbridge Compound	1	12	65	20
Satellite	River Itchen Viaduct Compound	3	34	85	30
Satellite	Long Itchington Wood Green Tunnel Compound	2.6	27	125	30
Satellite	Welsh Road Underbridge Compound	3.6	30	40	30
Main	Fosse Way Main Compound	5	23	170	55

HS2 Phase 1 Compund Summary

Compound Type	Location	Estimated Duration (Years.Months)	Estimated duration with busy vehicle movements (Months)	Average Daily Combined 2-way vehicle trips during busy period and within peak month of activity	
				Cars/LGV	HGV
				Range High	Range High
Road Head	Fosse Way	2.6	20	0	220
Satellite	Hunningham Road Overbridge Compound	2	13	65	50
Satellite	Cubbington Retaining Wall Compound	2	22	190	90
Satellite	Coventry Road Overbridge Compound	1	12	40	20
Satellite	A445 Leicester Lane Overbridge Compound	1	10	35	30
Satellite	Stoneleigh Park Retaining Wall Compound	2	24	215	130
Main	A46 Kenilworth Bypass Overbridge Main Compound	5.6	23	190	55
Satellite	Finham Brook Viaduct Compound	2	13	60	50
Satellite	Coventry-Leamington Spa Line Overbridge Compound (south-west)	4	14	170	110
Satellite	Crackley Lane Overbridge Compound	3	37	85	60
Satellite	Cromwell Lane Compound	3	36	165	75
Satellite	B4101 Waste Lane Overbridge Compound	1.6	14	35	30
Road Head	A46 Kenilworth Bypass southbound	3	36	0	365
Road Head	A429 Kenilworth Road	3	35	0	350
Road Head	B4101 Waste Lane	1	9	0	65
Main	M6 Motorway Main Compound	5	27	290	185
Satellite	M42 Coleshill Box Structure Compound	5	20	125	115
Satellite	M42 Coleshill North Viaduct Compound	2.6	19	75	90
Satellite	M42 - M6 Motorway Link Viaduct Compound (Central)	2	23	50	45
Satellite	Attleboro' Flyover Compound	3.6	14	130	120
Satellite	Water Orton Viaduct 1 and 3 (M42 North) Compound	2	21	120	85
Satellite	Water Orton Viaduct 1 and 3 (Central) Compound	3.5	27	195	130
Satellite	Curdworth viaduct (central)	2.6	8	140	85
Satellite	Faraday Avenue underbridge	1.6		80	60
Main	A4097 Kingsbury Road overbridge	5	19	260	165
Railhead/Main Compound	Kingsbury Road railhead	4	5	465	10
Satellite	Cuttle Mill mid-point auto transformer station (MPATS)	1.6	1	10	5
Satellite	Cuttle Mill underbridge	3	11	75	70
Satellite	Bodymoor Heath Lane overbridge	4	10	75	65
Satellite	A4091 Tamworth Road overbridge	3		50	50
Satellite	Church Lane overbridge	4.6	11	85	70
Road Head	Faraday Avenue	4.6	54	0	1170
Satellite	Drayton Bassett viaduct compound	2	22	45	45
Satellite	Drayton Lane overbridge compound	1	8	35	40
Satellite	Drayton Lane auto transformer station	1	10	70	5
Satellite	A453 Sutton Road overbridge compound	3	14	50	60
Roadhead	A453 Sutton Road	3	20	655	1105
Satellite	Brockhurst Lane underbridge compound	3.6	10	50	85
Satellite	Black Brook viaduct compound	4.6	17	165	135
Roadhead	Watling Street	3	17	0	1000
Satellite	Flats Lane overbridge compound	1.6	9	50	45
Satellite	Flats Lane auto-transformer station	1	10	70	5
Satellite	A51 Tamworth Road overbridge compound	3.5	17	50	50
Satellite	Lichfield Road underbridge compound	1.6	4	35	40
Satellite	Cappers Lane viaduct (north) compound	2	23	50	35
Satellite	Cappers Lane auto-transformer compound	1	11	70	5
Main	Cappers Lane main compound	6	1	210	105
Sidings	Streethay construction sidings	5	5	0	1550
Satellite	Streethay viaduct (north-west) compound	2	21	50	45
Road Head	Nanscawen Road	3	36	0	250
Satellite	Curborough flyover compound	7	13	150	135
Satellite	Wood End Lane	3	36	0	1250
Satellite	Lyntus auto-transformer station compound	1	11	70	5
Satellite	Trent and Mersey Canal west viaduct (south-west) compound	1	13	50	35
Main	A515 Lichfield Road main compound	5	26	220	100
Main	Handsacre (A515) rail systems main compound	6	25	125	10
Satellite	Shaw Lane Rail systems compound	2	25	90	5

Average	126	162
90th Percentile	242	377

Manual count points

Site number: 90231

Site details

Region	North West
Local authority	Warrington
Road name	A574
Road classification	'A' road
Managed by	Local authority
Road type	Major
Start junction	Moss Gate
End junction	M62
Link length	1.80km (1.12 miles)

Location

Easting, northing	366700, 393000
Latitude, longitude	53.43272400, -2.50267640

Annual Average daily flow

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2019	Estimated using previous year's AADF on this link	0	91	19965	12	2984	1161	24214
2018	Estimated using previous year's AADF on this link	0	85	19921	12	2994	1158	24171

Download data

Data disclaimer

Quality flags in data downloads

Manual count points

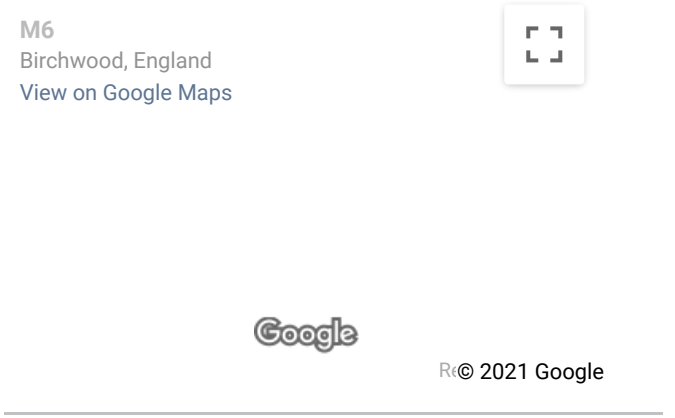
Site number: 6028

Site details

Region	North West
Local authority	Warrington
Road name	M6
Road classification	Motorway
Managed by	Highways England
Road type	Major
Start junction	21 spur
End junction	21A
Link length	3.90km (2.42 miles)

Location

Easting, northing	364400, 390840
Latitude, longitude	53.41315900, -2.53704810



Annual Average daily flow

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2020	Automatic counter	0	202	72849	144	23239	20852	117286
2019	Manual count	0	364	113288	268	28137	22937	164994
2018	Automatic counter	0	360	111927	315	24616	22216	159435
2017	Manual count	0	380	118514	329	25078	22997	167297
2016	Manual count	0	454	121726	277	22375	23454	168286

Manual count points

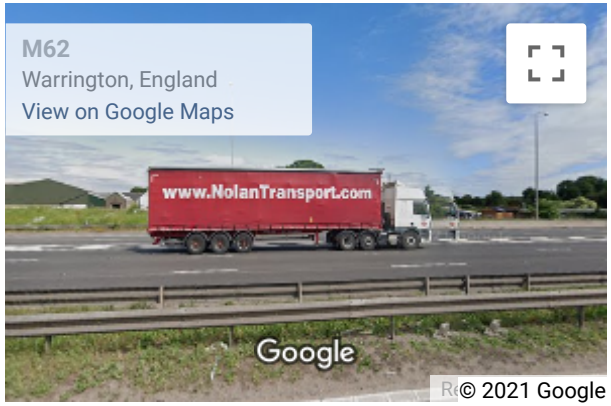
Site number: 6051

Site details

Region	North West
Local authority	Warrington
Road name	M62
Road classification	Motorway
Managed by	Highways England
Road type	Major
Start junction	9
End junction	10
Link length	2.80km (1.74 miles)

Location

Easting, northing	362100, 392040
Latitude, longitude	53.42378400, -2.57179320



Annual Average daily flow

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2020	Manual count	0	81	59920	18	17418	12912	90349
2019	Manual count	0	218	75390	265	18490	13854	108216
2018	Estimated using previous year's AADF on this link	0	195	84918	226	18957	14536	118832
2017	Estimated using previous year's AADF on this link	0	196	85648	226	18376	14331	118776
2016	Manual count	0	212	85741	231	16948	13764	116895

Manual count points

Site number: 36027

Site details

Region	North West
Local authority	Warrington
Road name	M6
Road classification	Motorway
Managed by	Highways England
Road type	Major
Start junction	21A (Junction 10 M62)
End junction	22 (A579 Junction - North of Junction 10 M62)
Link length	2.50km (1.55 miles)

Location

Easting, northing	362000, 393300
Latitude, longitude	53.43510100, -2.57345050

Annual Average daily flow

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2020	Manual count	0	231	53550	27	17985	13675	85468
2019	Automatic counter	0	343	78882	309	18769	14666	112970
2018	Automatic counter	0	357	78119	310	18889	14682	112358
2017	Automatic counter	0	365	80011	314	18594	14708	113992
2016	Estimated using previous year's AADF on this link	0	406	82602	331	17686	14580	115605
2015	Manual count	0	401	81933	338	16654	14221	113547

Manual count points

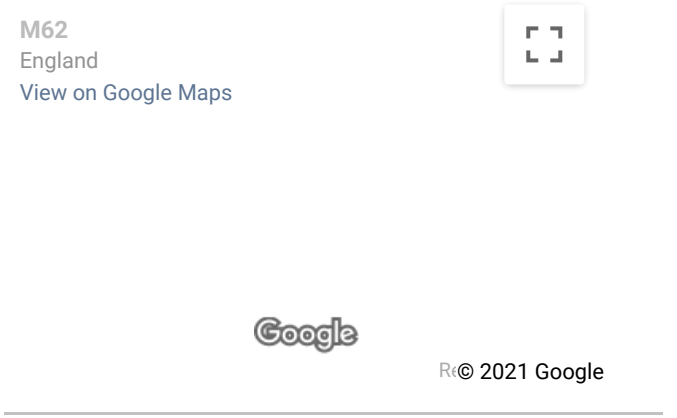
Site number: 17800

Site details

Region	North West
Local authority	Warrington
Road name	M62
Road classification	Motorway
Managed by	Highways England
Road type	Major
Start junction	11
End junction	LA Boundary
Link length	2.10km (1.30 miles)

Location

Easting, northing	368707, 393606
Latitude, longitude	53.43829400, -2.47253000



Annual Average daily flow

Year	Count method	Pedal cycles	Two wheeled motor vehicles	Cars and taxis	Buses and coaches	Light goods vehicles	Heavy goods vehicles	All motor vehicles
2020	Manual count	0	84	56423	19	20493	14861	91880
2019	Manual count	0	187	75701	162	17573	13246	106869
2018	Estimated using previous year's AADF on this link	0	228	93833	128	19481	14813	128485
2017	Manual count	0	230	94640	128	18883	14591	128472
2016	Estimated using previous year's AADF on this link	0	325	90726	159	20113	15285	126609

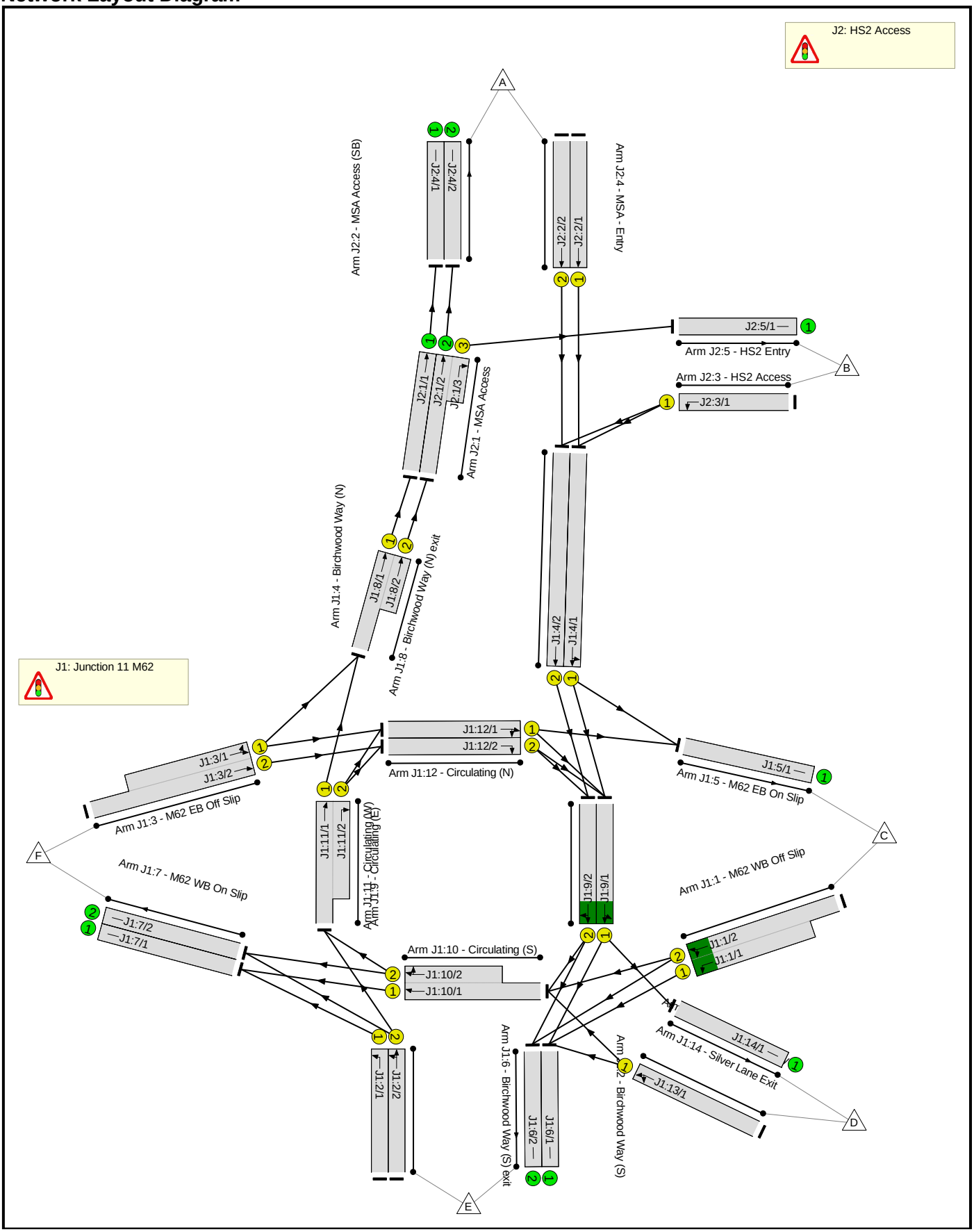
Full Input Data And Results

User and Project Details

Project:	**Warrington MSA**
Title:	**Junction 11 M62**
Location:	
Date Started:	14.12.20
Model Purpose:	HS2 Traffic Assessment
Flow Details:	2018 Survey + Growth (AA) + 50% Comm Dev + MSA + 100% HS2
Additional detail:	
File name:	No Growth + HS2.lsg3x
Author:	JW
Company:	i-Transport
Address:	Manchester

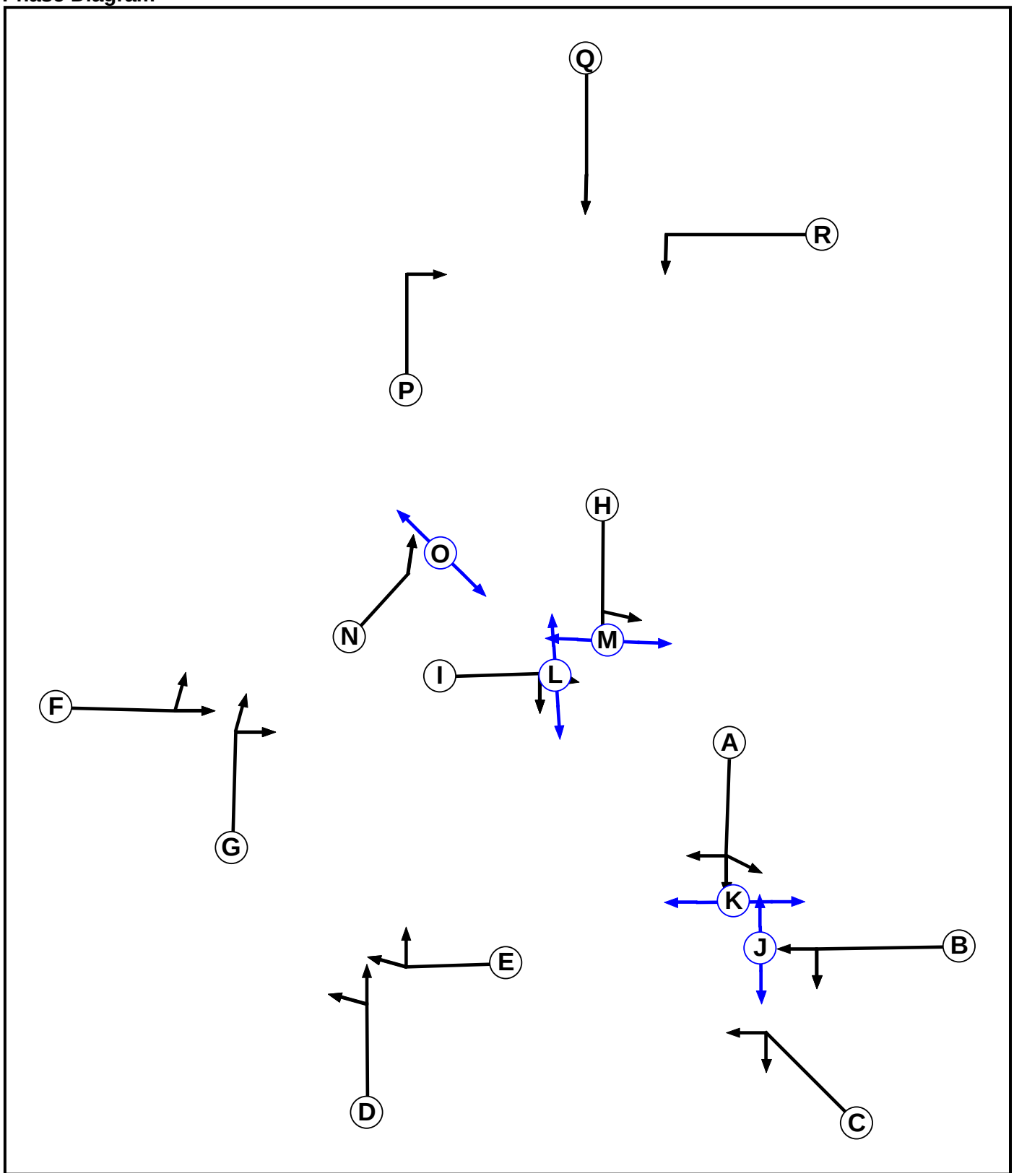
Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	1		7	7
D	Traffic	2		7	7
E	Traffic	2		7	7
F	Traffic	3		7	7
G	Traffic	3		7	7
H	Traffic	4		7	1
I	Traffic	4		7	2
J	Pedestrian	1		4	4
K	Pedestrian	1		5	5
L	Pedestrian	4		6	6
M	Pedestrian	4		5	5
N	Traffic	5		7	7
O	Pedestrian	5		5	5
P	Traffic	6		7	7
Q	Traffic	6		7	7
R	Traffic	6		7	7

Full Input Data And Results

Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
A		5	9	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-
B	5		8	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-
C	5	5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D	-	-	-		5	-	-	-	-	-	-	-	-	-	-	-	-	-
E	-	-	-	5		-	-	-	-	-	-	-	-	-	-	-	-	-
F	-	-	-	-	-		5	-	-	-	-	-	-	-	-	-	-	-
G	-	-	-	-	-	5		-	-	-	-	-	-	-	-	-	-	-
H	-	-	-	-	-	-	-		5	-	-	-	5	-	-	-	-	-
I	-	-	-	-	-	-	-	5		-	-	5	-	-	-	-	-	-
J	-	8	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-
K	9	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-
L	-	-	-	-	-	-	-	-	11	-	-		-	-	-	-	-	-
M	-	-	-	-	-	-	-	10	-	-	-	-		-	-	-	-	-
N	-	-	-	-	-	-	-	-	-	-	-	-	-		5	-	-	-
O	-	-	-	-	-	-	-	-	-	-	-	-	-	9		-	-	-
P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		7	-
Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7		7
R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	

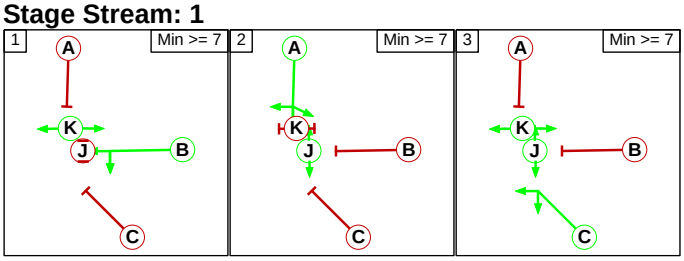
Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	B K
1	2	A J
1	3	C J K
2	1	D
2	2	E
3	1	F
3	2	G
4	1	H L
4	2	I M
5	1	N
5	2	O
6	1	Q
6	2	P R

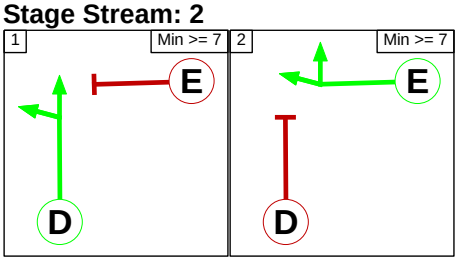
Full Input Data And Results

Stage Diagram

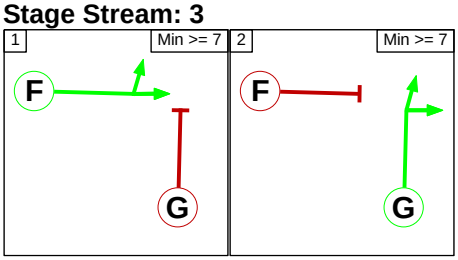
Stage Stream: 1



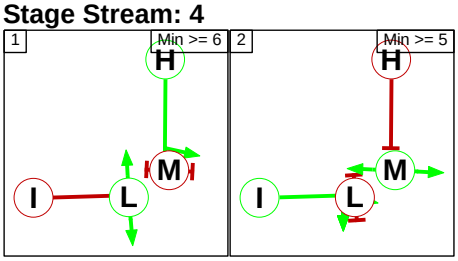
Stage Stream: 2



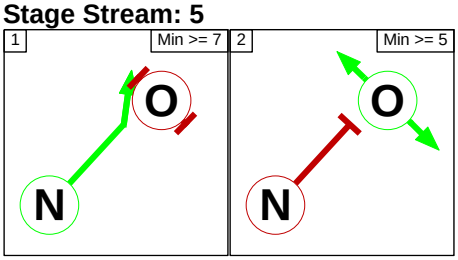
Stage Stream: 3



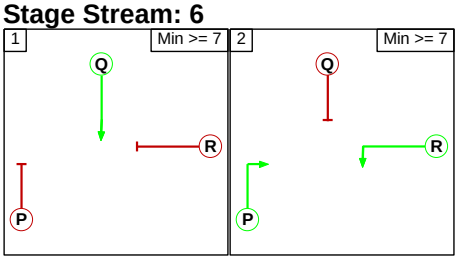
Stage Stream: 4



Stage Stream: 5



Stage Stream: 6



Full Input Data And Results

Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	B	Losing	4	4
2	1	A	Losing	3	3

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	H	Losing	6	6
2	1	I	Losing	5	5

Stage Stream: 5

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 6

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

Stage Stream: 1

		To Stage		
		1	2	3
From Stage	1		9	8
	2	8		9
	3	8	9	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		5
	2	5	

Full Input Data And Results

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		5
	2	5	

Stage Stream: 4

	To Stage		
		1	2
From Stage	1		11
	2	10	

Stage Stream: 5

	To Stage		
		1	2
From Stage	1		5
	2	9	

Stage Stream: 6

	To Stage		
		1	2
From Stage	1		7
	2	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: J1: Junction 11 M62
There are no Opposed Lanes in this Junction

Junction: J2: HS2 Access
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Full Input Data And Results

Junction: J1: Junction 11 M62												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
J1:1/1 (M62 WB Off Slip)	U	B	1	3	31.3	User	1982	-	-	-	-	-
J1:1/2 (M62 WB Off Slip)	U	B	1	3	60.0	User	2126	-	-	-	-	-
J1:2/1 (Birchwood Way (S))	U	D	1	3	60.0	User	2016	-	-	-	-	-
J1:2/2 (Birchwood Way (S))	U	D	1	3	60.0	User	2154	-	-	-	-	-
J1:3/1 (M62 EB Off Slip)	U	F	1	3	11.3	User	1921	-	-	-	-	-
J1:3/2 (M62 EB Off Slip)	U	F	1	3	60.0	User	2088	-	-	-	-	-
J1:4/1 (Birchwood Way (N))	U	H	1	3	12.2	User	2037	-	-	-	-	-
J1:4/2 (Birchwood Way (N))	U	H	1	3	12.2	User	2181	-	-	-	-	-
J1:8/1 (Birchwood Way (N) exit)	U	N	1	3	20.0	User	2073	-	-	-	-	-
J1:8/2 (Birchwood Way (N) exit)	U	N	2	3	5.0	User	2073	-	-	-	-	-
J1:9/1 (Circulating (E))	U	A	1	3	17.0	User	2105	-	-	-	-	-
J1:9/2 (Circulating (E))	U	A	1	3	17.0	User	2226	-	-	-	-	-
J1:10/1 (Circulating (S))	U	E	1	3	8.3	User	2024	-	-	-	-	-
J1:10/2 (Circulating (S))	U	E	1	3	8.7	User	2163	-	-	-	-	-
J1:11/1 (Circulating (W))	U	G	1	3	18.4	User	2049	-	-	-	-	-
J1:11/2 (Circulating (W))	U	G	1	3	12.2	User	2163	-	-	-	-	-
J1:12/1 (Circulating (N))	U	I	1	3	5.7	User	2100	-	-	-	-	-

J1:12/2 (Circulating (N))	U	I	1	3	8.2	User	2238	-	-	-	-	-
J1:13/1 (Silver Lane Entry)	U	C	2	3	60.0	Geom	-	4.68	0.00	Y	Arm J1:6 Left	68.65
											Arm J1:10 Ahead	162.60

Junction: J2: HS2 Access

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
J2:1/2 (MSA Access)	U		2	3	7.8	Geom	-	3.65	0.00	N	Arm J2:4 Ahead	Inf
J2:1/3 (MSA Access)	U	P	2	3	4.0	Geom	-	3.65	0.00	N	Arm J2:5 Right	15.00
J2:2/1 (MSA Access (SB))	U	Q	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J1:4 Ahead	Inf
J2:2/2 (MSA Access (SB))	U	Q	2	3	60.0	Geom	-	3.65	0.00	N	Arm J1:4 Ahead	Inf
J2:3/1 (HS2 Access)	U	R	2	3	60.0	Geom	-	4.50	0.00	Y	Arm J1:4 Left	15.00

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2018 Base + Comm Dev + MSA + HS2 AM1'	07:00	08:00	01:00	
2: '2018 Base + Comm Dev + MSA + HS2 AM2'	07:30	08:30	01:00	
3: '2018 Base + Comm Dev + MSA + HS2 PM1'	16:00	17:00	01:00	
4: '2018 Base + Comm Dev + MSA + HS2 PM2'	16:30	17:30	01:00	

Scenario 1: '2018 Base + Comm Dev + MSA + 100% HS2 AM1' (FG1: '2018 Base + Comm Dev + MSA + HS2

Full Input Data And Results
AM1', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	0	242	0	52	221	515
	B	0	0	8	0	0	28	36
	C	252	14	12	14	884	0	1176
	D	0	0	8	0	0	28	36
	E	34	2	1093	2	0	414	1545
	F	232	52	0	52	408	8	752
	Tot.	518	68	1363	68	1344	699	4060

Lane Saturation Flows

Junction: J1: Junction 11 M62

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:13/1 (Silver Lane Entry)	4.68	0.00	Y	Arm J1:6 Left	68.65	0.0 %	2064	2064
				Arm J1:10 Ahead	162.60	100.0 %		

Junction: J2: HS2 Access

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/2 (MSA Access)	3.65	0.00	N	Arm J2:4 Ahead	Inf	0.0 %	2120	2120
J2:1/3 (MSA Access)	3.65	0.00	N	Arm J2:5 Right	15.00	100.0 %	1927	1927
J2:2/1 (MSA Access (SB))	3.65	0.00	Y	Arm J1:4 Ahead	Inf	100.0 %	1980	1980
J2:2/2 (MSA Access (SB))	3.65	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2120	2120
J2:3/1 (HS2 Access)	4.50	0.00	Y	Arm J1:4 Left	15.00	100.0 %	1877	1877

Scenario 2: '2018 Base + Comm Dev + MSA + 100% HS2 AM2' (FG2: '2018 Base + Comm Dev + MSA + HS2

Full Input Data And Results
AM2', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	0	263	0	68	229	560
	B	0	0	8	0	0	28	36
	C	260	14	13	14	983	0	1284
	D	0	0	8	0	0	28	36
	E	42	2	990	2	0	422	1458
	F	259	52	0	52	602	39	1004
	Tot.	561	68	1282	68	1653	746	4378

Lane Saturation Flows

Junction: J1: Junction 11 M62

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:13/1 (Silver Lane Entry)	4.68	0.00	Y	Arm J1:6 Left	68.65	0.0 %	2064	2064
				Arm J1:10 Ahead	162.60	100.0 %		

Junction: J2: HS2 Access

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/2 (MSA Access)	3.65	0.00	N	Arm J2:4 Ahead	Inf	0.0 %	2120	2120
J2:1/3 (MSA Access)	3.65	0.00	N	Arm J2:5 Right	15.00	100.0 %	1927	1927
J2:2/1 (MSA Access (SB))	3.65	0.00	Y	Arm J1:4 Ahead	Inf	100.0 %	1980	1980
J2:2/2 (MSA Access (SB))	3.65	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2120	2120
J2:3/1 (HS2 Access)	4.50	0.00	Y	Arm J1:4 Left	15.00	100.0 %	1877	1877

Scenario 3: '2018 Base + Comm Dev + MSA + 100% HS2 PM1' (FG3: '2018 Base + Comm Dev + MSA + HS2

Full Input Data And Results
PM1', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	0	228	0	41	282	551
	B	0	0	14	0	2	52	68
	C	269	8	18	8	466	0	769
	D	0	0	14	0	2	52	68
	E	53	0	912	0	0	1393	2358
	F	223	28	0	28	329	25	633
	Tot.	545	36	1186	36	840	1804	4447

Lane Saturation Flows

Junction: J1: Junction 11 M62

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:13/1 (Silver Lane Entry)	4.68	0.00	Y	Arm J1:6 Left	68.65	2.9 %	2063	2063
				Arm J1:10 Ahead	162.60	97.1 %		

Junction: J2: HS2 Access

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/2 (MSA Access)	3.65	0.00	N	Arm J2:4 Ahead	Inf	0.0 %	2120	2120
J2:1/3 (MSA Access)	3.65	0.00	N	Arm J2:5 Right	15.00	100.0 %	1927	1927
J2:2/1 (MSA Access (SB))	3.65	0.00	Y	Arm J1:4 Ahead	Inf	100.0 %	1980	1980
J2:2/2 (MSA Access (SB))	3.65	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2120	2120
J2:3/1 (HS2 Access)	4.50	0.00	Y	Arm J1:4 Left	15.00	100.0 %	1877	1877

Scenario 4: '2018 Base + Comm Dev + MSA + 100% HS2 PM2' (FG4: '2018 Base + Comm Dev + MSA + HS2

Full Input Data And Results
PM2', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

		Destination						
		A	B	C	D	E	F	Tot.
Origin	A	0	0	211	0	45	262	518
	B	0	0	14	0	2	52	68
	C	253	8	26	8	461	0	756
	D	0	0	14	0	2	52	68
	E	53	0	892	0	0	1499	2444
	F	210	28	0	28	312	31	609
	Tot.	516	36	1157	36	822	1896	4463

Lane Saturation Flows

Junction: J1: Junction 11 M62

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:13/1 (Silver Lane Entry)	4.68	0.00	Y	Arm J1:6 Left	68.65	2.9 %	2063	2063
				Arm J1:10 Ahead	162.60	97.1 %		

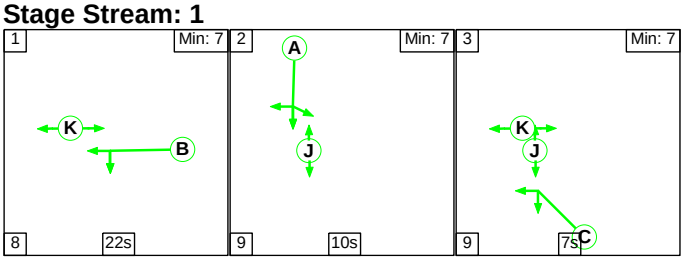
Junction: J2: HS2 Access

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J2:1/2 (MSA Access)	3.65	0.00	N	Arm J2:4 Ahead	Inf	0.0 %	2120	2120
J2:1/3 (MSA Access)	3.65	0.00	N	Arm J2:5 Right	15.00	100.0 %	1927	1927
J2:2/1 (MSA Access (SB))	3.65	0.00	Y	Arm J1:4 Ahead	Inf	100.0 %	1980	1980
J2:2/2 (MSA Access (SB))	3.65	0.00	N	Arm J1:4 Ahead	Inf	100.0 %	2120	2120
J2:3/1 (HS2 Access)	4.50	0.00	Y	Arm J1:4 Left	15.00	100.0 %	1877	1877

Scenario 1: '2018 Base + Comm Dev + MSA + 100% HS2 AM1' (FG1: '2018 Base + Comm Dev + MSA + HS2 AM1', Plan 2: 'Network Control Plan 2')

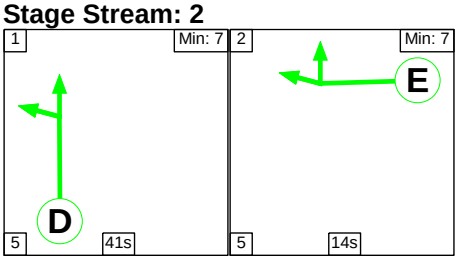
Stage Sequence Diagram

Stage Stream: 1

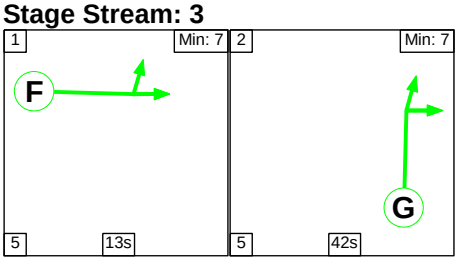


Full Input Data And Results

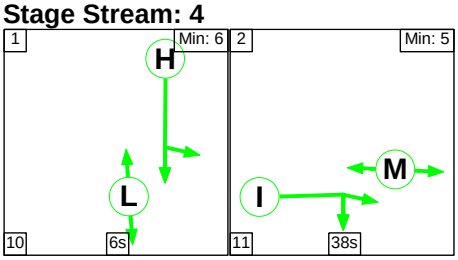
Stage Stream: 2



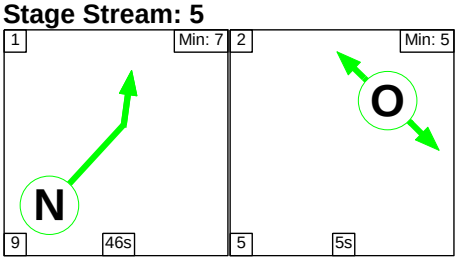
Stage Stream: 3



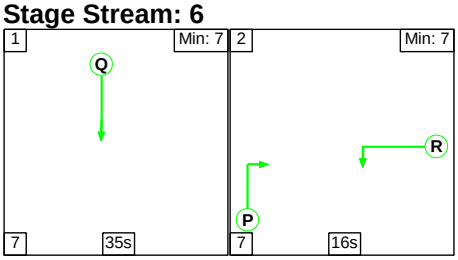
Stage Stream: 4



Stage Stream: 5



Stage Stream: 6



Stage Timings

Stage Stream: 1

Stage	1	2	3
Duration	22	10	7
Change Point	7	37	56

Stage Stream: 2

Stage	1	2
Duration	41	14
Change Point	11	57

Full Input Data And Results

Stage Stream: 3

Stage	1	2
Duration	13	42
Change Point	6	24

Stage Stream: 4

Stage	1	2
Duration	6	38
Change Point	4	20

Stage Stream: 5

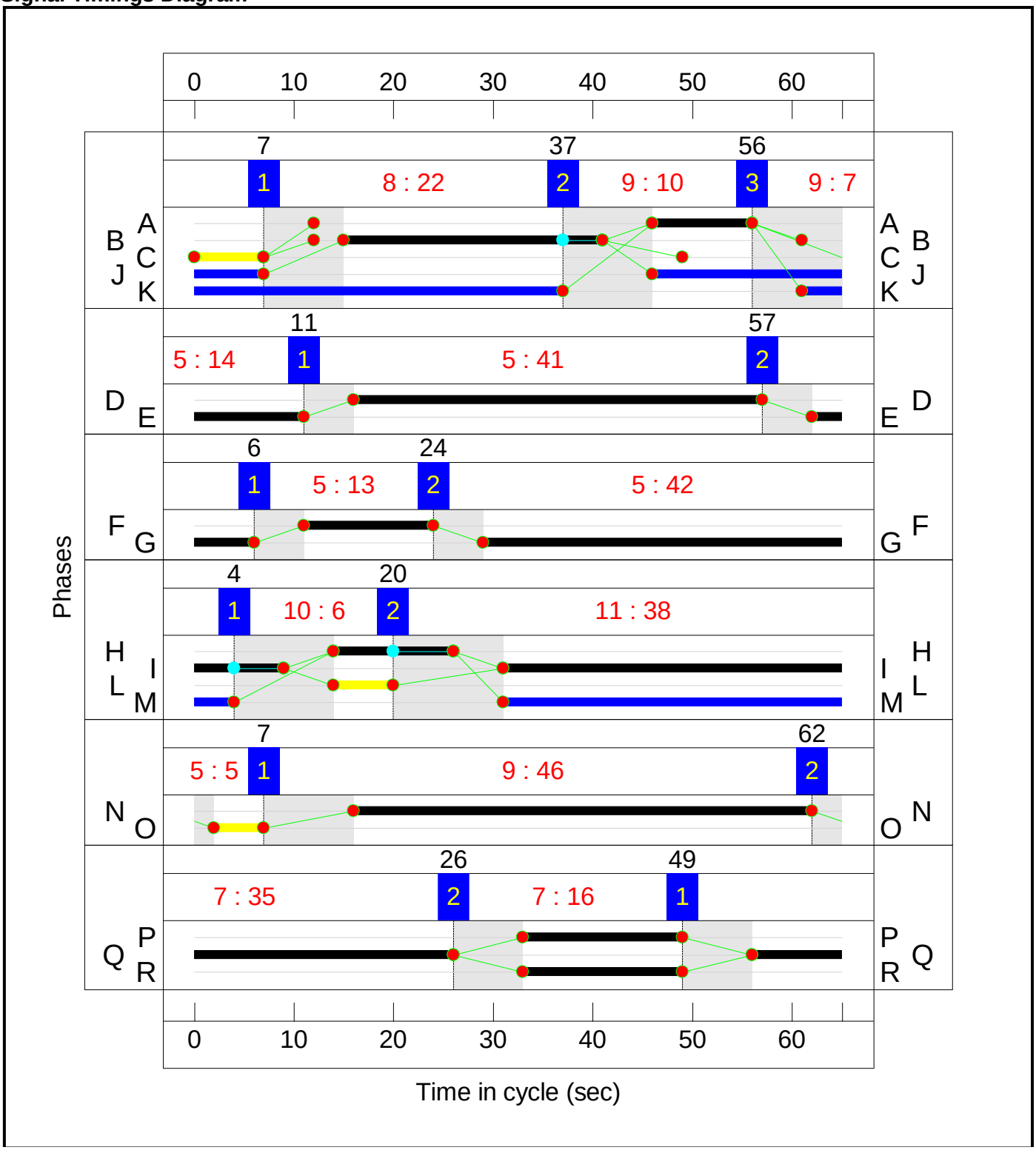
Stage	1	2
Duration	46	5
Change Point	7	62

Stage Stream: 6

Stage	1	2
Duration	35	16
Change Point	49	26

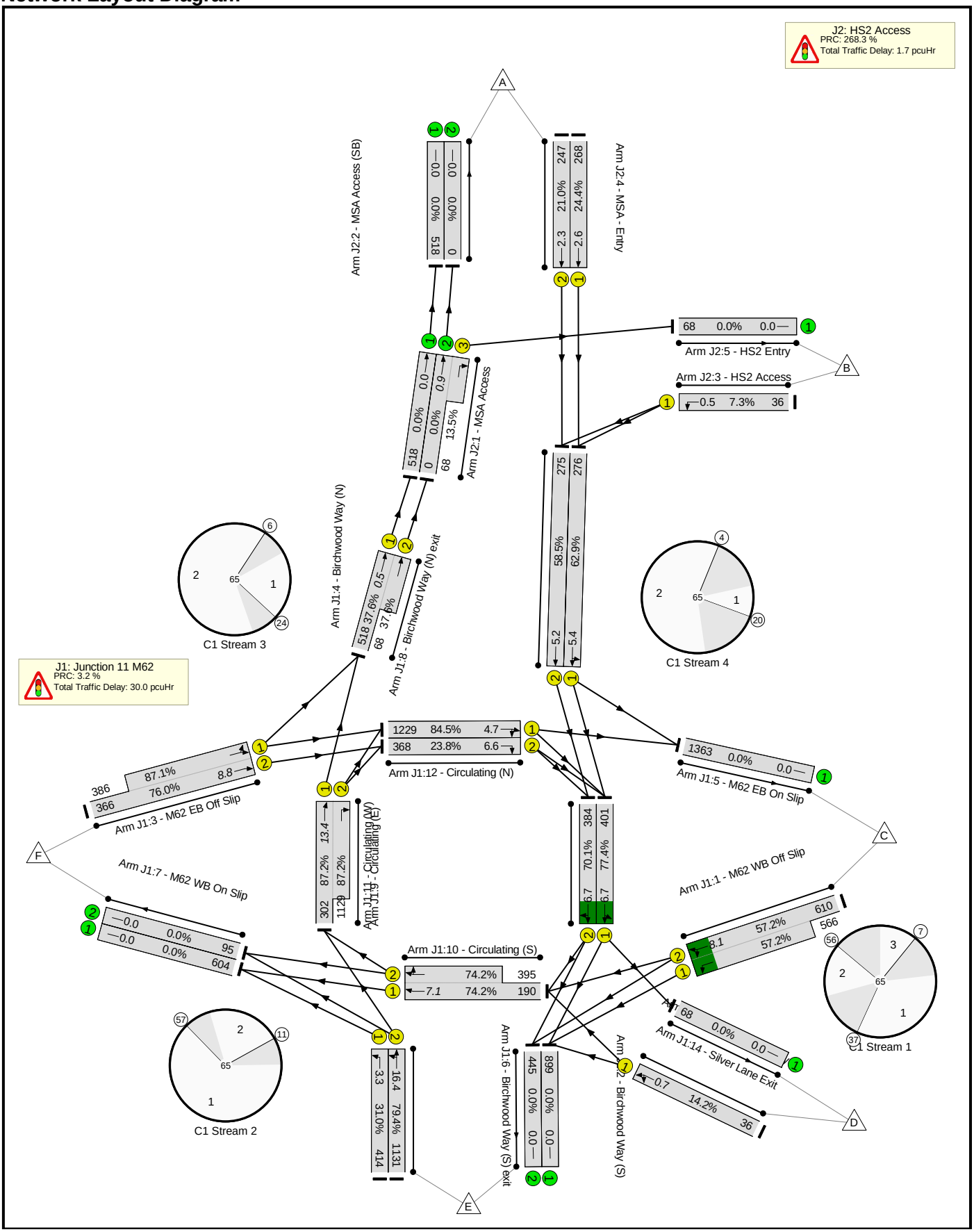
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Full Input Data And Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 11 M62	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.2%**
J1: Junction 11 M62	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.2%**
1/2+1/1	M62 WB Off Slip Left Ahead	U	1	N/A	B		1	26	-	1176	2126:1982	1066+989	57.2 : 57.2%
2/1	Birchwood Way (S) Left	U	2	N/A	D		1	41	-	414	2016	1334	31.0%
2/2	Birchwood Way (S) Left Ahead	U	2	N/A	D		1	41	-	1131	2154	1425	79.4%
3/2+3/1	M62 EB Off Slip Left Ahead	U	3	N/A	F		1	13	-	752	2088:1921	482+443	76.0 : 87.1%
4/1	Birchwood Way (N) Left Ahead	U	4	N/A	H		1	12	-	276	2037	439	62.9%
4/2	Birchwood Way (N) Ahead	U	4	N/A	H		1	12	-	275	2181	470	58.5%
8/1+8/2	Birchwood Way (N) exit Ahead	U	5	N/A	N		1	46	-	586	2073:2073	1376+181	37.6 : 37.6%
9/1	Circulating (E) Ahead Left	U	1	N/A	A		1	10	-	401	2105	518	77.4%
9/2	Circulating (E) Ahead Right	U	1	N/A	A		1	10	-	384	2226	548	70.1%
10/1+10/2	Circulating (S) Ahead Right	U	2	N/A	E		1	14	-	585	2024:2163	256+532	74.2 : 74.2%
11/1+11/2	Circulating (W) Ahead Right	U	3	N/A	G		1	42	-	1431	2049:2163	346+1294	87.2 : 87.2%
12/1	Circulating (N) Ahead Right	U	4	N/A	I		1	43	-	1229	2100	1454	84.5%
12/2	Circulating (N) Right	U	4	N/A	I		1	43	-	368	2238	1549	23.8%
13/1	Silver Lane Entry Left Ahead	U	1	N/A	C		1	7	-	36	2064	254	14.2%
J2: HS2 Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**24.4%**

Full Input Data And Results

1/2+1/3	MSA Access Ahead Right	U	N/A	N/A	- P		-	-	-	68	2120:1927	0+504	0.0 : 13.5%
2/1	MSA Access (SB) Ahead	U	6	N/A	Q		1	35	-	268	1980	1097	24.4%
2/2	MSA Access (SB) Ahead	U	6	N/A	Q		1	35	-	247	2120	1174	21.0%
3/1	HS2 Access Left	U	6	N/A	R		1	16	-	36	1877	491	7.3%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**24.5**	**7.2**	**0.0**	**31.8**	**-**	**-**	**-**	**-**
J1: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**23.2**	**6.8**	**0.0**	**30.0**	**-**	**-**	**-**	**-**
1/2+1/1	1176	1176	-	-	-	3.6	0.7	-	4.3	13.1	7.5	0.7	8.1
2/1	414	414	-	-	-	0.5	0.2	-	0.8	6.6	3.1	0.2	3.3
2/2	1131	1131	-	-	-	2.5	1.9	-	4.4	13.9	14.5	1.9	16.4
3/2+3/1	752	752	-	-	-	5.0	2.1	-	7.1	33.9	6.6	2.1	8.8
4/1	276	276	-	-	-	1.3	0.8	-	2.1	27.3	4.5	0.8	5.4
4/2	275	275	-	-	-	1.4	0.7	-	2.1	27.1	4.5	0.7	5.2
8/1+8/2	586	586	-	-	-	0.0	0.3	-	0.3	2.0	0.2	0.3	0.5
9/1	401	401	-	-	-	0.5	0.0	-	0.5	4.8	6.7	0.0	6.7
9/2	384	384	-	-	-	1.5	0.0	-	1.5	14.1	6.7	0.0	6.7
10/1+10/2	585	585	-	-	-	3.3	0.0	-	3.3	20.5	7.1	0.0	7.1
11/1+11/2	1431	1431	-	-	-	1.5	0.0	-	1.5	3.8	13.4	0.0	13.4
12/1	1229	1229	-	-	-	0.7	0.0	-	0.7	2.0	4.7	0.0	4.7
12/2	368	368	-	-	-	1.2	0.0	-	1.2	11.4	6.6	0.0	6.6
13/1	36	36	-	-	-	0.3	0.1	-	0.3	33.7	0.6	0.1	0.7
J2: HS2 Access	**-**	**-**	**0**	**0**	**0**	**1.3**	**0.4**	**0.0**	**1.7**	**-**	**-**	**-**	**-**
1/2+1/3	68	68	-	-	-	0.1	0.1	-	0.2	9.1	0.9	0.1	0.9
2/1	268	268	-	-	-	0.6	0.2	-	0.7	9.7	2.5	0.2	2.6
2/2	247	247	-	-	-	0.5	0.1	-	0.6	9.3	2.2	0.1	2.3
3/1	36	36	-	-	-	0.2	0.0	-	0.2	22.0	0.5	0.0	0.5

C1	Stream: 1 PRC for Signalled Lanes (%):	16.3	Total Delay for Signalled Lanes (pcuHr):	6.64	Cycle Time (s): 65
C1	Stream: 2 PRC for Signalled Lanes (%):	13.4	Total Delay for Signalled Lanes (pcuHr):	8.46	Cycle Time (s): 65
C1	Stream: 3 PRC for Signalled Lanes (%):	3.2	Total Delay for Signalled Lanes (pcuHr):	8.60	Cycle Time (s): 65
C1	Stream: 4 PRC for Signalled Lanes (%):	6.5	Total Delay for Signalled Lanes (pcuHr):	6.00	Cycle Time (s): 65
C1	Stream: 5 PRC for Signalled Lanes (%):	139.1	Total Delay for Signalled Lanes (pcuHr):	0.33	Cycle Time (s): 65
C1	Stream: 6 PRC for Signalled Lanes (%):	268.3	Total Delay for Signalled Lanes (pcuHr):	1.58	Cycle Time (s): 65
	PRC Over All Lanes (%):	3.2	Total Delay Over All Lanes(pcuHr):	31.77	

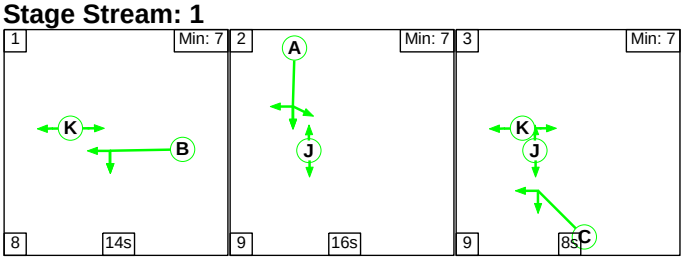
Full Input Data And Results

Full Input Data And Results

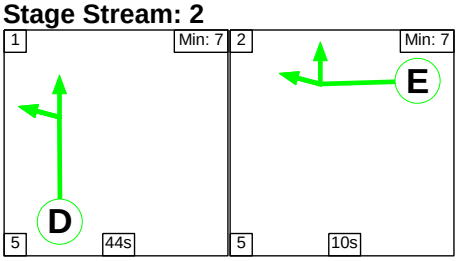
Scenario 2: '2018 Base + Comm Dev + MSA + 100% HS2 AM2' (FG2: '2018 Base + Comm Dev + MSA + HS2 AM2', Plan 2: 'Network Control Plan 2')

Stage Sequence Diagram

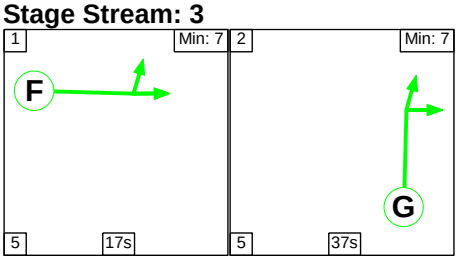
Stage Stream: 1



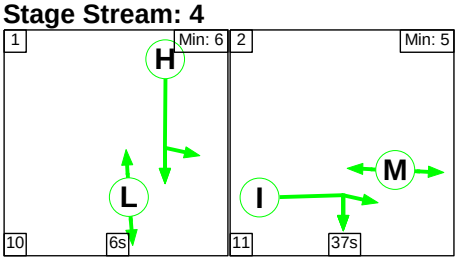
Stage Stream: 2



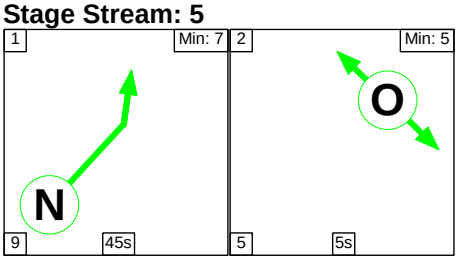
Stage Stream: 3



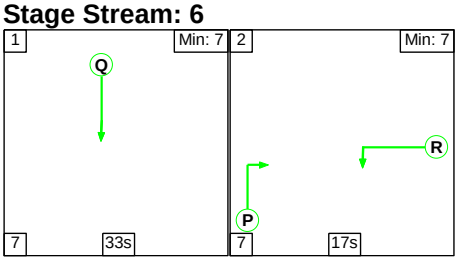
Stage Stream: 4



Stage Stream: 5



Stage Stream: 6



Full Input Data And Results

Stage Timings

Stage Stream: 1

Stage	1	2	3
Duration	14	16	8
Change Point	55	13	38

Stage Stream: 2

Stage	1	2
Duration	44	10
Change Point	12	61

Stage Stream: 3

Stage	1	2
Duration	17	37
Change Point	52	10

Stage Stream: 4

Stage	1	2
Duration	6	37
Change Point	50	2

Stage Stream: 5

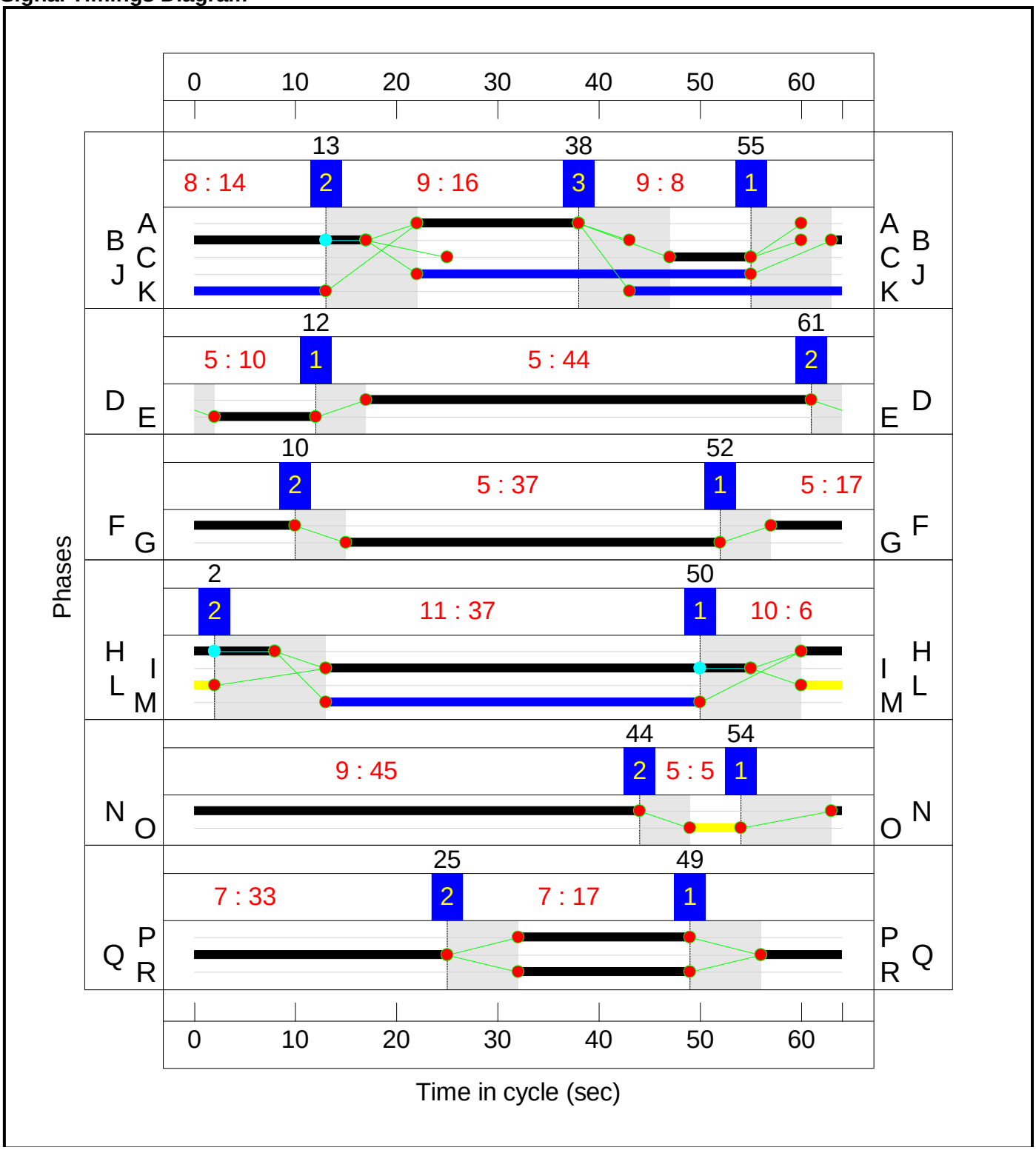
Stage	1	2
Duration	45	5
Change Point	54	44

Stage Stream: 6

Stage	1	2
Duration	33	17
Change Point	49	25

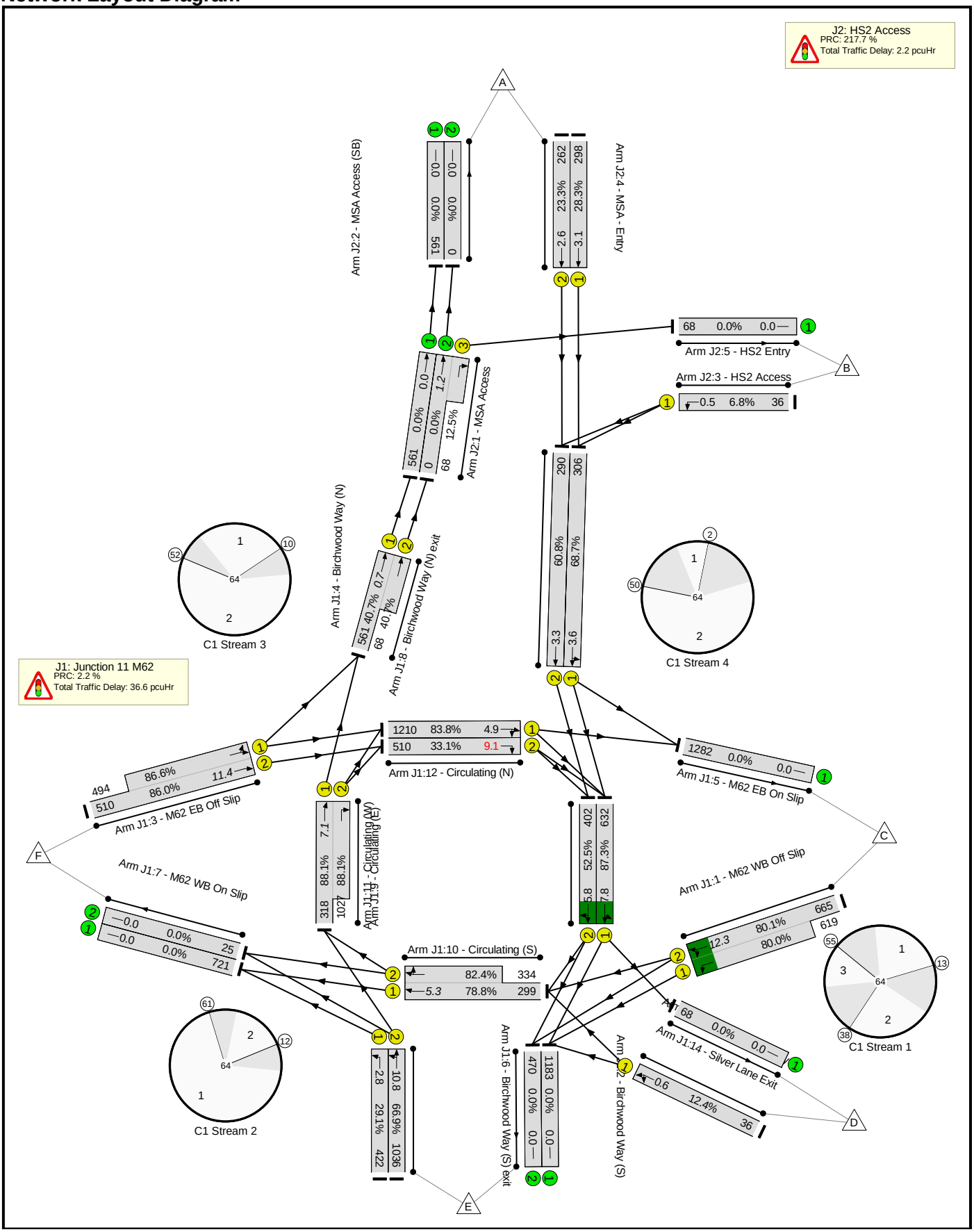
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Full Input Data And Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 11 M62	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.1%**
J1: Junction 11 M62	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.1%**
1/2+1/1	M62 WB Off Slip Left Ahead	U	1	N/A	B		1	18	-	1284	2126:1982	830+774	80.1 : 80.0%
2/1	Birchwood Way (S) Left	U	2	N/A	D		1	44	-	422	2016	1449	29.1%
2/2	Birchwood Way (S) Left Ahead	U	2	N/A	D		1	44	-	1036	2154	1548	66.9%
3/2+3/1	M62 EB Off Slip Left Ahead	U	3	N/A	F		1	17	-	1004	2088:1921	593+570	86.0 : 86.6%
4/1	Birchwood Way (N) Left Ahead	U	4	N/A	H		1	12	-	306	2037	446	68.7%
4/2	Birchwood Way (N) Ahead	U	4	N/A	H		1	12	-	290	2181	477	60.8%
8/1+8/2	Birchwood Way (N) exit Ahead	U	5	N/A	N		1	45	-	629	2073:2073	1379+167	40.7 : 40.7%
9/1	Circulating (E) Ahead Left	U	1	N/A	A		1	16	-	632	2105	724	87.3%
9/2	Circulating (E) Ahead Right	U	1	N/A	A		1	16	-	402	2226	765	52.5%
10/1+10/2	Circulating (S) Ahead Right	U	2	N/A	E		1	10	-	633	2024:2163	380+406	78.8 : 82.4%
11/1+11/2	Circulating (W) Ahead Right	U	3	N/A	G		1	37	-	1345	2049:2163	361+1166	88.1 : 88.1%
12/1	Circulating (N) Ahead Right	U	4	N/A	I		1	42	-	1210	2100	1444	83.8%
12/2	Circulating (N) Right	U	4	N/A	I		1	42	-	510	2238	1539	33.1%
13/1	Silver Lane Entry Left Ahead	U	1	N/A	C		1	8	-	36	2064	290	12.4%
J2: HS2 Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**28.3%**

Full Input Data And Results

1/2+1/3	MSA Access Ahead Right	U	N/A	N/A	- P		-	-	-	68	2120:1927	0+542	0.0 : 12.5%
2/1	MSA Access (SB) Ahead	U	6	N/A	Q		1	33	-	298	1980	1052	28.3%
2/2	MSA Access (SB) Ahead	U	6	N/A	Q		1	33	-	262	2120	1126	23.3%
3/1	HS2 Access Left	U	6	N/A	R		1	17	-	36	1877	528	6.8%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**29.8**	**8.9**	**0.0**	**38.8**	**-**	**-**	**-**	**-**
J1: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**28.1**	**8.5**	**0.0**	**36.6**	**-**	**-**	**-**	**-**
1/2+1/1	1284	1284	-	-	-	6.2	2.0	-	8.1	22.8	10.3	2.0	12.3
2/1	422	422	-	-	-	0.4	0.2	-	0.6	5.0	2.6	0.2	2.8
2/2	1036	1036	-	-	-	1.4	1.0	-	2.4	8.4	9.8	1.0	10.8
3/2+3/1	1004	1004	-	-	-	5.9	3.0	-	8.9	32.0	8.4	3.0	11.4
4/1	306	306	-	-	-	1.4	1.1	-	2.5	29.1	2.5	1.1	3.6
4/2	290	290	-	-	-	1.3	0.8	-	2.1	25.8	2.6	0.8	3.3
8/1+8/2	629	629	-	-	-	0.1	0.3	-	0.4	2.3	0.3	0.3	0.7
9/1	632	632	-	-	-	0.7	0.0	-	0.7	4.2	7.8	0.0	7.8
9/2	402	402	-	-	-	1.0	0.0	-	1.0	8.7	5.8	0.0	5.8
10/1+10/2	633	633	-	-	-	5.0	0.0	-	5.0	28.3	5.3	0.0	5.3
11/1+11/2	1345	1345	-	-	-	2.0	0.0	-	2.0	5.4	7.1	0.0	7.1
12/1	1210	1210	-	-	-	1.0	0.0	-	1.0	2.9	4.9	0.0	4.9
12/2	510	510	-	-	-	1.6	0.0	-	1.6	11.3	9.1	0.0	9.1
13/1	36	36	-	-	-	0.2	0.1	-	0.3	31.1	0.5	0.1	0.6
J2: HS2 Access	**-**	**-**	**0**	**0**	**0**	**1.7**	**0.5**	**0.0**	**2.2**	**-**	**-**	**-**	**-**
1/2+1/3	68	68	-	-	-	0.3	0.1	-	0.4	20.1	1.1	0.1	1.2
2/1	298	298	-	-	-	0.7	0.2	-	0.9	10.7	2.9	0.2	3.1
2/2	262	262	-	-	-	0.6	0.2	-	0.7	10.1	2.5	0.2	2.6
3/1	36	36	-	-	-	0.2	0.0	-	0.2	20.5	0.5	0.0	0.5

C1	Stream: 1 PRC for Signalled Lanes (%):	3.0	Total Delay for Signalled Lanes (pcuHr):	10.17	Cycle Time (s): 64
C1	Stream: 2 PRC for Signalled Lanes (%):	9.3	Total Delay for Signalled Lanes (pcuHr):	7.96	Cycle Time (s): 64
C1	Stream: 3 PRC for Signalled Lanes (%):	2.2	Total Delay for Signalled Lanes (pcuHr):	10.93	Cycle Time (s): 64
C1	Stream: 4 PRC for Signalled Lanes (%):	7.4	Total Delay for Signalled Lanes (pcuHr):	7.12	Cycle Time (s): 64
C1	Stream: 5 PRC for Signalled Lanes (%):	121.2	Total Delay for Signalled Lanes (pcuHr):	0.40	Cycle Time (s): 64
C1	Stream: 6 PRC for Signalled Lanes (%):	217.7	Total Delay for Signalled Lanes (pcuHr):	1.83	Cycle Time (s): 64
	PRC Over All Lanes (%):	2.2	Total Delay Over All Lanes(pcuHr):	38.78	

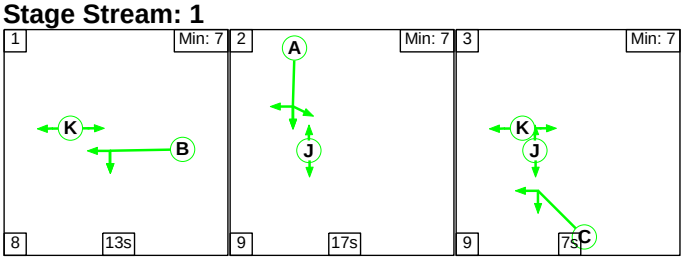
Full Input Data And Results

Full Input Data And Results

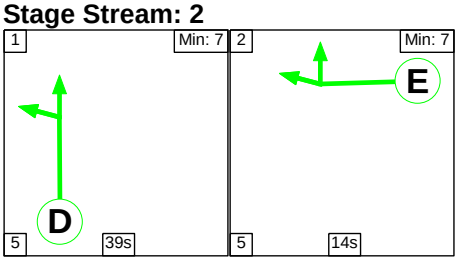
Scenario 3: '2018 Base + Comm Dev + MSA + 100% HS2 PM1' (FG3: '2018 Base + Comm Dev + MSA + HS2 PM1', Plan 2: 'Network Control Plan 2')

Stage Sequence Diagram

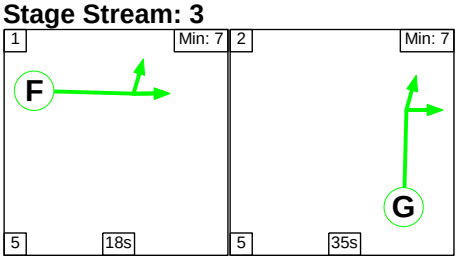
Stage Stream: 1



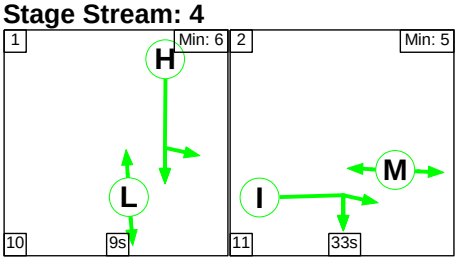
Stage Stream: 2



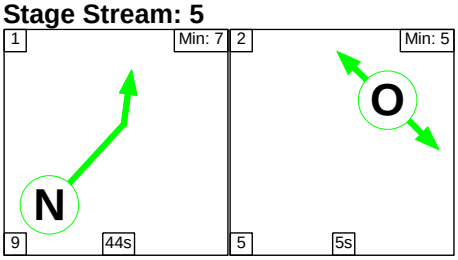
Stage Stream: 3



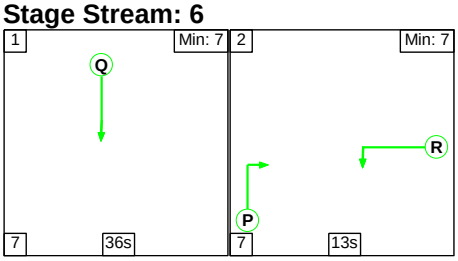
Stage Stream: 4



Stage Stream: 5



Stage Stream: 6



Full Input Data And Results

Stage Timings

Stage Stream: 1

Stage	1	2	3
Duration	13	17	7
Change Point	44	2	28

Stage Stream: 2

Stage	1	2
Duration	39	14
Change Point	2	46

Stage Stream: 3

Stage	1	2
Duration	18	35
Change Point	54	14

Stage Stream: 4

Stage	1	2
Duration	9	33
Change Point	55	11

Stage Stream: 5

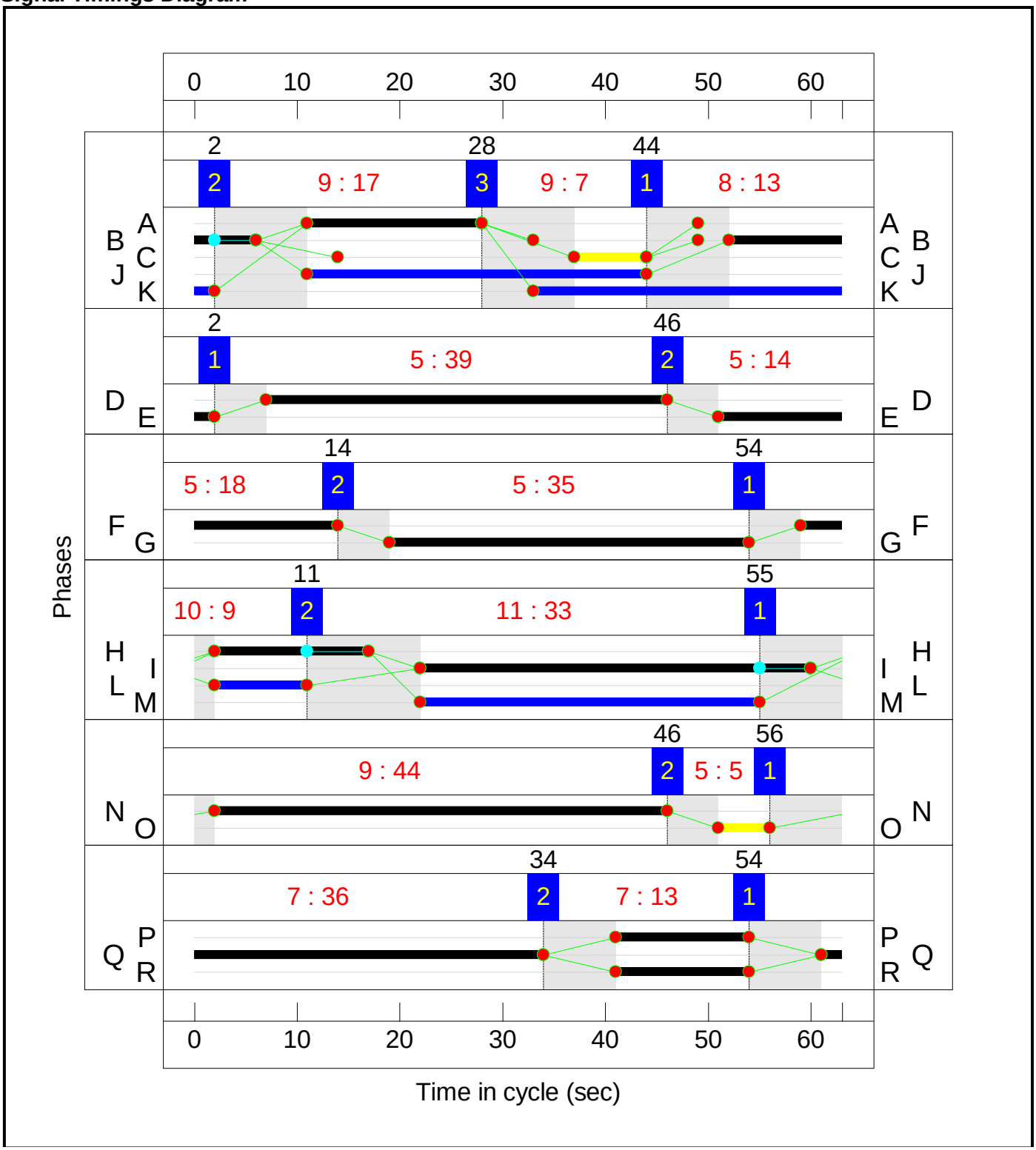
Stage	1	2
Duration	44	5
Change Point	56	46

Stage Stream: 6

Stage	1	2
Duration	36	13
Change Point	54	34

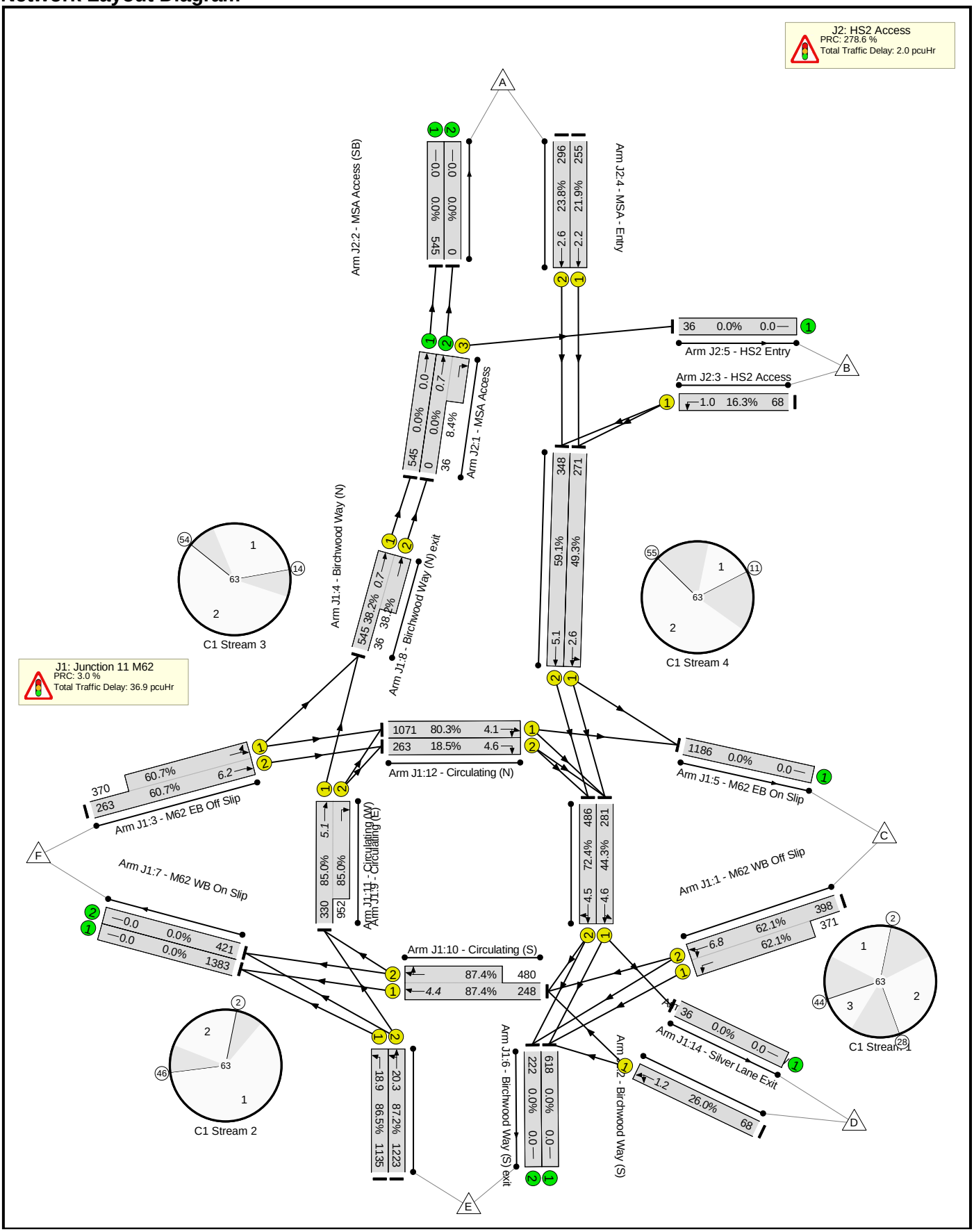
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Full Input Data And Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 11 M62	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.4%**
J1: Junction 11 M62	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.4%**
1/2+1/1	M62 WB Off Slip Left Ahead	U	1	N/A	B		1	17	-	769	2126:1982	641+598	62.1 : 62.1%
2/1	Birchwood Way (S) Left	U	2	N/A	D		1	39	-	1135	2016	1312	86.5%
2/2	Birchwood Way (S) Left Ahead	U	2	N/A	D		1	39	-	1223	2154	1402	87.2%
3/2+3/1	M62 EB Off Slip Left Ahead	U	3	N/A	F		1	18	-	633	2088:1921	433+610	60.7 : 60.7%
4/1	Birchwood Way (N) Left Ahead	U	4	N/A	H		1	15	-	271	2037	550	49.3%
4/2	Birchwood Way (N) Ahead	U	4	N/A	H		1	15	-	348	2181	589	59.1%
8/1+8/2	Birchwood Way (N) exit Ahead	U	5	N/A	N		1	44	-	581	2073:2073	1428+94	38.2 : 38.2%
9/1	Circulating (E) Ahead Left	U	1	N/A	A		1	17	-	281	2105	635	44.3%
9/2	Circulating (E) Ahead Right	U	1	N/A	A		1	17	-	486	2226	671	72.4%
10/1+10/2	Circulating (S) Ahead Right	U	2	N/A	E		1	14	-	728	2024:2163	284+549	87.4 : 87.4%
11/1+11/2	Circulating (W) Ahead Right	U	3	N/A	G		1	35	-	1282	2049:2163	388+1121	85.0 : 85.0%
12/1	Circulating (N) Ahead Right	U	4	N/A	I		1	38	-	1071	2100	1333	80.3%
12/2	Circulating (N) Right	U	4	N/A	I		1	38	-	263	2238	1421	18.5%
13/1	Silver Lane Entry Left Ahead	U	1	N/A	C		1	7	-	68	2063	262	26.0%
J2: HS2 Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**23.8%**

Full Input Data And Results

1/2+1/3	MSA Access Ahead Right	U	N/A	N/A	- P		-	-	-	36	2120:1927	0+428	0.0 : 8.4%
2/1	MSA Access (SB) Ahead	U	6	N/A	Q		1	36	-	255	1980	1163	21.9%
2/2	MSA Access (SB) Ahead	U	6	N/A	Q		1	36	-	296	2120	1245	23.8%
3/1	HS2 Access Left	U	6	N/A	R		1	13	-	68	1877	417	16.3%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**28.8**	**10.1**	**0.0**	**38.9**	**-**	**-**	**-**	**-**
J1: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**27.3**	**9.7**	**0.0**	**36.9**	**-**	**-**	**-**	**-**
1/2+1/1	769	769	-	-	-	4.0	0.8	-	4.9	22.7	6.0	0.8	6.8
2/1	1135	1135	-	-	-	2.8	3.1	-	5.9	18.6	15.8	3.1	18.9
2/2	1223	1223	-	-	-	3.0	3.3	-	6.3	18.6	17.0	3.3	20.3
3/2+3/1	633	633	-	-	-	3.1	0.8	-	3.9	22.0	5.4	0.8	6.2
4/1	271	271	-	-	-	1.1	0.5	-	1.6	20.6	2.1	0.5	2.6
4/2	348	348	-	-	-	1.4	0.7	-	2.1	22.1	4.4	0.7	5.1
8/1+8/2	581	581	-	-	-	0.1	0.3	-	0.4	2.3	0.3	0.3	0.7
9/1	281	281	-	-	-	2.7	0.0	-	2.7	34.2	4.6	0.0	4.6
9/2	486	486	-	-	-	1.8	0.0	-	1.8	13.6	4.5	0.0	4.5
10/1+10/2	728	728	-	-	-	3.2	0.0	-	3.2	15.9	4.4	0.0	4.4
11/1+11/2	1282	1282	-	-	-	1.7	0.0	-	1.7	4.9	5.1	0.0	5.1
12/1	1071	1071	-	-	-	0.7	0.0	-	0.7	2.3	4.1	0.0	4.1
12/2	263	263	-	-	-	1.2	0.0	-	1.2	16.3	4.6	0.0	4.6
13/1	68	68	-	-	-	0.5	0.2	-	0.6	34.1	1.1	0.2	1.2
J2: HS2 Access	**-**	**-**	**0**	**0**	**0**	**1.6**	**0.4**	**0.0**	**2.0**	**-**	**-**	**-**	**-**
1/2+1/3	36	36	-	-	-	0.2	0.0	-	0.3	27.5	0.6	0.0	0.7
2/1	255	255	-	-	-	0.4	0.1	-	0.6	8.1	2.1	0.1	2.2
2/2	296	296	-	-	-	0.5	0.2	-	0.7	8.1	2.5	0.2	2.6
3/1	68	68	-	-	-	0.4	0.1	-	0.5	25.0	0.9	0.1	1.0

C1	Stream: 1 PRC for Signalled Lanes (%):	24.3	Total Delay for Signalled Lanes (pcuHr):	10.00	Cycle Time (s): 63
C1	Stream: 2 PRC for Signalled Lanes (%):	3.0	Total Delay for Signalled Lanes (pcuHr):	15.40	Cycle Time (s): 63
C1	Stream: 3 PRC for Signalled Lanes (%):	5.9	Total Delay for Signalled Lanes (pcuHr):	5.61	Cycle Time (s): 63
C1	Stream: 4 PRC for Signalled Lanes (%):	12.0	Total Delay for Signalled Lanes (pcuHr):	5.56	Cycle Time (s): 63
C1	Stream: 5 PRC for Signalled Lanes (%):	135.8	Total Delay for Signalled Lanes (pcuHr):	0.37	Cycle Time (s): 63
C1	Stream: 6 PRC for Signalled Lanes (%):	278.6	Total Delay for Signalled Lanes (pcuHr):	1.72	Cycle Time (s): 63
	PRC Over All Lanes (%):	3.0	Total Delay Over All Lanes(pcuHr):	38.93	

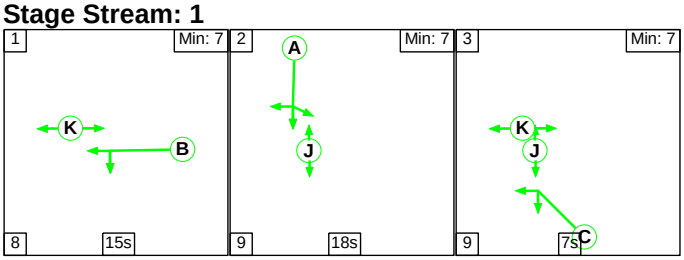
Full Input Data And Results

Full Input Data And Results

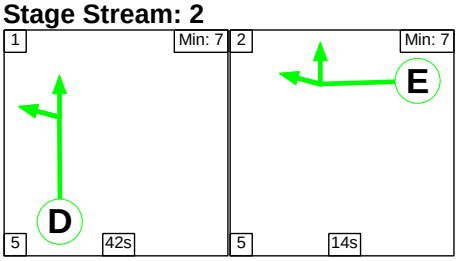
Scenario 4: '2018 Base + Comm Dev + MSA + 100% HS2 PM2' (FG4: '2018 Base + Comm Dev + MSA + HS2 PM2', Plan 2: 'Network Control Plan 2')

Stage Sequence Diagram

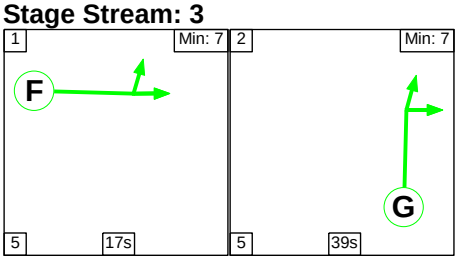
Stage Stream: 1



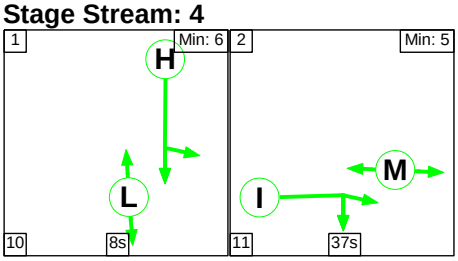
Stage Stream: 2



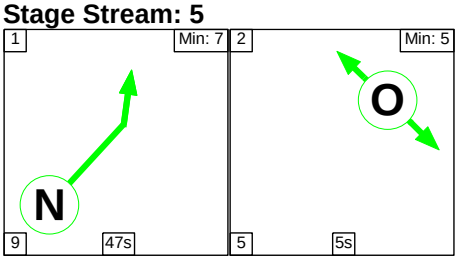
Stage Stream: 3



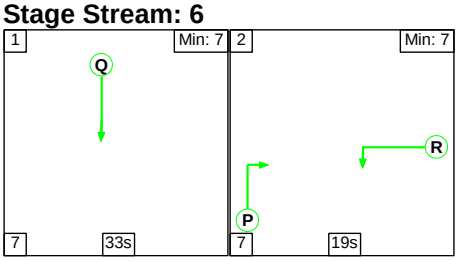
Stage Stream: 4



Stage Stream: 5



Stage Stream: 6



Full Input Data And Results

Stage Timings

Stage Stream: 1

Stage	1	2	3
Duration	15	18	7
Change Point	30	53	14

Stage Stream: 2

Stage	1	2
Duration	42	14
Change Point	51	32

Stage Stream: 3

Stage	1	2
Duration	17	39
Change Point	45	1

Stage Stream: 4

Stage	1	2
Duration	8	37
Change Point	44	62

Stage Stream: 5

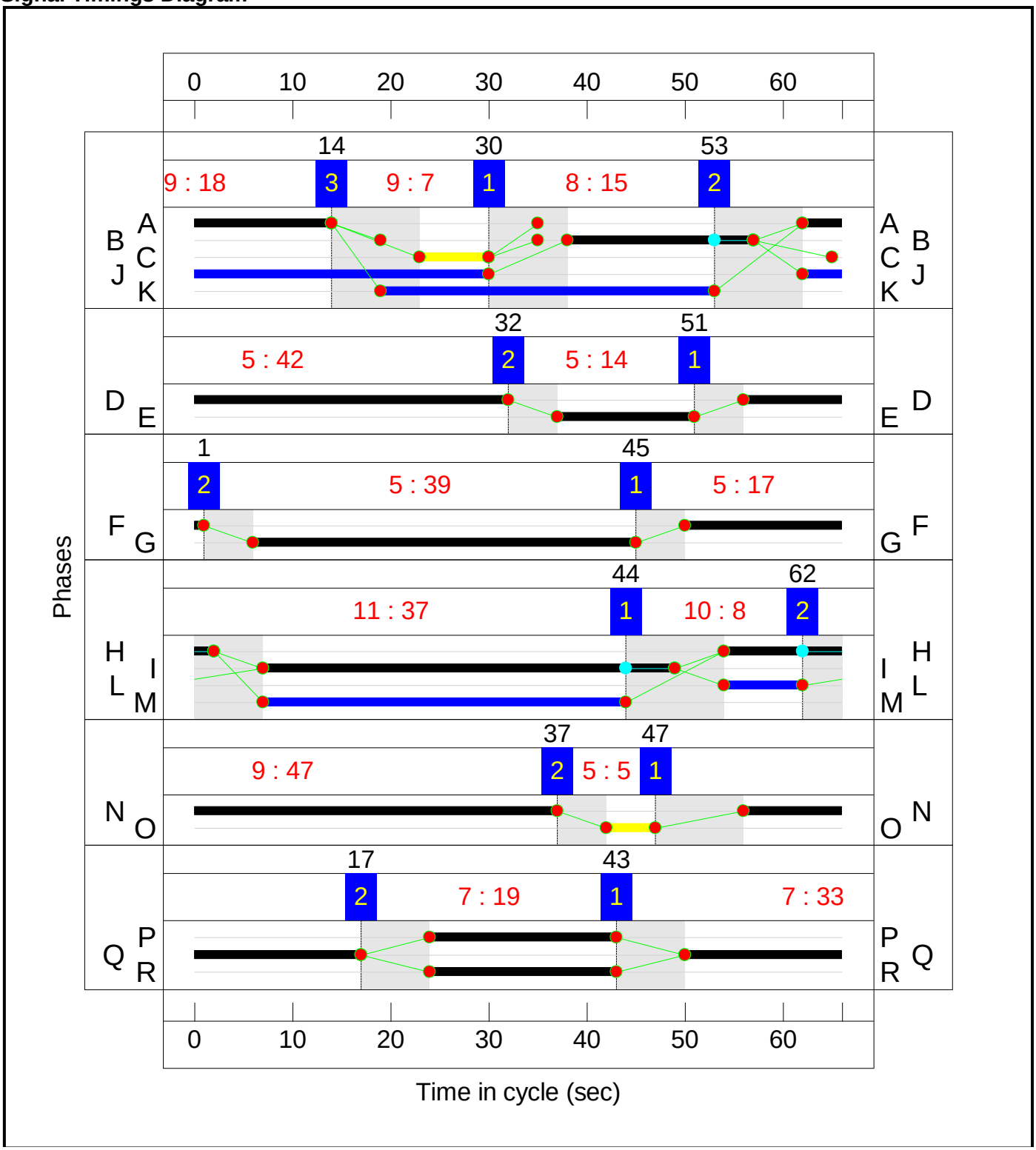
Stage	1	2
Duration	47	5
Change Point	47	37

Stage Stream: 6

Stage	1	2
Duration	33	19
Change Point	43	17

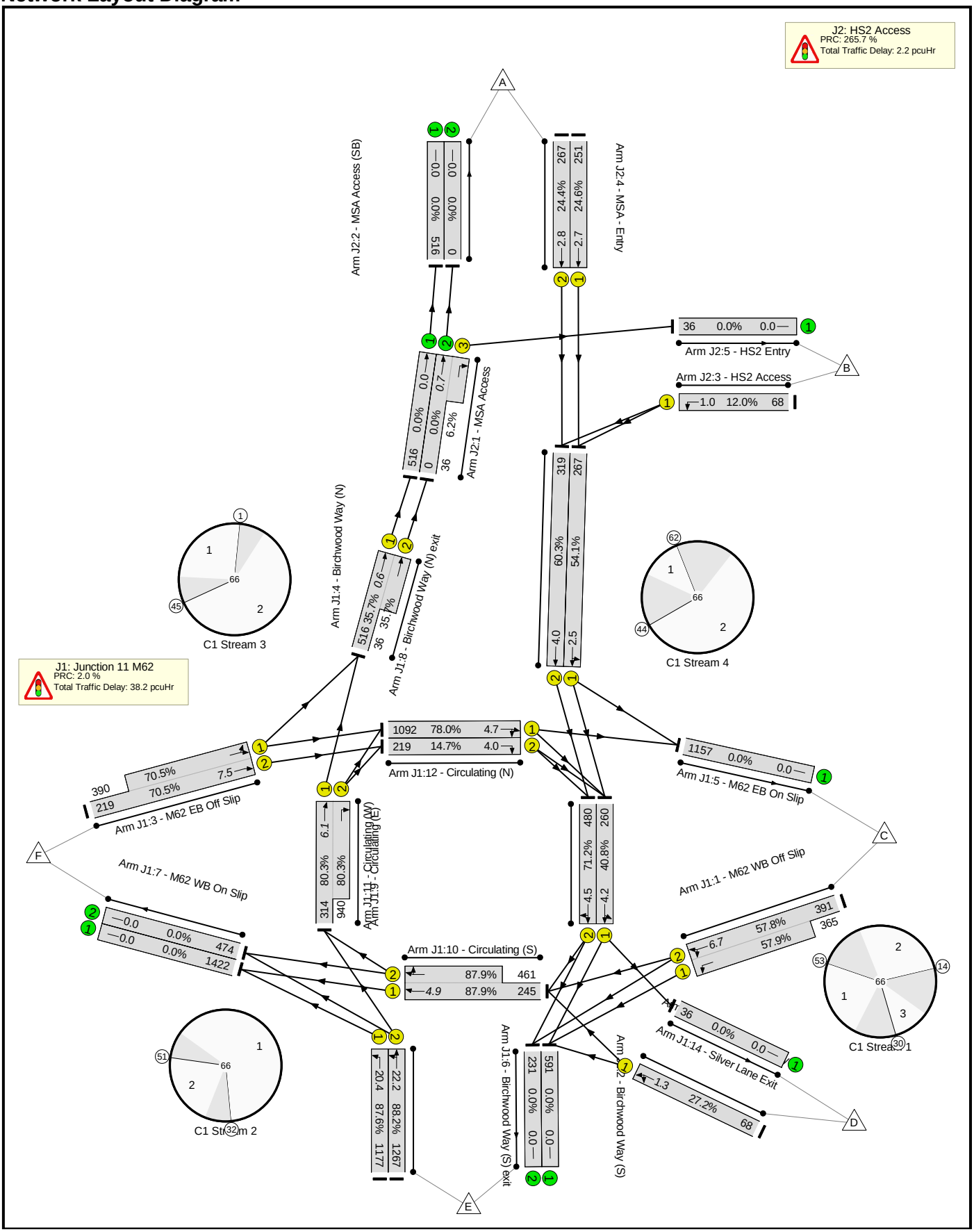
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Full Input Data And Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 11 M62	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.2%**
J1: Junction 11 M62	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.2%**
1/2+1/1	M62 WB Off Slip Left Ahead	U	1	N/A	B		1	19	-	756	2126:1982	676+631	57.8 : 57.9%
2/1	Birchwood Way (S) Left	U	2	N/A	D		1	42	-	1177	2016	1344	87.6%
2/2	Birchwood Way (S) Left Ahead	U	2	N/A	D		1	42	-	1267	2154	1436	88.2%
3/2+3/1	M62 EB Off Slip Left Ahead	U	3	N/A	F		1	17	-	609	2088:1921	311+553	70.5 : 70.5%
4/1	Birchwood Way (N) Left Ahead	U	4	N/A	H		1	14	-	267	2037	494	54.1%
4/2	Birchwood Way (N) Ahead	U	4	N/A	H		1	14	-	319	2181	529	60.3%
8/1+8/2	Birchwood Way (N) exit Ahead	U	5	N/A	N		1	47	-	552	2073:2073	1447+101	35.7 : 35.7%
9/1	Circulating (E) Ahead Left	U	1	N/A	A		1	18	-	260	2105	638	40.8%
9/2	Circulating (E) Ahead Right	U	1	N/A	A		1	18	-	480	2226	675	71.2%
10/1+10/2	Circulating (S) Ahead Right	U	2	N/A	E		1	14	-	706	2024:2163	279+524	87.9 : 87.9%
11/1+11/2	Circulating (W) Ahead Right	U	3	N/A	G		1	39	-	1254	2049:2163	391+1170	80.3 : 80.3%
12/1	Circulating (N) Ahead Right	U	4	N/A	I		1	42	-	1092	2100	1400	78.0%
12/2	Circulating (N) Right	U	4	N/A	I		1	42	-	219	2238	1492	14.7%
13/1	Silver Lane Entry Left Ahead	U	1	N/A	C		1	7	-	68	2063	250	27.2%
J2: HS2 Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**24.6%**

Full Input Data And Results

1/2+1/3	MSA Access Ahead Right	U	N/A	N/A	- P		-	-	-	36	2120:1927	0+584	0.0 : 6.2%
2/1	MSA Access (SB) Ahead	U	6	N/A	Q		1	33	-	251	1980	1020	24.6%
2/2	MSA Access (SB) Ahead	U	6	N/A	Q		1	33	-	267	2120	1092	24.4%
3/1	HS2 Access Left	U	6	N/A	R		1	19	-	68	1877	569	12.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**29.3**	**11.1**	**0.0**	**40.4**	**-**	**-**	**-**	**-**
J1: Junction 11 M62	**-**	**-**	**0**	**0**	**0**	**27.5**	**10.7**	**0.0**	**38.2**	**-**	**-**	**-**	**-**
1/2+1/1	756	756	-	-	-	3.9	0.7	-	4.6	22.1	6.0	0.7	6.7
2/1	1177	1177	-	-	-	2.9	3.4	-	6.3	19.2	17.0	3.4	20.4
2/2	1267	1267	-	-	-	3.1	3.6	-	6.7	19.1	18.7	3.6	22.2
3/2+3/1	609	609	-	-	-	3.4	1.2	-	4.6	27.2	6.3	1.2	7.5
4/1	267	267	-	-	-	1.1	0.6	-	1.7	22.5	1.9	0.6	2.5
4/2	319	319	-	-	-	1.4	0.8	-	2.1	23.9	3.2	0.8	4.0
8/1+8/2	552	552	-	-	-	0.0	0.3	-	0.3	2.1	0.3	0.3	0.6
9/1	260	260	-	-	-	2.5	0.0	-	2.5	34.0	4.2	0.0	4.2
9/2	480	480	-	-	-	2.2	0.0	-	2.2	16.3	4.5	0.0	4.5
10/1+10/2	706	706	-	-	-	3.3	0.0	-	3.3	16.7	4.9	0.0	4.9
11/1+11/2	1254	1254	-	-	-	1.6	0.0	-	1.6	4.7	6.1	0.0	6.1
12/1	1092	1092	-	-	-	0.8	0.0	-	0.8	2.8	4.7	0.0	4.7
12/2	219	219	-	-	-	0.8	0.0	-	0.8	13.5	4.0	0.0	4.0
13/1	68	68	-	-	-	0.5	0.2	-	0.7	36.2	1.1	0.2	1.3
J2: HS2 Access	**-**	**-**	**0**	**0**	**0**	**1.8**	**0.4**	**0.0**	**2.2**	**-**	**-**	**-**	**-**
1/2+1/3	36	36	-	-	-	0.2	0.0	-	0.2	21.3	0.6	0.0	0.7
2/1	251	251	-	-	-	0.6	0.2	-	0.8	11.2	2.5	0.2	2.7
2/2	267	267	-	-	-	0.7	0.2	-	0.8	11.1	2.7	0.2	2.8
3/1	68	68	-	-	-	0.3	0.1	-	0.4	20.3	0.9	0.1	1.0

C1	Stream: 1 PRC for Signalled Lanes (%):	26.5	Total Delay for Signalled Lanes (pcuHr):	9.94	Cycle Time (s): 66
C1	Stream: 2 PRC for Signalled Lanes (%):	2.0	Total Delay for Signalled Lanes (pcuHr):	16.26	Cycle Time (s): 66
C1	Stream: 3 PRC for Signalled Lanes (%):	12.1	Total Delay for Signalled Lanes (pcuHr):	6.23	Cycle Time (s): 66
C1	Stream: 4 PRC for Signalled Lanes (%):	15.4	Total Delay for Signalled Lanes (pcuHr):	5.45	Cycle Time (s): 66
C1	Stream: 5 PRC for Signalled Lanes (%):	152.4	Total Delay for Signalled Lanes (pcuHr):	0.32	Cycle Time (s): 66
C1	Stream: 6 PRC for Signalled Lanes (%):	265.7	Total Delay for Signalled Lanes (pcuHr):	1.99	Cycle Time (s): 66
	PRC Over All Lanes (%):	2.0	Total Delay Over All Lanes(pcuHr):	40.40	

Full Input Data And Results

Appendix 2.3 – Summary Table of Deletions

Warrington Motorway Service Area

J11, M62

ES Addendum

Text Deleted from Original ES Technical Paper 2 – Traffic and Transportation

Section Number / Paragraph Number / Table number / Figure Number in Original Paper	Text Deleted from Original ES	Reason
Section 2 – Para 2.2 (Page 9)	National Planning Policy Framework (NPPF) – February 2019	Policies updated in July 2021 with amended paragraph references and addition policy related to current design guidance
Section 2 – Para 2.2 (Page 24)	Warrington Local Transport Plan (LTP) – March 2011	New LTP adopted in December 2019 with amended objectives.
Section 4 – Para 4.25 (Page 32)	has been produced	Staff Travel Plan was submitted as part of the applciation
Section 4 – Para 4.25 (Page 32)	this includes details of proposed measures intended to encourage staff travel by modes of transport other than car driver. The Framework Travel Plan sets a proposed target of no more than 50% of staff travelling to work as a car driver and it is anticipated that, of those using alternative methods of transport to work, a	Now agreed that a Full Travel Plan will be implemented by the Council's Smarter Choices Manager and funded through agreed Developer contributions
Section 5 – Para 5.13 (Page 39)	Planned improvements at the junction are considered in Section 5.0.	Works are completed and now provide the improvement.

Section 5 (page 39)	Currently, Birchwood Way widens to two lanes at the approach to M62J11 and four lanes on the approach to the signalised junction with Daten Avenue and Moss Gate, with two dedicated right turn lanes, one ahead lane and one ahead and left lane. Birchwood Way is in the process of being improved, details of which are set out in paragraphs 5.19 to 5.21 below.	Works are completed and now provide the improvement.
Section 5 (Page 39)	Transport Networks – Planned	Title removed as no longer planned.
Section 5 – Para 5.15 (Page 39)	Highways England are in the process of	Highways England is now called National Highways and the planned works have been completed.
Section 5 – Para 5.15 (Page 39)	are due to be completed by Spring 2020	Works completed January 2021.
Section 5 – Para 5.18 (Page 40)	Roundabout	Incorrect, junction is a signal crossroads
Section 5 – Para 5.18 (Page 40)	with the project due to be	Works were completed in December 2019
Section 5 – Para 5.18 (Page 40)	will	Works are completed and now provide the improvement.
Section 5 (Page 40)	The scheme is fully funded, and construction began in December 2018, the works are due to be completed by January 2020. A stakeholder engagement for the scheme was carried out in May 2018, it is	Works were completed in 2020.

	understood that the scheme received extensive support.	
Section 6 – Para 6.6 (Page 52)	Highways England	Highways England is now called National Highways
Section 7 – Para 7.22 (Page 57)	Framework	Now agreed that a Full Travel Plan will be implemented
Section 7 – Para 7.45 (Page 64)	There have been seven	Accident data for 5 year period up to July 2018
Section 7 – Para 7.45 (Page 64)	most recent	Accident data for 5 year period up to July 2018
Section 8 – Para 8.6 (Page 68)	Framework	Now agreed that a Full Travel Plan will be implemented
Section 8 – Para 8.6 (Page 69)	include a range of measures including the appointment of a Travel Plan Co-ordinator, promotion of travel details via the Site's website, notice boards and dedicated Travel Packs for staff.	Now agreed that a Full Travel Plan will be implemented by the Council's Smarter Choices Manager and funded through agreed Developer contributions
Section 10 – Para 10.1 (Page 74)	we define	Correcting wording in sentence
Section 10 – Para 10.5 (Page 74)	includes the agreed list of	Cumulative developments identified in detail in table
Section 10 – Para 10.5 (Page 74)	cumulative developments	Cumulative developments identified in detail in table
Section 10 – Para 10.6 (Page 75)	In November 2016 the Secretary of State for Transport confirmed part of the Phase 2b route for HS2, whilst also announcing a consultation on seven route refinement areas. On 17 July 2017, the Secretary of State for Transport announced his	Cumulative developments section details the assessment of the current HS2 position

	decisions on these refinements and on 10 October 2018 the Secretary of State announced a consultation on the working draft Environmental Statement for Phase 2b.	
Section 10 – Para 10.7 (Page 75)	The current construction programme for HS2 Phase 2b (as identified in Appendix 14 of this ES) is anticipated to overlap with that of the Proposed Development.	Cumulative developments section details the assessment of the current HS2 position
Section 10 – Para 10.14 (Page 77)	Given that no quantitative assessment has yet been conducted for HS2 Phase 2b it is not possible to derive traffic figures for the construction phase and hence it is not possible to assess the implications of the HS2 Phase 2b construction phase in combination with the Proposed Development.	Cumulative developments section details the assessment of the current HS2 position
Section 10 – Para 10.17 (Page 78)	over recent months and will work proactively to agree how access to/from the proposed 'M62 West Viaduct North Satellite Compound and Transfer Node' can be achieved in the context of the Proposed Development that is the subject of this ES.	Cumulative developments section details the assessment of the current HS2 position, including 3 compound sites
Section 11 – Para 11.10 (Page 87)	Extra MSA Group has engaged with HS2 over recent months	Cumulative developments section details the assessment

	and will work proactively to agree how access to/from the proposed 'M62 West Viaduct North Satellite Compound and Transfer Node' can be achieved in the context of the Proposed Development that is the subject of this ES.	of the current HS2 position, including 3 compound sites