

Transport Assessment

Indurent Park
Knowsley



Change list

Ver	Date	Description of the change	Reviewed	Approved by
01	28/07/2025	Final for Issue	IB	NJR
02	30/07/2025	Final for Issue - Reviewed	IB	NJR

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1 Introduction

1.1 Background

This Transport Assessment (TA) has been prepared by Sweco, on behalf of Indurent Management Limited (the Applicant), to support a proposed industrial and logistics development comprising B2 / B8 and relevant E(g)(iii) class land uses, including provision of access from Alchemy Way and all associated works of landscaping, car parking and servicing arrangements.

The proposed application site (the 'Site') measures approximately 4.5 hectares and is located to the south of Knowsley Business Park and to the east of Moorgate Point (also within the ownership of the Applicant). The Site is located approximately 1.5 miles east of Kirkby and 6.5 miles northeast of Liverpool and benefits from excellent connectivity to the local and strategic highway network by virtue of its adjacency to the A580 East Lancashire Road and M57 Junction 4 providing connections to Liverpool, Manchester and beyond.

The proposed development comprises two industrial warehouse units of circa 197,880 sq. ft / 18,384 sq. m (total GIA).

The purpose of this TA is to provide the details of the scheme from a traffic and transport planning perspective. It presents the proposed access strategy and site layout, considers the sustainable transport characteristics of the development and the surrounding area, assesses the traffic generation and provides junction operational assessments for the agreed highway network of interest. From a transport planning perspective, the supporting documentation also includes an Interim Travel Plan (ITP) which is provided under separate cover.

1.2 Planning History

The Site has been the subject of a historic planning application for B2 / B8 uses, with an earlier (lapsed) consent being granted in 2009. The previously consented scheme confirms that the principle of taking an access to the development land directly from Alchemy Way was accepted. This is relevant to the present proposals in that the access strategy previously approved is mirrored in the proposed scheme.

The Site is designated in the Local Plan for employment. As such, the principle of use for the land use classes now applied for is established.

It has been established that development proposals for the adjacent Network Space site were running in parallel with the Site (as-is) from circa 2002 until the

present and therefore that the consideration of the development of both sites in parallel formed part of the consideration of planning applications thereafter.

1.3 Scoping

The TA has been prepared in line with best practice and our experience of supporting similar development proposals. The scope of the TA and the associated ITP have been agreed with Knowsley Council (the Council) as part of the pre-application process. A copy of the scoping responses from the Council and National Highways are included as **Appendix A**.

The key aspects of the agreed scope of this assessment are as follows:

- The TA shall include a study of the background highway conditions in the vicinity of the Site, including its accessibility by non-car modes, a review of personal injury accidents over the last full 5 year period and the identification of background traffic flows for the agreed highway network of interest.
- Details of the proposed development should be set out, including, the access proposals, servicing strategy and justification of the proposed parking provision in the context of prevailing policy guidance and operational requirements, including, consideration for Electric Vehicle charging, disabled parking and cyclists.
- Trip generation estimates shall be based on the approved trip rates for the adjacent Knowsley Lane development (B2 / B8); planning application reference 22/00348/FUL. Trip distribution and mode share assumptions shall be based on NOMIS travel to work data.
- Operational junction assessments shall be carried out for the A580 East Lancashire Road/ Alchemy Way signalised junction and the Alchemy Way roundabout.
- The future year assessment scenario to be considered is the planning application date year plus 5 years (2030). TEMPRO growth factors and identified committed development traffic flows will be included in the assessment to account for background traffic growth.

National Highways has been consulted on the pre-application proposals by KMBC and has requested that the assessment should include consideration of the potential impact of the development on M57 Junction 4 and alignment with National Highways policy.

In addition to the scope agreed with the Council, this TA has been prepared in line with BREEAM specific guidance. As such, it includes a review of amenities within a 500m walking distance from the Site and a calculation of the public transport Accessibility Index. A BREEAM compliant ITP has also been prepared and is provided under separate cover.

1.4 Report Structure

Following this introduction, the report is structured as follows:

- **Chapter 2** provides a baseline description of the site location and the surrounding highway network. Consideration is also given to the accessibility of the site by non-car modes and the historical Personal Injury Accident record for the highway network of interest;
- **Chapter 3** presents a review of the prevailing transport planning policy and other applicable guidance;
- **Chapter 4** sets out the detail of the proposed development, including a description of the scheme, the access strategy and future parking provision;
- **Chapter 5** assesses the quantum and composition of traffic likely to be generated by the proposed development and its assignment to the highway network;
- **Chapter 6** presents the scope and methodology for identifying the background, base and assessment traffic flows to be used within the assessment;
- **Chapter 7** details the results of the operational analyses of junctions forming the agreed highway network of interest;
- **Chapter 8** summarises the report and provides conclusions.

2 Existing Conditions

2.1 The Site

The Site measures approximately 4.5 ha and comprises land situated to the east of Moorgate Road North, within Knowsley Business Park, north-east of the M57 J4. The Site is located approximately 1.5 miles east of Kirkby and 6.5 miles northeast of Liverpool.

The land is currently undeveloped and is bounded on its northern and western frontages by existing industrial development, on its southern frontage by the current termination of Alchemy Way and an Over Head Line (OHL) electricity cable corridor, and on its eastern frontage by undeveloped land.

The location of the Site is shown on **Figure 2.1**.

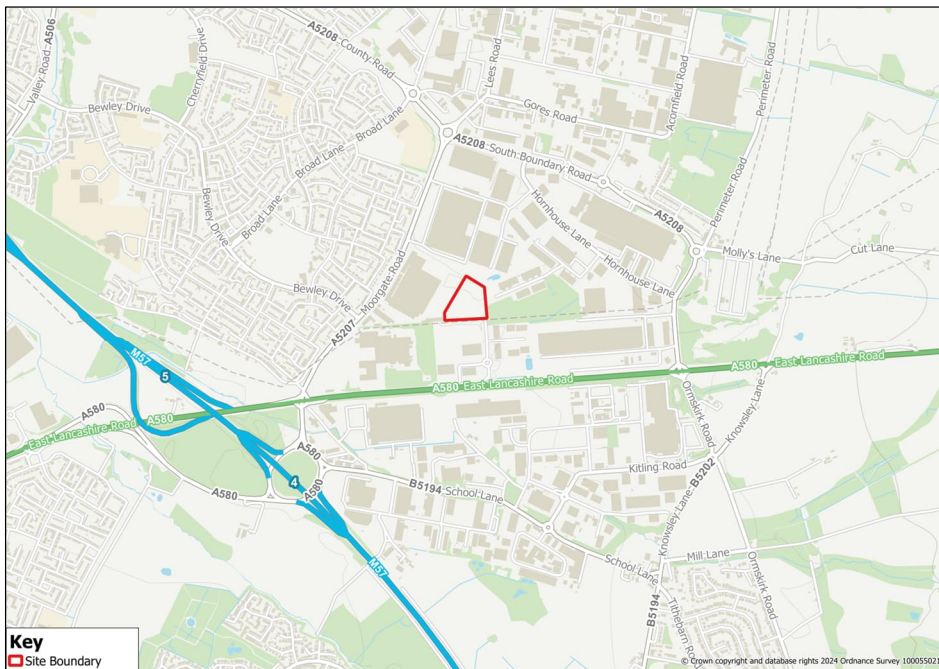


Figure 2.1 - Site Location Plan

The Site does not have an existing point of access, however the historical development of Alchemy Park and the Site's planning history confirm that the intention has always been that the land would be accessed via an extension to Alchemy Way which is an adopted highway along its extent from its junction

with the A580. There is a small strip of land between the termination of the current adopted highway and the Site boundary which is within the ownership of the Council. The Applicant and the Council have reached an agreement to grant a right of access to the Site in perpetuity, including the provision for the Council to use the internal access road for access to its landholding to the east of the application site in the future.

The area within the application boundary is wholly private land. There is no public access to the Site and no Public Rights of Way (PRoW) are located within the immediate vicinity.

The adjacent areas to the Site are predominately occupied by commercial and employment uses. Beyond the immediate vicinity of the Site, lie the largely residential districts of Northwood and Southdene to the northwest, and Gillmoss to the southwest.

2.2 Local Highway Network

A review of the immediate adjacent highway network has been undertaken and is summarised below.

Alchemy Way

Alchemy Road is a single carriageway road providing access to Alchemy Business Park via a signalised junction with the A580 East Lancashire Road to the south.

The road is adopted to the back of the footways on each frontage and to the current northern termination of the highway at a turning head, as shown in **Figure 2.2**. As noted above, there is a small strip of land between the northern extent of the road and the Site boundary which is owned by the Council but currently does not form part of the adopted highway, as illustrated in **Figure 2.3** as a red hatched area. An agreement between the Council and the Applicant provides for access rights to the Site across the Council owned land. Following the grant of planning consent the applicant will enter into a S278 Agreement to provide the necessary works to connect the Site with the adopted highway and extend the highway adoption extent up to the Site boundary.

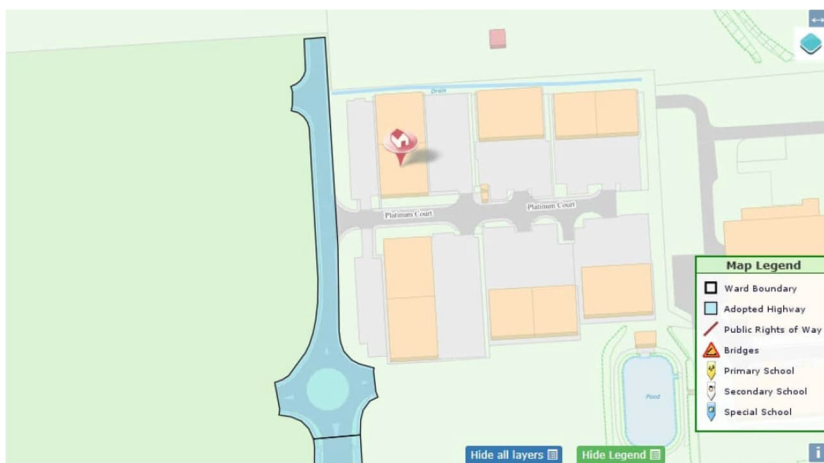


Figure 2.2 – Adopted Highway Boundary (extracted from the Council's website:

<https://highways.knowsley.gov.uk/>)

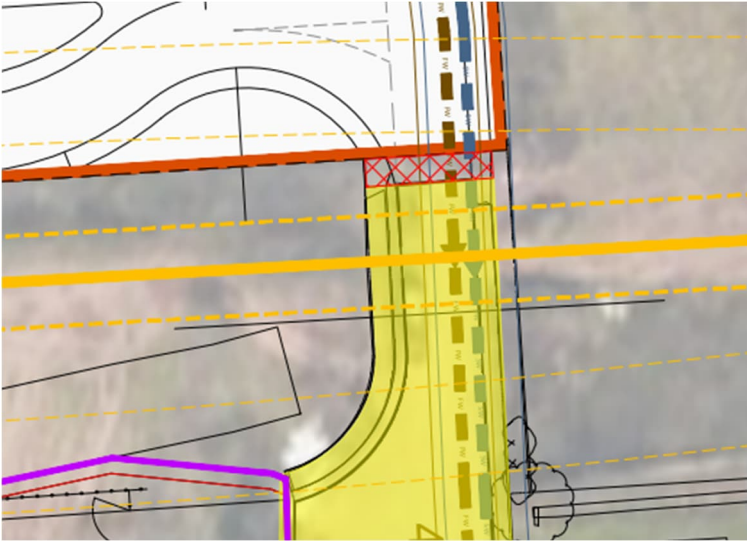


Figure 2.3 – Alchemy Way: KMBC owned land in red hatch (extracted from UMC Architects' Site Layout Plan)

Alchemy Way is street-lit, with footways on both frontages. It is assumed that the road is subject to a 30mph speed limit although this is not signed. The footpath along its western frontage terminates at the southern side of the access stub approximately 60m to the south of the Site's southern boundary. Reference to historical images from 2008 show this footpath continuing across the access stub and extending further north towards the Site. However, it is currently overgrown with vegetation and totally obscured by a significant accumulation of dumped material and other debris and as such its current condition cannot be ascertained. The footpath along the eastern frontage extends as far as the unadopted section of carriageway at the road's northern end.

There are uncontrolled crossing points for pedestrians at each arm of the Alchemy Way roundabout and at each private access within the Business Park. Shared pedestrian / cycle paths are provided along the A580 which extend into Alchemy Way for a short section after which cyclists are required to rejoin the Alchemy Way carriageway, just north of its signalised junction with the A580.

There are no Traffic Regulation Orders (TROs) in force along the road's extent. As a result, Alchemy Way currently experiences on-street parking, as shown in **Figure 2.4**. The uncontrolled parking partially obstructs the footways and impedes visibility at crossing points.



Figure 2.4 – Alchemy Way Uncontrolled Parking (looking southbound towards the A580 junction)

A580 East Lancashire Road

The A580 East Lancashire Road is a dual carriageway road that runs in an east-west direction to the south of the Site. It is a local distributor road which provides access to neighbouring residential areas to the northwest as well as destinations further afield including Manchester to the east and Liverpool to the west. It provides a connection to the M57 J4 to the southwest of the Site and the M6 J23 approximately 15km to the east.

To the east, the A580 forms a signalised crossroads junction with the A5208 Coopers Lane and Ormskirk Road. The A5208 provides access to the northern areas of Knowsley Business Park.

To the west, the A580 forms another signalised crossroads with the A5207 Moorgate Road North / South. To the north, the A5207 provides access to local residential areas within Kirkby including Southdene, Northwood and West Vale. To the south, the road provides a connection to the M57 via J4 which comprises a partially signalised roundabout. Additionally, the M57 Northbound can be accessed directly from the A580 via the on / off slip roads just west from its junction with the A5207.

The A580 in the vicinity of the Site is street-lit with shared pedestrian / cycle paths on both sides and is subject to a 50 mph speed limit. The A580 / Alchemy Way junction provides a toucan crossing across Alchemy Way, and an uncontrolled pedestrian crossing over the western arm of the A580. Toucan crossings are also provided to enable pedestrians and cyclists to negotiate the A580 / A5208 and A580 / A5207 junctions.

The Council is currently undertaking improvement works at the junction of the A580 / A5207 (Moorgate Road). Phase two, relating to Junction 4 of the M57 will commence in the summer of 2026. The works include:

- Improvements at the junction of Moorgate Road and East Lancashire Road (A580), with new separate cycle crossings constructed to improve the safety of cyclists whilst making their journey through the junction quicker and more efficient.

- A reduction in the speed limit of the East Lancashire Road from 50mph to 40mph between Alchemy Way and the boundary with Liverpool.
- Improvements for cyclists and pedestrians at Ribblers Lane, making it safer and easier to join existing cycle routes.
- Carriageway widening to create extra lanes and increase capacity and reduce congestion at both junctions.
- The full signalisation of Junction 4 of the M57 and upgrading the existing signals at Moorgate Road Junction East Lancashire Road (A580).

A 'No Stopping (Clearway)' TRO is in place along the A580's extent with restrictions in force at all times.

2.3 Site Accessibility Review

Accessibility to the site by sustainable modes of transport other than the private car has been reviewed and is summarised below.

2.3.1 Pedestrian Accessibility

Reference to Table 3.2 of the IHT document, 'Providing for Journeys on Foot (2000)', suggests that the preferred maximum walking distance to common facilities is 1.2 km and up to 2 km for commuting. BREEAM guidelines recommend that development should ideally be located within 500m of a range of local amenities.

Figure 2.5 illustrates that there are no amenities within 1.2km of the Site. However, there are several amenities located just outside of the preferred catchment area at approximately 1.5km to the east of the Site. These include several fast-food establishments, a convenience store and an ATM which can be reached by foot via a safe pedestrian route.

There are no Public Right of Ways (PROWs) immediately adjacent to or within the Site boundary.

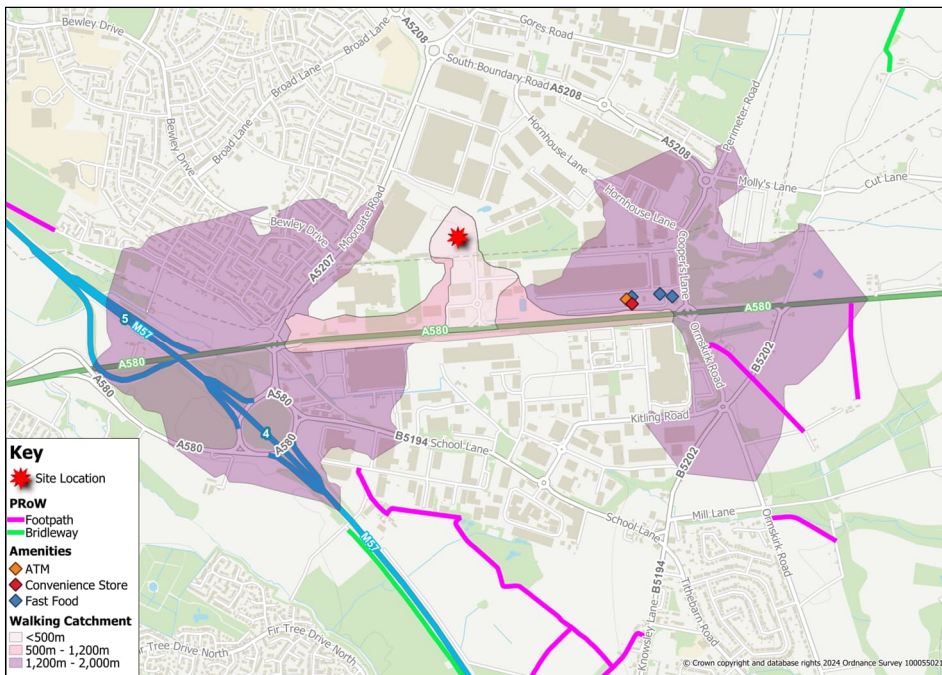


Figure 2.5 – Walking catchment

The 2km walking catchment area includes parts of the industrial estate and small parts of Southdene to the west of the Site. As such, the walking catchment for commuter trips is relatively limited.

In terms of pedestrian infrastructure, the footways along Alchemy Way and the A580 in the vicinity of the Site are of good quality. They vary in width with footways being approximately 2m wide and shared pedestrian / cycle paths being up to 3.5m. There is a short section of footpath along the western side of Alchemy Way, which is obstructed by overgrown vegetation and dumped material, and as such is unusable in its current state.

It should be noted that the only point of pedestrian access into the Site is via Alchemy Way as it is a cul-de-sac. There are no existing or proposed pedestrian links to the local highway network through adjacent land, or existing developments.

Several uncontrolled crossings are present at the private accesses along Alchemy Way. However, it was observed that the footways and pedestrian crossing points on the road are partially obstructed by uncontrolled on-street parking.

Pedestrian crossing facilities at the A580/ Alchemy Way junction are partially controlled, with signalised crossing facilities provided across Alchemy Way, and an uncontrolled staggered pedestrian crossing provided across the western arm of the A580. Fully controlled pedestrian crossing facilities are provided at both the A580/ A5208 (Ormskirk Road) and the A580/ A5207 (Moorgate Road) junctions.

As such, whilst pedestrian access to the site can only be taken from Alchemy Way, this is identical to the other consented development sites on Alchemy Way, not least the adjacent Network Space development which has recently been approved by the Council and reflects the layout of the established industrial area and surrounding highway network.

2.3.2 Cycle Accessibility

It is widely recognised that cycling is a potential substitute for short car trips, particularly those under 5 miles (8 km) and can form part of a longer journey by public transport.

Applying this criteria, **Figure 2.6** shows the area accessible by bike. At its furthest most reaches, this includes Kirkby to the north; Prescott to the south; and the outskirts of St Helens to the east and Liverpool to the west.

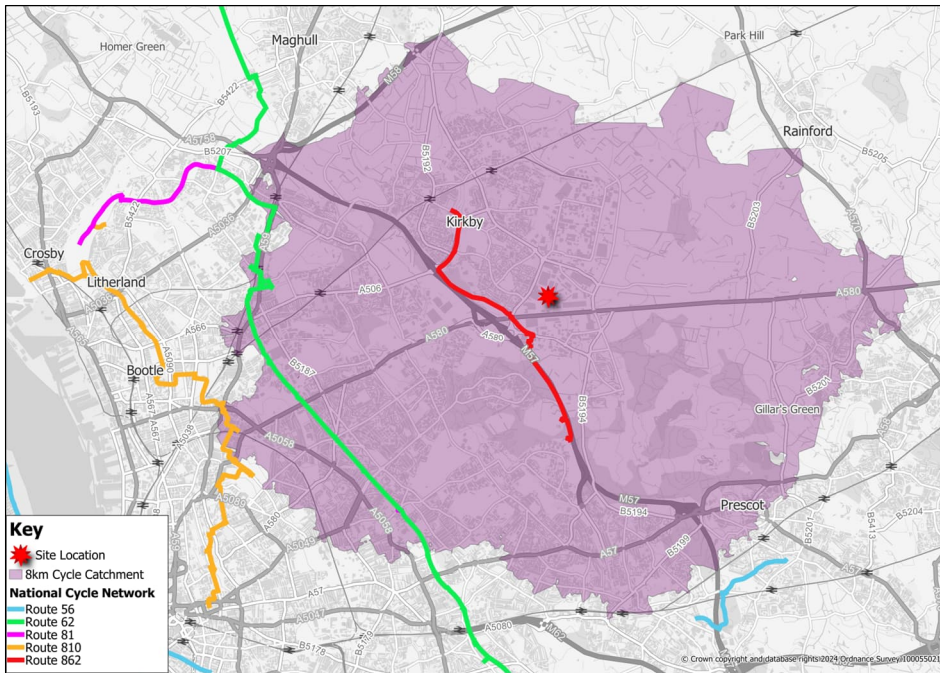


Figure 2.6 – Cycle catchment

An extract from the Knowsley Cycle Map is shown as **Figure 2.7**, with the full map included as **Appendix B**.



Figure 2.7 – Extract from Knowsley's Cycle Map

The existing cycle network is accessible directly from Alchemy Way. There is a shared pedestrian / cycle path that runs in an east – west direction to the south of the Site along both sides of the A580. To the west it joins the National Cycle Route (NCR) 862 at the A580 / A5207 junction, and to the east the path continues along the A580 past its junction with the A5208 towards St Helens. Additionally, there are shared pedestrian / cycle paths along the A5207 and the A5208 which provide access to other parts of the industrial estate, and further north-west into Kirkby.

Toucan crossings are provided at the A580 / Alchemy Way and A580 / A5208 junctions to facilitate east – west cycle movements. Toucan crossings are also provided at the A580 / A5207 junction along the eastern and northern arms to facilitate access to NCR 862. Highway improvements currently being undertaken by the Council (detailed in *Section 2.2*) will further improve facilities for cyclists at this junction.

NCR 862 runs to the west of the Site in a north-western – south-eastern direction between Kirkby and Stockbridge Village, as illustrated on **Figure 2.6**. Further to the west, NCR 62 runs in a north-western – south-eastern direction providing access to residential areas on the outskirts of Liverpool.

With regards to future improvements, the Liverpool City Region Combined Authority (LCRCA) has prepared a Local Cycling and Walking infrastructure plan (LCWIP) which includes the existing cycle route on the A580 East Lancashire Road as a Phase 2a proposal. It also identifies as a Phase 3 proposal the improvement of the Knowsley Cycle Route (Kirkby to Speke) which runs north to south and crosses the A580 at the A5208 Ormskirk Road.

Cycle accessibility to the Site is good and the commitment in the LCWIP to improve the A580 route and the Knowsley Cycle Route in the future would further improve access by bike.

2.3.3 Public Transport Accessibility

Bus

Table 4 of the Chartered Institution of Highways and Transportation (CIHT) document 'Buses in Urban Developments (2018)' suggests a maximum recommended walking distance of 500m to a bus stop within a core bus corridor which provides two or more high frequency services; and 300m to a bus stop with less frequent routes.

The bus stops in the vicinity of the Site are shown in **Figure 2.8**.

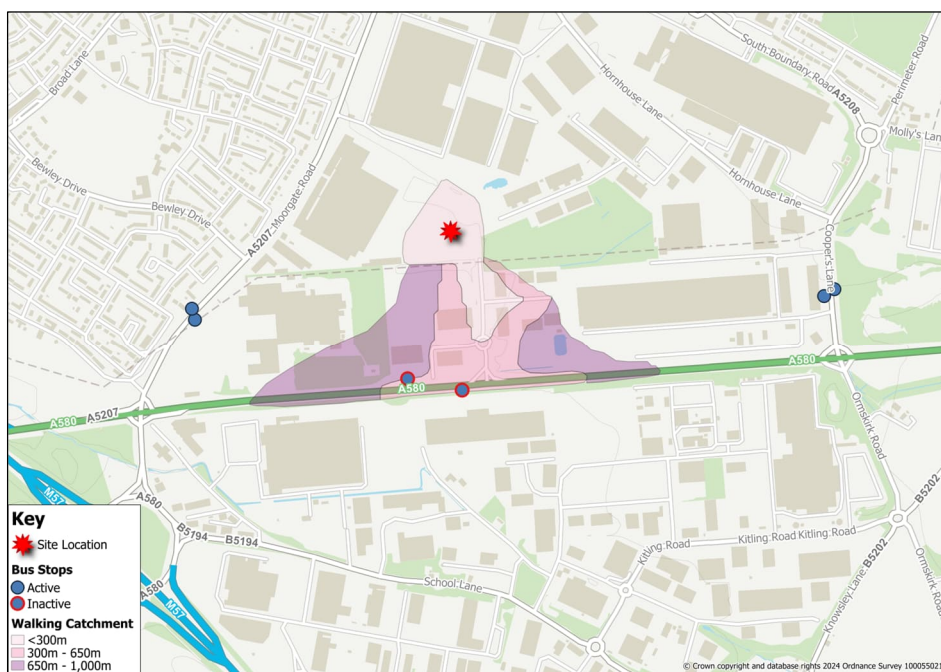


Figure 2.8 – Public Transport nodes accessible on foot

The closest active bus stops to the Site are located on the A5207 Moorgate Road North and the A5208 Coopers Lane, which are located approximately 1.5km from the Site.

The bus stops can be accessed via the footways along the A580. In addition to the controlled crossing facilities at the A5208 and the A5207 junctions, there are uncontrolled crossings adjacent to the bus stops providing access to services in the opposite direction.

The bus stops on the A5207 provide access to several bus services. These include three services that run hourly (898, 899, 17A/X), and three services that run more frequently (14A, 19, 97), every 15 to 45 minutes during the weekdays. The bus stops on the A5208 provide access to one additional service, namely the 217, which runs every 30 minutes during weekdays. There are additional bus services that can be accessed from these bus stops, however they are infrequent with only a few buses per day. The bus routes serve the neighbouring areas including, Knowsley, Kirkby, Bootle and Liverpool.

Whilst the bus stops in the area offer good service provision, they are located outside of the maximum recommended walking distance to a bus stop, so bus is unlikely to be a preferred mode of choice.

Rail

The Chartered Institution of Highways & Transportation (CIHT) document 'Planning for Walking' (2015) suggests that people will walk up to 800m to get to a railway station, which reflects the greater perceived quality or importance of rail services.

The closest rail station is Kirkby, which is located approximately 5km to the west of the Site which is significantly outside of the preferred maximum walking distance. However, the station can be accessed by cycle, or via the bus services on the A5207 Moorgate Road North.

BREEAM Accessibility Index

BREEAM guidelines indicate that a compliant public transport node includes any bus stop within 650m and any railway station within 1,000m of the assessed building's main entrance, measured via a safe pedestrian route.

Figure 2.8 shows the location of active bus stops in the vicinity of the Site, all of which fall outside the preferred walking distance to a bus stop. Therefore, the BREEAM Accessibility Index for the Site is calculated to be 0.

Considering the walking distances to amenities, neighbouring residential areas and compliant public transport notes it can be concluded that the Site does not benefit from a notable accessibility rating for walking trips and public transport trips.

2.4 Personal Injury Accident Record

Personal injury accident data have been obtained from CrashMap for the latest five-year period where data are available (2019-2023 inclusive). The data indicate there were a total of 25 collisions on the adjacent highway network of interest during that period. This includes Alchemy Way, the A580 East Lancashire Road, its junctions with the A5207 and the A5208, and the M57 J4. There were 18 recorded collisions that resulted in a Slight injury, six resulting in a Serious injury and one Fatality.

The respective locations of these collisions are shown in **Figure 2.9**.

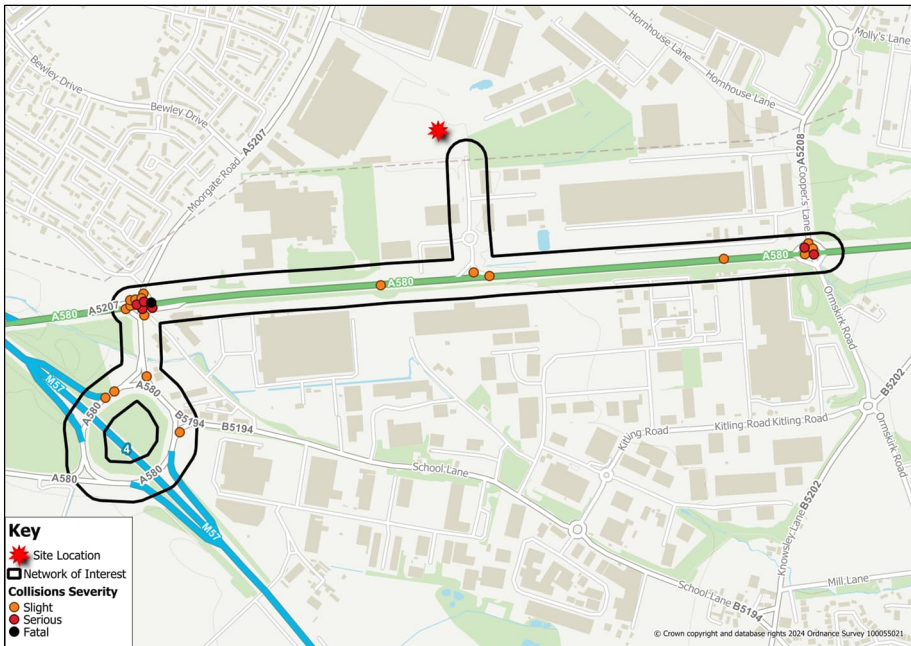


Figure 2.9 – Collision Location Plan

From **Figure 2.9**, it can be seen that the main cluster of collisions occurred at, or adjacent to, the A580 / A5207 junction with a total of twelve collisions recorded. This includes seven slight collisions, four serious collisions and one fatality. Two of the serious collisions and the fatal collision involved cyclists. The fatal collision occurred in 2023 and involved a car impacting a crossing cyclist. This occurred during the early morning, and it was noted the road surface was wet. The collision occurred during the pedestrian phase of the traffic signals. Of the other two serious collisions, one involved a motorcyclist, and one involved a collision between two cars.

Another small cluster of collisions is identified at the A580 / A5208 with five collisions recorded including three slight and two serious. One of the serious collisions involved a motorcyclist, whilst the other involved a collision between two cars.

Notably, there are no collisions recorded on Alchemy Way, with only two slight collisions recorded at or near its junction with the A580. One of the slight collisions involved a cyclist, whilst the other involved a collision between two cars and a goods vehicle.

A total of four slight collisions occurred at the M57 J4 junction. Of these, one involved a motorcycle, and another involved a goods vehicle.

Overall, the type and frequency of collisions are typical of what could be expected within a busy transport corridor. Notably, only two collisions involved goods vehicles which were both of slight severity. Whilst there is an increase in collision density recorded at A580 / A5207 junction, this is typical of large, signalised junction. As detailed above, the A580 / A5207 junction is currently undergoing improvements by the Council to provide additional signalised cyclist crossing facilities and to reduce the speed limit. It is reasonable to assume that the scheme has been formulated taking into account road safety as a core design principle and that the revised junction arrangement will further improve road safety.

Considering the above, there are no specific road safety concerns identified on the highway network of interest which the proposed development would exacerbate.

3 Transport Policy Review

3.1 Introduction

The following section details the findings of a review of the national, regional and local transport planning policies which are applicable to the Site.

3.2 National Policy

3.2.1 National Planning Policy Framework (2024)

The National Planning Policy Framework (NPPF) sets out the Government's planning policy and its expectations in terms of the application of this policy. The purpose of the NPPF is to achieve sustainable development, with a presumption that development should be allowed to proceed without delay if it meets the criteria under the roles of delivering economic, social and environmental objectives. In addition, NPPF states that proposals according with an up to date development plan should also be approved.

At its core, NPPF requires the planning system to:

"...actively manage patterns of growth" to make fullest possible use of public transport, walking and cycling, and focus significant development in "locations which are or can be made sustainable."

"However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."

Furthermore, paragraph 115 states that decisions should take account of whether:

- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
- Safe and suitable access to the site can be achieved for all users; and
- Improvements can be undertaken within the transport network that cost - effectively limits the significant impacts of the development.
Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

Paragraph 118 states that *"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".

3.2.2 DfT Circular 01/2022 The Strategic Road Network and the Delivery of Sustainable Development ('The Circular')

The Secretary of State's policy document for the Strategic Road Network (SRN) sits alongside National Planning Policy Framework (NPPF), and other planning policy documents to help set policies and make decisions on planning proposals. It sets out the general principles of engagement with National Highways as a Statutory Consultee at an early stage to identify and, if necessary, resolve any issues as early as possible in the process.

The circular is applicable to the whole of the SRN, comprising motorways and their junctions with the major road network.

The document also emphasises the need to consider and maximise opportunities for walking, wheeling, cycling, public transport and shared travel.

The Council contacted National Highways as part of its pre-application consultation and they have provided a response which is considered as part of this TA.

3.3 Regional Policy

3.3.1 LCRCA Draft Local Transport Plan (2024) (under preparation)

The LCRCA Draft Transport Plan details the Combined Authority's vision for transport for the city region up to 2040. The Draft Plan has recently undergone consultation and is currently under review.

The core vision of the Strategy is to develop a transport system that is clean, safe and accessible. There are five strategic goals listed in the Strategy, focusing on supporting inclusive economic growth across the city region, achieving net-zero carbon, improving the health and wellbeing of the population, and securing a well-maintained and resilient transport network.

It should be noted that the Draft Plan does not provide information about the proposed Infrastructure Delivery Plan as this is currently under development.

3.3.2 LCRCA Draft Spatial Development Strategy (2023) (under preparation)

The LCRCA is currently developing a Spatial Development Strategy (SDS). The SDS is a statutory planning document that will set out the development and use of land for the next 15 years up to 2040. Once adopted, it will form part of the 'development plan' for the six City Region local authorities alongside their own Local Plans and Neighbourhood Plans. The SDS policies, when finalised, will therefore be a material consideration when determining planning applications across the City Region.

The key objectives detailed in the latest publication draft include tackling climate change, reducing health inequalities, boosting economic prosperity, creating sustainable places, and maximising social value from development by ensuring positive impacts for communities.

3.3.3 LCRCAs Local Cycling and Walking Infrastructure Plan (2020)

LCRCA's LCWIP details the plans for developing walking and cycling routes across the City Region. The main goals of the plan are to improve sustainable transport options, promote healthier lifestyles, and enhance safety for cyclists and pedestrians.

With regards to the area surrounding the Site, Phase 2a focuses on the A580 East Lancashire Road, aiming to develop an integrated and high-quality cycling and walking route from Haydock to Liverpool. Additionally, Phase 3 of the LCWIP includes the Kirkby to Speke route, among other key routes. Both of these route improvements are considered to be long-term commitments (March 2029) and are subject to securing the appropriate funding.

3.4 Local Policy

3.4.1 Knowsley Local Plan

The Knowsley Local Plan Core Strategy (the Core Strategy) was adopted in 2016, and sets out the vision, objectives and policies which will guide development within Knowsley up to 2028.

A review of the Core Strategy has revealed several transport planning policies relevant to the Site. Knowsley Industrial Park is recognised as a key regeneration area, with emphasis on the need for strategic accessibility improvements in new developments, including better access to rail freight and connections to Kirkby town centre.

It should be noted that there are no specific policies addressing the control, or restriction, of HGV traffic in the area and there are no committed highway schemes that would affect the Proposal (excepting the delivery of the current junction improvements works on the A580 detailed previously which are of wider benefit).

The following policies are particularly relevant to the Site:

Policy CS1: Spatial Strategy for Knowsley

One of Knowsley's spatial development priorities will be to enhance existing employment sites and provide a suitable range of sites and premises for new employment development. There are several principal regeneration areas identified where opportunities for regeneration and development will be maximised, including Knowsley Industrial and Business Parks.

Policy CS2: Development Principles

New development in Knowsley will be expected to support the following development principles:

- Promote sustainable economic development;
- Reduce carbon emissions;
- Reduce the need to travel and increase accessibility;
- Protect and enhance environmental assets; and
- Prioritise locations consistent with the spatial strategy.

The development principles will be implemented using development assessment tools including Transport Assessments and Travel Plans.

Policy CS7: Transport Networks

The overall transport strategy involves meeting the development needs of the borough through to 2028, enhancing road safety, and ensuring people can reach their destination by choice of walking, cycling and public transport.

New development will be required to be:

- Located and designed to prioritise accessibility and sustainable modes of travel, and incorporate access for private vehicles.
- Where subject to a planning application, accompanied by Transport Assessments and / or Travel Plans; and
- In compliance with adopted cycle, car, disabled and service vehicle parking standards.

Policy CS11: Principal Regeneration Area – Knowsley Industrial and Business Parks

Regeneration of Knowsley Industrial and Business Parks will be supported, encouraging a mix of new high quality employment development with a particular focus on the development of Class B2 'General Industrial' and B8 'Storage and Distribution' uses.

Policy CS19: Design Quality and Accessibility in New Development

New development within Knowsley will be expected to provide safe, secure and convenient routes for movement, with priority for walking, cycling and public transport, and integrate effectively with existing developments.

Development proposals will be required to avoid unacceptable impacts on existing residents, building occupiers, and future occupiers.

Policy CS27: Planning and Paying for New Infrastructure

Proposals for new development will be required to demonstrate that any negative impacts that the development may have on the improvement, replacement or provision of new infrastructure will be avoided and / or appropriately mitigated as part of the planning process.

New development will be expected (where necessary given the scale and nature of the proposal) to:

- Demonstrate compliance with Local Plan policies which specifically require developer contributions;
- Provide additional on-site or directly ancillary infrastructure as required to make the development acceptable in planning terms; and
- Provide financial contributions towards the provision of strategic infrastructure to support local communities together with borough-wide and other strategic development requirements.

The Knowsley Replacement Unitary Development Plan (the UDP) was adopted in 2006. Following a transition to the Local Plan system and subsequent adoption of the Core Strategy, the majority of the UDP policies have been

replaced. A number of UDP policies continue to be saved, which are detailed in the Core Strategy. The policies relevant to the Site include the following:

Policy EC3: Primarily Industrial Areas

The Site and surrounding area is identified as a primarily industrial area, and is an appropriate location for Business (Class B1), General Industry (Class B2), and Storage and Distribution (Class B8) uses.

Policy T6: Ensuring Choice of Travel to New Developments

Proposals for new development should provide or be served by a good choice of modes of travel which is appropriate to the scale and nature of the development, as follows:

- Well lit, safe, convenient and clearly sign-posted footways and cycle routes
- Cycle parking facilities in accordance with the Council's minimum standards;
- Car parking facilities which do not exceed the Council's maximum standards;
- Parking facilities for the less mobile, delivery and other service vehicles within the site in accordance with the Council's minimum standards;
- Safe and convenient vehicular access to and from the highway and within the site; and
- Good provision of public transport to the site.

Policy T7: New Development and Walking & Cycling Routes

New development should preserve and where possible enhance the walking and cycling network.

Policy T8: Transport Assessments

Development proposals that would generate a material increase in traffic, which would overload the access to, or any part of the network, will not be permitted, unless the necessary mitigation measures required are undertaken.

Transport Assessments will be required for major traffic generating development proposals or proposals that would generate a material increase in traffic on any motorways, trunk roads or other primary routes.

Policy T9: Travel Plans

Travel Plans will be required for major traffic generating development proposals or proposals that would exacerbate an existing traffic problem in the surrounding area which would otherwise justify a refusal of planning permission.

Travel Plans will be encouraged to be as sustainable and innovative as possible and also provide inclusive access for all.

3.4.2 Ensuring a Choice of Travel Supplementary Planning Document (2019)

The Ensuring a Choice of Travel Supplementary Planning Document (SPD) was adopted by the Council in 2010 to provide detailed guidance about the Council's transport policies. The main objective of the SPD is to ensure a good choice of travel modes to all new developments in Knowsley.

The development is considered 'Major' based on the thresholds listed in the SPD for B2 (4,000 m²+) and B8 (5,000 m²+) uses. The SPD provides details on the parking standards, accessibility, and Transport Assessment and Travel Plan requirements for new developments.

Policies T6, T8 Transport Assessments (TAs) and T9 Travel Plans (TPs) detailed in the UDP are also listed within the SPD. The SPD provides further information on the thresholds for TAs and TPs, and what information is required.

More information on the relevant parking standards is provided in *Section 4.5*.

3.5 Summary

From the above, it is considered that the development location and proposed quantum accords with current national, regional and local policy.

Prevailing policy has a significant focus on sustainable development and, for obvious reasons, makes specific reference to access and proximity to sustainable transport infrastructure. This is typically focused on maximising the use of sustainable modes of travel to reduce the use of the private car.

The accessibility review presented in *section 2.3* acknowledges that the Site does not benefit from a notable accessibility rating for walking trips and public transport trips given its location at the end of a cul-de-sac, although cycle accessibility is good. This has not however been a barrier to the development of other adjacent employment sites on Alchemy Way, which have identical location characteristics in respect of sustainable transport. The Site is also designated in the Local Plan for employment uses and as such, the principle of development for the land use classes now applied for is established.

A Travel Plan will be prepared for the Site to maximise use of the available non-car options and promote their use. A number of sustainable travel measures will be implemented as part of the development, including, showers and changing facilities to facilitate running and cycling commuter trips, covered and secure cycle parking and dedicated car share and EV spaces.

3.6 Other Applicable Guidance

3.6.1 BREEAM UK New Construction (v6.1)

The BREEAM UK New Construction V6.1 scheme can be used to assess the environmental life cycle impacts of new non-domestic buildings at the design and construction stages.

The transport category includes two assessment criteria:

- Tra 01 Transport assessment and travel plan (2 credits)
- Tra 02 Sustainable transport measures (10 credits)

The Transport Assessment shall cover current and future travel patterns, existing pedestrian and cycling infrastructure, existing amenities in the vicinity, and accessibility assessment. The Travel Plan shall consider measures such as provision of electric vehicle charging stations, cycle storage, pedestrian and cycle facilities, and car parking restrictions.

Tra 02 relates to the sustainable transport measures implemented at the proposed development, and the proximity to amenities and quality public transport services. Credits are awarded according to the existing Accessible Index (AI) of the project, calculated for Tra 01, and the total number of points achieved for the implemented measures.

4 Development Proposals

4.1 Development Description

The present application seeks full planning permission for the demolition of existing buildings / structures and erection of industrial & logistics warehouse units (Use Class B2 and/ or B8 and/ or E(g)(iii)), with ancillary offices, including provision of revised access arrangements from Alchemy Way and all associated works of landscaping, car parking and servicing arrangements. The Proposal is split between two units as follows:

- Unit K135 – 11,966 sq. m; and
- Unit K72 – 6,418 sq. m.

The largest of the units (Unit K135) is located to the north-west of the Site, whilst the smaller unit (Unit K72) is located to the south-west. Both comprise dedicated access from the internal (private) access road, servicing and staff / visitors parking areas.

As the development is speculative, the use classes of the future occupiers of the two units cannot be confirmed at this stage and therefore an open consent for the identified land uses is sought. Taking this into account, it has been agreed with the Council that for the purposes of assessing traffic generation and parking provision two development scenarios will be considered, comprising an all B2 development and an all B8 development, the former presenting the most robust assessment of future development impact.

Site Layout plans for each scenario are shown in the UMC Architects drawings included as **Appendix C**. The key differences between the scenarios relate to parking provision and service yard layout reflecting the differing characteristics of B2 and B8 operations. The main site infrastructure is common to both alternatives.

4.2 Proposed Site Access and Internal Road Network

There are no existing points of access to the Site for either vehicles or non-motorised modes. As described in *Section 2.2* the adopted highway of Alchemy Way currently terminates just short of the Site's southern boundary.

Access to the Site will be provided via a connection with Alchemy Way which will link to a new internal private spine road extending from Alchemy Way into the Site, as shown on the Site Layout plans (**Appendix C**). This will facilitate

access to the Site for all car and HGV traffic as well as pedestrians and cyclists. An uncontrolled crossing point comprising dropped kerbs and tactile paving will be provided on Alchemy Way just south of the Site boundary to allow pedestrians to cross between the existing footway along the eastern side of the carriageway and the proposed footway leading into the Site along the spine road.

The new spine road and the internal access points will remain private and outwith the adopted public highway. Access to the individual service yards will be gated.

The Site has historically benefitted from planning permission consent (granted in 2009) for B2 / B8 development accessed from Alchemy Way which confirms that the principle of taking an access to the development land directly from Alchemy Way was accepted.

Access to the car park areas and service yards of each unit will be taken from the central spine road. Although the spine road will remain private, it will be designed to adoptable standards and can accommodate safe two-way movement of the largest anticipated vehicles (a 16.5m articulated HGV), with a carriageway width of 7.3m and single footway of 2m with flush crossing points provided.

Visibility at the access points from each unit onto the spine road has been provided for a 20 mph road, namely an X-distance of 2.4 metres and a Y-distance of 25 metres, as shown on the plan included as **Appendix D**.

As agreed between the Applicant and the Council, the Site Layout retains the ability for a future option to establish an access from the spine road into the land to the east of the application site which is owned by KMBC.

If supported by the Council, consideration can be given to the introduction of a TRO on Alchemy Way to control the on-street parking which currently partially obstructs the carriageway, footways and crossing points on the northern section of Alchemy Way (see **Figure 2.4**).

4.3 Servicing Strategy

The spine road and service yards for each unit have been designed to accommodate the two-way movement of maximum length (16.5m) articulated HGVs. Swept path analysis of HGVs manoeuvring within the individual service yards is shown in **Appendix C**.

It is anticipated that the service yards will be gated for security reasons, with sliding, or inwardly opening, gates to enable a vehicle to wait at the yard access whilst the gate is opened. The waiting zone in front of each gate is sufficient to enable a full length articulated HGV to wait without obstructing the operation of the spine road, or car park accesses. The larger unit can accommodate two HGVs waiting in separate lanes. In operational terms the gates are likely to be open during normal working hours and will be closed overnight.

4.4 Pedestrian and Cycle Facilities

Cycle parking will be provided as detailed in *Section 4.5.5* below. Covered cycle shelters are provided on paved, non-traffic areas at key locations throughout the Site as shown in **Appendix C**. Footways provide safe pedestrian routes from

each parking area and cycle store into the individual units, and along the main spine road of the Site. Crossing points are provided along the main spine road and within the parking areas to allow pedestrians to cross safely. There are no stepped areas within the Site and all crossing points will comprise dropped kerbs to ensure easy access for all users.

Provision for lockers, showers and changing facilities are included within each building.

As detailed in *Section 4.2*, an uncontrolled crossing point will be provided along Alchemy Way just south of the site boundary to provide a connection to the existing footway along the eastern carriageway.

The possibility for the provision of a pedestrian link to the A5207 Moorgate Road North which goes through the existing development located just west of the Site has been explored. However, it has been concluded by the Applicant that this is not feasible for operational, pedestrian safety and security reasons.

4.5 Parking Provision

Car parking is provided with reference to the standards set out in the Council's SPD Ensuring a Choice of Travel (2010). The applicable standards relate to sites that are classed as located outside the Town Centre, and District or Local Centres. The relevant parking standards are included as **Appendix E**.

The development proposals comprise two land-use classes (B2 General Industry and B8 Storage & Distribution). **Table 4.1** sets out the applicable standards for each. The car parking standards detailed are maximums, whilst the disabled, cycle and motorcycle standards are minimums. Whilst there are no specific standards relating to Electric Vehicles, the guidance states that electric vehicle charging infrastructure will be required, at the discretion of the local highway authority, at a level appropriate to the type and scale of the development and in line with any future government guidance.

Class Use	Car Parking (per sqm)	Disabled Parking		Cycle Parking (per sqm)	Motorcycle Parking (per sqm)
		Up to 200 bays	Over 200 bays		
B2 (General Industry)	1:45	Individual bays for each disabled employee plus 2 bays or 5% of total capacity whichever is greater	6 bays plus 2% of total capacity	1:450	1:1,000
B8 (Storage and Distribution)	1:100			1:850	1:2,000

Table 4.1 - Parking Standards

4.5.1 Car Parking Requirements

As the occupiers are not known at the time of writing a split between the use classes cannot be confirmed at this stage. However, it is noted that the Council requires adequate car parking provision for both B2 or B8 occupiers, to ensure that parking is sufficient for each scenario and can be contained within the Site.

Based on the applicable standards, a scenario where both units are occupied by B2 uses represents the 'worst case scenario' for parking provision. Office accommodation in each unit is ancillary to the principle uses and therefore the

floorspace has been included but considered under B2 / B8 uses for the calculation of parking provision.

Table 4.2 sets out the maximum car parking requirements across the Site with associated disabled, cycle and motorcycle parking (as minimums) for each unit as prescribed by the Council's parking standards.

Class Use	Car Parking	Disabled Parking		Cycle Parking	Motorcycle
		Up to 200 bays	Over 200 bays		
Unit 72					
B2 (General Industry)	143	7	N/A	14	6
B8 (Storage and Distribution)	64	3	N/A	8	3
Unit 135					
B2 (General Industry)	266	N/A	11	27	11
B8 (Storage and Distribution)	120	6	N/A	14	6

Table 4.2 – Parking Provision based on the KMBC Standards

From **Table 4.2** it can be seen that if the development comprised 100% B2, it would result in a maximum car parking quantum of 389 spaces across the two units. If it were 100% B8, this would result in 175 spaces.

Table 4.3 details the proposed number of car parking spaces for each unit (individually) compared to the maximum standards.

Class Use	Car Parking Standards	Proposed Spaces
Unit 72		
B2 (General Industry)	143 (1:45)	94 (1:68)
B8 (Storage and Distribution)	64 (1:100)	64 (1:100)
Unit 135		
B2 (General Industry)	266 (1:45)	186 (1:64)
B8 (Storage and Distribution)	120 (1:100)	122 (1:98)

Table 4.3 – Proposed Car Parking Provision compared to the Car Parking Standards (ratio to GIA)

As shown above, the car parking provision for the B8 scenario allows for the provision of the full maximum standard and indeed is slightly above the threshold. In this regard it is noted that the consented Network Space development adjacent to the Site includes provision for B8 in excess of the maximum parking standards and this aligns with the wishes of the Council officers identified during scoping discussions.

In relation to the B2 scenario, the provision of additional car parking spaces will be accommodated within the service yards for each unit as shown on the B2 Site Layout plan (**Appendix C**). This use class has less demand for HGV parking than B8 and therefore frees up space which can be used for additional parking. The B2 car parking provision is below the maximum standards for B2 uses, although it is notably better than the 1 space per 76sq. m GIA ratio

accepted by the Council for the Network Space development, and which was identified as a suggested target ratio that would be acceptable to the Council in scoping discussions for this application.

As well as aligning to the identified aspirations of the Council, and its prevailing parking standards, the proposed parking provision is in line with the Applicant's expectations for commercial demand and parking requirements based on their experience elsewhere, market conditions and the location and available amenities that the Site offers to prospective occupants.

4.5.2 Disabled Parking

The standards state that provision for disabled parking spaces should be provided on a 1 to 1 basis for currently known disabled employees, plus 2 spaces or 5% of total capacity, whichever is greater (sub 200 spaces per unit). The number of future disabled employees cannot be determined at this stage, so 5% of the provided spaces have been assigned for disabled parking. Overall, this equates to a total of **11 parking spaces** for the B8 scenario, and **18 spaces** for the B2 scenario. The spaces are split between the two units proportionally based on the development quantum for each.

If a need for additional spaces is identified, standard car parking spaces can be converted as required. The spaces will be sited in the most accessible location relative to the pedestrian entrances to the units.

4.5.3 Motorcycle Parking

From **Table 4.2**, it can be seen that a development comprising 100% B2 would require a minimum requirement for **17 motorcycle spaces** and 100% B8 would require a minimum of **9 spaces**.

Motorcycle parking spaces have been provided for each unit in line with these standards. The provision of additional motorcycle parking can be revised if the demand increases such that it is needed.

4.5.4 Car Share Spaces

In accordance with the BREEAM guidance, 5% of the total parking capacity will be allocated as priority spaces for car sharers. This results in a total of **11 car share spaces** for the B8 scenario (which will be designated for use by employees who have chosen to car share), and **15 spaces** for the B2 scenario. These spaces are split between the two units proportionally based on the development quantum and will be located close to the building access points for additional convenience.

4.5.5 Cycle Parking

From **Table 4.2**, it can be seen that the greatest requirement for cycle parking spaces would be if the development comprised 100% B2, resulting in a minimum requirement for a total of 41 cycle spaces across the Site.

The proposals include a total of **84 cycle parking spaces**, provided across the Site. The provision has been derived using BREEAM cycle parking standards, calculated based on expected employee levels. The calculations utilise the "sliding scale of compliance" methodology defined in BREEAM guidance to identify the level of cycle parking for each unit. The resultant cycle parking levels significantly exceeds the Council's minimum requirements.

The cycle parking will be provided within covered shelters suitable for long stay cycle parking. Once the Site is operational, cycle usage will be monitored to identify if further provision is needed.

4.5.6 Electric Vehicle Provision

Whilst the Council does not have formal parking standards for electric vehicle provision, the guidance states that EV charging infrastructure will be required at a level appropriate to the type and scale of the development.

BREEAM guidance suggests that 10% of the total car parking capacity should be provided for EV charging.

In total, **19 EV ready parking spaces** are proposed for the B8 scenario and **20 spaces** for the B2 scenario, which equates to 10% of the provision within the B8 scenario, or 7% for the B2 scenario.

An additional 10% of the proposed parking provision will have the necessary infrastructure in place to support easy conversion to EV spaces in the future, as necessary.

5 Traffic Generation

5.1 Introduction

This section describes the methodology used to derive the assessment traffic flows at the junctions comprising the highway network of interest. All subsequent assessment scenarios consider a 100% B2 development occupation of the Site to reflect a worst-case assessment with regards to trip generation.

The methodology has been agreed with the Council as part of the pre-application and subsequent TA scoping discussions.

5.2 Trip Generation Analysis

As agreed with the Council, trip rates have been taken from the adjacent committed B2 / B8 development on Knowsley Lane (reference 22/00348/FUL) which was granted permission in May 2023 and is similar to the applicant's proposal. The Council has therefore previously accepted the adopted trip rates as appropriate for the assessment of the traffic impact arising from a B2 / B8 development.

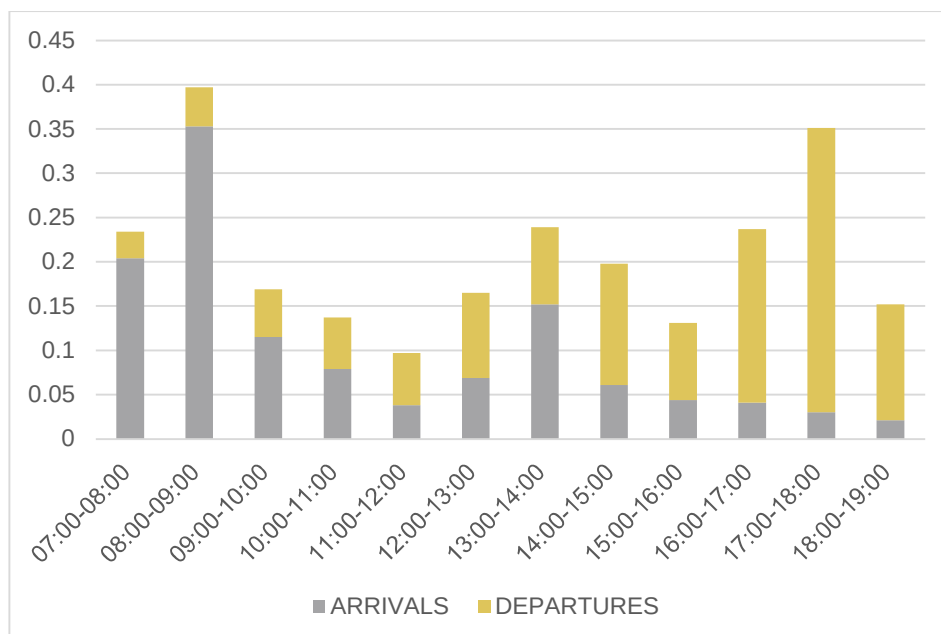


Figure 5.1 – Vehicle Trip Rate Profile

The profile of arrivals and departures shows that the highest hourly vehicle trips occur during 0800 to 0900 hours and 1700 to 1800 hours reflecting a typical AM and PM peak hours for this type of development.

The Vehicle Trip Rates per 100m² GIA, and resultant Vehicle Trips for the AM and PM peak hour time periods for the proposed development quantum are set out below. The vehicle trips are split into Lights and Heavies, where the latter is derived from the OGV trip rates, and the former includes all other motor vehicles for robustness.

Type	AM Peak			PM Peak		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Lights	0.338	0.031	0.369	0.029	0.32	0.349
Heavies	0.015	0.013	0.028	0.001	0.001	0.002
All Vehicles	0.353	0.044	0.397	0.03	0.321	0.351

Table 5.1 –Vehicle Trip Rates

Type	AM Peak			PM Peak		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Lights	62	6	68	5	59	64
Heavies	3	2	5	0	0	0
All Vehicles	65	8	73	6	59	65

Table 5.2 –Development Vehicle Trip Estimates

5.3 Trip Distribution

As agreed with the Council, a trip distribution for cars has been derived based on NOMIS data. The selected dataset is “*Location of usual residence and place of work by method of travel to work (MSOA level)*” with the location of work set as “*E02001331 : Knowsley 005 (2011 super output area - middle layer)*”.

Although more recent data are available, due to the uncertainty around the effects of the Covid-19 pandemic on the results of the Census 2021, it was concluded the Census 2011 data are more appropriate in this instance.

Routes from each origin output area have been assigned to the local highway network of interest based on the most appropriate route.

The trip distribution for HGV traffic has been identified based on a review of the suitability of the local network for large vehicles and appropriate routeing options to key destinations and the strategic highway network, based on professional judgement and knowledge of the local highway network.

The resultant Trip Distribution Plans for HGVs and cars are included as **Appendix F**.

The anticipated HGV and other Vehicle Trips have been assigned across the network of interest using the Trip Distribution Plans to derive the Development Traffic Flows (Vehicles) for HGVs and Cars for the identified peak hours, as shown in **Appendix G**.

To inform the Junction Impact Assessments detailed in *Section 7*, all vehicle trips have been converted to Passenger Car Units (PCUs). The resultant Development Traffic Flows (PCUs) for the identified peak hours is shown in **Appendix H**.

5.4 Modal Split

For the purposes of understanding the likely demands on sustainable travel, the anticipated level of demand on each mode arising from the proposed development has been calculated. The modal split has been derived from the NOMIS data (as specified above).

The NOMIS data encompasses “Driver” trips, which correspond closely with the two-way “light” vehicle trips detailed in **Table 5.2**. The remaining mode shares have then been estimated based on this relationship to adjust the usage of each mode according to its relative percentage split, as illustrated in **Table 5.3** below.

Overall, a total of 96 and 90 person trips are anticipated in the AM and PM peak hours, respectively.

Mode	%age	AM Peak	PM Peak
Driver	71%	68	64
Car Share	9%	9	8
Taxi	1%	1	1
Motorcycle	1%	1	1
Bus	9%	9	8
Train	1%	1	1
Tram	0%	0	0
Bicycle	2%	2	2
Foot	5%	4	4
Other	1%	1	1
Total	100%	96	90

Table 5.3 – Sustainable and Active Travel Demand

The mode share data indicates that 73% of person-trips will be by private car, taxi or motorcycle, with a further 9% as a car passenger. Of the sustainable travel modes, travel by bus is the most prevalent with 9% of predicted person trips, followed by 5% on foot and 2% by bicycle.

The sustainable access study has highlighted that the Site is not well served by existing public transport services and is also unlikely to attract significant levels of commuter trips on foot therefore the numbers in **Table 5.3** are deemed to be a robust estimate of demand for these modes.

The resultant additional demand for public transport trips is unlikely to add any noticeable change in capacity on the currently available services. Similarly, the

magnitude of additional cycling and pedestrian trips will be easily accommodated by the existing infrastructure.

6 Forecast Traffic Flows

6.1 Introduction

The following section sets out the methodology used to determine the forecast traffic flows for use in the assessment of the impacts of development generated traffic on the local highway network.

6.2 Scope of Assessment

The network of interest has been identified, based on the scoping discussions with the Council. It was agreed that the highway network of interest to this TA comprises the following junctions:

- Alchemy Way roundabout; and
- A580 East Lancashire Road / Alchemy Way signalised junction.

The Site will be accessed via a new spine road extending into the Site from the existing termination of Alchemy Way and as such there is no site access junction onto the public highway to be assessed.

The development traffic flows presented in **Appendix H** show that in the AM peak hour a total of 49 PCUs will arrive from the west on the A580. Whilst this flow is high enough to justify a review of potential impacts on the operation of the preceding junction (A580 / A5207 Moorgate Road), during scoping discussions the Council indicated that this junction has been subject to extensive modelling studies under robust scenarios accounting for future traffic growth and Local Plan land allocations (which would include the application site). As such, it was agreed with the Council that given the improvement works currently in progress account for future development, there is no requirement for a further assessment of this junction.

6.3 Background Traffic Flows

A classified turning count was undertaken at the A580 / Alchemy Way junction and Alchemy Way roundabout on Tuesday 17th June 2025 between 0700 to 0930 hours and 1600 to 1830 hours in order to capture the typical network AM and PM peak hours. Queue surveys were also undertaken to assist in the validation of the junction model.

Examination of the junction survey data indicates that the AM peak hour is 0730 to 0830 hours, and the PM peak hour is 1630 to 1730 hours.

The 2025 Background Traffic Flows for the AM and PM peak hours are shown in **Appendix I**.

6.4 Assessment Years and Traffic Growth

During scoping discussions, it was confirmed by the Council that an assessment of potential traffic impacts should be undertaken for the Application Year plus 5 years, resulting in a future assessment year of 2030.

Traffic growth factors have been identified using TEMPro. The program enables users to look at traffic growth using actual and forecast data supplied by the Department for Transport.

The derived traffic growth factors using TEMPro for the area “E02001331 : Knowsley 005 (2011 super output area - middle layer)” are as follows:

- 2025 to 2030 – AM – 1.03575
- 2025 to 2030 – PM – 1.03455

6.5 Committed Development Flows

The following committed developments were identified with the Council as potentially having relevance to the traffic impact assessment as part of this TA:

- Network Space, Alchemy Way (Ref: 23/00456/FUL)
- Redsun Projects, Gale Road (Ref: 23/01197/FUL)
- Acornfield Properties, Kirkby Bank Rd (Ref: 23/02819/FUL)
- Arundel Propco Ltd, Moorgate Rd (Ref: 23/00215/FUL)
- Caddick Developments, East Lincs Rd (Ref: 22/00348/FUL)

A review has been undertaken to ascertain whether any of these developments would significantly impact on the baseline operation of the highway network of interest and if they need to be taken into account in the future year assessment within this TA.

The reports for **Redsun Projects** and **Arundel Propco** developments do not include any development traffic flows along the A580 in the vicinity of the Site. The report for **Acornfield Properties** development details negligible development traffic and as such no formal Transport Assessment was undertaken. This information was presented to the Council and it was agreed that these developments do not need to be considered within the assessment.

The **Network Space** development is located on Alchemy Way immediately adjacent to the Site and is predominately B2 / B8, with all traffic accessing via the A580 / Alchemy Way junction.

The supporting planning documentation states that the proposed level of traffic generation is not significant and is less than previously assessed within the masterplan application covering the wider Alchemy Way business park. No operational assessment was undertaken and the Council did not require any mitigation. It should be noted that traffic flow diagrams were not provided as part of the supporting documentation for the proposed Network Space development. As such, a traffic distribution of 50 / 50 split on to the A580 has been assumed for the current purposes of this assessment.

The **Caddick Developments** site is located to the southeast of the A580 / A5208 / Ormskirk Road junction and comprises B2 / B8 land uses. The

supporting TA estimates that the site will generate 37 and 31 two-way trips in the AM and PM peak hours, respectively. However, only a proportion (14 two-way trips) will utilise the A580 and pass through the Alchemy Way junction in each peak hour.

Table 6.1 presents the total flows accounted for as committed development. The traffic flows have been combined and applied to the highway network of interest with the resultant Committed Development Flows detailed in **Appendix J**.

	AM Peak			PM Peak		
	Arrive	Depart	Two-way	Arrive	Depart	Two-way
Network Space	99	41	140	31	95	126
Caddick	11	3	14	3	11	14

Table 6.1 – Proposed traffic flows for the Network Space development

6.6 Base Flows

The 2025 Background Traffic Flows detailed in **Appendix I** have been expanded to 2030 using the TEMPro growth factors detailed above. These flows have then been expanded to include the Committed Development Flows. The resultant 2030 Base Traffic Flows are detailed in **Appendix K**. Where peak hours differ between the background traffic flows and the anticipated development trips, the worst case in each has been used (peak + peak) to ensure a robust assessment.

6.7 Assessment Flows

The Base Traffic Flows detailed above have been combined with the anticipated Development Traffic Flows presented in **Appendix H** to derive the 2030 Assessment Traffic Flows which are detailed in **Appendix L**.

7 Junction Impact Assessment

7.1 Assessment Methodology

An operational assessment of the highway network of interest has been undertaken to understand the potential traffic impacts arising from the introduction of the traffic generated by the proposed development on the network of interest. The assessment of the A580 and Alchemy Way utilises the TRANSYT 16 software which is the industry standard for assessing the capacity of networks comprising priority and signal-controlled junctions.

To ensure that the geometric parameters of the junction models reflect existing junction geometry, all measurements have been taken from available Ordnance Survey mapping and on-site observations. Existing signal phasing and staging information for the A580 / Alchemy Way junction have been obtained from the Council.

Given their proximity, the Alchemy Way roundabout and the A580 / Alchemy Way signalised junction have been modelled as a single network to ensure the interactions between each are correctly synthesised.

The results of the operational assessment of the junctions are presented in the following section along with a summary of the assessment findings.

7.2 A580 / Alchemy Way and Alchemy Way Roundabout

To ensure that the assembled model results in an accurate prediction of the highway network future operational performance, it was initially tested against the 2025 Background Traffic Flows and the results compared to the observed queue length surveys.

The results of the assessments are summarised in **Table 7.1**, with all queues shown in PCUs. The corresponding TRANSYT outputs for each flow scenario are included as **Appendix M**.

Arm	Description								
1A	A580 (EB)								
1B	Alchemy Way - Internal (SB)								
1C	A580 (WB)								
2A	Alchemy Way - Internal (NB)								
2B	Private Access								
2C	Alchemy Way								
Stream	Lane/ Movement	2025 AM Peak				2025 PM Peak			
		Validation Model		Queue Length Survey		Validation Model		Queue Length Survey	
		DoS	Queue	Ave	Max	DoS	Queue	Ave	Max
1A1	Ahead	47%	9	6	11	55%	11	6	13
1A2	Left Turn	9%	1	1	3	2%	0	1	4
1A Bypass	Left Turn (Give-Way)	13%	1	N/A	N/A	2%	0	N/A	N/A
1B1	All	13%	1	2	5	19%	2	4	10
1C1	Ahead	21%	4	6	17	23%	6	7	14
1C2	Right Turn	20%	1	2	4	6%	0	1	1
2A	All	7%	0	0	0	2%	0	0	0
2B	All	2%	0	0	1	2%	0	0	1
2C	All	2%	0	0	0	5%	0	0	1
DoS		Degree of Saturation Practical Maximum 90%							
Queue		Queue Length Passenger Car Units (PCU's)							

Table 7.1 – 2025 Junction Validation Summary

From a review of the queue data, it is apparent that the network, and especially the Alchemy Way roundabout, operates well within capacity, with only occasional short-duration queues through both surveyed periods. As expected, the most notable queues occur on the A580 in both directions of travel in both peak hours. Even so, the queue is typically 6 or 7 vehicles split across both ahead lanes, although occasional spikes in demand result in sporadic longer queue lengths.

The predicted queues on stream 1B1 (Alchemy Way exit onto the A580) fall slightly short of those recorded, however the difference is minimal and is considered to be as a result of the more random nature of observed traffic flow demand vs modelled.

The queues predicted on stream 1C1 (A580 westbound ahead) are shorter than observed. However, it was apparent during the traffic survey period that the temporary traffic management in place on the westbound carriageway, beyond the Alchemy Way junction, currently reduces the two ahead lanes to one (see **Figure 7.1**). Queues recorded in the survey data suggest that on the survey day very few vehicles were choosing to use the inside lane at the A580 westbound stop line, resulting in a single, greater queue, and slight reduction in capacity at that arm, over normal operation. It is therefore appropriate that the model

reflects the normal operation of the 2 lanes on the A580 rather than the current temporary situation.



Figure 7.1 – Lane closure on the A580 Westbound, looking west from Alchemy Way

Overall, the queues predicted by the model (which represent average queues) are largely comparable to the average queues observed during the traffic surveys. The model is therefore considered appropriate for predicting the operation of the network under future traffic flow conditions.

The operational performance of the network has been tested against the 2030 Base Flow scenario to give a datum against which the likely traffic impact of the proposed development can be considered. It has then been re-tested against the Assessment Flow scenario to identify any requirement for improvements to mitigate the likely traffic impact.

The results of these assessments are summarised in **Table 7.2**. The corresponding TRANSYT outputs for each scenario are included as **Appendix M**.

Arm	Description								
1A	A580 (EB)								
1B	Alchemy Way - Internal (SB)								
1C	A580 (WB)								
2A	Alchemy Way - Internal (NB)								
2B	Private Access								
2C	Alchemy Way								
Stream	Lane/ Movement	2030 Base				2030 Assessment			
		AM Peak		PM Peak		AM Peak		PM Peak	
		DoS	Queue	DoS	Queue	DoS	Queue	DoS	Queue
1A1	Ahead	50%	10	57%	12	50%	10	57%	12
1A2	Left Turn	14%	1	3%	0	19%	2	4%	0
1A Bypass	Left Turn (Give-Way)	21%	2	4%	0	28%	2	5%	0
1B1	All	22%	2	38%	3	24%	2	49%	4
1C1	Ahead	22%	4	24%	6	22%	4	24%	6
1C2	Right Turn	42%	2	12%	0	49%	2	13%	0
2A	All	13%	0	3%	0	17%	0	4%	0
2B	All	4%	0	6%	0	5%	0	6%	0
2C	All	3%	0	7%	0	4%	0	12%	0
DoS		Degree of Saturation Practical Maximum 90%							
Queue		Queue Length Passenger Car Units (PCU's)							

Table 7.2 – Base and Assessment Results

From **Table 7.2**, it can be seen that in the Base Flow scenarios, the highway network of interest is predicted to operate with no capacity constraints on any movements. The results for the Assessment Flow scenario predict that with the addition of the development traffic the junction will continue to operate with no capacity constraints. Furthermore, the results show that the predicted queue on the A580 (WB) right turn lane into Alchemy Way can be accommodated within its available length and will not cause blocking back along the main arm.

It can therefore be concluded that the highway network of interest and both junctions assessed therein, are appropriate to accommodate development generated traffic in their current form, have ample spare capacity in the 'with development' future year scenario and no mitigation works are required.

7.3 Review of Impact on M57 Junction 4

As requested by National Highways, the potential impacts of the development on the operation of M57 Junction 4 have also been considered. Given the location of the development Site, only vehicles travelling southbound along the M57 will use the J4 roundabout. Vehicles travelling northbound along the M57 are expected to use the northbound on / off slip roads to the west of the A580 / A5207 junction.

The trip distribution included as **Appendix F** indicates that 30% of HGVs and 23% of cars are predicted to travel southbound along the M57. This results in a total of 20 two-way development trips in the AM peak, and 15 in the PM peak.

Given the predicted low number of development trips at the junction when compared to the very significant background traffic flows at J4, the impact of the Proposal on the M57 J4 roundabout is considered to be negligible and will be undetectable within the daily variation in flow at the junction.

Similarly, vehicles trips travelling northbound on the M57 comprise 20% of HGV and 18% of cars, resulting in even fewer trips which are expected to be indistinguishable from the daily variation in background traffic flows.

Furthermore, the proposals will not result in any physical changes to the network and therefore will not impact upon the needs and operation of pedestrians, cyclists or road safety in general.

It is noted that as part of the works being progressed by the Council at the A580 / A5207 (Moorgate Road) junction, Phase two, will commence in the summer of 2026 and include for full signalisation of the Junction 4 roundabout as well as a range of other improvements.

In summary, the proposed development will not have a material impact upon M57 J4 now or in the future, and traffic generation from the scheme will be undetectable within the daily variation in flow at the junction. As such, no further assessment of traffic impacts on the strategic highway network have been undertaken.

8 Summary and Conclusions

This TA has been prepared on behalf of Indurent Management Limited, to support a proposed industrial and logistics development comprising two industrial warehouse units of circa 18,384 sq. m (total GIA) of B2 / B8 and relevant E(g)(iii) class land uses, to the south of Knowsley Business Park.

The TA has been prepared in accordance with best practice and the scope of the TA and the associated Interim Travel Plan have been agreed with Knowsley Metropolitan Borough Council and National Highways, as part of a pre-application scoping exercise. In addition, this TA has been prepared in line with BREEAM specific transport guidance.

The Site has been the subject for a number of historic planning applications for B2 / B8 uses, with an earlier (lapsed) consent being granted in 2009. The Site is also designated in the Local Plan for employment.

The Site is currently undeveloped and is bounded by existing commercial and employment uses. The Site does not have an existing point of access, however the historical development of Alchemy Park and the Site's planning history, including an earlier planning consent, confirm that the intention has always been that the land would be accessed via an extension to Alchemy Way.

A review of the local highway network has been undertaken which identifies the existing infrastructure providing access to the Site. An accessibility review has also been undertaken to review the Site's accessibility by sustainable modes, including, public transport, cycling and walking.

The review identifies that the Site is ideally located to take advantage of numerous local facilities on foot and commuting trips by bicycle. It is also noted that the Site is not currently well served by bus or train services.

Personal Injury Accidents statistics have been examined and it is concluded that there are no specific road safety concerns on the adjacent highway network which need to be addressed. Furthermore, it is noted that a significant scheme of improvement works, including new cycle and pedestrian facilities, are being delivered at the A580 / A5207 (Moorgate Road) junction and the M57 Junction 4 roundabout.

A review of the relevant national, regional and local transport planning policies has been undertaken. The proposed development accords with these policies and follows the design guidance therein.

In terms of accessibility, it is noted that the Site has identical location characteristics to the other adjacent employment sites on Alchemy Way, in respect of sustainable transport and that this has not been a barrier to their development. The Site is also designated in the Local Plan for employment

uses and as such, the principle of development for the land use classes now applied for is established.

An Interim Travel Plan has been prepared and a number of sustainable travel measures will be provided as part of the development, including showers, changing facilities, cycle parking and car share spaces, to facilitate and encourage sustainable transport choices. A full Travel Plan, including staff surveys, will be actioned upon the occupation of the development.

The TA provides details of the proposed development with regards to traffic and transport, including, the proposed access and servicing strategy, proposed pedestrian and walking infrastructure, and car and bicycle parking provision, which aligns with the prevailing standards.

EV charging will be provided in line with BREEAM guidelines, with a further 10% of the parking spaces ready for future EV use.

Access to the Site will be provided via a connection with Alchemy Way which will link to a new internal private spine road extending into the Site. This will facilitate access to the Site for all car and HGV traffic as well as pedestrians and cyclists.

Forecast traffic flows and multi-modal trips have been identified and it is noted that the predicted level of demand for walking, cycling and public transport can be easily accommodated within the existing provision.

Car parking provision is provided in accordance with the applicable standards and the requirements outlined by the Council in the pre-application and scoping discussions. The Site Layout (B8 scenario) provides the maximum level set out within the Councils parking standards. The alternative Site Layout (B2 scenario) demonstrates that the potential additional parking demand can be accommodated by the reallocation of space within the service yards which is not needed for HGV parking in this scenario (reflecting the lesser HGV parking demand resulting from B2). Car parking provision for the alternative scenario is at a higher ratio than that consented by the Council for the adjacent Network Space development and the minimum desirable level identified during scoping discussions.

The operational performance of the A580 / Alchemy Way signalised junction and Alchemy Way roundabout have been tested against the baseline traffic flows and the predicted operational traffic flows for the AM and PM peak hours. It is noted that both junctions will operate well within their capacity thresholds, in both scenarios, for the future design year of 2030. The existing highway network is therefore considered appropriate to accommodate development generated traffic and no mitigation is required.

In summary, the findings of this TA identify no reason with regards to transport impacts why the development should not be granted planning permission.

Appendix A – Scoping Responses



Your ref: 25/00024/PREAPP
Our ref: NH/25/11201

Assistant Spatial Planner

Knowsley Metropolitan Borough Council,

Sent Via Email

29th May 2025

Request for pre-application advice

Land to the East of Moorgate Point, Alchemy Way, Knowsley Business Park, Kirkby, Knowsley. Proposed industrial and logistics (Class B2 and/ or B8 and/ or E(g) (iii) use) with Ancillary offices, including provision of revised access arrangements from south perimeter road and all associated works and landscaping, Indurent Management Limited.

Thank you for inviting National Highways to provide pre planning advice regarding the above proposals.

Policy Overview

National Highways has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity. It is an ambition to ensure that major roads are more dependable, durable, and most importantly – safe.

National Highways' approach to engaging with the planning system is governed by the advice and guidance set out in:

- The Strategic Road Network Planning for the Future - A Guide to Working with National Highways on Planning Matters (October 2023).

- The document is written in the context of statutory responsibilities as set out in National Highways' licence, and in the light of government policy and regulation, including the:
- National Planning Policy Framework (NPPF);
- Town and Country Planning Development Management (Procedure) Order (England) 2015 (DMPO)
- DfT Circular 01/2022 The Strategic Road Network and the Delivery of Sustainable Development ('The Circular').

National Highways comments

National Highways reviewed the pre-application Scoping Note produced by Savills for a proposed industrial and logistics development, near the M57, Junction 4.

Below is a summary of what National Highways would expect to see included in any forthcoming Transport Assessment (TA):

- Confirmation of Gross Floor Area and assessment of various B2/B8 use mixes for trip generation.
- Non-car travel options are limited due to poor infrastructure and obstructed crossings; National Highways recommends further assessment and mitigation for active and sustainable travel.
- The TA will detail parking, including EV and cycle facilities; in line with [national guidance](#) promoting sustainable travel and planning for the future.
- Trip forecasts will use TRICS and NOMIS data; National Highways requests confirmation of B2/B8 mix and further detail on HGV traffic distribution.
- The TA will assess key junctions and include site layout, transport data, and a Travel Plan; we request inclusion of M57 Junction 4 and alignment with National Highways policy.

National Highways suggests that a Transport Assessment accompanying the planning application that may be submitted includes the following information as regards to any SRN junctions that may need to be significantly utilised as part of the construction/occupation of the development:

It is important to note that the Transport Assessment must accord with the requirements of the Circular in respect of the SRN. The Circular also places an emphasis on development proposals establishing and testing vision of what the development is seeking to achieve in transport terms within the transport assessment and then

validating those vision scenarios to determine what the optimum design and transport infrastructure is to realise that 'vision'.

To conclude, these comments imply no pre-determined view as to the acceptability of the development scheme in relation to its potential traffic impact on the SRN, most notably the M57, Junction 4.

Kind Regards,

North-West Spatial Planning Team

From: >
Sent: 11 June 2025 14:59
To:
Cc:
Subject: RE: Confirm Enquiry Ref 122405 - Knowsley Business Park

Hi ,

The below is noted.

I am satisfied with the committed developments you have identified.

Kelly is on leave until next week, so you can contact instead for the traffic counts. I would also contact for signal data.

Kind regards

On behalf of Highways.

From:
Sent: 10 June 2025 11:18
To: ;
Cc:
Subject: RE: Confirm Enquiry Ref 122405 - Knowsley Business Park

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Secured by Check Point

Thanks for the prompt response on this one. as you know, timing was everything. Additionally, [REDACTED], thank you for the NH note. We will provide the required detail within the TA.

With regard to the wider submission, you will find the majority of the information in the pre-app note (attached for reference). and subsequent to our call I would also like to add or highlight the following:

Firstly, as per our discussions, the pre-app note is superseded with regard to our proposals for trip rates, given the proposed use of the consented Caddick rates as per our previous note.

To reconfirm an Assessment for application year + 5 (2030) as per the pre-app note. We may have referenced opening year by mistake on the call. We will growth the background flows using locally adjusted Tempco factors.

With regard to committed development, we have identified a number of potential schemes:

- Network Space, Alchemy Way (Ref: 23/00456/FUL)
- Redsun Projects, Gale Road (Ref: 23/01197/FUL)
- Acornfield Properties, Kirkby Bank Rd (Ref:23/02819/FUL)
- Arundel Propco Ltd, Moorgate Rd (Ref: 23/00215/FUL)
- Caddick Developments, East Lancs Rd (Ref:22/00348/FUL)

However, only two have any bearing on the baseline traffic conditions relevant to the Indurent proposals. Namely the Network Space development on Alchemy Way and the Caddick development to the south of the A580, as previously identified. Can you confirm if you agree that the two sites should be considered, and if you have any further development that we should take account of.

Finally, we have been looking to obtain signal data for the A580 / Alchemy way junction and I understand ... is the appropriate contact. However I only have a phone number which is not answered. Are you able to pass through their email address please, or provide an alternative contact, if thinks have changed. I understand ... would also issue licences for traffic count equipment and therefore as you can imagine, we are keen to speak with her asap.

Thankyou for your time in advance. I look forward to hearing from you shortly

Best Regards

Sweco UK Limited | Manchester



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From:
Sent: 10 June 2025 09:29
To:
Cc:

Subject: RE: Confirm Enquiry Ref 122405 - Knowsley Business Park

Good morning ...,

Thanks for providing the information, as requested in the meeting.

Based on the data you have presented for the scheme as shown, I am satisfied that the extents of the off site capacity assessment proposed (Alchemy / A580 signals and the Alchemy Way roundabout) will be sufficient to consider the impacts of the scheme.

Kind regards

On behalf of Highways

From:
Sent: 09 June 2025 14:20
To:
Cc: ;

Subject: RE: Confirm Enquiry Ref 122405 - Knowsley Business Park

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Thank you for your time on the call earlier. The attached has been brought together following our discussions earlier today.

I attach the various sheets as presented today. This includes:

- The current masterplan as tabled.
- Trip rates calcs
 - o Development quantum
 - o Knowsley Lane development B2 and B8 - Planning App Ref: 22/00348/FUL. Granted May 2023.
 - o Moorgate point trips B2 and B8 (assuming above)
 - o Moorgate point trips with 50 / 50 split
- HGV distribution (assumed based on road network and geography)
- Car distribution based on NOMIS travel to work data
- HGV flows (vehicles)
- Car flows (vehicles)
- Total Flows (PCUs)

As discussed at the call, we are looking to the consented Knowsley Lane development and the trip rates agreed therein. The Alchemy Way development (Planning App Ref: 23/00456/FUL) are significantly greater and more representative of a small business park. We have shown trips based on a mix of B2 and B8 trips to best reflect the likely trip generation across the site.

The flows show that the proposals are not a significant peak hour trip generator, especially when considering the background flows on the A580 and strategic roads. Specifically, we do not feel that the level of traffic would justify widening the network of interest for the assessment outside of that proposed in the pre-app. (Alchemy / A580 signals and the Alchemy Way roundabout)

We appreciate you may have comments on the above assumptions, but in the first instance would appreciate if you could confirm you are happy with the network of interest, given that counts are currently programmed for Tuesday (17/06/25). Subsequently, we would also welcome the authorities confirmation as to the acceptability of the proposed trip rates and distribution.

Finally, thank you for your comments on parking in the meeting. We will provide the requested details within the TA. I look forward to your response shortly.

Best Regards

Sweco UK Limited | Manchester



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From:

Sent: 09 June 2025 09:40

To:

Subject: FW: Confirm Enquiry Ref 122405 - Knowsley Business Park

See below.

Kind regards



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From:
Sent: 09 June 2025 09:38
To:
Subject: FW: Confirm Enquiry Ref 122405 - Knowsley Business Park

Please accept my apologies for the delay in responding to you. I would be happy to have a conversation with you of course, but before we do, have you carried out a trip gen and distribution exercise yet? I've seen your pre-app note, but it doesn't provide any numbers to back up the proposed scope of the off site capacity assessment.

Thanks

On behalf of Highways.

From:
Sent: 23 May 2025 14:55
To:
Cc:

Subject: RE: Confirm Enquiry Ref 122405 - Knowsley Business Park

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Secured by Check Point

Hi ..., hope you are well. Further to our exchange of e-mails in February (below) you will be aware that the site I referred to (now named Land East of Moorgate Point) is now the subject of a formal pre-app and that a meeting is being arranged for 9th June. However, given programme pressures and the rapidly approaching non-neutral summer data collection period we would be really grateful if we could have a short Teams call with you to discuss a couple of issues and, in particular, the network of interest for the TA so we can commission traffic counts (if required) asap.

Thanks in advance.

Kind regards





From:
Sent: 24 February 2025 13:28
To:
Subject: RE: Confirm Enquiry Ref 122405 - Knowsley Business Park

Hi ..., many thanks for getting back to me. This is in relation to an undeveloped (allocated) site at the northern end of Alchemy Way which our client Indurent has appointed us to provide early traffic and transport planning advice. There is no open planning application, but they are hoping to progress towards a planning submission later in the year subject to due diligence work currently on-going.

Our research indicates that there is previous planning history associated with the land (an approval in 2009), but we can't find any documentation on the portal (noting that this would be of background interest only at this point in time). We are aware that the adjacent Network Space site was consented in 2023 (again after a long planning history) so I was hoping we could have a quick discussion to get your insight into key issues to be addressed in a future TA.

Would you be available for a half hour introductory teams call over the next couple of weeks? If agreeable, can you let me have dates / times that suit you and I'll send an invitation. Look forward to speaking.

Thanks.

Kind regards

Sweco UK Limited | Manchester



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From:
Sent: Monday, February 24, 2025 12:15 PM
To:
Cc:
Subject: Confirm Enquiry Ref 122405 - Knowsley Business Park

I have been forwarded the below enquiry regarding Knowsley Business Park. I took over from A..... as Team Leader for Development Control at Knowsley. If you have any queries, please let me know.

If the query is related to an open planning application however, I must ask that you go through your planning case officer as we are unable to bypass them in these cases.

Thanks,

Knowsley Council, Huyton Library, Civic Way, Huyton, Knowsley,

Appendix B – Knowsley Cycle Map



- | | |
|---|--------------------------------------|
| Off-road cycle track | National Cycle Network route number |
| Bridleway | Trans Pennine Trail |
| On-road signed cycle route | Bus station |
| On-road cycle lane | Pedestrian crossing |
| Restricted access - no motor vehicles | Cycle crossing |
| 20mph street | Cycle parking / Secure cycle storage |
| Footpath - please walk | Loop Line access point |
| Motorway / Major route | Public Green Space |
| One way / Cycle contraflow | School |
| Steep hill (arrow points downhill) / Advanced Stop Line | Attraction |
| Railway station (with name) | Library |
| Borough boundary | Public convenience |
| Knowsley Safari Park | Leisure centre |
| Local centre shopping areas | Hospital |
| Prominent building | Knowsley Velodrome & BMX Track |

N
W E S

0 Kilometres 1 2 3
0 Miles 1 2

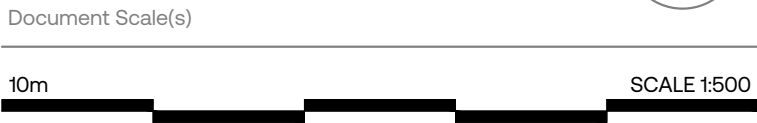
One mile is equal to 7-8 minutes cycling

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Appendix C – Site Layout (B2 and B8 Scenarios)



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 - All relevant drawings and specifications should be read in conjunction with this document.
 - Scaling of this document is not recommended.



Application Boundary
11.19 acres (4.53 Ha)

Schedule of Accommodation		
Total GIA	197,880 ft ²	(18,384 m ²)
Total GIA (+Exp/Amn)	207,617 ft ²	(19,288 m ²)
Site Density GIA	40.58%	

Unit K135		
Warehouse Area	121,431 ft ²	(11,261 m ²)
GF Core	1,220 ft ²	(113 m ²)
1 st Office	6,151 ft ²	(571 m ²)
Total GIA	128,802 ft²	(11,966 m²)
Amenity Deck	6,326 ft ²	(588 m ²)
Total GIA (+Exp/Amn)	135,128 ft ²	(12,554 m ²)

Unit K72		
Warehouse Area	65,056 ft ²	(6,044 m ²)
GF Core	708 ft ²	(66 m ²)
1 st Office	3,314 ft ²	(308 m ²)
Total GIA	69,078 ft²	(6,418 m²)
Amenity Deck	3,411 ft ²	(317 m ²)
Total GIA (+Exp/Amn)	72,489 ft ²	(6,734 m ²)



Project Name

Indurent Park, Moorgate Point, Knowsley

Employer		Project Address		
Indurent		Moorgate Point Liverpool L33 7XW		
RIBA Workstage		Suitability		
3 - Spatial Coordination		S2 - Information		
Drawn	Checked	Created	Size	
JWY	TDA	08.07.2025	A1	
UMC Project Reference		Scale	LOD	LOI
22520		1:500	1	1

Document Title

**Proposed Site Plan - B8 Parking
Standards Layout**

Document Reference

22520 - UMC - ZZZZ - SI - DR - A - 0601

Revision Note

Key notes and drawing title amended

Issue Date Status Current Revision



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- Scaling of this document is not recommended.

North



Document Scale(s)

10m SCALE 1:500

Application Boundary
11.19 acres (4.53 Ha)

Schedule of Accommodation

Total GIA	197,880 ft ²	(18,384 m ²)
Total GIA (+Exp/Amn)	207,617 ft ²	(19,288 m ²)
Site Density GIA	40.58%	

Unit K135

Warehouse Area	121,431 ft ²	(11,261 m ²)
GF Core	1,220 ft ²	(113 m ²)
1 st Office	6,151 ft ²	(571 m ²)
Total GIA	128,802 ft²	(11,966 m²)
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Total GIA (+Exp/Amn)	135,128 ft ²	(12,554 m ²)

Unit K72

Warehouse Area	65,056 ft ²	(6,044 m ²)
GF Core	708 ft ²	(66 m ²)
1 st Office	3,314 ft ²	(308 m ²)
Total GIA	69,078 ft²	(6,418 m²)
Amenity Deck	3,411 ft ²	(317 m ²)
Total GIA (+Exp/Amn)	72,489 ft ²	(6,734 m ²)



Project Name

Indurent Park, Moorgate Point, Knowsley

Employer	Project Address		
Indurent	Moorgate Point Liverpool L33 7XW		
RIBA Workstage	Suitability		
3 - Spatial Coordination	S2 - Information		
Drawn	Checked	Created	Size
JWY	TDA	09.07.2025	A1
UMC Project Reference	Scale	LOD	LOI
22520	1:500	1	1

Document Title

**Proposed Site Plan - B2 Parking
Standards Layout**

Document Reference

22520 - UMC - ZZZZ - SI - DR - A - 0611

Revision Note

Key notes and drawing title amended

Issue Date Status Current Revision

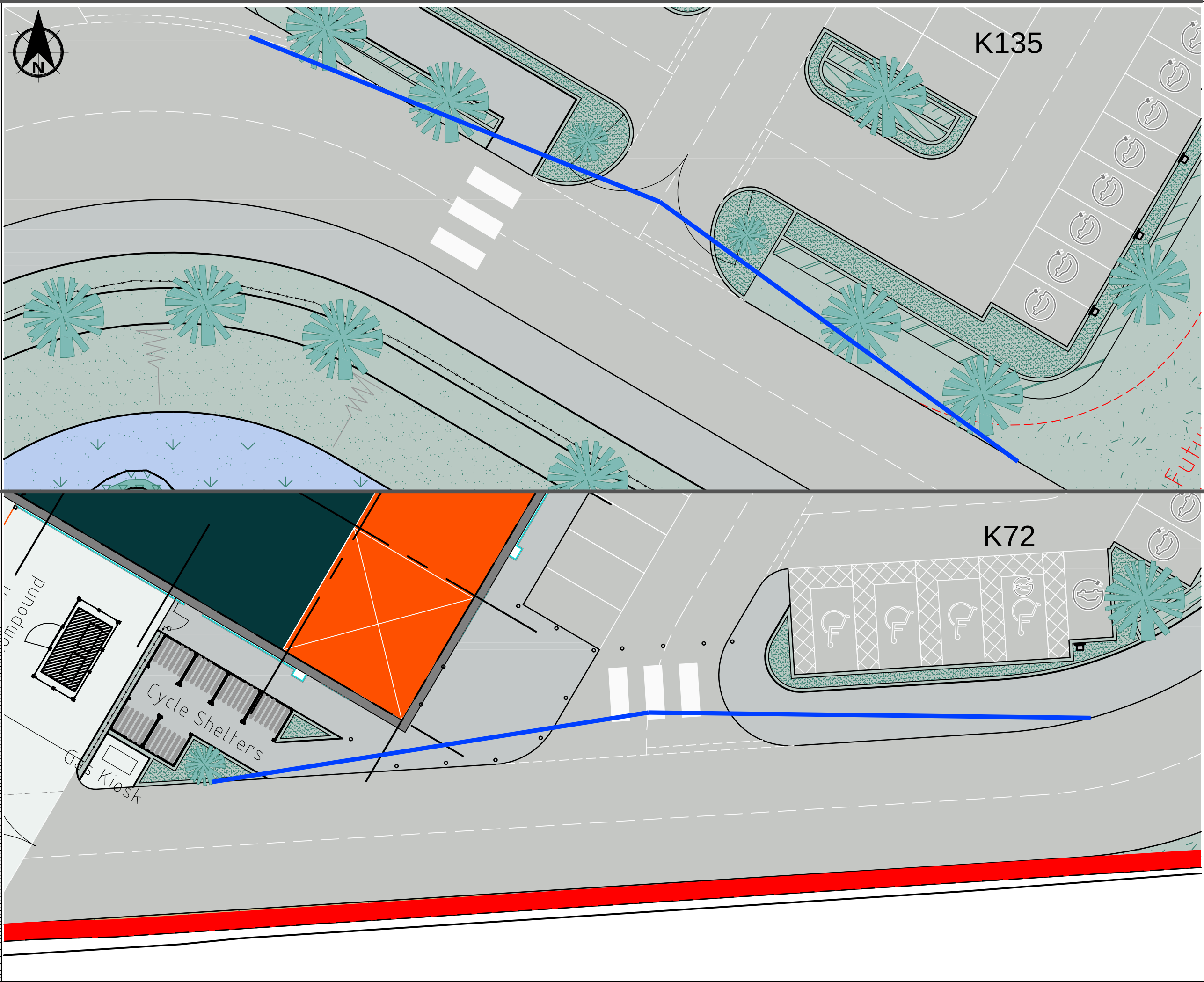
24.07.2025

PLANNING

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P04

Appendix D – Internal Access Road Visibility Splays



NOTES

1. DO NOT SCALE FROM THIS DRAWING MANUALLY OR ELECTRONICALLY.

2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT PROJECT INFORMATION.

3. ALL DATUM LEVELS ARE IN METRES AND DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

P01	28.00.2025	FIRST ISSUE	JF	IB	IB
Rev	Date	Amendment Details	Dr'n	Chk'	App'

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SWECO

Client

INDURENT MANAGEMENT LIMITED

Project Title

INDURENT PARK, KNOWSLEY

Drawing Title

INTERNAL VISIBILITY SPLAYS - 2.4m x 25m

Purpose Of Issue

PRELIMINARY

Status	Status Description			
S0	INITIAL STATUS OR WIP			
Drawn	Designed	Checked	Approved	
JF	JF	IB	IB	
Sheet Size	Scale	Sweco Ref	Revision	
A3	1:500	65215060	P01	

Drawing Number

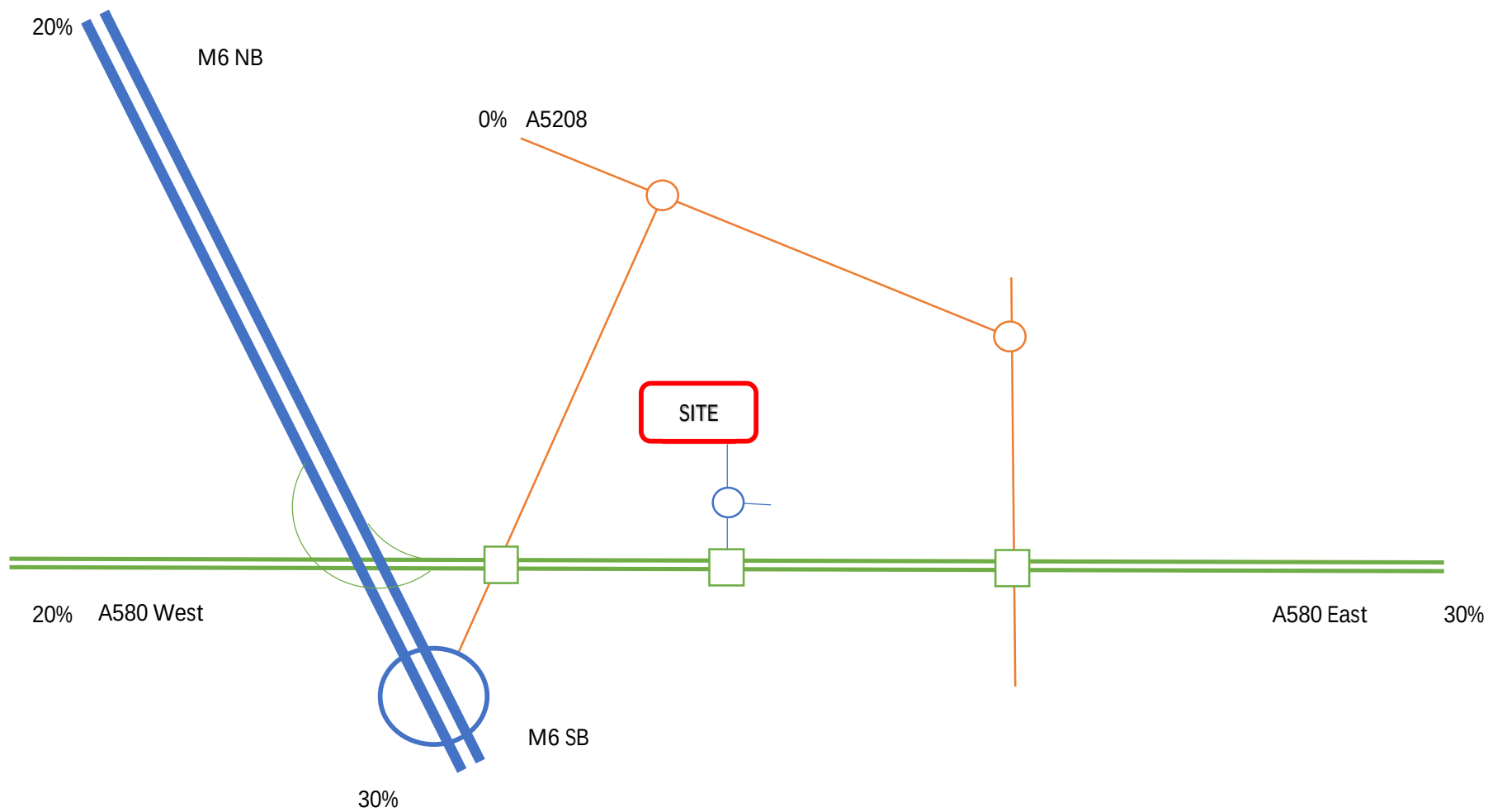
65215060-SWE-XX-XX-SK-H-0002

P:\6535\65215060_Moorgate_Point\000\Project\Drawings\Working\ 65215060-SWE-XX-XX-SK-H-0002-P01-Internal Visibility.dwg

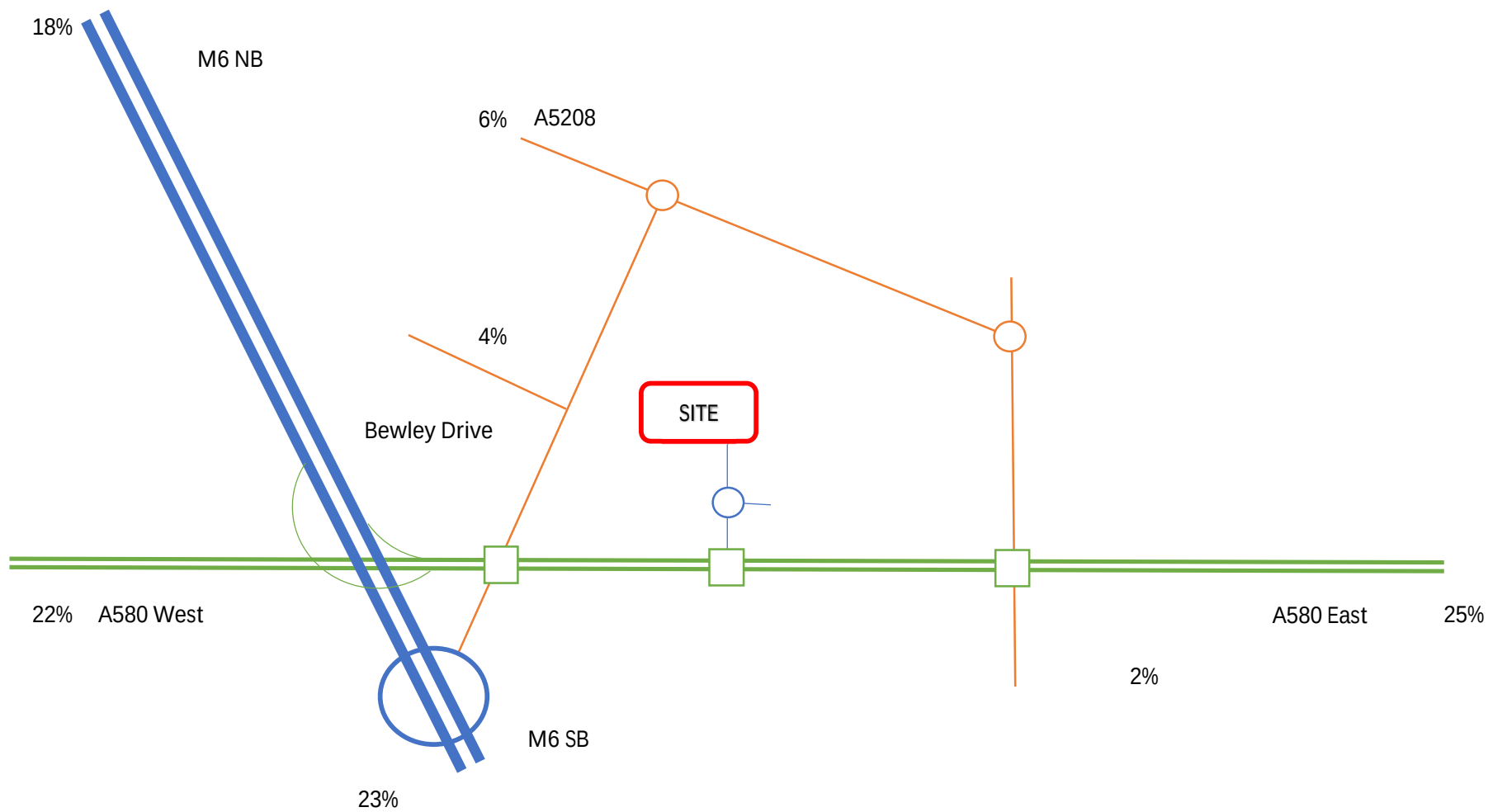
Appendix E – Knowsley Parking Standards

Class	Broad Land Use	Specific Land Use	Town Centre (Maximum)	District and Local Centre (Maximum)	Other Areas (Maximum)	Disabled Parking		Bicycles (Minimum)	Motorcycles (Minimum)	Coaches Parking (Minimum)	Coaches Drop Off (Minimum)	Comments
						Up to 200 bays (Minimum)	Over 200 bays (Minimum)					
			All areas are Gross Floor Area unless otherwise stated						All areas are Gross Floor Area unless otherwise stated			
B2	General Industry	General Industry	1 space per 60 sq.m.	1 space per 48 sq.m.	1 space per 45 sq.m.	Individual bays for each disabled employee plus 2 bays or 5% of total capacity whichever is greater	6 bays plus 2% of total capacity	1 space per 450 sq.m. (minimum of 2 spaces)	1 space per 1000 sq.m. (minimum of 2 spaces)	-	-	Includes general industry in residential areas.
B8	Storage and distribution	Storage and distribution	1 space per 100 sq.m.	1 space per 100 sq.m.	1 space per 100 sq.m.	Individual bays for each disabled employee plus 2 bays or 5% of total capacity whichever is greater	6 bays plus 2% of total capacity	1 space per 850 sq.m. (minimum of 2 spaces)	1 space per 2000 sq.m. (minimum of 2 spaces)	-	-	

Appendix F – Trip Distribution



HGV Trip Distribution



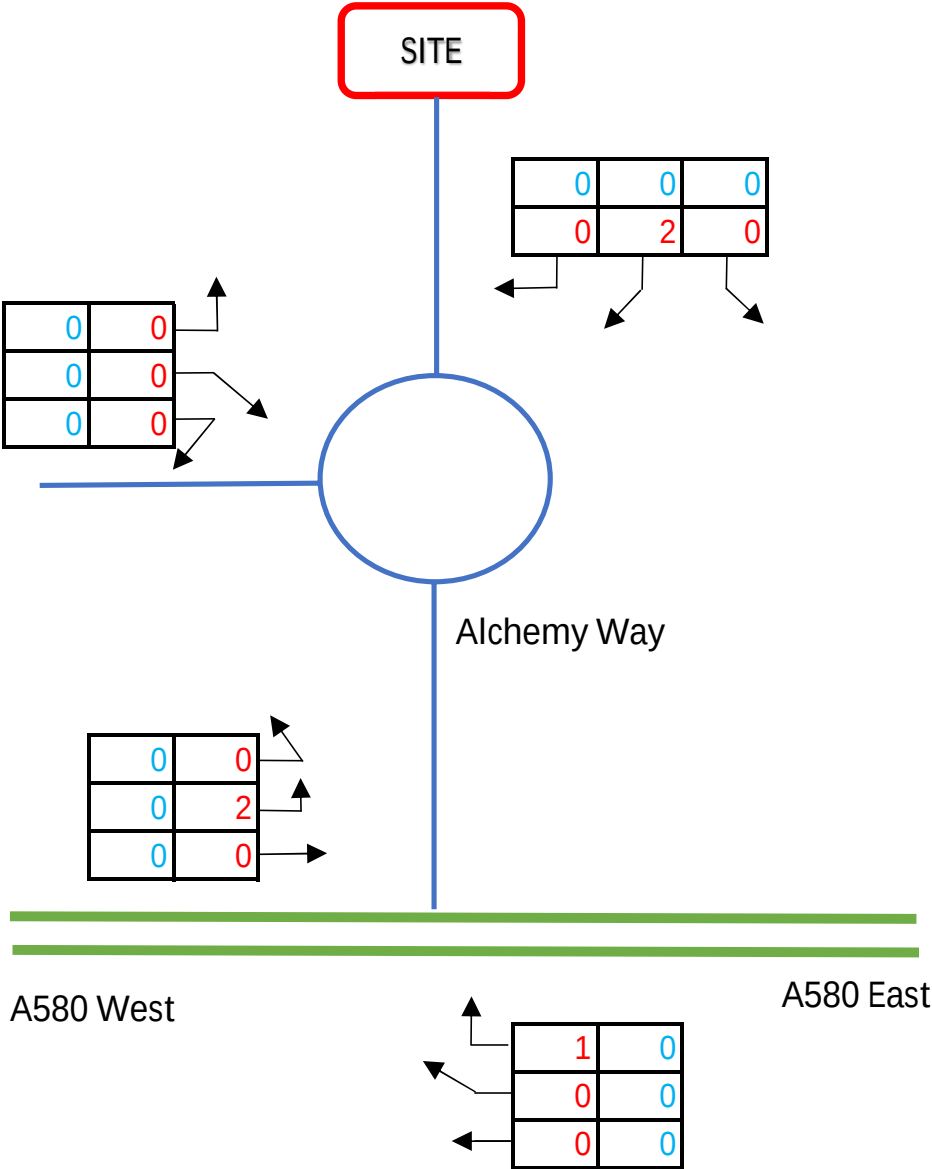
Car Trip Distribution

Appendix G – Development Flows (Vehicles)

AM Peak	07:30-08:30
PM Peak	16:30-17:30

All flows shown in Vehicles

AM Peak		PM Peak	
IN	OUT	IN	OUT
3	2	0	0



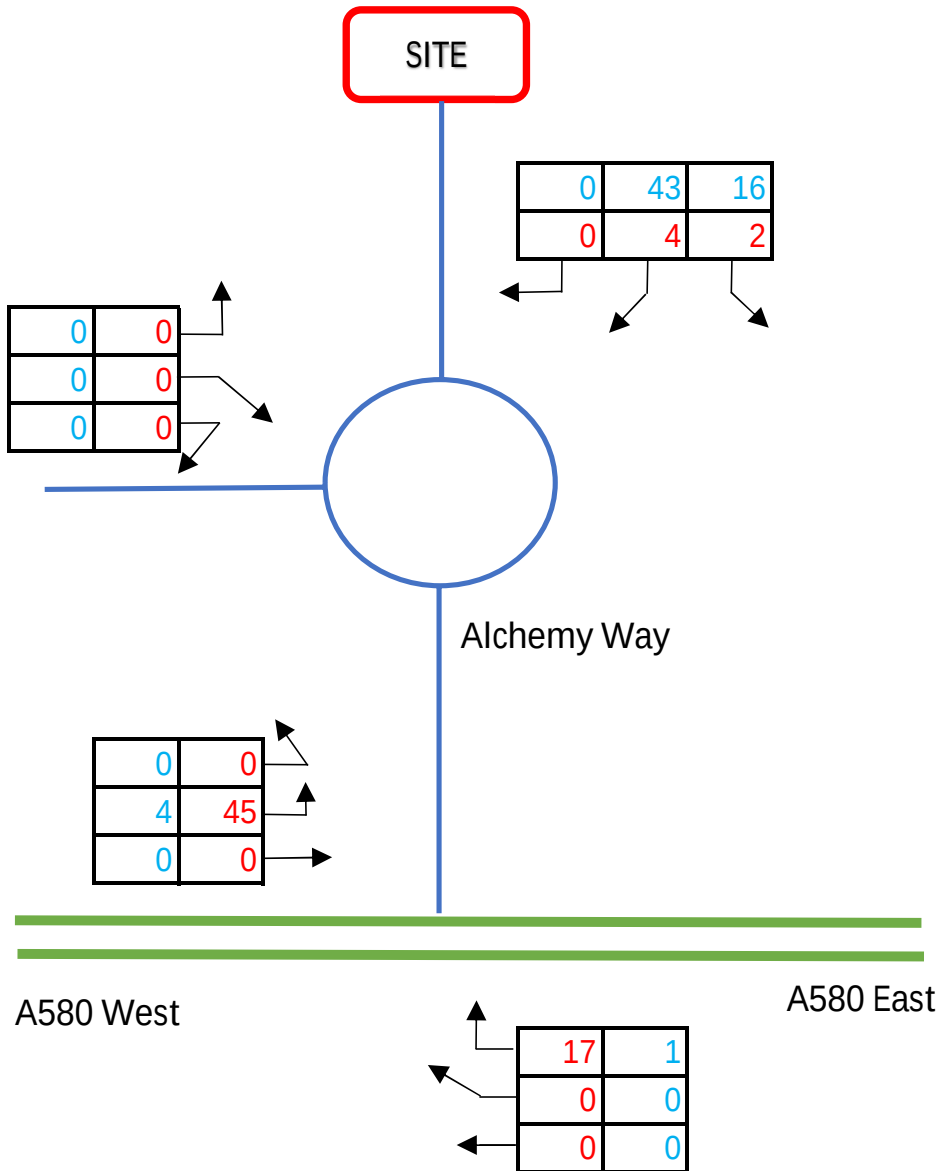
Development Flows (HGVs) - In Vehicles



AM Peak	07:30-08:30
PM Peak	16:30-17:30

All flows shown in Vehicles

AM Peak		PM Peak	
IN	OUT	IN	OUT
62	6	5	59



Development Flows (Cars) - In Vehicles

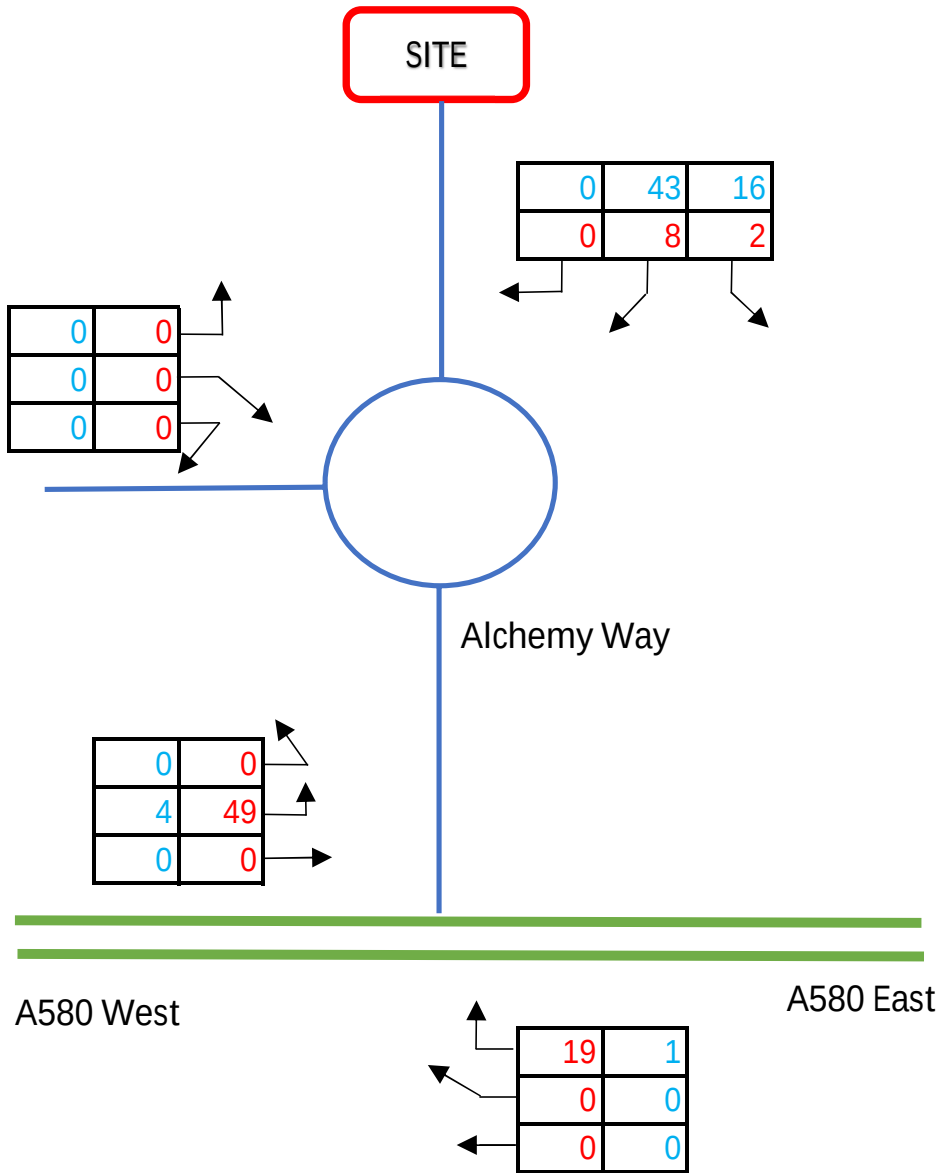


Appendix H – Total Development Flows (PCUs)

AM Peak	07:30-08:30
PM Peak	16:30-17:30

All flows shown in PCUs

AM Peak		PM Peak	
IN	OUT	IN	OUT
68	10	5	59



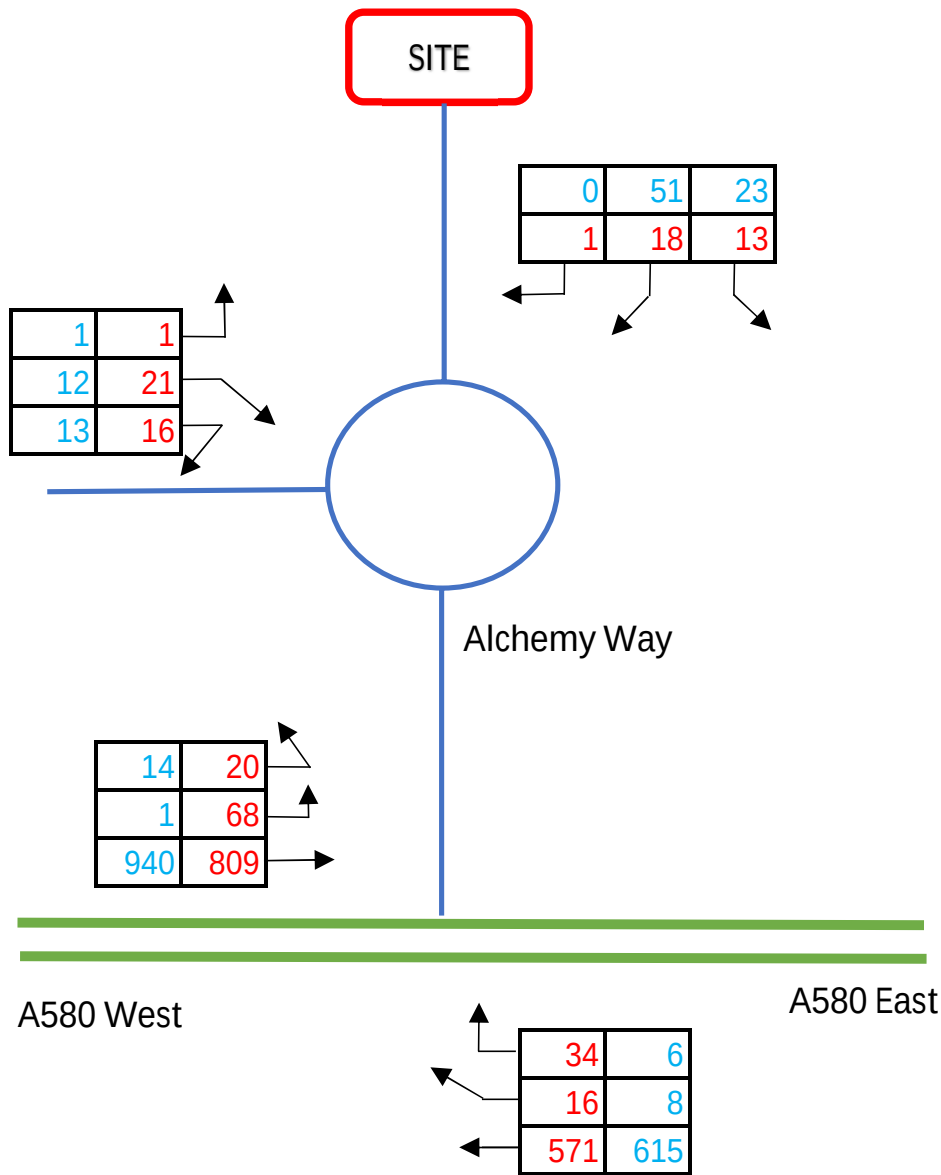
Development Flows - In PCUs



Appendix I – 2025 Background Flows

AM Peak	07:30-08:30
PM Peak	16:30-17:30

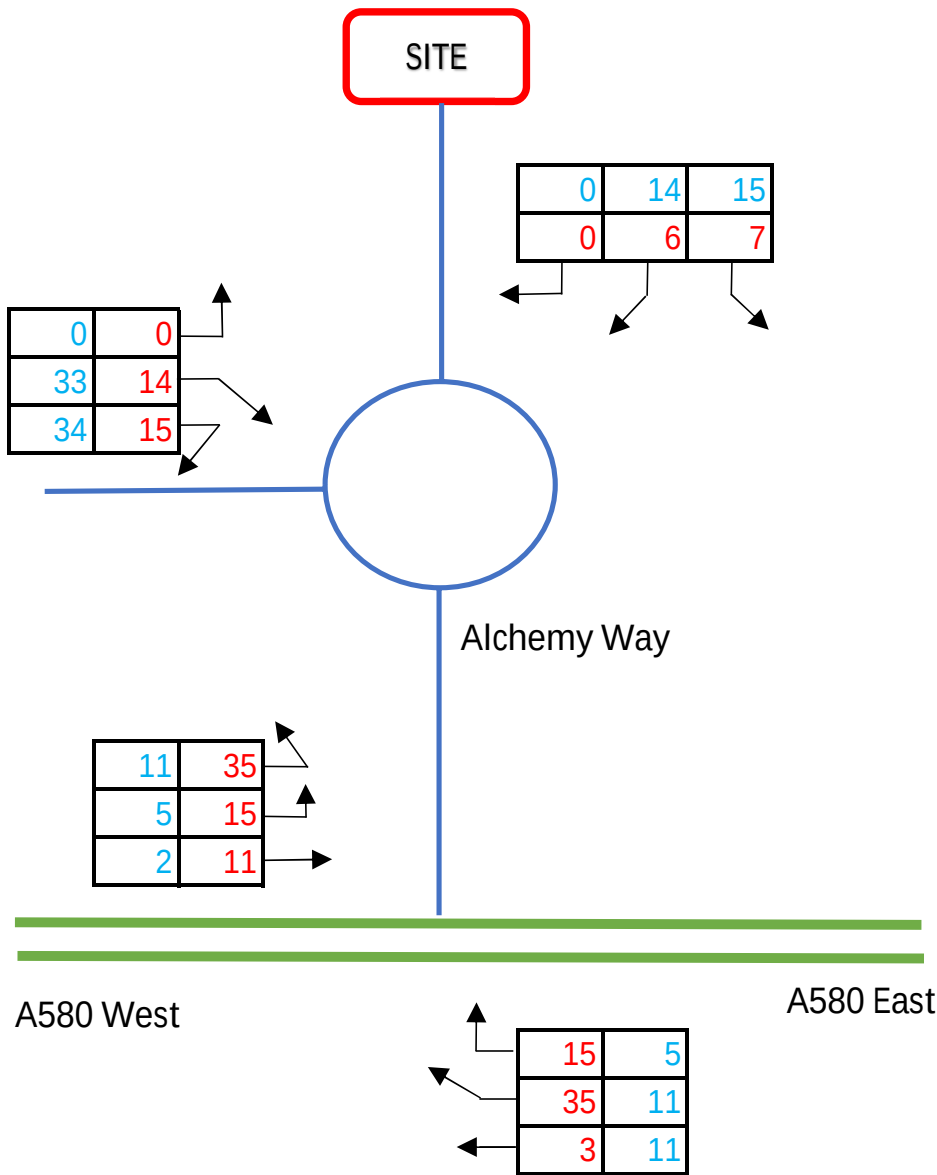
All flows shown in PCUs



Appendix J – Committed Development Flows

AM Peak	07:30-08:30
PM Peak	16:30-17:30

All flows shown in PCUs



Committed Development Flows

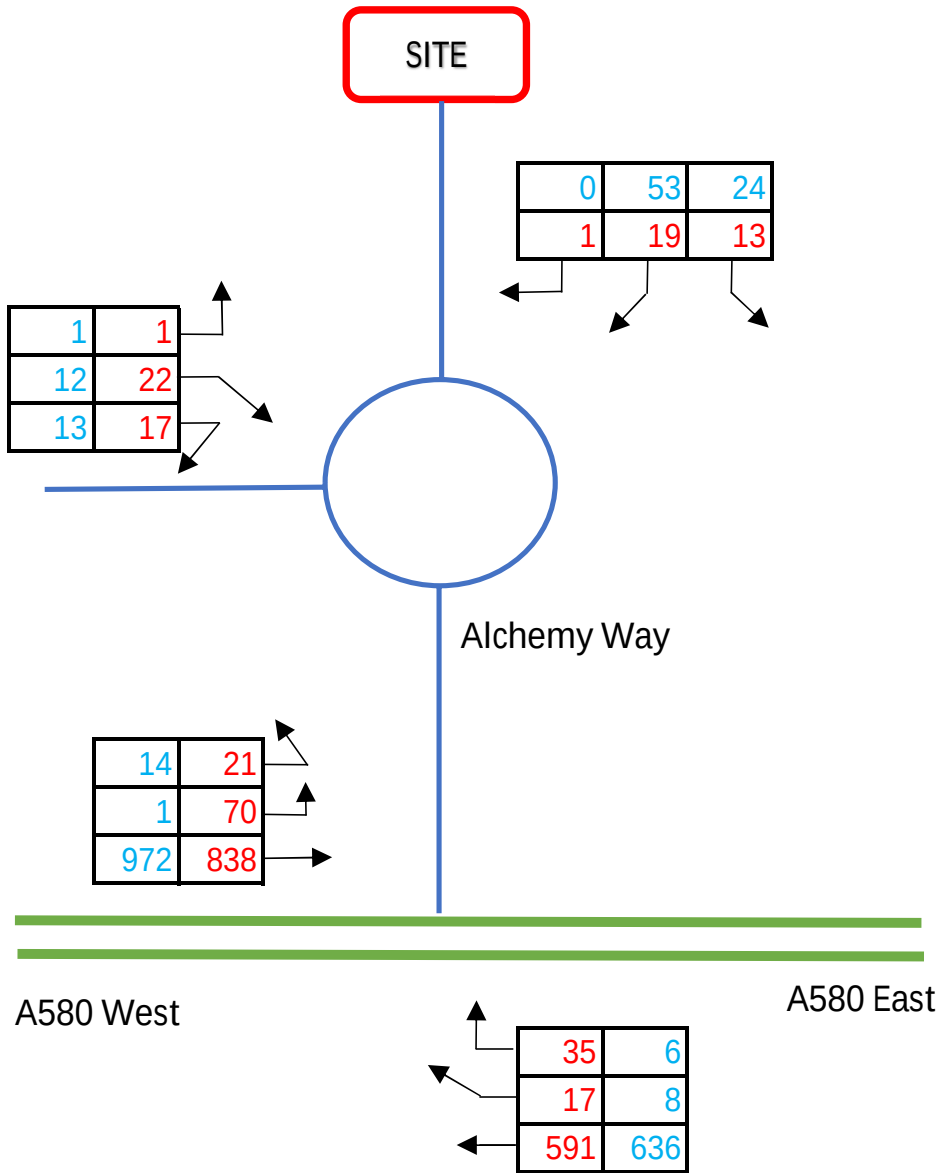


Appendix K – 2030 Base Flows

AM Peak	07:30-08:30
PM Peak	16:30-17:30

All flows shown in PCUs

Traffic Growth Factors	
AM Peak	1.035750
PM Peak	1.034550



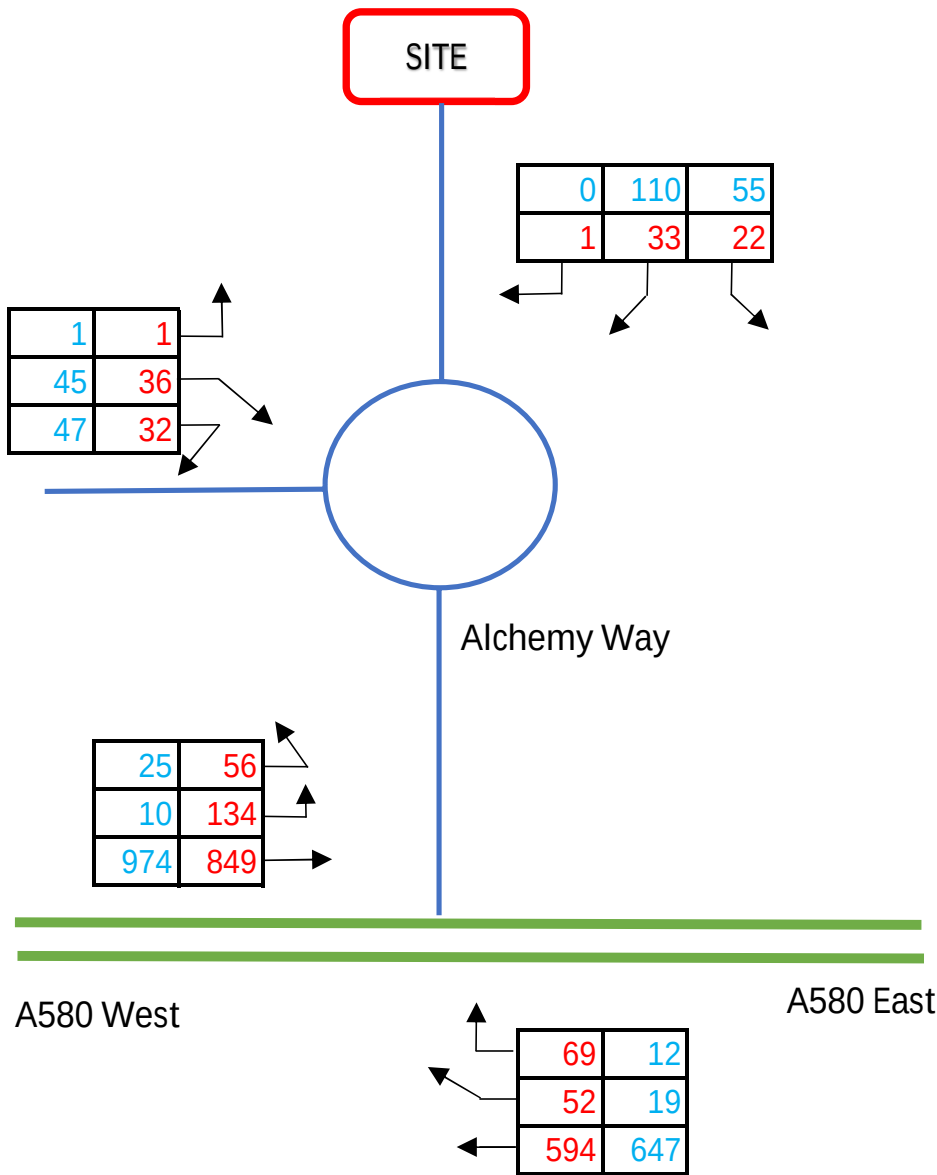
2030 Background Flows



Appendix L – 2030 Assessment Flows

AM Peak	07:30-08:30
PM Peak	16:30-17:30

All flows shown in PCUs



Appendix M – TRANSYT Outputs

TRANSYT 16										
Version: 16.1.1.1951 © Copyright TRL Software Limited, 2021										
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com										
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution										

Filename: A580 - Alchemy Way - assessment v1.t16
Path: P:\6535\65215060_Moorgate_Point\000\Project\Technical\Modelling
Report generation date: 11/07/2025 14:00:44

»A1 - : DD1 - 2025, AM :
»A1 - : DD2 - 2025, PM :
»A1 - : DD3 - 2030 Base, AM :
»A1 - : DD4 - 2030 Base, PM :
»A1 - : DD5 - 2030 Assessment, AM :
»A1 - : DD6 - 2030 Assessment, PM :

Summary of network performance

	AM					PM				
	Set ID	PI (£ per hr)	Total delay (PCU-hr/hr)	Highest DOS	Number oversaturated	Set ID	PI (£ per hr)	Total delay (PCU-hr/hr)	Highest DOS	Number oversaturated
2025										
Network	DD1	85.28	5.15	47% (TS 1A1/1)	0 (0%)	DD2	92.42	5.61	55% (TS 1A1/1)	0 (0%)
2030 Base										
Network	DD3	107.96	6.57	50% (TS 1A1/1)	0 (0%)	DD4	112.93	6.90	57% (TS 1A1/1)	0 (0%)
2030 Assessment										
Network	DD5	118.64	7.23	50% (TS 1A1/1)	0 (0%)	DD6	122.57	7.51	57% (TS 1A1/1)	0 (0%)

File summary

File description

File title	A580 / Alchemy Way Baseline
Location	
Site number	
Driving side	Left
Date	18/03/2010
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SWECO\GBIABN
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display OD matrix distances	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber	c m
			✓			✓		✓				✓			

Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	PCU	PCU	perHour	s	-Hour	perHour

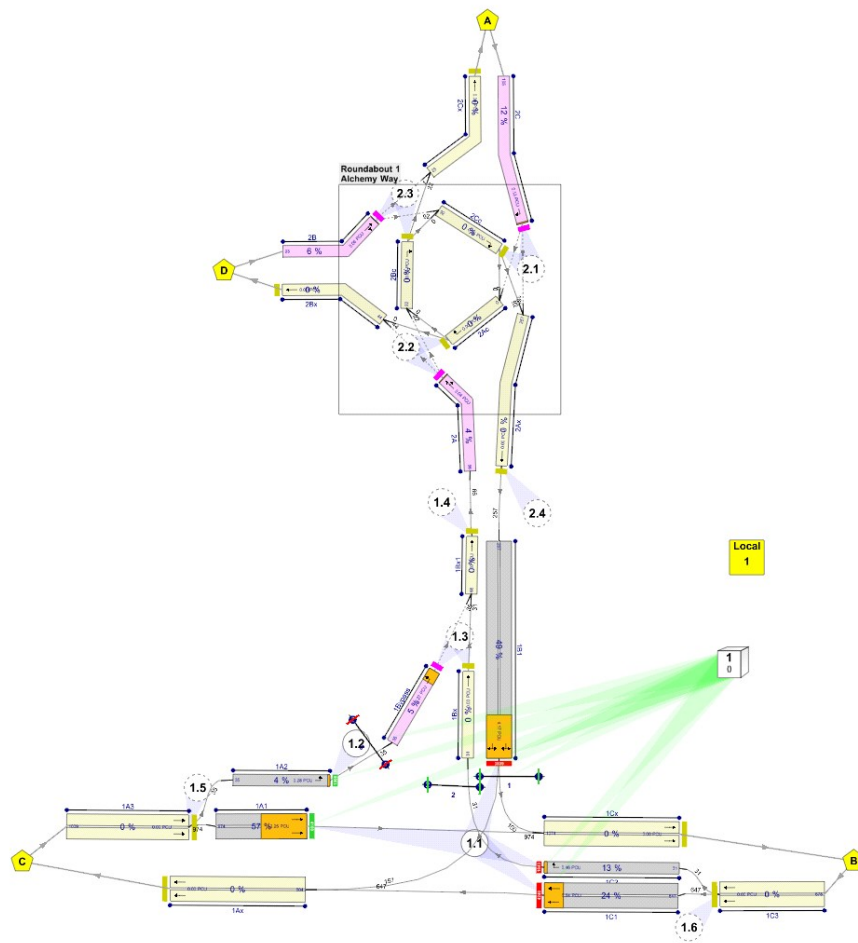
Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

Simulation options

Criteria type	Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Average animation capture interval (s)	Use quick response	Do flow sampling	Uniform vehicle generation	Last run random seed	Last run number of trials	Last run time taken (s)
Delay	1.00	10000	10000	-1	3	60	✓			0	0	0.00

Network Diagrams



A580 / Alchemy Way Baseline
Diagram produced using TRANSYT 16.1.1.1951

A1 - DD1 - 2025, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC
1	08/07/2025 14:10:46	08/07/2025 14:10:47	1.49	08:00	60	85.28	5.15	47.36	1A1/1	0	0	1A1/1	1Bypas

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025	AM	(untitled)			08:00		✓

Network Options

Network timings

Network cycle time (s)	Minimum possible cycle time (s)	Absolute minimum possible cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
60	43	43		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)	Missing stage transition options
10000.00	10000.00	10000.00	2	Assume banned

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from traffic model	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓			Complex	Automatic	Automatic	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy (%)	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Standard accuracy Hill Climb	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1.1		
1.2	(untitled)	
1.3	(untitled)	
1.4	(untitled)	
1.5	(untitled)	
1.6	(untitled)	
2.1		
2.2		
2.3		
2.4	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
1Ax			
1Bx			1.3
1Bypass	(untitled)		1.3
1Cx			
2A			2.2
2Ac			2.2
2Ax			2.4
2B			2.3
2Bc			2.3
2Bx			
2C			2.1
2Cc			2.1
2Cx			
1A1			1.1
1B1			1.1
1Bx1	(untitled)		1.4
1C1			1.1
1A2			1.2
1C2			1.1
1A3			1.5
1C3			1.6

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
1Ax	1	A580 WBx			300.00								Normal	
1Bx	1				10.00								Normal	
1Bypass	1	(untitled)			10.00							✓	Normal	
1Cx	1	A580 EBx			300.00								Normal	
2A	1				50.00							✓	Normal	
2Ac	1				20.00								Normal	
2Ax	1				1.00								Normal	
2B	1				100.00							✓	Normal	
2Bc	1				20.00								Normal	
2Bx	1				100.00								Normal	
2C	1				100.00							✓	Normal	
2Cc	1				20.00								Normal	
2Cx	1				100.00								Normal	
1A1	1	A580 W			70.00	✓	Sum of lanes	4100	✓	3600	✓		Normal	
1B1	1	Alchemy Way			60.00	✓	Sum of lanes	3899			✓		Normal	
1Bx1	1	(untitled)			1.00								Normal	
1C1	1	A580 E			118.00	✓	Sum of lanes	4240	✓	3600	✓		Normal	
1A2	1	A580 W LT			70.00	✓	Sum of lanes	1908	✓	1800	✓		Normal	
1C2	1	A580 E RT			118.00	✓	Sum of lanes	1843	✓	1800	✓		Normal	
1A3	1				300.00								Normal	
1C3	1				300.00								Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
1Ax	1	1												
		2	(untitled)											
1Bx	1	1												
1Bypass	1	1	(untitled)											
1Cx	1	1												
		2	(untitled)											
2A	1	1												
2Ac	1	1												
2Ax	1	1												
2B	1	1												
2Bc	1	1												
2Bx	1	1												
2C	1	1												
2Cc	1	1												
2Cx	1	1												
1A1	1	1			✓	N/A	N/A	0	3.65		0	99999.00	✓	1980
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1B1	1	1			✓	N/A	N/A	0	3.65		100	15.00		1927
		2	(untitled)		✓	N/A	N/A	0	3.65		100	20.00		1972
1Bx1	1	1	(untitled)											
1C1	1	1	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1A2	1	1	(untitled)		✓	N/A	N/A	0	3.65		100	40.00	✓	1908
1C2	1	1			✓	N/A	N/A	0	3.65		100	10.00		1843
1A3	1	1	(untitled)											
		2	(untitled)											
1C3	1	1	(untitled)											
		2	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
1Ax	1	NetworkDefault	100	100	100		0.00		
1Bx	1	NetworkDefault	100	100	100		0.00		
1Bypass	1	NetworkDefault	100	100	100		0.00		
1Cx	1	NetworkDefault	100	100	100		0.00		
2A	1	NetworkDefault	100	100	100		0.00		
2Ac	1	NetworkDefault	100	100	100		0.00		
2Ax	1	NetworkDefault	100	100	100		0.00		
2B	1	NetworkDefault	100	100	100		0.00		
2Bc	1	NetworkDefault	100	100	100		0.00		
2Bx	1	NetworkDefault	100	100	100		0.00		
2C	1	NetworkDefault	100	100	100		0.00		
2Cc	1	NetworkDefault	100	100	100		0.00		
2Cx	1	NetworkDefault	100	100	100		0.00		
1A1	1	Flare	100	100	100		0.00		
1B1	1	NetworkDefault	100	100	100		0.00		
1Bx1	1	NetworkDefault	100	100	100		0.00		
1C1	1	Flare	100	100	100		0.00		
1A2	1	Flare	100	100	100		0.00		
1C2	1	Flare	100	100	100		0.00		
1A3	1	NetworkDefault	100	100	100		0.00		
1C3	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
1Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bypass	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
1Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2A	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Ac	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2B	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Bc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2C	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Cc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1B1	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1Bx1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A2	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C2	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1A3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
1Ax	1	605	605
1Bx	1	50	50
1Bypass	1	88	88
1Cx	1	843	843
2A	1	138	138
2Ac	1	1	1
2Ax	1	68	68
2B	1	38	38
2Bc	1	102	102
2Bx	1	37	37
2C	1	32	32
2Cc	1	37	37
2Cx	1	103	103
1A1	1	809	809
1B1	1	68	68
1Bx1	1	138	138
1C1	1	571	571
1A2	1	88	88
1C2	1	50	50
1A3	1	897	897
1C3	1	621	621

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
1A1	1	1	B	
1B1	1	1	D	
1C1	1	1	A	
1A2	1	1	C	
1C2	1	1	E	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
2B	1	12.00	30.00
2C	1	12.00	30.00
1A3	1	36.00	30.00
1C3	1	36.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
1Ax	1	1	1B1/1	1Ax/1	36.00	30.00	✓	Offside	68.07
1Bx	1	1	1C2/1	1Bx/1	1.20	30.00	✓	Offside	40.05
1Bypass	1	1	1A2/1	1Bypass/1	1.20	30.00	✓	Nearside	37.24
1Cx	1	1	1A1/1	1Cx/1	36.00	30.00	✓	Straight	Straight Movement
2A	1	1	1Bx1/1	2A/1	6.00	30.00	✓	Straight	Straight Movement
2Ac	1	1	2Cc/1	2Ac/1	2.40	30.00	✓	Offside	15.40
2Ax	1	1	2C/1	2Ax/1	1.00	30.00	✓	Offside	94.37
2Bc	1	1	2Ac/1	2Bc/1	2.40	30.00	✓	Offside	9.12
2Bx	1	1	2Ac/1	2Bx/1	12.00	30.00	✓	Offside	20.87
2Cc	1	1	2Bc/1	2Cc/1	2.40	30.00	✓	Offside	5.89
2Cx	1	1	2Bc/1	2Cx/1	12.00	30.00	✓	Offside	39.03
1A1	1	1	1A3/1	1A1/1	8.40	30.00	✓	Straight	Straight Movement
1B1	1	1	2Ax/1	1B1/1	7.20	30.00	✓	Straight	Straight Movement
1Bx1	1	1	1Bx/1	1Bx1/1	1.00	30.00	✓	Straight	Straight Movement
1C1	1	1	1C3/1	1C1/1	14.16	30.00	✓	Straight	Straight Movement
1A2	1	1	1A3/1	1A2/1	8.40	30.00	✓	Straight	Straight Movement
1C2	1	1	1C3/1	1C2/1	14.16	30.00	✓	Straight	Straight Movement
1Ax	1	2	1C1/1	1Ax/1	36.00	30.00	✓	Straight	Straight Movement
1Cx	1	2	1B1/1	1Cx/1	36.00	30.00	✓	Nearside	23.62
2Ac	1	2	2C/1	2Ac/1	2.40	30.00	✓	Offside	37.14
2Ax	1	2	2Cc/1	2Ax/1	1.00	30.00	✓	Offside	30.32
2Bc	1	2	2A/1	2Bc/1	2.40	30.00	✓	Offside	48.97
2Bx	1	2	2A/1	2Bx/1	12.00	30.00	✓	Straight	Straight Movement
2Cc	1	2	2B/1	2Cc/1	2.40	30.00	✓	Offside	25.73
2Cx	1	2	2B/1	2Cx/1	12.00	30.00	✓	Straight	Straight Movement
1Bx1	1	2	1Bypass/1	1Bx1/1	1.00	30.00	✓	Nearside	81.01

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
1Bypass	1	Movement		
2A	1	AllTraffic		
2B	1	AllTraffic		
2C	1	AllTraffic		

Give Way Data - All Movements - Conflicts

Traffic Stream	Description	Controlling type	Controlling traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1	Roundabout Circulating	TrafficStream	2Ac/1	100	0.69	
	Roundabout Circulating	TrafficStream	2Bc/1	100	0.64	
	Roundabout Circulating	TrafficStream	2Cc/1	100	0.60	

Give Way Data - Movements

Arm	Traffic Stream	Movement	Destination traffic stream	Max Flow (Opposed) (PCU/hr)	Max Flow (Unopposed) (PCU/hr)	Percentage opposed (%)
1Bypass	1	1	1Bx1/1	699	699	100

Give Way Data - Movements - Conflicts

Arm	Traffic Stream	Movement	Destination traffic stream	Description	Controlling type	Controlling from traffic stream	Controlling to traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1Bypass	1	1	1Bx1/1	Tjunction opposing flow	TrafficStreamMovement	1Bx/1	1Bx1/1	100	0.27	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	6.00	4.00	5.40
2	(untitled)				Farside	6.00	4.00	5.40
3	(untitled)				Farside	4.00	2.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	H	
2	1	G	
3	1	F	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Roundabouts

Roundabouts

Roundabout	Name	Roundabout type	Lighting
1	Alchemy Way	Standard	Normal/unknown

Entries

Roundabout	Entry	Name	Description	Auto assign priority	Type	Entry	Number of circulating items	Circulating 1	Calculate slope intercept	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)
1	2A	Alchemy Way S		✓	TrafficStream	2A/1	1	2Ac/1	✓	6.00	6.00	0.00	22.00	39.00
	2B	Site		✓	TrafficStream	2B/1	1	2Bc/1	✓	3.65	7.20	10.00	21.00	39.00
	2C	Alchemy Way N		✓	TrafficStream	2C/1	1	2Cc/1	✓	3.65	6.60	6.00	16.00	39.00

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1		✓	✓	Lane Balancing			✓			✓	1.01				

Normal Input Flows (PCU/hr)

	To				
	A	B	C	D	
From	A	0	13	18	1
	B	34	0	571	16
	C	68	809	0	20
	D	1	21	16	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	A	(untitled)	2C/1	2Cx/1	#FFFF00
	B		1C3/1	1Cx/1	#0000FF
	C		1A3/1	1Ax/1	#FF0000
	D		2B/1	2Bx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		C	B	1A3/1, 1A1/1, 1Cx/1	Normal	809
	3		B	C	1C3/1, 1C1/1, 1Ax/1	Normal	571
	4		C	C	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	0
	5		B	D	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	16
	6		C	D	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	20
	7		D	D	2B/1, 2Cc/1, 2Ac/1, 2Bx/1	Normal	0
	8		D	B	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	21
	9		D	C	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	16
	10		A	D	2C/1, 2Ac/1, 2Bx/1	Normal	1
	11		A	B	2C/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	13
	12		A	C	2C/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	18
	13		B	A	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	34
	14		C	A	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	68
	15		D	A	2B/1, 2Cx/1	Normal	1
	16		A	A	2C/1, 2Ac/1, 2Bc/1, 2Cx/1	Normal	0
	19		B	B	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	0

Signal Timings

Network Default: 60s cycle time; 60 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	A580 / Alchemy Way		1	NetworkDefault	60	43

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	A580 E	7	300	0	0	Traffic	
	B	A580 W	7	300	0	0	Traffic	
	C	A580 W LT	7	300	0	0	Traffic	
	D	Alchemy Way	7	300	0	0	Traffic	
	E	A580 E RT	7	300	0	0	Traffic	
	F	A580 LTSlip	4	300	0	0	Pedestrian	0
	G	AW NB C/W	4	300	0	0	Pedestrian	0
	H	AW SB C/W	4	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Allow intermittent occurrence
1	1	B, C, A, G, H	1	
	2	A, E, F, H	1	
	3	D, F	1	

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3	23, 38, 53	43	

Intergreen Matrix for Controller Stream 1

		To							
		A	B	C	D	E	F	G	H
From	A				8				
	B				8	8			
	C					8	8		
	D	8	6			7			6
	E		8	11	8			12	
	F			0					
	G					0			
	H				0				

Banned Stage transitions for Controller Stream 1

		To		
		1	2	3
From	1			
	2			
	3			

Interstage Matrix for Controller Stream 1

		To		
		1	2	3
From	1	0	8	8
	2	12	0	8
	3	8	8	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	B,C,A,G,H	1	23	22	1	5
	2	✓	2	A,E,F,H	31	38	7	1	7
	3	✓	3	D,F	46	53	7	1	7

Resultant Phase Green Periods

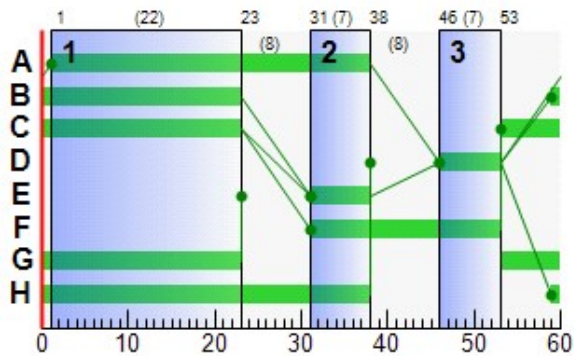
Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	1	38	37
	B	1	✓	59	23	24
	C	1	✓	53	23	30
	D	1	✓	46	53	7
	E	1	✓	31	38	7
	F	1	✓	31	53	22
	G	1	✓	53	23	30
	H	1	✓	59	38	39

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1A1	1	1.1	1	B	59	23	24
1B1	1	1.1	1	D	46	53	7
1C1	1	1.1	1	A	1	38	37
1A2	1	1.2	1	C	53	23	30
1C2	1	1.1	1	E	31	38	7

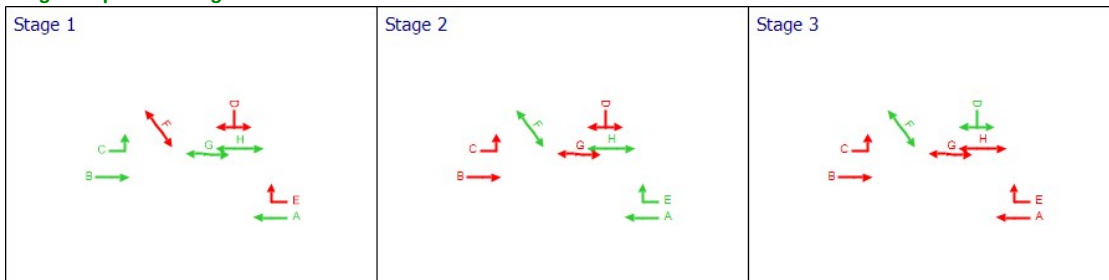
Phase Timings Diagram

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	1Ax	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx	1	0.00	0.00	1.74	0.00	0.00	0.00	0.00	55.00	0.00	55.00	
	1Bypass	1	0.00	0.94	1.74	54.04	0.00	0.00	0.00	29.00	0.00	29.00	
	1Cx	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2A	1	0.00	0.08	8.70	0.92	0.00	0.00	0.00	19.00	0.00	19.00	
	2Ac	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	2Ax	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2B	1	0.00	0.02	17.39	0.14	0.00	0.00	0.00	60.00	0.00	60.00	
	2Bc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	20.00	0.00	20.00	
	2Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	47.00	0.00	47.00	
	2C	1	0.00	0.02	17.39	0.13	0.00	0.00	0.00	60.00	0.00	60.00	
	2Cc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	2Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	15.00	0.00	15.00	
	1A1	1	0.00	9.49	24.35	38.99	0.00	0.00	0.00	0.00	0.00	0.00	
	1B1	1	0.00	0.99	20.87	4.75	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx1	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	23.00	0.00	23.00	
	1C1	1	0.00	3.84	41.04	9.35	0.00	0.00	0.00	0.00	0.00	0.00	
	1A2	1	0.00	1.45	12.17	11.94	0.00	0.00	0.00	0.00	0.00	0.00	
	1C2	1	0.00	1.48	20.52	7.19	0.00	0.00	0.00	6.00	0.00	6.00	
	1A3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1C3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Collections

A1 - DD2 - 2025, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC
1	08/07/2025 14:10:47	08/07/2025 14:10:48	1.35	16:30	60	92.42	5.61	55.02	1A1/1	0	0	1A1/1	2C/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2025	PM				16:30		✓

Network Options

Network timings

Network cycle time (s)	Minimum possible cycle time (s)	Absolute minimum possible cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
60	43	43		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)	Missing stage transition options
10000.00	10000.00	10000.00	2	Assume banned

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from traffic model	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓			Complex	Automatic	Automatic	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy (%)	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Standard accuracy Hill Climb	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1.1		
1.2	(untitled)	
1.3	(untitled)	
1.4	(untitled)	
1.5	(untitled)	
1.6	(untitled)	
2.1		
2.2		
2.3		
2.4	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
1Ax			
1Bx			1.3
1Bypass	(untitled)		1.3
1Cx			
2A			2.2
2Ac			2.2
2Ax			2.4
2B			2.3
2Bc			2.3
2Bx			
2C			2.1
2Cc			2.1
2Cx			
1A1			1.1
1B1			1.1
1Bx1	(untitled)		1.4
1C1			1.1
1A2			1.2
1C2			1.1
1A3			1.5
1C3			1.6

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
1Ax	1	A580 WBx			300.00								Normal	
1Bx	1				10.00								Normal	
1Bypass	1	(untitled)			10.00							✓	Normal	
1Cx	1	A580 EBx			300.00								Normal	
2A	1				50.00							✓	Normal	
2Ac	1				20.00								Normal	
2Ax	1				1.00								Normal	
2B	1				100.00							✓	Normal	
2Bc	1				20.00								Normal	
2Bx	1				100.00								Normal	
2C	1				100.00							✓	Normal	
2Cc	1				20.00								Normal	
2Cx	1				100.00								Normal	
1A1	1	A580 W			70.00	✓	Sum of lanes	4100	✓	3600	✓		Normal	
1B1	1	Alchemy Way			60.00	✓	Sum of lanes	3899			✓		Normal	
1Bx1	1	(untitled)			1.00								Normal	
1C1	1	A580 E			118.00	✓	Sum of lanes	4240	✓	3600	✓		Normal	
1A2	1	A580 W LT			70.00	✓	Sum of lanes	1908	✓	1800	✓		Normal	
1C2	1	A580 E RT			118.00	✓	Sum of lanes	1843	✓	1800	✓		Normal	
1A3	1				300.00								Normal	
1C3	1				300.00								Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
1Ax	1	1												
		2	(untitled)											
1Bx	1	1												
1Bypass	1	1	(untitled)											
1Cx	1	1												
		2	(untitled)											
2A	1	1												
2Ac	1	1												
2Ax	1	1												
2B	1	1												
2Bc	1	1												
2Bx	1	1												
2C	1	1												
2Cc	1	1												
2Cx	1	1												
1A1	1	1			✓	N/A	N/A	0	3.65		0	99999.00	✓	1980
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1B1	1	1			✓	N/A	N/A	0	3.65		100	15.00		1927
		2	(untitled)		✓	N/A	N/A	0	3.65		100	20.00		1972
1Bx1	1	1	(untitled)											
1C1	1	1	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1A2	1	1	(untitled)		✓	N/A	N/A	0	3.65		100	40.00	✓	1908
1C2	1	1			✓	N/A	N/A	0	3.65		100	10.00		1843
1A3	1	1	(untitled)											
		2	(untitled)											
1C3	1	1	(untitled)											
		2	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
1Ax	1	NetworkDefault	100	100	100		0.00		
1Bx	1	NetworkDefault	100	100	100		0.00		
1Bypass	1	NetworkDefault	100	100	100		0.00		
1Cx	1	NetworkDefault	100	100	100		0.00		
2A	1	NetworkDefault	100	100	100		0.00		
2Ac	1	NetworkDefault	100	100	100		0.00		
2Ax	1	NetworkDefault	100	100	100		0.00		
2B	1	NetworkDefault	100	100	100		0.00		
2Bc	1	NetworkDefault	100	100	100		0.00		
2Bx	1	NetworkDefault	100	100	100		0.00		
2C	1	NetworkDefault	100	100	100		0.00		
2Cc	1	NetworkDefault	100	100	100		0.00		
2Cx	1	NetworkDefault	100	100	100		0.00		
1A1	1	Flare	100	100	100		0.00		
1B1	1	NetworkDefault	100	100	100		0.00		
1Bx1	1	NetworkDefault	100	100	100		0.00		
1C1	1	Flare	100	100	100		0.00		
1A2	1	Flare	100	100	100		0.00		
1C2	1	Flare	100	100	100		0.00		
1A3	1	NetworkDefault	100	100	100		0.00		
1C3	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
1Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bypass	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
1Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2A	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Ac	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2B	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Bc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2C	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Cc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1B1	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1Bx1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A2	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C2	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1A3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
1Ax	1	679	679
1Bx	1	14	14
1Bypass	1	15	15
1Cx	1	975	975
2A	1	29	29
2Ac	1	0	0
2Ax	1	99	99
2B	1	26	26
2Bc	1	7	7
2Bx	1	22	22
2C	1	74	74
2Cc	1	25	25
2Cx	1	8	8
1A1	1	940	940
1B1	1	99	99
1Bx1	1	29	29
1C1	1	615	615
1A2	1	15	15
1C2	1	14	14
1A3	1	955	955
1C3	1	629	629

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
1A1	1	1	B	
1B1	1	1	D	
1C1	1	1	A	
1A2	1	1	C	
1C2	1	1	E	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
2B	1	12.00	30.00
2C	1	12.00	30.00
1A3	1	36.00	30.00
1C3	1	36.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
1Ax	1	1	1B1/1	1Ax/1	36.00	30.00	✓	Offside	68.07
1Bx	1	1	1C2/1	1Bx/1	1.20	30.00	✓	Offside	40.05
1Bypass	1	1	1A2/1	1Bypass/1	1.20	30.00	✓	Nearside	37.24
1Cx	1	1	1A1/1	1Cx/1	36.00	30.00	✓	Straight	Straight Movement
2A	1	1	1Bx1/1	2A/1	6.00	30.00	✓	Straight	Straight Movement
2Ac	1	1	2Cc/1	2Ac/1	2.40	30.00	✓	Offside	15.40
2Ax	1	1	2C/1	2Ax/1	1.00	30.00	✓	Offside	94.37
2Bc	1	1	2Ac/1	2Bc/1	2.40	30.00	✓	Offside	9.12
2Bx	1	1	2Ac/1	2Bx/1	12.00	30.00	✓	Offside	20.87
2Cc	1	1	2Bc/1	2Cc/1	2.40	30.00	✓	Offside	5.89
2Cx	1	1	2Bc/1	2Cx/1	12.00	30.00	✓	Offside	39.03
1A1	1	1	1A3/1	1A1/1	8.40	30.00	✓	Straight	Straight Movement
1B1	1	1	2Ax/1	1B1/1	7.20	30.00	✓	Straight	Straight Movement
1Bx1	1	1	1Bx/1	1Bx1/1	1.00	30.00	✓	Straight	Straight Movement
1C1	1	1	1C3/1	1C1/1	14.16	30.00	✓	Straight	Straight Movement
1A2	1	1	1A3/1	1A2/1	8.40	30.00	✓	Straight	Straight Movement
1C2	1	1	1C3/1	1C2/1	14.16	30.00	✓	Straight	Straight Movement
1Ax	1	2	1C1/1	1Ax/1	36.00	30.00	✓	Straight	Straight Movement
1Cx	1	2	1B1/1	1Cx/1	36.00	30.00	✓	Nearside	23.62
2Ac	1	2	2C/1	2Ac/1	2.40	30.00	✓	Offside	37.14
2Ax	1	2	2Cc/1	2Ax/1	1.00	30.00	✓	Offside	30.32
2Bc	1	2	2A/1	2Bc/1	2.40	30.00	✓	Offside	48.97
2Bx	1	2	2A/1	2Bx/1	12.00	30.00	✓	Straight	Straight Movement
2Cc	1	2	2B/1	2Cc/1	2.40	30.00	✓	Offside	25.73
2Cx	1	2	2B/1	2Cx/1	12.00	30.00	✓	Straight	Straight Movement
1Bx1	1	2	1Bypass/1	1Bx1/1	1.00	30.00	✓	Nearside	81.01

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
1Bypass	1	Movement		
2A	1	AllTraffic		
2B	1	AllTraffic		
2C	1	AllTraffic		

Give Way Data - All Movements - Conflicts

Traffic Stream	Description	Controlling type	Controlling traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1	Roundabout Circulating	TrafficStream	2Ac/1	100	0.69	
	Roundabout Circulating	TrafficStream	2Bc/1	100	0.64	
	Roundabout Circulating	TrafficStream	2Cc/1	100	0.60	

Give Way Data - Movements

Arm	Traffic Stream	Movement	Destination traffic stream	Max Flow (Opposed) (PCU/hr)	Max Flow (Unopposed) (PCU/hr)	Percentage opposed (%)
1Bypass	1	1	1Bx1/1	699	699	100

Give Way Data - Movements - Conflicts

Arm	Traffic Stream	Movement	Destination traffic stream	Description	Controlling type	Controlling from traffic stream	Controlling to traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1Bypass	1	1	1Bx1/1	Tjunction opposing flow	TrafficStreamMovement	1Bx/1	1Bx1/1	100	0.27	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	6.00	4.00	5.40
2	(untitled)				Farside	6.00	4.00	5.40
3	(untitled)				Farside	4.00	2.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	H	
2	1	G	
3	1	F	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Roundabouts

Roundabouts

Roundabout	Name	Roundabout type	Lighting
1	Alchemy Way	Standard	Normal/unknown

Entries

Roundabout	Entry	Name	Description	Auto assign priority	Type	Entry	Number of circulating items	Circulating 1	Calculate slope intercept	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)
1	2A	Alchemy Way S		✓	TrafficStream	2A/1	1	2Ac/1	✓	6.00	6.00	0.00	22.00	39.00
	2B	Site		✓	TrafficStream	2B/1	1	2Bc/1	✓	3.65	7.20	10.00	21.00	39.00
	2C	Alchemy Way N		✓	TrafficStream	2C/1	1	2Cc/1	✓	3.65	6.60	6.00	16.00	39.00

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1		✓	✓	Lane Balancing			✓			✓	1.01				

Normal Input Flows (PCU/hr)

	To				
	A	B	C	D	
From	A	0	23	51	0
	B	6	0	615	8
	C	1	940	0	14
	D	1	12	13	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	A	(untitled)	2C/1	2Cx/1	#FFFF00
	B		1C3/1	1Cx/1	#0000FF
	C		1A3/1	1Ax/1	#FF0000
	D		2B/1	2Bx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		C	B	1A3/1, 1A1/1, 1Cx/1	Normal	940
	3		B	C	1C3/1, 1C1/1, 1Ax/1	Normal	615
	4		C	C	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	0
	5		B	D	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	8
	6		C	D	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	14
	7		D	D	2B/1, 2Cc/1, 2Ac/1, 2Bx/1	Normal	0
	8		D	B	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	12
	9		D	C	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	13
	10		A	D	2C/1, 2Ac/1, 2Bx/1	Normal	0
	11		A	B	2C/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	23
	12		A	C	2C/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	51
	13		B	A	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	6
	14		C	A	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	1
	15		D	A	2B/1, 2Cx/1	Normal	1
	16		A	A	2C/1, 2Ac/1, 2Bc/1, 2Cx/1	Normal	0
	19		B	B	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	0

Signal Timings

Network Default: 60s cycle time; 60 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	A580 / Alchemy Way		1	NetworkDefault	60	43

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	A580 E	7	300	0	0	Traffic	
	B	A580 W	7	300	0	0	Traffic	
	C	A580 W LT	7	300	0	0	Traffic	
	D	Alchemy Way	7	300	0	0	Traffic	
	E	A580 E RT	7	300	0	0	Traffic	
	F	A580 LTSlip	4	300	0	0	Pedestrian	0
	G	AW NB C/W	4	300	0	0	Pedestrian	0
	H	AW SB C/W	4	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Allow intermittent occurrence
1	1	B, C, A, G, H	1	
	2	A, E, F, H	1	
	3	D, F	1	

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3	23, 38, 53	43	

Intergreen Matrix for Controller Stream 1

		To							
		A	B	C	D	E	F	G	H
From	A				8				
	B				8	8			
	C					8	8		
	D	8	6			7			6
	E		8	11	8			12	
	F			0					
	G					0			
	H				0				

Banned Stage transitions for Controller Stream 1

		To		
		1	2	3
From	1			
	2			
	3			

Interstage Matrix for Controller Stream 1

		To		
		1	2	3
From	1	0	8	8
	2	12	0	8
	3	8	8	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	B,C,A,G,H	1	23	22	1	5
	2	✓	2	A,E,F,H	31	38	7	1	7
	3	✓	3	D,F	46	53	7	1	7

Resultant Phase Green Periods

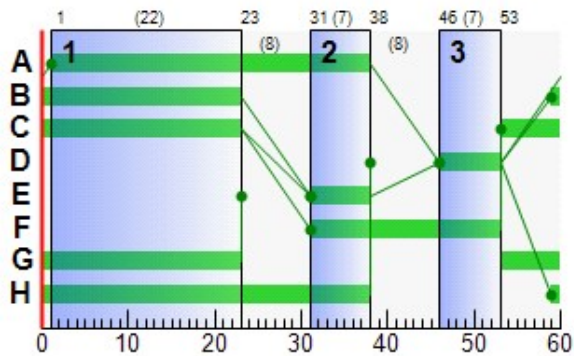
Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	1	38	37
	B	1	✓	59	23	24
	C	1	✓	53	23	30
	D	1	✓	46	53	7
	E	1	✓	31	38	7
	F	1	✓	31	53	22
	G	1	✓	53	23	30
	H	1	✓	59	38	39

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1A1	1	1.1	1	B	59	23	24
1B1	1	1.1	1	D	46	53	7
1C1	1	1.1	1	A	1	38	37
1A2	1	1.2	1	C	53	23	30
1C2	1	1.1	1	E	31	38	7

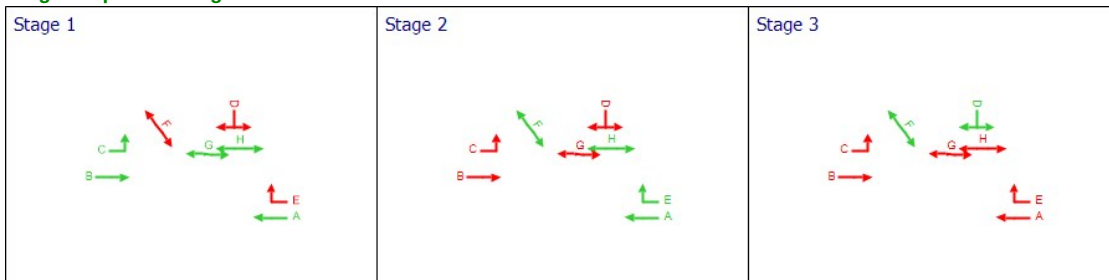
Phase Timings Diagram

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
16:30-17:30	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
16:30-17:30	1Ax	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx	1	0.00	0.00	1.74	0.00	0.00	0.00	0.00	58.00	0.00	58.00	
	1Bypass	1	0.00	0.02	1.74	1.26	0.00	0.00	0.00	58.00	0.00	58.00	
	1Cx	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2A	1	0.00	0.02	8.70	0.18	0.00	0.00	0.00	51.00	0.00	51.00	
	2Ac	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	2Ax	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2B	1	0.00	0.02	17.39	0.09	0.00	0.00	0.00	60.00	0.00	60.00	
	2Bc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	58.00	0.00	58.00	
	2Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	2C	1	0.00	0.05	17.39	0.31	0.00	0.00	0.00	0.00	0.00	0.00	
	2Cc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	2Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	1A1	1	0.00	11.14	24.35	45.74	0.00	0.00	0.00	0.00	0.00	0.00	
	1B1	1	0.00	1.48	20.87	7.09	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx1	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	55.00	0.00	55.00	
	1C1	1	0.00	5.83	41.04	14.21	0.00	0.00	0.00	0.00	0.00	0.00	
	1A2	1	0.00	0.12	12.17	0.99	0.00	0.00	0.00	30.00	0.00	30.00	
	1C2	1	0.00	0.20	20.52	0.99	0.00	0.00	0.00	7.00	0.00	7.00	
	1A3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1C3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Collections

A1 - DD3 - 2030 Base, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignal PRC
1	08/07/2025 14:10:48	08/07/2025 14:10:49	1.21	08:00	60	107.96	6.57	49.70	1A1/1	0	0	1A1/1	1Bypas

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 Base	AM				08:00		✓

Network Options

Network timings

Network cycle time (s)	Minimum possible cycle time (s)	Absolute minimum possible cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
60	43	43		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)	Missing stage transition options
10000.00	10000.00	10000.00	2	Assume banned

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from traffic model	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓			Complex	Automatic	Automatic	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy (%)	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Standard accuracy Hill Climb	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1.1		
1.2	(untitled)	
1.3	(untitled)	
1.4	(untitled)	
1.5	(untitled)	
1.6	(untitled)	
2.1		
2.2		
2.3		
2.4	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
1Ax			
1Bx			1.3
1Bypass	(untitled)		1.3
1Cx			
2A			2.2
2Ac			2.2
2Ax			2.4
2B			2.3
2Bc			2.3
2Bx			
2C			2.1
2Cc			2.1
2Cx			
1A1			1.1
1B1			1.1
1Bx1	(untitled)		1.4
1C1			1.1
1A2			1.2
1C2			1.1
1A3			1.5
1C3			1.6

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
1Ax	1	A580 WBx			300.00								Normal	
1Bx	1				10.00								Normal	
1Bypass	1	(untitled)			10.00							✓	Normal	
1Cx	1	A580 EBx			300.00								Normal	
2A	1				50.00							✓	Normal	
2Ac	1				20.00								Normal	
2Ax	1				1.00								Normal	
2B	1				100.00							✓	Normal	
2Bc	1				20.00								Normal	
2Bx	1				100.00								Normal	
2C	1				100.00							✓	Normal	
2Cc	1				20.00								Normal	
2Cx	1				100.00								Normal	
1A1	1	A580 W			70.00	✓	Sum of lanes	4100	✓	3600	✓		Normal	
1B1	1	Alchemy Way			60.00	✓	Sum of lanes	3899			✓		Normal	
1Bx1	1	(untitled)			1.00								Normal	
1C1	1	A580 E			118.00	✓	Sum of lanes	4240	✓	3600	✓		Normal	
1A2	1	A580 W LT			70.00	✓	Sum of lanes	1908	✓	1800	✓		Normal	
1C2	1	A580 E RT			118.00	✓	Sum of lanes	1843	✓	1800	✓		Normal	
1A3	1				300.00								Normal	
1C3	1				300.00								Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
1Ax	1	1												
		2	(untitled)											
1Bx	1	1												
1Bypass	1	1	(untitled)											
1Cx	1	1												
		2	(untitled)											
2A	1	1												
2Ac	1	1												
2Ax	1	1												
2B	1	1												
2Bc	1	1												
2Bx	1	1												
2C	1	1												
2Cc	1	1												
2Cx	1	1												
1A1	1	1			✓	N/A	N/A	0	3.65		0	99999.00	✓	1980
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1B1	1	1			✓	N/A	N/A	0	3.65		100	15.00		1927
		2	(untitled)		✓	N/A	N/A	0	3.65		100	20.00		1972
1Bx1	1	1	(untitled)											
1C1	1	1	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1A2	1	1	(untitled)		✓	N/A	N/A	0	3.65		100	40.00	✓	1908
1C2	1	1			✓	N/A	N/A	0	3.65		100	10.00		1843
1A3	1	1	(untitled)											
		2	(untitled)											
1C3	1	1	(untitled)											
		2	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
1Ax	1	NetworkDefault	100	100	100		0.00		
1Bx	1	NetworkDefault	100	100	100		0.00		
1Bypass	1	NetworkDefault	100	100	100		0.00		
1Cx	1	NetworkDefault	100	100	100		0.00		
2A	1	NetworkDefault	100	100	100		0.00		
2Ac	1	NetworkDefault	100	100	100		0.00		
2Ax	1	NetworkDefault	100	100	100		0.00		
2B	1	NetworkDefault	100	100	100		0.00		
2Bc	1	NetworkDefault	100	100	100		0.00		
2Bx	1	NetworkDefault	100	100	100		0.00		
2C	1	NetworkDefault	100	100	100		0.00		
2Cc	1	NetworkDefault	100	100	100		0.00		
2Cx	1	NetworkDefault	100	100	100		0.00		
1A1	1	Flare	100	100	100		0.00		
1B1	1	NetworkDefault	100	100	100		0.00		
1Bx1	1	NetworkDefault	100	100	100		0.00		
1C1	1	Flare	100	100	100		0.00		
1A2	1	Flare	100	100	100		0.00		
1C2	1	Flare	100	100	100		0.00		
1A3	1	NetworkDefault	100	100	100		0.00		
1C3	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
1Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bypass	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
1Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2A	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Ac	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2B	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Bc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2C	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Cc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1B1	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1Bx1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A2	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C2	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1A3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
1Ax	1	651	651
1Bx	1	102	102
1Bypass	1	141	141
1Cx	1	905	905
2A	1	243	243
2Ac	1	1	1
2Ax	1	113	113
2B	1	69	69
2Bc	1	135	135
2Bx	1	109	109
2C	1	46	46
2Cc	1	68	68
2Cx	1	136	136
1A1	1	849	849
1B1	1	113	113
1Bx1	1	243	243
1C1	1	594	594
1A2	1	141	141
1C2	1	102	102
1A3	1	990	990
1C3	1	696	696

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
1A1	1	1	B	
1B1	1	1	D	
1C1	1	1	A	
1A2	1	1	C	
1C2	1	1	E	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
2B	1	12.00	30.00
2C	1	12.00	30.00
1A3	1	36.00	30.00
1C3	1	36.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
1Ax	1	1	1B1/1	1Ax/1	36.00	30.00	✓	Offside	68.07
1Bx	1	1	1C2/1	1Bx/1	1.20	30.00	✓	Offside	40.05
1Bypass	1	1	1A2/1	1Bypass/1	1.20	30.00	✓	Nearside	37.24
1Cx	1	1	1A1/1	1Cx/1	36.00	30.00	✓	Straight	Straight Movement
2A	1	1	1Bx1/1	2A/1	6.00	30.00	✓	Straight	Straight Movement
2Ac	1	1	2Cc/1	2Ac/1	2.40	30.00	✓	Offside	15.40
2Ax	1	1	2C/1	2Ax/1	1.00	30.00	✓	Offside	94.37
2Bc	1	1	2Ac/1	2Bc/1	2.40	30.00	✓	Offside	9.12
2Bx	1	1	2Ac/1	2Bx/1	12.00	30.00	✓	Offside	20.87
2Cc	1	1	2Bc/1	2Cc/1	2.40	30.00	✓	Offside	5.89
2Cx	1	1	2Bc/1	2Cx/1	12.00	30.00	✓	Offside	39.03
1A1	1	1	1A3/1	1A1/1	8.40	30.00	✓	Straight	Straight Movement
1B1	1	1	2Ax/1	1B1/1	7.20	30.00	✓	Straight	Straight Movement
1Bx1	1	1	1Bx/1	1Bx1/1	1.00	30.00	✓	Straight	Straight Movement
1C1	1	1	1C3/1	1C1/1	14.16	30.00	✓	Straight	Straight Movement
1A2	1	1	1A3/1	1A2/1	8.40	30.00	✓	Straight	Straight Movement
1C2	1	1	1C3/1	1C2/1	14.16	30.00	✓	Straight	Straight Movement
1Ax	1	2	1C1/1	1Ax/1	36.00	30.00	✓	Straight	Straight Movement
1Cx	1	2	1B1/1	1Cx/1	36.00	30.00	✓	Nearside	23.62
2Ac	1	2	2C/1	2Ac/1	2.40	30.00	✓	Offside	37.14
2Ax	1	2	2Cc/1	2Ax/1	1.00	30.00	✓	Offside	30.32
2Bc	1	2	2A/1	2Bc/1	2.40	30.00	✓	Offside	48.97
2Bx	1	2	2A/1	2Bx/1	12.00	30.00	✓	Straight	Straight Movement
2Cc	1	2	2B/1	2Cc/1	2.40	30.00	✓	Offside	25.73
2Cx	1	2	2B/1	2Cx/1	12.00	30.00	✓	Straight	Straight Movement
1Bx1	1	2	1Bypass/1	1Bx1/1	1.00	30.00	✓	Nearside	81.01

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
1Bypass	1	Movement		
2A	1	AllTraffic		
2B	1	AllTraffic		
2C	1	AllTraffic		

Give Way Data - All Movements - Conflicts

Traffic Stream	Description	Controlling type	Controlling traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1	Roundabout Circulating	TrafficStream	2Ac/1	100	0.69	
	Roundabout Circulating	TrafficStream	2Bc/1	100	0.64	
	Roundabout Circulating	TrafficStream	2Cc/1	100	0.60	

Give Way Data - Movements

Arm	Traffic Stream	Movement	Destination traffic stream	Max Flow (Opposed) (PCU/hr)	Max Flow (Unopposed) (PCU/hr)	Percentage opposed (%)
1Bypass	1	1	1Bx1/1	699	699	100

Give Way Data - Movements - Conflicts

Arm	Traffic Stream	Movement	Destination traffic stream	Description	Controlling type	Controlling from traffic stream	Controlling to traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1Bypass	1	1	1Bx1/1	Tjunction opposing flow	TrafficStreamMovement	1Bx/1	1Bx1/1	100	0.27	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	6.00	4.00	5.40
2	(untitled)				Farside	6.00	4.00	5.40
3	(untitled)				Farside	4.00	2.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	H	
2	1	G	
3	1	F	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Roundabouts

Roundabouts

Roundabout	Name	Roundabout type	Lighting
1	Alchemy Way	Standard	Normal/unknown

Entries

Roundabout	Entry	Name	Description	Auto assign priority	Type	Entry	Number of circulating items	Circulating 1	Calculate slope intercept	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)
1	2A	Alchemy Way S		✓	TrafficStream	2A/1	1	2Ac/1	✓	6.00	6.00	0.00	22.00	39.00
	2B	Site		✓	TrafficStream	2B/1	1	2Bc/1	✓	3.65	7.20	10.00	21.00	39.00
	2C	Alchemy Way N		✓	TrafficStream	2C/1	1	2Cc/1	✓	3.65	6.60	6.00	16.00	39.00

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1		✓	✓	Lane Balancing			✓			✓	1.01				

Normal Input Flows (PCU/hr)

	To				
	A	B	C	D	
From	A	0	20	25	1
	B	50	0	594	52
	C	85	849	0	56
	D	1	36	32	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	A	(untitled)	2C/1	2Cx/1	#FFFF00
	B		1C3/1	1Cx/1	#0000FF
	C		1A3/1	1Ax/1	#FF0000
	D		2B/1	2Bx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		C	B	1A3/1, 1A1/1, 1Cx/1	Normal	849
	3		B	C	1C3/1, 1C1/1, 1Ax/1	Normal	594
	4		C	C	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	0
	5		B	D	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	52
	6		C	D	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	56
	7		D	D	2B/1, 2Cc/1, 2Ac/1, 2Bx/1	Normal	0
	8		D	B	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	36
	9		D	C	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	32
	10		A	D	2C/1, 2Ac/1, 2Bx/1	Normal	1
	11		A	B	2C/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	20
	12		A	C	2C/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	25
	13		B	A	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	50
	14		C	A	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	85
	15		D	A	2B/1, 2Cx/1	Normal	1
	16		A	A	2C/1, 2Ac/1, 2Bc/1, 2Cx/1	Normal	0
	19		B	B	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	0

Signal Timings

Network Default: 60s cycle time; 60 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	A580 / Alchemy Way		1	NetworkDefault	60	43

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	A580 E	7	300	0	0	Traffic	
	B	A580 W	7	300	0	0	Traffic	
	C	A580 W LT	7	300	0	0	Traffic	
	D	Alchemy Way	7	300	0	0	Traffic	
	E	A580 E RT	7	300	0	0	Traffic	
	F	A580 LTSlip	4	300	0	0	Pedestrian	0
	G	AW NB C/W	4	300	0	0	Pedestrian	0
	H	AW SB C/W	4	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Allow intermittent occurrence
1	1	B, C, A, G, H	1	
	2	A, E, F, H	1	
	3	D, F	1	

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3	23, 38, 53	43	

Intergreen Matrix for Controller Stream 1

		To							
		A	B	C	D	E	F	G	H
From	A				8				
	B				8	8			
	C					8	8		
	D	8	6			7			6
	E		8	11	8			12	
	F			0					
	G					0			
	H				0				

Banned Stage transitions for Controller Stream 1

		To		
		1	2	3
From	1			
	2			
	3			

Interstage Matrix for Controller Stream 1

		To		
		1	2	3
From	1	0	8	8
	2	12	0	8
	3	8	8	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	B,C,A,G,H	1	23	22	1	5
	2	✓	2	A,E,F,H	31	38	7	1	7
	3	✓	3	D,F	46	53	7	1	7

Resultant Phase Green Periods

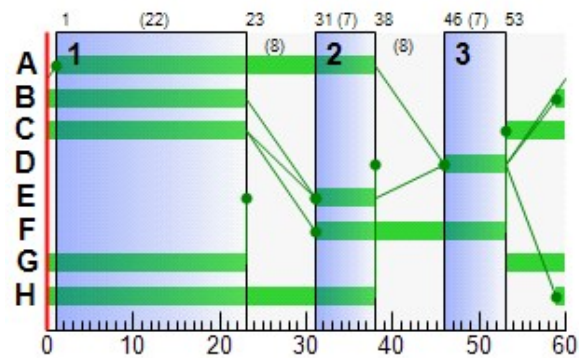
Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	1	38	37
	B	1	✓	59	23	24
	C	1	✓	53	23	30
	D	1	✓	46	53	7
	E	1	✓	31	38	7
	F	1	✓	31	53	22
	G	1	✓	53	23	30
	H	1	✓	59	38	39

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1A1	1	1.1	1	B	59	23	24
1B1	1	1.1	1	D	46	53	7
1C1	1	1.1	1	A	1	38	37
1A2	1	1.2	1	C	53	23	30
1C2	1	1.1	1	E	31	38	7

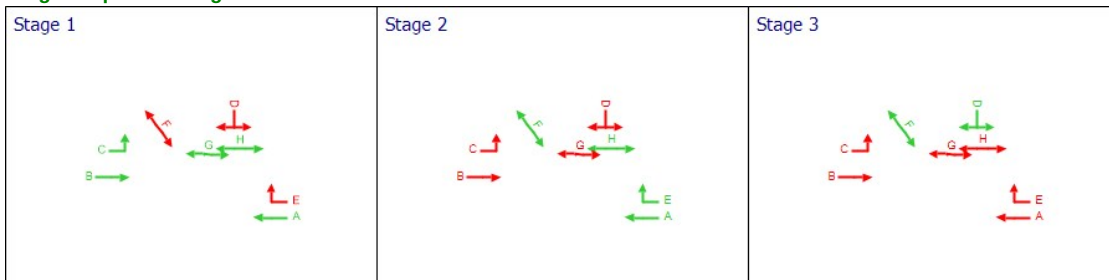
Phase Timings Diagram

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	1Ax	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx	1	0.00	0.00	1.74	0.00	0.00	0.00	0.00	52.00	0.00	52.00	
	1Bypass	1	0.00	1.66	1.74	95.50	0.00	0.00	0.00	29.00	0.00	29.00	
	1Cx	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2A	1	0.00	0.15	8.70	1.72	0.00	0.00	0.00	16.00	0.00	16.00	
	2Ac	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	2Ax	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2B	1	0.00	0.05	17.39	0.26	0.00	0.00	0.00	0.00	0.00	0.00	
	2Bc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	17.00	0.00	17.00	
	2Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	22.00	0.00	22.00	
	2C	1	0.00	0.03	17.39	0.19	0.00	0.00	0.00	60.00	0.00	60.00	
	2Cc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	12.00	0.00	12.00	
	1A1	1	0.00	9.99	24.35	41.01	0.00	0.00	0.00	0.00	0.00	0.00	
	1B1	1	0.00	1.69	20.87	8.12	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx1	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	21.00	0.00	21.00	
	1C1	1	0.00	3.99	41.04	9.73	0.00	0.00	0.00	0.00	0.00	0.00	
	1A2	1	0.00	1.46	12.17	12.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1C2	1	0.00	1.68	20.52	8.18	0.00	0.00	0.00	0.00	0.00	0.00	
	1A3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1C3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Collections

A1 - DD4 - 2030 Base, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignal PRC
1	08/07/2025 14:10:49	08/07/2025 14:10:49	0.94	16:30	60	112.93	6.90	57.01	1A1/1	0	0	1A1/1	2C/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 Base	PM				16:30		✓

Network Options

Network timings

Network cycle time (s)	Minimum possible cycle time (s)	Absolute minimum possible cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
60	43	43		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)	Missing stage transition options
10000.00	10000.00	10000.00	2	Assume banned

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from traffic model	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓			Complex	Automatic	Automatic	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy (%)	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Standard accuracy Hill Climb	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1.1		
1.2	(untitled)	
1.3	(untitled)	
1.4	(untitled)	
1.5	(untitled)	
1.6	(untitled)	
2.1		
2.2		
2.3		
2.4	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
1Ax			
1Bx			1.3
1Bypass	(untitled)		1.3
1Cx			
2A			2.2
2Ac			2.2
2Ax			2.4
2B			2.3
2Bc			2.3
2Bx			
2C			2.1
2Cc			2.1
2Cx			
1A1			1.1
1B1			1.1
1Bx1	(untitled)		1.4
1C1			1.1
1A2			1.2
1C2			1.1
1A3			1.5
1C3			1.6

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
1Ax	1	A580 WBx			300.00								Normal	
1Bx	1				10.00								Normal	
1Bypass	1	(untitled)			10.00							✓	Normal	
1Cx	1	A580 EBx			300.00								Normal	
2A	1				50.00							✓	Normal	
2Ac	1				20.00								Normal	
2Ax	1				1.00								Normal	
2B	1				100.00							✓	Normal	
2Bc	1				20.00								Normal	
2Bx	1				100.00								Normal	
2C	1				100.00							✓	Normal	
2Cc	1				20.00								Normal	
2Cx	1				100.00								Normal	
1A1	1	A580 W			70.00	✓	Sum of lanes	4100	✓	3600	✓		Normal	
1B1	1	Alchemy Way			60.00	✓	Sum of lanes	3899			✓		Normal	
1Bx1	1	(untitled)			1.00								Normal	
1C1	1	A580 E			118.00	✓	Sum of lanes	4240	✓	3600	✓		Normal	
1A2	1	A580 W LT			70.00	✓	Sum of lanes	1908	✓	1800	✓		Normal	
1C2	1	A580 E RT			118.00	✓	Sum of lanes	1843	✓	1800	✓		Normal	
1A3	1				300.00								Normal	
1C3	1				300.00								Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
1Ax	1	1												
		2	(untitled)											
1Bx	1	1												
1Bypass	1	1	(untitled)											
1Cx	1	1												
		2	(untitled)											
2A	1	1												
2Ac	1	1												
2Ax	1	1												
2B	1	1												
2Bc	1	1												
2Bx	1	1												
2C	1	1												
2Cc	1	1												
2Cx	1	1												
1A1	1	1			✓	N/A	N/A	0	3.65		0	99999.00	✓	1980
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1B1	1	1			✓	N/A	N/A	0	3.65		100	15.00		1927
		2	(untitled)		✓	N/A	N/A	0	3.65		100	20.00		1972
1Bx1	1	1	(untitled)											
1C1	1	1	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1A2	1	1	(untitled)		✓	N/A	N/A	0	3.65		100	40.00	✓	1908
1C2	1	1			✓	N/A	N/A	0	3.65		100	10.00		1843
1A3	1	1	(untitled)											
		2	(untitled)											
1C3	1	1	(untitled)											
		2	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
1Ax	1	NetworkDefault	100	100	100		0.00		
1Bx	1	NetworkDefault	100	100	100		0.00		
1Bypass	1	NetworkDefault	100	100	100		0.00		
1Cx	1	NetworkDefault	100	100	100		0.00		
2A	1	NetworkDefault	100	100	100		0.00		
2Ac	1	NetworkDefault	100	100	100		0.00		
2Ax	1	NetworkDefault	100	100	100		0.00		
2B	1	NetworkDefault	100	100	100		0.00		
2Bc	1	NetworkDefault	100	100	100		0.00		
2Bx	1	NetworkDefault	100	100	100		0.00		
2C	1	NetworkDefault	100	100	100		0.00		
2Cc	1	NetworkDefault	100	100	100		0.00		
2Cx	1	NetworkDefault	100	100	100		0.00		
1A1	1	Flare	100	100	100		0.00		
1B1	1	NetworkDefault	100	100	100		0.00		
1Bx1	1	NetworkDefault	100	100	100		0.00		
1C1	1	Flare	100	100	100		0.00		
1A2	1	Flare	100	100	100		0.00		
1C2	1	Flare	100	100	100		0.00		
1A3	1	NetworkDefault	100	100	100		0.00		
1C3	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
1Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bypass	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
1Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2A	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Ac	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2B	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Bc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2C	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Cc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1B1	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1Bx1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A2	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C2	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1A3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
1Ax	1	761	761
1Bx	1	30	30
1Bypass	1	31	31
1Cx	1	1058	1058
2A	1	61	61
2Ac	1	0	0
2Ax	1	198	198
2B	1	93	93
2Bc	1	17	17
2Bx	1	44	44
2C	1	106	106
2Cc	1	92	92
2Cx	1	18	18
1A1	1	974	974
1B1	1	198	198
1Bx1	1	61	61
1C1	1	647	647
1A2	1	31	31
1C2	1	30	30
1A3	1	1005	1005
1C3	1	677	677

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
1A1	1	1	B	
1B1	1	1	D	
1C1	1	1	A	
1A2	1	1	C	
1C2	1	1	E	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
2B	1	12.00	30.00
2C	1	12.00	30.00
1A3	1	36.00	30.00
1C3	1	36.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
1Ax	1	1	1B1/1	1Ax/1	36.00	30.00	✓	Offside	68.07
1Bx	1	1	1C2/1	1Bx/1	1.20	30.00	✓	Offside	40.05
1Bypass	1	1	1A2/1	1Bypass/1	1.20	30.00	✓	Nearside	37.24
1Cx	1	1	1A1/1	1Cx/1	36.00	30.00	✓	Straight	Straight Movement
2A	1	1	1Bx1/1	2A/1	6.00	30.00	✓	Straight	Straight Movement
2Ac	1	1	2Cc/1	2Ac/1	2.40	30.00	✓	Offside	15.40
2Ax	1	1	2C/1	2Ax/1	1.00	30.00	✓	Offside	94.37
2Bc	1	1	2Ac/1	2Bc/1	2.40	30.00	✓	Offside	9.12
2Bx	1	1	2Ac/1	2Bx/1	12.00	30.00	✓	Offside	20.87
2Cc	1	1	2Bc/1	2Cc/1	2.40	30.00	✓	Offside	5.89
2Cx	1	1	2Bc/1	2Cx/1	12.00	30.00	✓	Offside	39.03
1A1	1	1	1A3/1	1A1/1	8.40	30.00	✓	Straight	Straight Movement
1B1	1	1	2Ax/1	1B1/1	7.20	30.00	✓	Straight	Straight Movement
1Bx1	1	1	1Bx/1	1Bx1/1	1.00	30.00	✓	Straight	Straight Movement
1C1	1	1	1C3/1	1C1/1	14.16	30.00	✓	Straight	Straight Movement
1A2	1	1	1A3/1	1A2/1	8.40	30.00	✓	Straight	Straight Movement
1C2	1	1	1C3/1	1C2/1	14.16	30.00	✓	Straight	Straight Movement
1Ax	1	2	1C1/1	1Ax/1	36.00	30.00	✓	Straight	Straight Movement
1Cx	1	2	1B1/1	1Cx/1	36.00	30.00	✓	Nearside	23.62
2Ac	1	2	2C/1	2Ac/1	2.40	30.00	✓	Offside	37.14
2Ax	1	2	2Cc/1	2Ax/1	1.00	30.00	✓	Offside	30.32
2Bc	1	2	2A/1	2Bc/1	2.40	30.00	✓	Offside	48.97
2Bx	1	2	2A/1	2Bx/1	12.00	30.00	✓	Straight	Straight Movement
2Cc	1	2	2B/1	2Cc/1	2.40	30.00	✓	Offside	25.73
2Cx	1	2	2B/1	2Cx/1	12.00	30.00	✓	Straight	Straight Movement
1Bx1	1	2	1Bypass/1	1Bx1/1	1.00	30.00	✓	Nearside	81.01

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
1Bypass	1	Movement		
2A	1	AllTraffic		
2B	1	AllTraffic		
2C	1	AllTraffic		

Give Way Data - All Movements - Conflicts

Traffic Stream	Description	Controlling type	Controlling traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1	Roundabout Circulating	TrafficStream	2Ac/1	100	0.69	
	Roundabout Circulating	TrafficStream	2Bc/1	100	0.64	
	Roundabout Circulating	TrafficStream	2Cc/1	100	0.60	

Give Way Data - Movements

Arm	Traffic Stream	Movement	Destination traffic stream	Max Flow (Opposed) (PCU/hr)	Max Flow (Unopposed) (PCU/hr)	Percentage opposed (%)
1Bypass	1	1	1Bx1/1	699	699	100

Give Way Data - Movements - Conflicts

Arm	Traffic Stream	Movement	Destination traffic stream	Description	Controlling type	Controlling from traffic stream	Controlling to traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1Bypass	1	1	1Bx1/1	Tjunction opposing flow	TrafficStreamMovement	1Bx/1	1Bx1/1	100	0.27	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	6.00	4.00	5.40
2	(untitled)				Farside	6.00	4.00	5.40
3	(untitled)				Farside	4.00	2.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	H	
2	1	G	
3	1	F	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Roundabouts

Roundabouts

Roundabout	Name	Roundabout type	Lighting
1	Alchemy Way	Standard	Normal/unknown

Entries

Roundabout	Entry	Name	Description	Auto assign priority	Type	Entry	Number of circulating items	Circulating 1	Calculate slope intercept	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)
1	2A	Alchemy Way S		✓	TrafficStream	2A/1	1	2Ac/1	✓	6.00	6.00	0.00	22.00	39.00
	2B	Site		✓	TrafficStream	2B/1	1	2Bc/1	✓	3.65	7.20	10.00	21.00	39.00
	2C	Alchemy Way N		✓	TrafficStream	2C/1	1	2Cc/1	✓	3.65	6.60	6.00	16.00	39.00

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1		✓	✓	Lane Balancing			✓			✓	1.01				

Normal Input Flows (PCU/hr)

	To				
	A	B	C	D	
From	A	0	39	67	0
	B	11	0	647	19
	C	6	974	0	25
	D	1	45	47	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	A	(untitled)	2C/1	2Cx/1	#FFFF00
	B		1C3/1	1Cx/1	#0000FF
	C		1A3/1	1Ax/1	#FF0000
	D		2B/1	2Bx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		C	B	1A3/1, 1A1/1, 1Cx/1	Normal	974
	3		B	C	1C3/1, 1C1/1, 1Ax/1	Normal	647
	4		C	C	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	0
	5		B	D	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	19
	6		C	D	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	25
	7		D	D	2B/1, 2Cc/1, 2Ac/1, 2Bx/1	Normal	0
	8		D	B	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	45
	9		D	C	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	47
	10		A	D	2C/1, 2Ac/1, 2Bx/1	Normal	0
	11		A	B	2C/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	39
	12		A	C	2C/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	67
	13		B	A	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	11
	14		C	A	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	6
	15		D	A	2B/1, 2Cx/1	Normal	1
	16		A	A	2C/1, 2Ac/1, 2Bc/1, 2Cx/1	Normal	0
	19		B	B	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	0

Signal Timings

Network Default: 60s cycle time; 60 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	A580 / Alchemy Way		1	NetworkDefault	60	43

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	A580 E	7	300	0	0	Traffic	
	B	A580 W	7	300	0	0	Traffic	
	C	A580 W LT	7	300	0	0	Traffic	
	D	Alchemy Way	7	300	0	0	Traffic	
	E	A580 E RT	7	300	0	0	Traffic	
	F	A580 LTSlip	4	300	0	0	Pedestrian	0
	G	AW NB C/W	4	300	0	0	Pedestrian	0
	H	AW SB C/W	4	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Allow intermittent occurrence
1	1	B, C, A, G, H	1	
	2	A, E, F, H	1	
	3	D, F	1	

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3	23, 38, 53	43	

Intergreen Matrix for Controller Stream 1

	To							
	A	B	C	D	E	F	G	H
From	A			8				
	B			8	8			
	C				8	8		
	D	8	6		7			6
	E		8	11	8		12	
	F			0				
	G				0			
	H			0				

Banned Stage transitions for Controller Stream 1

	To		
	1	2	3
From	1		
	2		
	3		

Interstage Matrix for Controller Stream 1

	To		
	1	2	3
From	1	0	8
	2	12	0
	3	8	8

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	B,C,A,G,H	1	23	22	1	5
	2	✓	2	A,E,F,H	31	38	7	1	7
	3	✓	3	D,F	46	53	7	1	7

Resultant Phase Green Periods

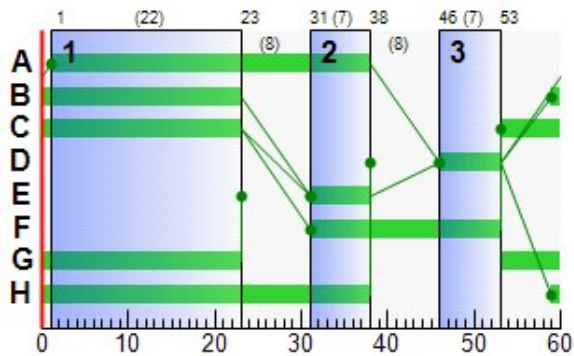
Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	1	38	37
	B	1	✓	59	23	24
	C	1	✓	53	23	30
	D	1	✓	46	53	7
	E	1	✓	31	38	7
	F	1	✓	31	53	22
	G	1	✓	53	23	30
	H	1	✓	59	38	39

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1A1	1	1.1	1	B	59	23	24
1B1	1	1.1	1	D	46	53	7
1C1	1	1.1	1	A	1	38	37
1A2	1	1.2	1	C	53	23	30
1C2	1	1.1	1	E	31	38	7

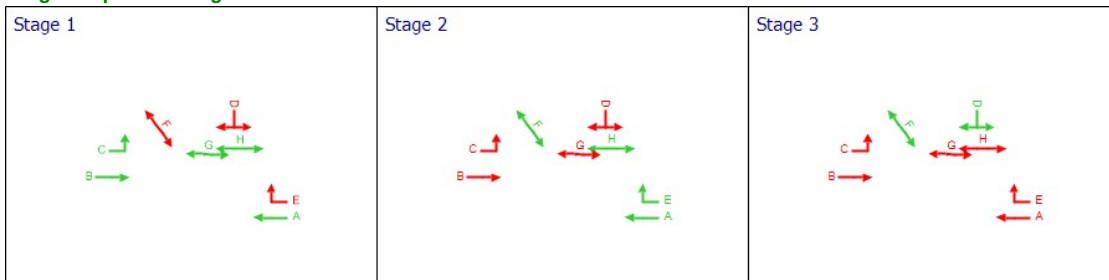
Phase Timings Diagram

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
16:30-17:30	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
16:30-17:30	1Ax	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx	1	0.00	0.00	1.74	0.00	0.00	0.00	0.00	57.00	0.00	57.00	
	1Bypass	1	0.00	0.05	1.74	2.69	0.00	0.00	0.00	57.00	0.00	57.00	
	1Cx	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2A	1	0.00	0.03	8.70	0.39	0.00	0.00	0.00	46.00	0.00	46.00	
	2Ac	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	2Ax	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2B	1	0.00	0.06	17.39	0.34	0.00	0.00	0.00	0.00	0.00	0.00	
	2Bc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	55.00	0.00	55.00	
	2Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	44.00	0.00	44.00	
	2C	1	0.00	0.08	17.39	0.46	0.00	0.00	0.00	0.00	0.00	0.00	
	2Cc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	57.00	0.00	57.00	
	1A1	1	0.00	12.25	24.35	50.30	0.00	0.00	0.00	0.00	0.00	0.00	
	1B1	1	0.00	3.09	20.87	14.79	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx1	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	53.00	0.00	53.00	
	1C1	1	0.00	5.84	41.04	14.22	0.00	0.00	0.00	0.00	0.00	0.00	
	1A2	1	0.00	0.25	12.17	2.06	0.00	0.00	0.00	30.00	0.00	30.00	
	1C2	1	0.00	0.44	20.52	2.15	0.00	0.00	0.00	7.00	0.00	7.00	
	1A3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1C3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Collections

A1 - DD5 - 2030 Assessment, AM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignal PRC
1	08/07/2025 14:10:50	08/07/2025 14:10:50	0.89	08:00	60	118.64	7.23	49.70	1A1/1	0	0	1A1/1	1Bypas

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 Assessment	AM				08:00		✓

Network Options

Network timings

Network cycle time (s)	Minimum possible cycle time (s)	Absolute minimum possible cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
60	43	43		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)	Missing stage transition options
10000.00	10000.00	10000.00	2	Assume banned

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from traffic model	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓			Complex	Automatic	Automatic	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy (%)	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Standard accuracy Hill Climb	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1.1		
1.2	(untitled)	
1.3	(untitled)	
1.4	(untitled)	
1.5	(untitled)	
1.6	(untitled)	
2.1		
2.2		
2.3		
2.4	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
1Ax			
1Bx			1.3
1Bypass	(untitled)		1.3
1Cx			
2A			2.2
2Ac			2.2
2Ax			2.4
2B			2.3
2Bc			2.3
2Bx			
2C			2.1
2Cc			2.1
2Cx			
1A1			1.1
1B1			1.1
1Bx1	(untitled)		1.4
1C1			1.1
1A2			1.2
1C2			1.1
1A3			1.5
1C3			1.6

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
1Ax	1	A580 WBx			300.00								Normal	
1Bx	1				10.00								Normal	
1Bypass	1	(untitled)			10.00							✓	Normal	
1Cx	1	A580 EBx			300.00								Normal	
2A	1				50.00							✓	Normal	
2Ac	1				20.00								Normal	
2Ax	1				1.00								Normal	
2B	1				100.00							✓	Normal	
2Bc	1				20.00								Normal	
2Bx	1				100.00								Normal	
2C	1				100.00							✓	Normal	
2Cc	1				20.00								Normal	
2Cx	1				100.00								Normal	
1A1	1	A580 W			70.00	✓	Sum of lanes	4100	✓	3600	✓		Normal	
1B1	1	Alchemy Way			60.00	✓	Sum of lanes	3899			✓		Normal	
1Bx1	1	(untitled)			1.00								Normal	
1C1	1	A580 E			118.00	✓	Sum of lanes	4240	✓	3600	✓		Normal	
1A2	1	A580 W LT			70.00	✓	Sum of lanes	1908	✓	1800	✓		Normal	
1C2	1	A580 E RT			118.00	✓	Sum of lanes	1843	✓	1800	✓		Normal	
1A3	1				300.00								Normal	
1C3	1				300.00								Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
1Ax	1	1												
		2	(untitled)											
1Bx	1	1												
1Bypass	1	1	(untitled)											
1Cx	1	1												
		2	(untitled)											
2A	1	1												
2Ac	1	1												
2Ax	1	1												
2B	1	1												
2Bc	1	1												
2Bx	1	1												
2C	1	1												
2Cc	1	1												
2Cx	1	1												
1A1	1	1			✓	N/A	N/A	0	3.65		0	99999.00	✓	1980
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1B1	1	1			✓	N/A	N/A	0	3.65		100	15.00		1927
		2	(untitled)		✓	N/A	N/A	0	3.65		100	20.00		1972
1Bx1	1	1	(untitled)											
1C1	1	1	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1A2	1	1	(untitled)		✓	N/A	N/A	0	3.65		100	40.00	✓	1908
1C2	1	1			✓	N/A	N/A	0	3.65		100	10.00		1843
1A3	1	1	(untitled)											
		2	(untitled)											
1C3	1	1	(untitled)											
		2	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
1Ax	1	NetworkDefault	100	100	100		0.00		
1Bx	1	NetworkDefault	100	100	100		0.00		
1Bypass	1	NetworkDefault	100	100	100		0.00		
1Cx	1	NetworkDefault	100	100	100		0.00		
2A	1	NetworkDefault	100	100	100		0.00		
2Ac	1	NetworkDefault	100	100	100		0.00		
2Ax	1	NetworkDefault	100	100	100		0.00		
2B	1	NetworkDefault	100	100	100		0.00		
2Bc	1	NetworkDefault	100	100	100		0.00		
2Bx	1	NetworkDefault	100	100	100		0.00		
2C	1	NetworkDefault	100	100	100		0.00		
2Cc	1	NetworkDefault	100	100	100		0.00		
2Cx	1	NetworkDefault	100	100	100		0.00		
1A1	1	Flare	100	100	100		0.00		
1B1	1	NetworkDefault	100	100	100		0.00		
1Bx1	1	NetworkDefault	100	100	100		0.00		
1C1	1	Flare	100	100	100		0.00		
1A2	1	Flare	100	100	100		0.00		
1C2	1	Flare	100	100	100		0.00		
1A3	1	NetworkDefault	100	100	100		0.00		
1C3	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
1Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bypass	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
1Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2A	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Ac	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2B	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Bc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2C	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Cc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1B1	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1Bx1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A2	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C2	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1A3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
1Ax	1	659	659
1Bx	1	121	121
1Bypass	1	190	190
1Cx	1	907	907
2A	1	311	311
2Ac	1	1	1
2Ax	1	123	123
2B	1	69	69
2Bc	1	203	203
2Bx	1	109	109
2C	1	56	56
2Cc	1	68	68
2Cx	1	204	204
1A1	1	849	849
1B1	1	123	123
1Bx1	1	311	311
1C1	1	594	594
1A2	1	190	190
1C2	1	121	121
1A3	1	1039	1039
1C3	1	715	715

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
1A1	1	1	B	
1B1	1	1	D	
1C1	1	1	A	
1A2	1	1	C	
1C2	1	1	E	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
2B	1	12.00	30.00
2C	1	12.00	30.00
1A3	1	36.00	30.00
1C3	1	36.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
1Ax	1	1	1B1/1	1Ax/1	36.00	30.00	✓	Offside	68.07
1Bx	1	1	1C2/1	1Bx/1	1.20	30.00	✓	Offside	40.05
1Bypass	1	1	1A2/1	1Bypass/1	1.20	30.00	✓	Nearside	37.24
1Cx	1	1	1A1/1	1Cx/1	36.00	30.00	✓	Straight	Straight Movement
2A	1	1	1Bx1/1	2A/1	6.00	30.00	✓	Straight	Straight Movement
2Ac	1	1	2Cc/1	2Ac/1	2.40	30.00	✓	Offside	15.40
2Ax	1	1	2C/1	2Ax/1	1.00	30.00	✓	Offside	94.37
2Bc	1	1	2Ac/1	2Bc/1	2.40	30.00	✓	Offside	9.12
2Bx	1	1	2Ac/1	2Bx/1	12.00	30.00	✓	Offside	20.87
2Cc	1	1	2Bc/1	2Cc/1	2.40	30.00	✓	Offside	5.89
2Cx	1	1	2Bc/1	2Cx/1	12.00	30.00	✓	Offside	39.03
1A1	1	1	1A3/1	1A1/1	8.40	30.00	✓	Straight	Straight Movement
1B1	1	1	2Ax/1	1B1/1	7.20	30.00	✓	Straight	Straight Movement
1Bx1	1	1	1Bx/1	1Bx1/1	1.00	30.00	✓	Straight	Straight Movement
1C1	1	1	1C3/1	1C1/1	14.16	30.00	✓	Straight	Straight Movement
1A2	1	1	1A3/1	1A2/1	8.40	30.00	✓	Straight	Straight Movement
1C2	1	1	1C3/1	1C2/1	14.16	30.00	✓	Straight	Straight Movement
1Ax	1	2	1C1/1	1Ax/1	36.00	30.00	✓	Straight	Straight Movement
1Cx	1	2	1B1/1	1Cx/1	36.00	30.00	✓	Nearside	23.62
2Ac	1	2	2C/1	2Ac/1	2.40	30.00	✓	Offside	37.14
2Ax	1	2	2Cc/1	2Ax/1	1.00	30.00	✓	Offside	30.32
2Bc	1	2	2A/1	2Bc/1	2.40	30.00	✓	Offside	48.97
2Bx	1	2	2A/1	2Bx/1	12.00	30.00	✓	Straight	Straight Movement
2Cc	1	2	2B/1	2Cc/1	2.40	30.00	✓	Offside	25.73
2Cx	1	2	2B/1	2Cx/1	12.00	30.00	✓	Straight	Straight Movement
1Bx1	1	2	1Bypass/1	1Bx1/1	1.00	30.00	✓	Nearside	81.01

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
1Bypass	1	Movement		
2A	1	AllTraffic		
2B	1	AllTraffic		
2C	1	AllTraffic		

Give Way Data - All Movements - Conflicts

Traffic Stream	Description	Controlling type	Controlling traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1	Roundabout Circulating	TrafficStream	2Ac/1	100	0.69	
	Roundabout Circulating	TrafficStream	2Bc/1	100	0.64	
	Roundabout Circulating	TrafficStream	2Cc/1	100	0.60	

Give Way Data - Movements

Arm	Traffic Stream	Movement	Destination traffic stream	Max Flow (Opposed) (PCU/hr)	Max Flow (Unopposed) (PCU/hr)	Percentage opposed (%)
1Bypass	1	1	1Bx1/1	699	699	100

Give Way Data - Movements - Conflicts

Arm	Traffic Stream	Movement	Destination traffic stream	Description	Controlling type	Controlling from traffic stream	Controlling to traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1Bypass	1	1	1Bx1/1	Tjunction opposing flow	TrafficStreamMovement	1Bx/1	1Bx1/1	100	0.27	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	6.00	4.00	5.40
2	(untitled)				Farside	6.00	4.00	5.40
3	(untitled)				Farside	4.00	2.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	H	
2	1	G	
3	1	F	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Roundabouts

Roundabouts

Roundabout	Name	Roundabout type	Lighting
1	Alchemy Way	Standard	Normal/unknown

Entries

Roundabout	Entry	Name	Description	Auto assign priority	Type	Entry	Number of circulating items	Circulating 1	Calculate slope intercept	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)
1	2A	Alchemy Way S		✓	TrafficStream	2A/1	1	2Ac/1	✓	6.00	6.00	0.00	22.00	39.00
	2B	Site		✓	TrafficStream	2B/1	1	2Bc/1	✓	3.65	7.20	10.00	21.00	39.00
	2C	Alchemy Way N		✓	TrafficStream	2C/1	1	2Cc/1	✓	3.65	6.60	6.00	16.00	39.00

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1		✓	✓	Lane Balancing			✓			✓	1.01				

Normal Input Flows (PCU/hr)

	To				
	A	B	C	D	
From	A	0	22	33	1
	B	69	0	594	52
	C	134	849	0	56
	D	1	36	32	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	A	(untitled)	2C/1	2Cx/1	#FFFF00
	B		1C3/1	1Cx/1	#0000FF
	C		1A3/1	1Ax/1	#FF0000
	D		2B/1	2Bx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		C	B	1A3/1, 1A1/1, 1Cx/1	Normal	849
	3		B	C	1C3/1, 1C1/1, 1Ax/1	Normal	594
	4		C	C	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	0
	5		B	D	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	52
	6		C	D	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	56
	7		D	D	2B/1, 2Cc/1, 2Ac/1, 2Bx/1	Normal	0
	8		D	B	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	36
	9		D	C	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	32
	10		A	D	2C/1, 2Ac/1, 2Bx/1	Normal	1
	11		A	B	2C/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	22
	12		A	C	2C/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	33
	13		B	A	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	69
	14		C	A	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	134
	15		D	A	2B/1, 2Cx/1	Normal	1
	16		A	A	2C/1, 2Ac/1, 2Bc/1, 2Cx/1	Normal	0
	19		B	B	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	0

Signal Timings

Network Default: 60s cycle time; 60 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	A580 / Alchemy Way		1	NetworkDefault	60	43

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	A580 E	7	300	0	0	Traffic	
	B	A580 W	7	300	0	0	Traffic	
	C	A580 W LT	7	300	0	0	Traffic	
	D	Alchemy Way	7	300	0	0	Traffic	
	E	A580 E RT	7	300	0	0	Traffic	
	F	A580 LTSlip	4	300	0	0	Pedestrian	0
	G	AW NB C/W	4	300	0	0	Pedestrian	0
	H	AW SB C/W	4	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Allow intermittent occurrence
1	1	B, C, A, G, H	1	
	2	A, E, F, H	1	
	3	D, F	1	

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3	23, 38, 53	43	

Intergreen Matrix for Controller Stream 1

	To							
	A	B	C	D	E	F	G	H
From	A			8				
	B			8	8			
	C				8	8		
	D	8	6		7			6
	E		8	11	8		12	
	F			0				
	G				0			
	H			0				

Banned Stage transitions for Controller Stream 1

	To		
	1	2	3
From	1		
	2		
	3		

Interstage Matrix for Controller Stream 1

	To		
	1	2	3
From	1	0	8
	2	12	0
	3	8	8

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	B,C,A,G,H	1	23	22	1	5
	2	✓	2	A,E,F,H	31	38	7	1	7
	3	✓	3	D,F	46	53	7	1	7

Resultant Phase Green Periods

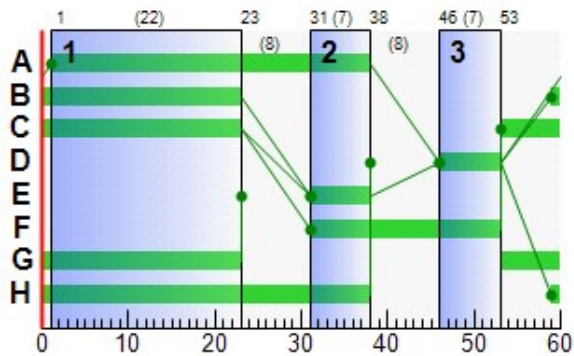
Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	1	38	37
	B	1	✓	59	23	24
	C	1	✓	53	23	30
	D	1	✓	46	53	7
	E	1	✓	31	38	7
	F	1	✓	31	53	22
	G	1	✓	53	23	30
	H	1	✓	59	38	39

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1A1	1	1.1	1	B	59	23	24
1B1	1	1.1	1	D	46	53	7
1C1	1	1.1	1	A	1	38	37
1A2	1	1.2	1	C	53	23	30
1C2	1	1.1	1	E	31	38	7

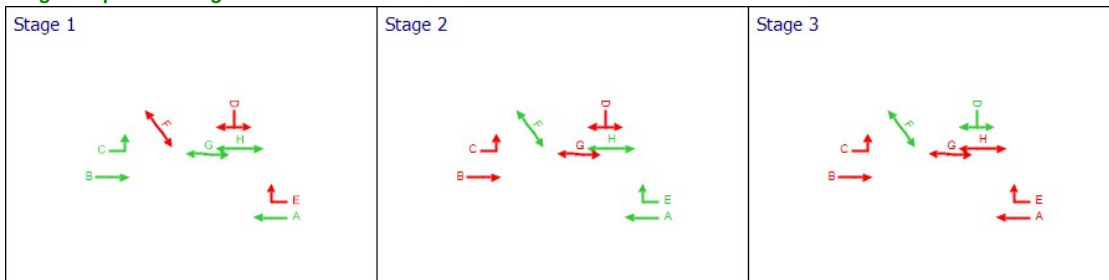
Phase Timings Diagram

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	1Ax	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx	1	0.00	0.00	1.74	0.00	0.00	0.00	0.00	52.00	0.00	52.00	
	1Bypass	1	0.00	2.44	1.74	140.12	0.06	0.00	0.00	29.00	0.00	29.00	
	1Cx	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2A	1	0.00	0.20	8.70	2.29	0.00	0.00	0.00	14.00	0.00	14.00	
	2Ac	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	2Ax	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2B	1	0.00	0.05	17.39	0.27	0.00	0.00	0.00	0.00	0.00	0.00	
	2Bc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	14.00	0.00	14.00	
	2Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	20.00	0.00	20.00	
	2C	1	0.00	0.04	17.39	0.23	0.00	0.00	0.00	60.00	0.00	60.00	
	2Cc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	7.00	0.00	7.00	
	1A1	1	0.00	9.99	24.35	41.01	0.00	0.00	0.00	0.00	0.00	0.00	
	1B1	1	0.00	1.85	20.87	8.85	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx1	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	20.00	0.00	20.00	
	1C1	1	0.00	3.99	41.04	9.73	0.00	0.00	0.00	0.00	0.00	0.00	
	1A2	1	0.00	1.66	12.17	13.64	0.00	0.00	0.00	0.00	8.00	8.00	
	1C2	1	0.00	2.05	20.52	9.99	0.00	0.00	0.00	0.00	0.00	0.00	
	1A3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1C3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Collections

A1 - DD6 - 2030 Assessment, PM

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis set used	Run start time	Run finish time	Run duration (s)	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC
1	08/07/2025 14:10:51	08/07/2025 14:10:51	0.58	16:30	60	122.57	7.51	57.01	1A1/1	0	0	1A1/1	2C/1

Analysis Set Details

Name	Use Simulation	Description	Use specific Demand Set(s)	Optimise specific Demand Set(s)	Include in report	Locked
					✓	

Demand Set Details

Scenario name	Time Period name	Description	Composite	Demand sets	Start time (HH:mm)	Locked	Run automatically
2030 Assessment	PM				16:30		✓

Network Options

Network timings

Network cycle time (s)	Minimum possible cycle time (s)	Absolute minimum possible cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
60	43	43		60	1	60

Signals options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)	Missing stage transition options
10000.00	10000.00	10000.00	2	Assume banned

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from traffic model	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓			Complex	Automatic	Automatic	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ² [-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy (%)	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Standard accuracy Hill Climb	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

Traffic node	Name	Description
1.1		
1.2	(untitled)	
1.3	(untitled)	
1.4	(untitled)	
1.5	(untitled)	
1.6	(untitled)	
2.1		
2.2		
2.3		
2.4	(untitled)	

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
1Ax			
1Bx			1.3
1Bypass	(untitled)		1.3
1Cx			
2A			2.2
2Ac			2.2
2Ax			2.4
2B			2.3
2Bc			2.3
2Bx			
2C			2.1
2Cc			2.1
2Cx			
1A1			1.1
1B1			1.1
1Bx1	(untitled)		1.4
1C1			1.1
1A2			1.2
1C2			1.1
1A3			1.5
1C3			1.6

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Auto-calculate cell saturation flow	Cell saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
1Ax	1	A580 WBx			300.00								Normal	
1Bx	1				10.00								Normal	
1Bypass	1	(untitled)			10.00							✓	Normal	
1Cx	1	A580 EBx			300.00								Normal	
2A	1				50.00							✓	Normal	
2Ac	1				20.00								Normal	
2Ax	1				1.00								Normal	
2B	1				100.00							✓	Normal	
2Bc	1				20.00								Normal	
2Bx	1				100.00								Normal	
2C	1				100.00							✓	Normal	
2Cc	1				20.00								Normal	
2Cx	1				100.00								Normal	
1A1	1	A580 W			70.00	✓	Sum of lanes	4100	✓	3600	✓		Normal	
1B1	1	Alchemy Way			60.00	✓	Sum of lanes	3899			✓		Normal	
1Bx1	1	(untitled)			1.00								Normal	
1C1	1	A580 E			118.00	✓	Sum of lanes	4240	✓	3600	✓		Normal	
1A2	1	A580 W LT			70.00	✓	Sum of lanes	1908	✓	1800	✓		Normal	
1C2	1	A580 E RT			118.00	✓	Sum of lanes	1843	✓	1800	✓		Normal	
1A3	1				300.00								Normal	
1C3	1				300.00								Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface condition	Site quality factor	Gradient (%)	Width (m)	Use connector turning radius	Proportion that turn (%)	Turning radius (m)	Nearside lane	Saturation flow (PCU/hr)
1Ax	1	1												
		2	(untitled)											
1Bx	1	1												
1Bypass	1	1	(untitled)											
1Cx	1	1												
		2	(untitled)											
2A	1	1												
2Ac	1	1												
2Ax	1	1												
2B	1	1												
2Bc	1	1												
2Bx	1	1												
2C	1	1												
2Cc	1	1												
2Cx	1	1												
1A1	1	1			✓	N/A	N/A	0	3.65		0	99999.00	✓	1980
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1B1	1	1			✓	N/A	N/A	0	3.65		100	15.00		1927
		2	(untitled)		✓	N/A	N/A	0	3.65		100	20.00		1972
1Bx1	1	1	(untitled)											
1C1	1	1	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
		2	(untitled)		✓	N/A	N/A	0	3.65		0	99999.00		2120
1A2	1	1	(untitled)		✓	N/A	N/A	0	3.65		100	40.00	✓	1908
1C2	1	1			✓	N/A	N/A	0	3.65		100	10.00		1843
1A3	1	1	(untitled)											
		2	(untitled)											
1C3	1	1	(untitled)											
		2	(untitled)											

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
1Ax	1	NetworkDefault	100	100	100		0.00		
1Bx	1	NetworkDefault	100	100	100		0.00		
1Bypass	1	NetworkDefault	100	100	100		0.00		
1Cx	1	NetworkDefault	100	100	100		0.00		
2A	1	NetworkDefault	100	100	100		0.00		
2Ac	1	NetworkDefault	100	100	100		0.00		
2Ax	1	NetworkDefault	100	100	100		0.00		
2B	1	NetworkDefault	100	100	100		0.00		
2Bc	1	NetworkDefault	100	100	100		0.00		
2Bx	1	NetworkDefault	100	100	100		0.00		
2C	1	NetworkDefault	100	100	100		0.00		
2Cc	1	NetworkDefault	100	100	100		0.00		
2Cx	1	NetworkDefault	100	100	100		0.00		
1A1	1	Flare	100	100	100		0.00		
1B1	1	NetworkDefault	100	100	100		0.00		
1Bx1	1	NetworkDefault	100	100	100		0.00		
1C1	1	Flare	100	100	100		0.00		
1A2	1	Flare	100	100	100		0.00		
1C2	1	Flare	100	100	100		0.00		
1A3	1	NetworkDefault	100	100	100		0.00		
1C3	1	NetworkDefault	100	100	100		0.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
1Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1Bypass	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
1Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2A	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Ac	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Ax	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2B	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Bc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Bx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2C	1	0.00	NetworkDefault	Included	NetworkDefault	1.00	✓	60
2Cc	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
2Cx	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1B1	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1Bx1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C1	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1A2	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C2	1	0.00	Automatic	Not-Included	Automatic	0.50	✓	60
1A3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60
1C3	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	60

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
1Ax	1	804	804
1Bx	1	31	31
1Bypass	1	35	35
1Cx	1	1074	1074
2A	1	66	66
2Ac	1	0	0
2Ax	1	257	257
2B	1	93	93
2Bc	1	22	22
2Bx	1	44	44
2C	1	165	165
2Cc	1	92	92
2Cx	1	23	23
1A1	1	974	974
1B1	1	257	257
1Bx1	1	66	66
1C1	1	647	647
1A2	1	35	35
1C2	1	31	31
1A3	1	1009	1009
1C3	1	678	678

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
1A1	1	1	B	
1B1	1	1	D	
1C1	1	1	A	
1A2	1	1	C	
1C2	1	1	E	

Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
2B	1	12.00	30.00
2C	1	12.00	30.00
1A3	1	36.00	30.00
1C3	1	36.00	30.00

Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
1Ax	1	1	1B1/1	1Ax/1	36.00	30.00	✓	Offside	68.07
1Bx	1	1	1C2/1	1Bx/1	1.20	30.00	✓	Offside	40.05
1Bypass	1	1	1A2/1	1Bypass/1	1.20	30.00	✓	Nearside	37.24
1Cx	1	1	1A1/1	1Cx/1	36.00	30.00	✓	Straight	Straight Movement
2A	1	1	1Bx1/1	2A/1	6.00	30.00	✓	Straight	Straight Movement
2Ac	1	1	2Cc/1	2Ac/1	2.40	30.00	✓	Offside	15.40
2Ax	1	1	2C/1	2Ax/1	1.00	30.00	✓	Offside	94.37
2Bc	1	1	2Ac/1	2Bc/1	2.40	30.00	✓	Offside	9.12
2Bx	1	1	2Ac/1	2Bx/1	12.00	30.00	✓	Offside	20.87
2Cc	1	1	2Bc/1	2Cc/1	2.40	30.00	✓	Offside	5.89
2Cx	1	1	2Bc/1	2Cx/1	12.00	30.00	✓	Offside	39.03
1A1	1	1	1A3/1	1A1/1	8.40	30.00	✓	Straight	Straight Movement
1B1	1	1	2Ax/1	1B1/1	7.20	30.00	✓	Straight	Straight Movement
1Bx1	1	1	1Bx/1	1Bx1/1	1.00	30.00	✓	Straight	Straight Movement
1C1	1	1	1C3/1	1C1/1	14.16	30.00	✓	Straight	Straight Movement
1A2	1	1	1A3/1	1A2/1	8.40	30.00	✓	Straight	Straight Movement
1C2	1	1	1C3/1	1C2/1	14.16	30.00	✓	Straight	Straight Movement
1Ax	1	2	1C1/1	1Ax/1	36.00	30.00	✓	Straight	Straight Movement
1Cx	1	2	1B1/1	1Cx/1	36.00	30.00	✓	Nearside	23.62
2Ac	1	2	2C/1	2Ac/1	2.40	30.00	✓	Offside	37.14
2Ax	1	2	2Cc/1	2Ax/1	1.00	30.00	✓	Offside	30.32
2Bc	1	2	2A/1	2Bc/1	2.40	30.00	✓	Offside	48.97
2Bx	1	2	2A/1	2Bx/1	12.00	30.00	✓	Straight	Straight Movement
2Cc	1	2	2B/1	2Cc/1	2.40	30.00	✓	Offside	25.73
2Cx	1	2	2B/1	2Cx/1	12.00	30.00	✓	Straight	Straight Movement
1Bx1	1	2	1Bypass/1	1Bx1/1	1.00	30.00	✓	Nearside	81.01

Give Way Data

Arm	Traffic Stream	Opposed traffic	Use Step-wise Opposed Turn Model	Visibility restricted
1Bypass	1	Movement		
2A	1	AllTraffic		
2B	1	AllTraffic		
2C	1	AllTraffic		

Give Way Data - All Movements - Conflicts

Traffic Stream	Description	Controlling type	Controlling traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1	Roundabout Circulating	TrafficStream	2Ac/1	100	0.69	
	Roundabout Circulating	TrafficStream	2Bc/1	100	0.64	
	Roundabout Circulating	TrafficStream	2Cc/1	100	0.60	

Give Way Data - Movements

Arm	Traffic Stream	Movement	Destination traffic stream	Max Flow (Opposed) (PCU/hr)	Max Flow (Unopposed) (PCU/hr)	Percentage opposed (%)
1Bypass	1	1	1Bx1/1	699	699	100

Give Way Data - Movements - Conflicts

Arm	Traffic Stream	Movement	Destination traffic stream	Description	Controlling type	Controlling from traffic stream	Controlling to traffic stream	Percentage opposing (%)	Slope coefficient	Upstream signals visible
1Bypass	1	1	1Bx1/1	Tjunction opposing flow	TrafficStreamMovement	1Bx/1	1Bx1/1	100	0.27	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	6.00	4.00	5.40
2	(untitled)				Farside	6.00	4.00	5.40
3	(untitled)				Farside	4.00	2.67	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	H	
2	1	G	
3	1	F	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Roundabouts

Roundabouts

Roundabout	Name	Roundabout type	Lighting
1	Alchemy Way	Standard	Normal/unknown

Entries

Roundabout	Entry	Name	Description	Auto assign priority	Type	Entry	Number of circulating items	Circulating 1	Calculate slope intercept	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)
1	2A	Alchemy Way S		✓	TrafficStream	2A/1	1	2Ac/1	✓	6.00	6.00	0.00	22.00	39.00
	2B	Site		✓	TrafficStream	2B/1	1	2Bc/1	✓	3.65	7.20	10.00	21.00	39.00
	2C	Alchemy Way N		✓	TrafficStream	2C/1	1	2Cc/1	✓	3.65	6.60	6.00	16.00	39.00

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit	Limit paths by flow	Low path flow threshold
1		✓	✓	Lane Balancing			✓			✓	1.01				

Normal Input Flows (PCU/hr)

	To				
	A	B	C	D	
From	A	0	55	110	0
	B	12	0	647	19
	C	10	974	0	25
	D	1	45	47	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	A	(untitled)	2C/1	2Cx/1	#FFFF00
	B		1C3/1	1Cx/1	#0000FF
	C		1A3/1	1Ax/1	#FF0000
	D		2B/1	2Bx/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	2		C	B	1A3/1, 1A1/1, 1Cx/1	Normal	974
	3		B	C	1C3/1, 1C1/1, 1Ax/1	Normal	647
	4		C	C	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	0
	5		B	D	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	19
	6		C	D	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bx/1	Normal	25
	7		D	D	2B/1, 2Cc/1, 2Ac/1, 2Bx/1	Normal	0
	8		D	B	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	45
	9		D	C	2B/1, 2Cc/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	47
	10		A	D	2C/1, 2Ac/1, 2Bx/1	Normal	0
	11		A	B	2C/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	55
	12		A	C	2C/1, 2Ax/1, 1B1/1, 1Ax/1	Normal	110
	13		B	A	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	12
	14		C	A	1A3/1, 1A2/1, 1Bypass/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cx/1	Normal	10
	15		D	A	2B/1, 2Cx/1	Normal	1
	16		A	A	2C/1, 2Ac/1, 2Bc/1, 2Cx/1	Normal	0
	19		B	B	1C3/1, 1C2/1, 1Bx/1, 1Bx1/1, 2A/1, 2Bc/1, 2Cc/1, 2Ax/1, 1B1/1, 1Cx/1	Normal	0

Signal Timings

Network Default: 60s cycle time; 60 steps

Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)	Minimum possible cycle time (s)
1	A580 / Alchemy Way		1	NetworkDefault	60	43

Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

Phases

Controller Stream	Phase	Name	Street minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	A580 E	7	300	0	0	Traffic	
	B	A580 W	7	300	0	0	Traffic	
	C	A580 W LT	7	300	0	0	Traffic	
	D	Alchemy Way	7	300	0	0	Traffic	
	E	A580 E RT	7	300	0	0	Traffic	
	F	A580 LTSlip	4	300	0	0	Pedestrian	0
	G	AW NB C/W	4	300	0	0	Pedestrian	0
	H	AW SB C/W	4	300	0	0	Pedestrian	0

Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)	Allow intermittent occurrence
1	1	B, C, A, G, H	1	
	2	A, E, F, H	1	
	3	D, F	1	

Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends	Minimum possible cycle time (s)	Exclude from analysis
1	1	(untitled)	Single	1, 2, 3	23, 38, 53	43	

Intergreen Matrix for Controller Stream 1

		To							
		A	B	C	D	E	F	G	H
From	A				8				
	B				8	8			
	C					8	8		
	D	8	6			7			6
	E		8	11	8			12	
	F			0					
	G					0			
	H				0				

Banned Stage transitions for Controller Stream 1

		To		
		1	2	3
From	1			
	2			
	3			

Interstage Matrix for Controller Stream 1

		To		
		1	2	3
From	1	0	8	8
	2	12	0	8
	3	8	8	0

Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	B,C,A,G,H	1	23	22	1	5
	2	✓	2	A,E,F,H	31	38	7	1	7
	3	✓	3	D,F	46	53	7	1	7

Resultant Phase Green Periods

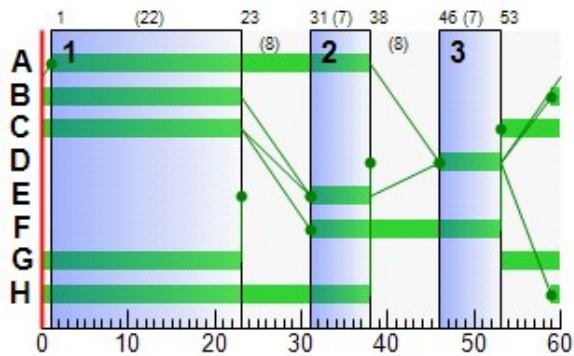
Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	1	38	37
	B	1	✓	59	23	24
	C	1	✓	53	23	30
	D	1	✓	46	53	7
	E	1	✓	31	38	7
	F	1	✓	31	53	22
	G	1	✓	53	23	30
	H	1	✓	59	38	39

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
1A1	1	1.1	1	B	59	23	24
1B1	1	1.1	1	D	46	53	7
1C1	1	1.1	1	A	1	38	37
1A2	1	1.2	1	C	53	23	30
1C2	1	1.1	1	E	31	38	7

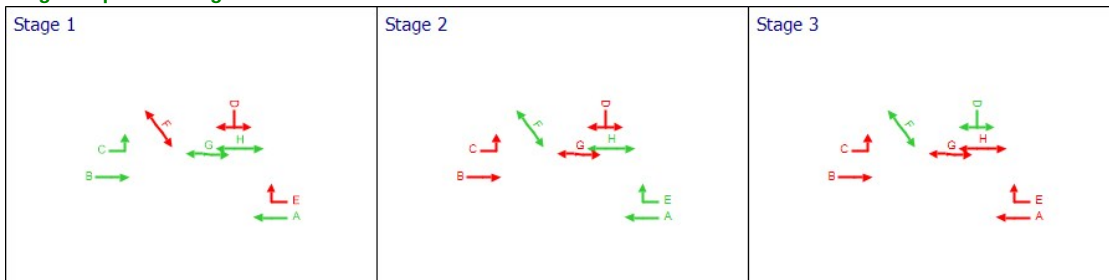
Phase Timings Diagram

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
16:30-17:30	1	0.00	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Average storage excess queue (PCU)	Average limit excess queue (PCU)	Excess queue penalty (£ per hr)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
16:30-17:30	1Ax	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx	1	0.00	0.00	1.74	0.00	0.00	0.00	0.00	57.00	0.00	57.00	
	1Bypass	1	0.00	0.27	1.74	15.61	0.00	0.00	0.00	57.00	0.00	57.00	
	1Cx	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2A	1	0.00	0.04	8.70	0.42	0.00	0.00	0.00	45.00	0.00	45.00	
	2Ac	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	60.00	0.00	60.00	
	2Ax	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2B	1	0.00	0.06	17.39	0.35	0.00	0.00	0.00	0.00	0.00	0.00	
	2Bc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	54.00	0.00	54.00	
	2Bx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	44.00	0.00	44.00	
	2C	1	0.00	0.13	17.39	0.76	0.00	0.00	0.00	0.00	0.00	0.00	
	2Cc	1	0.00	0.00	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2Cx	1	0.00	0.00	17.39	0.00	0.00	0.00	0.00	55.00	0.00	55.00	
	1A1	1	0.00	12.25	24.35	50.30	0.00	0.00	0.00	0.00	0.00	0.00	
	1B1	1	0.00	4.17	20.87	19.97	0.00	0.00	0.00	0.00	0.00	0.00	
	1Bx1	1	0.00	0.00	0.17	0.00	0.00	0.00	0.00	52.00	0.00	52.00	
	1C1	1	0.00	5.84	41.04	14.22	0.00	0.00	0.00	0.00	0.00	0.00	
	1A2	1	0.00	0.28	12.17	2.32	0.00	0.00	0.00	30.00	0.00	30.00	
	1C2	1	0.00	0.46	20.52	2.23	0.00	0.00	0.00	7.00	0.00	7.00	
	1A3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1C3	1	0.00	0.00	104.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

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