

Crown Street Phase 3 and Plot D

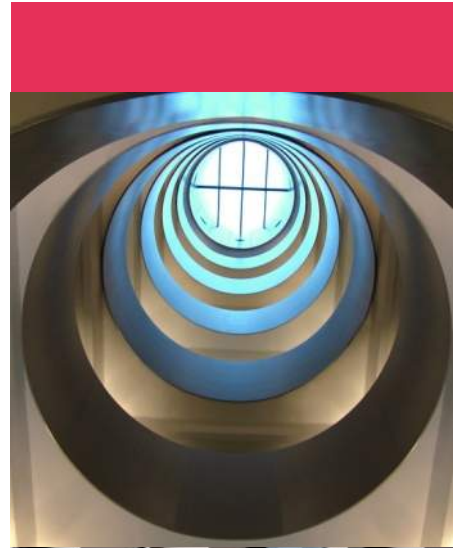
Transport Assessment

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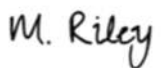
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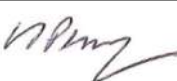
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1.0 Introduction

1.1 Background & Planning History

- 1.1.1 Curtins has been appointed by Renaker Build Limited to provide traffic and transport advice in relation to the redevelopment of the Site known as Crown Street Phase 3 (CSP3) and Plot D at Great Jackson Street, Manchester. Together, the CSP3 Site and the Plot D Site comprise the Site and the Proposed Development.
- 1.1.2 The Proposed Development includes the demolition of the existing buildings on-site, including the removal of the Deansgate Square Marketing Suite, Gaddum House and existing light industrial units at the CSP3 Site, and the removal of a concrete batching plant from the Plot D Site, and the construction of a high-quality residential development comprising of five separate towers and a separate three-storey office building.
- 1.1.3 The CSP3 Site and the Plot D Site form part of the Great Jackson Street Development Framework (GJS Framework) which encompasses a Site area of 7.78 hectares, as shown in **Figure 1.1** below:

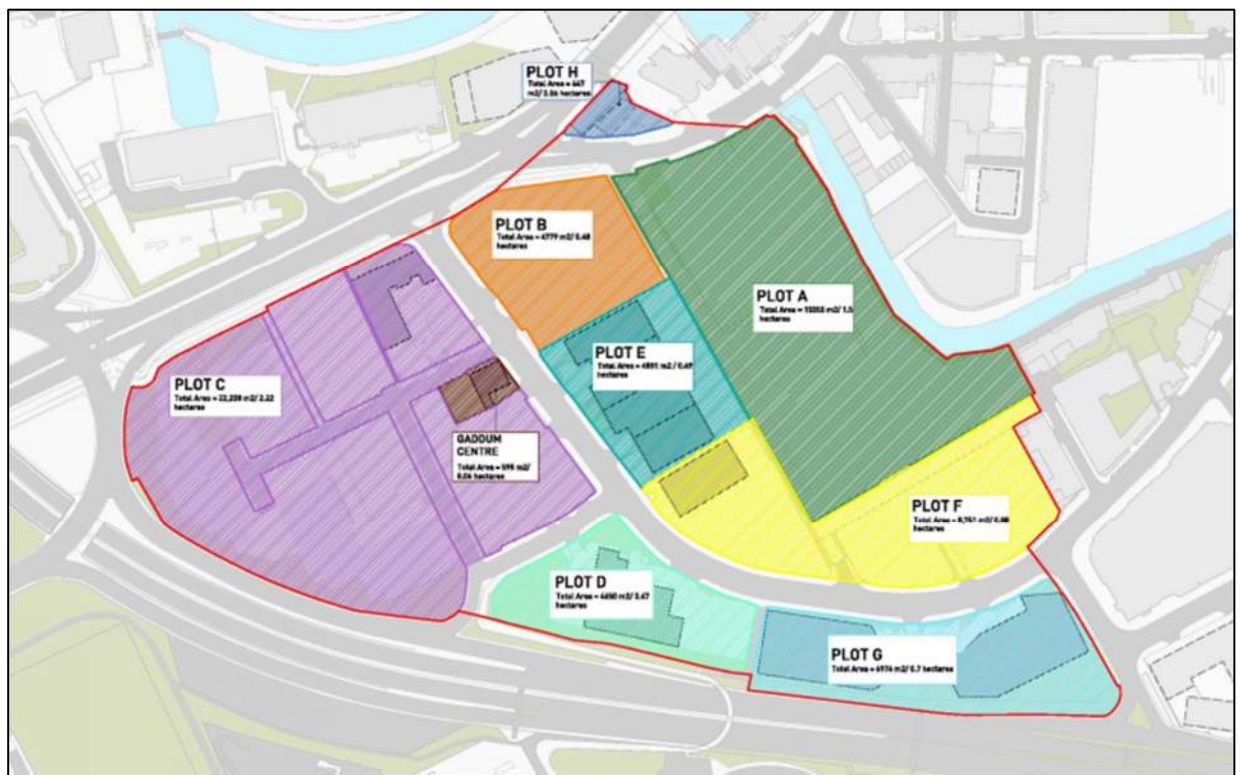


Figure 1.1 – Great Jackson Street Development Framework – Development Plots

(Source: Great Jackson Street Development Framework 2018 Update, Deloitte/Manchester City Council)

- 1.1.4 The GJS Framework was prepared on behalf of Manchester City Council (MCC) to guide the future reconfiguration, re-development and re-positioning of the Great Northern, Manchester Central and

Castlefield Quay sites. The Framework seeks to deliver a critical mass and mix of high-quality City Centre uses that will combine in order to create a distinctive sense of place as well as life and vitality on weekdays, in the evenings and at the weekend.

- 1.1.5 MCC originally endorsed a Development Framework for Great Jackson Street in 2007, based on a mix of residential and commercial uses. This was subsequently updated in 2015 and finally in 2018 in order to establish a set of development principles appropriate to the creation of a new, more focused residential-led neighbourhood and community in this part of the City Centre. This neighbourhood has an essential role to play in supporting Manchester's growth, productivity and quality of life.
- 1.1.6 The Site forms part of Plot C, and the entirety of Plots D and E of the GJS Framework; a major part of the Southern Gateway redevelopment to create a high quality residential led neighbourhood at a key point of entry into Manchester City Centre.
- 1.1.7 More specifically, the CSP3 Site comprises Plot E (to the east of Great Jackson Street) and the south-eastern section of Plot C (to the west of Great Jackson Street and inclusive of the Gaddum Centre). As such, the CSP3 Site is bound by Silvercroft Street and Plot B to the north, Melbourne Street and the recently consented Plot F to the south, Owen Street and Deansgate Square to the east and the currently under construction Crown Street Phase 2 (CSP2) to the west.
- 1.1.8 The Plot D Site is bounded by Great Jackson Street to the northeast, the A57(M) Mancunian Way to the south, Melbourne Street to the northwest and a public footpath to the east.
- 1.1.9 It is noted that Plot E (eastern parcel of CSP3) obtained planning permission in 2017 for three residential buildings with c. 450 residential units and associated commercial uses (MCC Planning Reference: 116850/FO/2017); however, this consent has now lapsed.

1.2 Purpose of the Report

- 1.2.1 Two planning applications are due to be submitted for the Site – one for the CSP3 Site and another for the Plot D Site. Each application will be supported by a single Environmental Statement (ES), which considers the potential effects of the Site and the Proposed Development. This approach was agreed during scoping discussions with the Local Planning Authority – MCC.
- 1.2.2 This Transport Assessment (TA), which will form an appendix to the ES, has been prepared to inform Highway Officers at MCC and Transport for Greater Manchester (TfGM) with regard to the Proposed Development and the potential impact on the surrounding area from a traffic and transportation perspective. It considers the potential impacts of both the CSP3 Site and the Plot D Site, which aligns with the approach taken for the ES.

- 1.2.3 A Framework Travel Plan (FTP) has also been prepared (**Document Reference: 081453-CUR-XX-XX-T-TP-00002**) to minimise the number of car trips generated by the Proposed Development and encourage residents, staff and visitors to use sustainable modes of transport. This will also form an appendix to the ES.

1.3 Scope of the Report

- 1.3.1 As part of pre-application scoping discussions with Highways Officers at MCC and TfGM, a meeting was held on 14th October 2022 and subsequently on 23rd November 2022, 6th February 2023 and 20th February 2023 to discuss the Proposed Development in detail.

- 1.3.2 The pre-application discussions focussed on baseline traffic surveys and study area, traffic forecasting, access and servicing proposals, parking strategy, the TA methodology, the scope of the TA and FTP reports, wind mitigation proposals, design updates to the Proposed Development and surrounding roads, highway adoption and oversailing. These items were confirmed in writing to MCC/TfGM.

- 1.3.3 Based on points agreed during pre-application scoping discussions, this TA contains the following:

- Details of the existing situation on the surrounding highway network;
- Review of collision data for a five-year period in the vicinity of the Site;
- Details of the Proposed Development, vehicular, pedestrian and cycle access, servicing arrangements and car and cycle parking proposals;
- Scale drawings and swept path analysis to demonstrate the visibility splays, servicing arrangements and internal layout (where required);
- Review of the accessibility of the Site by all modes of transport including walking, cycling, and public transport – cognisant of the Greater Manchester Accessibility Levels (GMAL);
- Review of collision data for a five-year period in the vicinity of the Site;
- An assessment of trip generation using analysis derived from the TRICS database, with respect to Census data and the TfGM Greater Manchester Travel Diary Surveys (TRADS);
- Details on development traffic distribution and a net impact assessment with consideration of trips associated with existing uses on-site;
- Capacity analysis at junctions within the study area; and
- A summary of relevant transport planning policy.

1.4 Structure of the Report

- 1.4.1 Following this introduction, **Section 2** of the report provides a description of the existing Site location and transport conditions. This includes the local highway network and facilities for pedestrians, cyclists and public transport users. This section also reviews highway safety and existing travel patterns.

- 1.4.2 The development proposals are presented in **Section 3**, including the parking strategy and access arrangements.
- 1.4.3 The accessibility of the Site by sustainable modes of travel is assessed in **Section 4**.
- 1.4.4 **Section 5** outlines the traffic forecasting methodology used to establish the likely traffic generation associated with the Proposed Development, with **Section 6** providing an assessment on the highway impacts.
- 1.4.5 **Section 7** summarises key national and local transport planning policy, and **Section 8** provides a report summary and conclusions.

2.0 Existing Situation

2.1 Site Location

- 2.1.1 The Site is located on the south-west edge of Manchester City Centre, situated in the Deansgate-Castlefield area. The Site is located in a key strategic location being within a ten-minute walk of numerous amenities and of the transport hubs of Deansgate train station and Deansgate-Castlefield tram station.
- 2.1.2 The Site is also within easy walking distance to employment opportunities and the services and facilities offered by Manchester City Centre and in close proximity to the district of Hulme, just beyond the Mancunian Way to the south. It benefits from being in close proximity to Oxford Road which is a bus corridor with many services linking Manchester City Centre, the Oxford Road Corridor, and South Manchester. It is also within easy access of the City's Inner Ring Road, which connects with key arterial routes leading to the strategic motorway network.
- 2.1.3 The Site is bounded to the north by Silvercroft Street and Plot B, Owen Street/Deansgate Square to the east, to the west by CSP2, and to the south by the A57(M) Mancunian Way.
- 2.1.4 The following **Figure 2.1** illustrates the Site in relation to the local highway network.

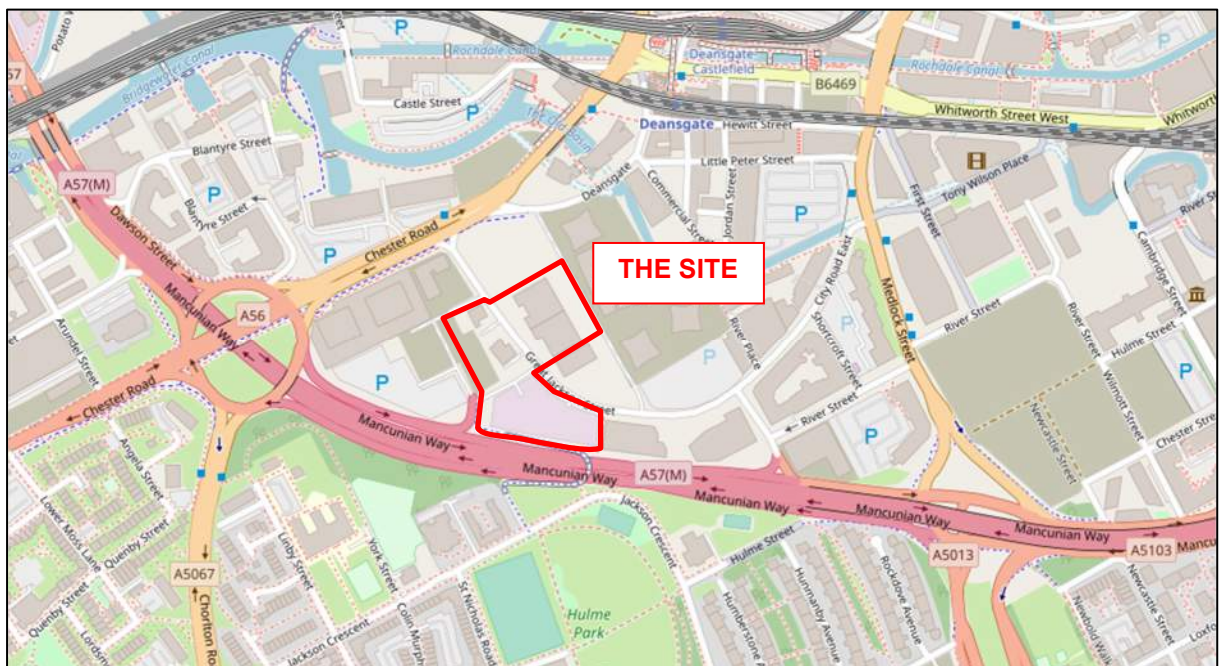


Figure 2.1 – Indicative Site Location in Relation to the Local Highway Network
(Source: ©OpenStreetMap)

2.1.5 **Figure 2.2** illustrates CSP3 and Plot D in context with the emerging Masterplan:

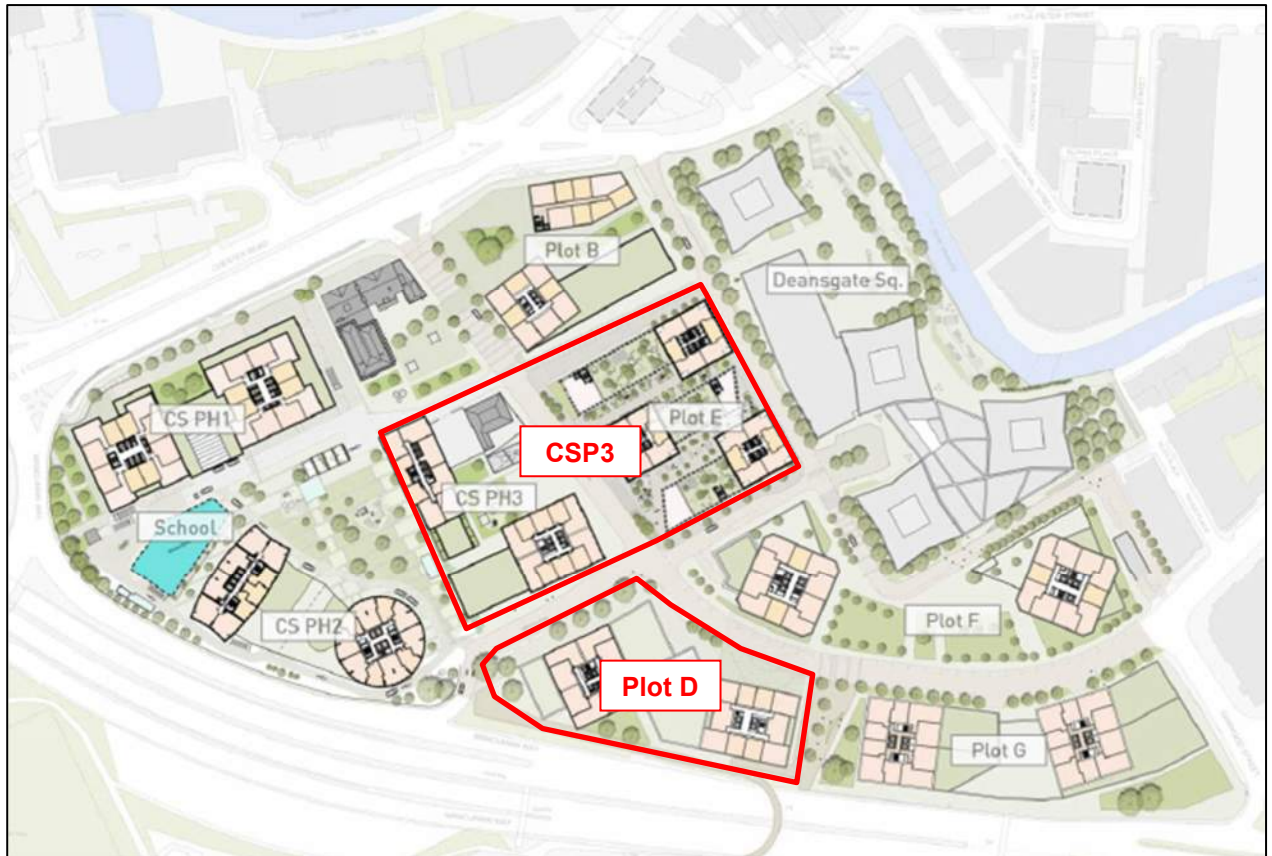


Figure 2.2 – Site Location (with respect to GJS Masterplan)
(Source: Simpson Haugh)

2.2 Existing Use and Access

- 2.2.1 Various site visits have been undertaken to observe existing traffic conditions along Great Jackson Street and the surrounding provision for pedestrians and cyclists.
- 2.2.2 The CSP3 Site comprises the Deansgate Square Marketing Suite, Gaddum House and existing light industrial units. In addition, parts of the CSP3 Site are currently used as surface car parking.
- 2.2.3 Access to the various uses on the CSP3 Site is taken from various locations including Silvercroft Street, Great Jackson Street and Owen Street – all via priority junctions.
- 2.2.4 The Plot D Site includes a concrete batching plant for the manufacture and distribution of ready mixed concrete. Access to existing uses on the Plot D Site is undertaken via priority junctions on Melbourne Street and Great Jackson Street.
- 2.2.5 Uses on both sites are currently operational and traffic surveys have been undertaken at all existing access points to determine the existing peak hour vehicular arrival/departure profiles.

2.3 Surrounding Highway Network

Great Jackson Street

- 2.3.1 Great Jackson Street connects the A56 Chester Road to the A5103 Medlock Street in a semi-circular route from west to east, continuing on as City Road East past the priority junction with Garwood Street to the east of the Site.
- 2.3.2 The roads form the minor arm of a priority junction at both ends and have a combined length of circa 580m. The priority junction at the western end of Great Jackson Street with the A56 Chester Road has a left-in, left-out arrangement, whilst the priority junction at the eastern end of the road (City Road East/Medlock Street) allows for all traffic movements.
- 2.3.3 Great Jackson Street comprises a single carriageway with a typical width of c. 10m. There are also footways of an average c. 2.5m with on both sides of the road, along with street lighting at regular intervals on the southern side of the road. The road is subject to a speed limit of 20mph.
- 2.3.4 Great Jackson Street is in Zone 4 of Manchester City Centre's Controlled Parking Zone (CPZ), where Pay and Display (P&D) parking is provided for up to 10 hours between 08:00 and 20:00 on Mondays to Sundays, with no return within 1 hour and no charge for parking on a Bank Holiday.
- 2.3.5 Where the road meets other minor junctions leading into other car parks or minor roads, there are parking restrictions present in the form of double yellow lines.

Melbourne Street

- 2.3.6 Melbourne Street serves as a link between Great Jackson Street and the A57 Mancunian Way, with a length of circa 70m. At its northern end, it forms a priority junction with Great Jackson Street, whereas at its southern end it commences at the junction between the end of the Ring Road slip road and Crown Street.
- 2.3.7 Melbourne Street comprises a single carriageway with a typical width of c. 7m and footways of c. 2.5m on both sides of the road. There are some street light columns along both sides. The road is also within Zone 4 of the CPZ and has a number of P&D bays along the road, with parking restriction in the form of double yellow lines along the rest of the carriageway and junctions.
- 2.3.8 At the time of writing, Melbourne Street is closed at its southern end and does not currently permit vehicular movement to/from the A57 Mancunian Way due to ongoing construction works associated with CSP2. The current speed limit along the Mancunian Way slip road is 30mph, reducing to 20mph along Melbourne Street.

- 2.3.9 Melbourne Street currently provides pedestrian access to Hulme and other areas to the south of the City Centre via a pedestrian and cycle bridge over the Mancunian Way, located at the end of Melbourne Street. This bridge can be accessed within an approximate 250m walk from the centre of the Site.

Silvercroft Street

- 2.3.10 Providing the north-western boundary to CSP3, Silvercroft Street extends on an east-west alignment from a priority junction with Great Jackson Street towards other Masterplan Plots such as Crown Street Phase 1 and Phase 2.
- 2.3.11 Silvercroft Street is in the process of major refurbishment works as part of wider GJS Framework proposals. The carriageway is currently 5.5m wide, with a minimum of 2m footways on both side of the carriageway. As part of the wider Masterplan works, Silvercroft Street will form the access route for an underground car park (as part of CSP2).

Owen Street

- 2.3.12 Owen Street currently links Deansgate with Great Jackson Street, extending for c. 210m.
- 2.3.13 As per Silvercroft Street, Owen Street has undergone a major refurbishment as part of wider GJS Framework proposals. At the time of writing, the carriageway and eastern footway have been fully completed, with only the western footway to be fully constructed.
- 2.3.14 The road is privately owned and has carriageway width of c. 5.5m wide, with speed bumps providing a speed calming measure. The current footway to the east ranges in width, with a minimum of c. 2.5m. Street lighting is provided along the eastern side of the carriageway. On-street parking is restricted by double red line markings along the entirety of the road.

Garwood Street

- 2.3.15 Located to the east of the Site, Garwood Street serves as a link between Great Jackson Street / City Road East and the A57 Mancunian Way, with a length of circa 85m. At its northern end, it forms a priority junction with Great Jackson Street and City Road East, whereas at its southern end it forms a priority junction with the A5103 leading into Medlock Street/A5103 Princess Road.
- 2.3.16 The road is clearly signed to prevent westbound entry onto A5103. In the northbound direction from the Mancunian Way, there are signs indicating the change of speed limit from 30mph along the slip road to 20mph along Garwood Street.
- 2.3.17 Garwood Street comprises a single carriageway of c. 10m in width and wide footways of up to c. 5m on both sides of the road. There are some street light columns present along the road. The road is also within Zone 4 of the CPZ with P&D bays in place. There are also parking restrictions in the form of double yellow lines at junctions along the road.

A57 (M) Mancunian Way

- 2.3.18 Located to the south of the Site, the A57 (M) Mancunian Way forms part of the inner ring road around Manchester City Centre by connecting Deansgate in the west to Manchester Piccadilly in the east. The road commences at a signalised junction with the A57 Regent Road, A6042 Trinity Way and Water Street, then extends to the east for approximately 2.75km before it terminates and continues on as the A635 Ring Road.
- 2.3.19 In the vicinity of the Site, the A57 (M) Mancunian Way comprises a dual carriageway with a total width of c. 28m and up to three lanes in each direction. As of February 2022, the road is now subject to a speed limit of 30mph (reduced from 50mph) and is lit by regularly spaced lighting columns.

A56 Chester Road

- 2.3.20 The A56 Chester Road is one of the main radial routes into Manchester City Centre and provides the main route for outlying towns such as Altrincham and Sale to gain access to the city. In the vicinity of the Site, Chester Road has an overall carriageway width of c. 19m.
- 2.3.21 Chester Road provides access to/from the Site from the north via the priority junction with Great Jackson Street, with a left-in, left-out arrangement directing traffic westbound on Chester Road. To the north-west of the Site, the A56 Chester Road meets the A57 (M) Mancunian Way and A5067 Chorlton Road at a grade separated signalised roundabout, known as Deansgate Interchange.
- 2.3.22 Chester Road serves as a bus route into and out of Manchester and also features an on-road cycle lane along its southern side and an unsegregated footway / cycleway on its northern side. Chester Road is subject to a 30mph speed limit and is lit by regularly spaced lighting columns.
- 2.3.23 There are bus stops on both sides Chester Road within walking distance of the Site. More details regarding bus services are provided in **Section 4** of this report.

Medlock Street

- 2.3.24 Medlock Street commences at the signalised junction with the B6469 Whitworth Street West (to the north-east of the Site) and runs on a broadly north-south alignment from approximately 365m before terminating at the signalised junction with the A5103 Princess Road and associated slip roads for the A57 (M) Mancunian Way. Medlock Street, continuing from Princess Road, is another main radial route into Manchester City Centre.
- 2.3.25 Medlock Street has an overall average carriageway width of c.12m in proximity of the Site but is noted to include flare lanes as the carriageway approaches the junctions to the north and south. Medlock Street benefits from a both on-road and off-road cycle infrastructure in both directions and is subject to a 30mph speed limit and is lit by regularly spaced lighting columns.

River Street

- 2.3.26 Located to the east of Plot D, River Street is located between Medlock Street and Garwood Street and is approximately 150m in length; the carriageway is one-way only in a westbound direction (from Medlock Street to Garwood Street).
- 2.3.27 River Street currently provides access to residential and commercial uses, and a Premier Inn hotel which fronts onto Medlock Street. It comprises a single carriageway of c.8m in width, which is narrowed by the presence of on-street parking bays on both sides of the carriageway; notwithstanding this, there are also parking restrictions in the form of double yellow lines adjacent to junctions along the length of River Street.
- 2.3.28 Wide footways are present of up to c.5m on both sides of the road, and there are street light columns present along the length of the road.

2.4 Highway Safety

- 2.4.1 Personal Injury Collision data for the main junctions along the highway network adjacent to the Site has been obtained from the Transport for Greater Manchester reported road collisions database for the most recent five-year period.
- 2.4.2 The details of the search are contained in **Figure 2.2**, and a breakdown of the information is contained in **Table 2.1** below:

Junction/Link	Slight	Serious	Fatal	Totals
Great Jackson Street	0	0	0	0
City Road East	1	0	0	1
Garwood Street	0	0	0	0
Great Jackson Street / A56 Chester Road	1	2	0	3
A56 Chester Road	0	0	0	0
City Road East / Medlock Street	2	1	0	3
A56 Chester Road / Deansgate	1	0	0	1
A56 Deansgate Interchange	11	1	0	12
A57 Mancunian Way	6	1	0	7
Owen Street	0	0	0	0
River Place	0	0	0	0
Totals	22	5	0	27

Table 2.1 – Personal Injury Collision Data Summary
(Source: TfGM Reported Road Accidents)

- 2.4.3 There has been a total of 27 collisions recorded in the latest five-year period available, which resulted in 22 slight injuries and 5 serious injuries. There have been no fatal injuries recorded in the vicinity of the Site.
- 2.4.4 There have been no collisions recorded in the immediate vicinity of the Site along Great Jackson Street, Melbourne Street, Silvercroft Street or Owen Street, according to TfGM's available data.
- 2.4.5 On the above basis, it is clear that the safety record is not particularly onerous or indicative of a pre-existing safety issue that would be exacerbated by the Proposed Development. It is therefore concluded that road safety is not a material concern in the context of the Proposed Development.

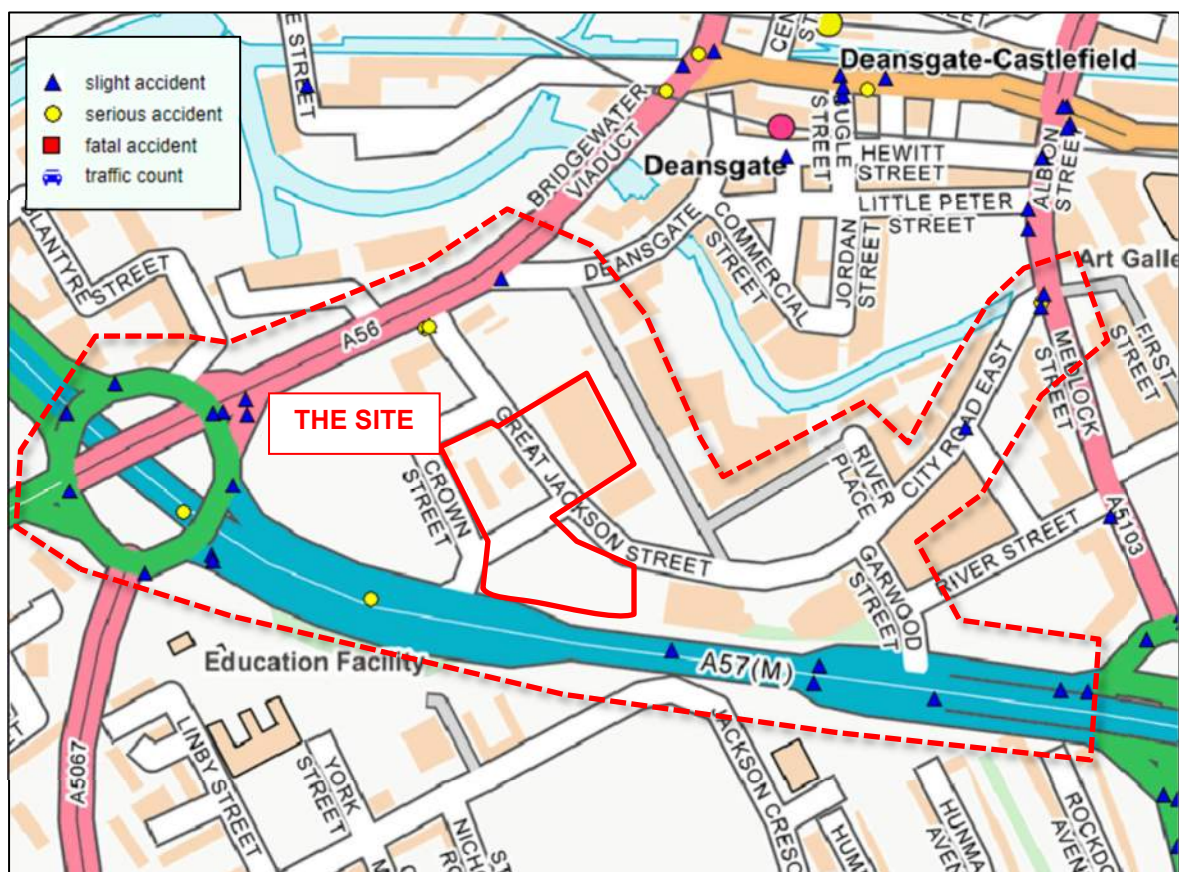


Figure 2.3 – Area Assessed for Personal Injury Collision Data
(Source: TfGM Reported Road Accidents)

3.0 Development Proposals

3.1 Phasing

- 3.1.1 The Proposed Development comprises four residential towers within the CSP3 Site – two plots within the western section of Plot C noted as Towers C7 and C8, and two plots within Plot E noted as Towers E1 and E2. In addition, the Proposed Development comprises two distinct buildings within the Plot D Site – one residential tower and a separate office building.
- 3.1.2 It is understood that the Proposed Development will be completed in 6 phases. This is outlined in **Figure 3.1** below:

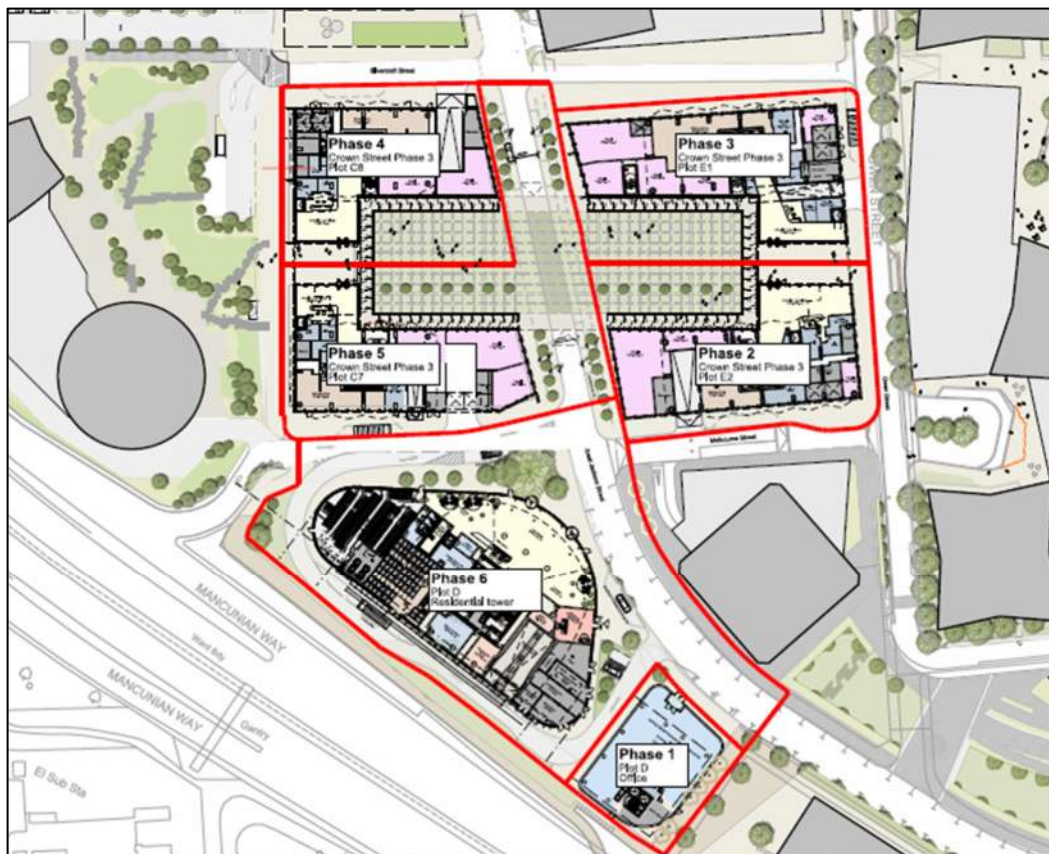


Figure 3.1 – Proposed Site Development Phasing
(Source: Simpson Haugh Architects)

- 3.1.3 The red lines in the above figure denote the boundary of each phase of the Proposed Development, including the buildings and the associated public realm, landscaping and trees. The proposed works to surrounding roads and highways will also take place along the sections of road/highway that fall within each phase/red line.

3.2 Development Proposals

3.2.1 The proposals involve the construction of five high-quality residential towers totalling up to 2,388 apartments.

3.2.2 The CSP3 Site includes two towers at 47 storeys (Towers E1 and E2) and two towers at 51 storeys (Towers C7 and C8) totalling 1,746 apartments and including ground floor flexible commercial use.

3.2.3 The Plot D Site comprises a single residential tower with 71 storeys containing 642 apartments and a separate 3-storey office building.

3.2.4 The scheme will comprise:

- **Crown Street Phase 3:**

- Tower C7:
 - 422 apartments;
 - 107 car parking spaces across three levels of underground car park.
- Tower C8:
 - 422 apartments;
 - 105 car parking spaces across three levels of underground car park.
- Tower E1:
 - 451 apartments;
 - 150 car parking spaces across three levels of underground car park.
- Tower E2:
 - 451 apartments;
 - 121 car parking spaces across three levels of underground car park.
- Retail:
 - 965m² distributed across the ground floor of the four towers.

- **Plot D:**

- Residential Tower:
 - 642 Apartments;
 - 214 car parking spaces across three levels of underground car park.
- Office Building:
 - c.2,059m²;
 - 2 car parking spaces at surface level.
- Retail:
 - c.1,088m² restaurant located at the top level of the residential tower.

3.2.5 The residential element of the Proposed Development will offer 100% cycle parking provision. The spaces will be covered and secure, distributed across the levels of basement car park. The Office Use will be provided with 10 secure and covered parking spaces.

3.2.6 The proposed Site layout plans are included in **Appendix A** to the rear of this report.

3.3 Vehicular Access Strategy

3.3.1 An access strategy has been prepared to support the Proposed Development. This is summarised below and shown on **Drawings 081453-CUR-XX-00-D-TP-75001** and **75002**.

Crown Street Phase 3

3.3.2 Each of the four towers will have its own vehicular access to the underground car parks.

3.3.3 Tower E2 basement car park will be accessed from the new extension to Melbourne Street, which also provides access to Plot F1. This section of the road will be two-way. The road will continue to the north, linking the Site and Owen Street. However, access will be limited to servicing vehicles and to be controlled via droppable bollards or a similar access control mechanism.

3.3.4 Tower E1 basement car park will be accessed off Owen Street. A short section of Owen Street will be reduced to a single lane, to be priority controlled and with southbound vehicles to have priority.

3.3.5 Tower C8 will have access to its basement car park located off Silvercroft Street. Tower C7 will have access to its basement car park located off Melbourne Street, which will become one-way northbound as part of the Proposed Development.

3.3.6 Access for taxis and private vehicles dropping off residents of the development is described below in **Section 3.6**.

3.3.7 Owen Street and the extension to Melbourne Street as part of the Proposed Development will not be offered for adoption and will remain private. Barriers will control access to the car parks, with other access control measures (via droppable bollards or similar) to the different plots. These will also act as traffic calming measures, reducing vehicular speeds along the Site access roads.

3.3.8 **Drawing 081453-CUR-XX-00-D-TP-75002** shows the proposed access arrangements, with **Drawing 081453-CUR-XX-00-D-TP-05008** showing the swept path analysis of a large refuse vehicle negotiating the CSP3 Site access roads.

3.3.9 **Drawing 081453-CUR-XX-00-D-TP-05010** illustrates the swept path assessment of a large car accessing the car park for the CSP3 Site.

Plot D

3.3.10 Plot D basement car park will be accessed off a new access road, creating a loop surrounding the residential tower. The access road will be one-way and be accessed off Great Jackson Street, with the egress point joining Melbourne Street, becoming a northbound lane. On this basis, Melbourne Street will become a one-way, two-lane road.

- 3.3.11 **Drawing 081453-CUR-XX-00-D-TP-75001** shows the proposed access arrangements, with **Drawing 081453-CUR-XX-00-D-TP-05001** showing the swept path analysis of a large refuse vehicle negotiating the Plot D Site access roads.
- 3.3.12 **Drawing 081453-CUR-XX-00-D-TP-05009** illustrates the swept path assessment of a large car accessing the car park for the Plot D Site.

3.4 Pedestrian & Cycle Access Strategy

- 3.4.1 The Site layout has been designed to promote walking and cycling. Moreover, as a result of the Proposed Development, the surrounding highway infrastructure would also benefit from a more pleasant environment with the provision of public realm, landscaping and trees within the Site, and improved pedestrian and cycle infrastructure. This would ensure an accessible and safe physical environment for pedestrian and cyclists to promote active travel for commuting and leisure.
- 3.4.2 As summarised in **Section 2.3**, the surrounding roads have footways available for pedestrian use, and the carriageways are well lit by street lighting. At the major junctions near the Site, there are signalised crossing points, pedestrian refuge islands, dropped kerbs and tactile paving. There are also multiple local on and off-road cycle routes that surround the Site. Further details on the multi-modal accessibility of the Site are provided in **Section 4**.

Crown Street Phase 3

- 3.4.3 The four towers are proposed to be built around a large central public square, which will be the main arrival space to the development.
- 3.4.4 There are two ample corridors proposed beneath the podium of the towers, linking the square to the east with Owen Street, and to the west with the proposed public park, multi-storey car park and cycle lane currently being built as part of CSP2. It is within these links, at the eastern and western ends of the square, that residential access to the four towers will be located. The retail units will have their pedestrian access points located in the vicinity of the square.
- 3.4.5 A minimum 2m footway will be maintained in all instances. At some points, part of the footway will be sitting on the public highway and part located on private land. MCC Highways agreed with this approach in principle, subject to provision of studs on the ground delineating the edge of adoption.
- 3.4.6 There will be a small pinch point along the proposed loading bay at the southern footway on Silvercroft Street. The width of the footway at columns will range from 1.77 to 1.54m. Notwithstanding, the loading bay will be provided with flush kerbs and similar materials to the footway so it can be used by pedestrians when not in use. This arrangement has been agreed in principle with MCC Highways. There will also be a 2m wide footway available on the other side of the road available to pedestrians. Cyclists

would be able to access the Site in a similar manner to vehicles, as the cycle stores are located within the underground car parks.

Plot D

- 3.4.7 Pedestrians will access the proposed residential tower from the corner between Great Jackson Street and Melbourne Street. The restaurant at Level 70 will have an independent access to a lift, located at ground floor off Great Jackson Street. The office building will also have its pedestrian access located off Great Jackson Street.
- 3.4.8 The CSP2 proposals (currently under construction) include a 3m wide footway/cycleway, linking Melbourne Street and the existing cycle lane along Chester Road. A new signalised Toucan crossing is proposed on Melbourne Street as part of the Proposed Development at the Plot D Site, connecting footway/cycleway provision within the Plot D Site to the footway/cycleway proposed as part of CSP2. This is intended as the primary access route to the Plot D Site by cyclists, and will be complemented by a shared space for pedestrians and cyclists along the southern side of Melbourne Street.
- 3.4.9 The main cycle store at the residential tower will be located at ground floor, conveniently located at the southwestern corner of the podium and in the vicinity of the proposed Toucan crossing across Melbourne Street. There will be a number of additional cycle stores at the basement levels. Cyclists will access these stores in a similar manner to vehicles.
- 3.4.10 Access to the office building cycle store will be via the proposed path to the bridge over the Mancunian Way, to the east of the Proposed Development.

3.5 Car and Cycle Parking

Crown Street Phase 3

- 3.5.1 There will be a total of 483 car parking spaces, distributed between the four towers. This represents c. 28% car parking provision to reflect the highly accessible location of the Site in terms of opportunities for active and sustainable travel. This level of provision, which is similar to other city centre schemes, supports the sustainability ethos of the Proposed Development and Manchester City Council's aim of making Manchester a zero-carbon city by 2038.
- 3.5.2 The scheme will facilitate up to 20% EV charging points; these will be provided on a demand led basis through the apartment sales process.
- 3.5.3 There will also be 26 accessible spaces provided within the basement car parks, which equates to c. 5% provision. This is in accordance with Manchester City Council's minimum requirement of 5% that was noted during scoping discussions.

- 3.5.4 Access to the basement car parks will be via two-way ramps with the exception of Tower E1, which will have a one-way system. This will be controlled via a traffic light system which will be green on default for vehicles accessing the car park. There will be a waiting space without blocking the footway.
- 3.5.5 Internally, the car parks will be provided with a network of one-way ramps. Consideration has also been given to waiting space outside the path of vehicles travelling through the car park.
- 3.5.6 **Drawings 081453-CUR-XX-00-D-TP-05004, 05005 and 05006** show the swept path analysis within the car park layouts at the different basement levels.
- 3.5.7 The Proposed Development will offer 100% cycle parking provision for the residential uses. The spaces will be covered and secure, distributed across the levels of basement car park. These spaces will be complemented by visitor cycle parking, which will be provided at ground floor level, within the landscaped proposals.

Plot D

- 3.5.8 There will be a total of 214 car parking spaces, distributed across the three levels of basement car park. This represents a c.33% car parking provision.
- 3.5.9 The scheme will facilitate up to 20% EV charging points, which will also be provided on a demand led basis through the apartment sales process.
- 3.5.10 There will also be 12 accessible spaces provided on site, which equates to approximately 8% provision. This exceeds Manchester City Council's minimum requirement of 5% that was noted during scoping discussions.
- 3.5.11 Access to the basement car parks and internal circulation will be via two-way ramps.
- 3.5.12 **Drawings 081453-CUR-XX-00-D-TP-05002, 05003 and 05007** show the swept path analysis within the car park layouts at the different basement levels.
- 3.5.13 The office building is proposed to offer two parking spaces at ground floor level. These are anticipated to be used by visitors only, with staff primarily travelling via sustainable modes of transport or utilising the proposed Multi-Storey Car Park proposed as part of CSP2, which is under construction.
- 3.5.14 The Proposed Development will offer 100% cycle parking provision for the residential uses. The spaces will be covered and secure, distributed across a main cycle store at ground floor and several complementary stores across the levels of basement car park. Visitor cycle parking will be provided at ground floor level, within the landscaped proposals.
- 3.5.15 The office building is provided with a cycle store with capacity for 10 bicycles. This level of provision is consistent with the recommendations set out in MCC's Core Strategy of 1 space per 200m².

3.6 Servicing and Delivery Access

Crown Street Phase 3

- 3.6.1 Each of the proposed towers will be provided with its own loading bay. The loading bays for Towers C7 and E1 are proposed as 12.5 x 3m. Tower E2 which will have a 25 x 2.7m loading bay, shared with the Plot F1 development. Tower C8 will benefit from a 15 x 2.7m loading bay, provided with flush kerbs and materials similar to the footway.
- 3.6.2 All the proposed loading bays are located in close proximity to the proposed waste stores, although also conveniently located near the proposed entrances and retail units at ground floor.
- 3.6.3 The location of Tower E2 loading bay is along the new extension of Melbourne Street, with access controlled via a droppable bollard. Tower E1 loading bay will be located along Owen Street. Tower C8 will have its loading bay located on Silvercroft Street and Tower C7 along Melbourne Street.
- 3.6.4 **Drawing 081453-CUR-XX-00-D-TP-75002** provides details of the location of the proposed loading bays, with **Drawing 081453-CUR-XX-00-D-TP-05008** showing the swept path assessment of a large refuse vehicle accessing and egressing all proposed loading bays in a forward gear.

Plot D

- 3.6.5 Plot D will be provided with two loading bays. The primary loading bay measures 15 x 2.7m and is located to the rear of the building, accessed via the proposed one-way loop road.
- 3.6.6 A secondary loading bay is proposed along Great Jackson Street, measuring 17 x 2.7m. The primary use of this loading is to serve as drop-off point for residents, customers of the restaurant and visitors to the office building.
- 3.6.7 **Drawing 081453-CUR-XX-00-D-TP-75001** provides details of the location of the proposed loading bays, with **Drawing 081453-CUR-XX-00-D-TP-05001** showing the swept path assessment of a large refuse vehicle accessing and egressing all proposed loading bays in a forward gear.

4.0 Accessibility by Sustainable Modes of Travel

4.1 Introduction

4.1.1 A key element of national and local policy is to ensure that new developments are located in areas where alternative modes of travel are available. It is important to ensure that developments are not isolated but are located close to complementary land uses. This supports the aims of integrating planning and transport, providing more sustainable transport choices, and reducing overall travel and car use.

4.1.2 The accessibility of the Proposed Development is considered in this context for the following modes of travel:

- Pedestrian Accessibility;
- Cycle Accessibility; and
- Public Transport Accessibility.

4.2 TRACC Analysis

4.2.1 Accessibility has been assessed through the use of TRACC Software. TRACC is the leading multi-modal transport accessibility tool which was developed in conjunction with the Department for Transport (DfT), local authorities and transport planners.

4.2.2 It is designed to calculate travel time using a multitude of public transport and road travel modes to give accurate journey times from many origins to many destinations in one calculation. The software covers a wide range of transport modes including walking, cycling, driving and public transport.

4.2.3 TRACC analysis has been undertaken to establish the pedestrian, cycle, and public transport accessibility of the Site and demonstrate the connectivity of the Site to adjacent areas using these modes of transport.

4.3 Pedestrian Accessibility

4.3.1 Research has indicated that acceptable walking distances depend on a number of factors, including the quality of the development, the type of amenity offered, the surrounding area, and other local facilities. The Chartered Institution for Highways and Transportation (CIHT) document entitled 'Providing for Journeys on Foot' suggests walking distances which are relevant to this planning application. These are reproduced in **Table 4.1** below:

	Town Centres (m)	Commuting/School/ Sightseeing (m)	Elsewhere/Local Services (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

Table 4.1 – CIHT Suggested Acceptable Walking Distances

- 4.3.2 To assist in summarising the accessibility of the Site by foot, an indicative pedestrian catchment plan has been produced. **Plan 081453-CUR-XX-XX-G-TP-06001**, to the rear of this report, shows distances of 500m, 1,000m and 2,000m which are termed ‘Desirable’, ‘Acceptable’ and the ‘Preferred Maximum’ by the CIHT for commuting trips.
- 4.3.3 The pedestrian catchment plan confirms that the Site is well located in relation to local facilities and services within Manchester. Most notably, several bus stops along the A56 Chester Road and A5103 Medlock Street are located within the 500m walking catchment. Future residents can also access several office buildings east of the Site, the Manchester School of Acting, several small coffee shops, and the Castlefield Gallery, as well as other local facilities.
- 4.3.4 The First Street development comprising a Sainsbury’s, HOME theatre, public houses, several bars and restaurants is also within the 500m walking catchment. Once the CSP2 development is completed, a primary school will also be available to residents within 500m of the Site.
- 4.3.5 Within 1,000m of the Site, more bus stops and tram stops are accessible for residents of the Site. The Deansgate Railway Station and the Deansgate-Castlefield Metrolink station can be accessed within an 8-minute walk (or 600m walk distance) north of the Site. The entirety of the leisure / entertainment in the Deansgate and Spinningfields areas is also accessible, with Deansgate Locks fronting Whitworth Street West, the Bridgewater Hall and Manchester Central Convention Complex, Manchester Great Northern (comprising the ODEON cinema, bowling alley, and food/drink establishments), Science and Industry Museum and Beetham Tower.
- 4.3.6 To the east of the Site, the Oxford Road rail station is accessible within 1,000m, along with the Palace Theatre and more entertainment facilities. The Oxford Road Corridor is accessible too, and it is known as the busiest bus corridor in Europe, connecting Manchester City Centre to the surrounding neighbourhoods including Ardwick, Hulme, Longsight, Moss Side and Rusholme. Along the corridor are many pharmacies, a Tesco and Sainsbury’s store, food and drink outlets, and health clubs.
- 4.3.7 To the south of the Site, the Manchester Metropolitan University campus lies within the 1,000m catchment, which includes student accommodation along with places of worship. There are also several primary schools, Hulme Park and St Georges Park.

- 4.3.8 At 2,000m beyond the Site, the whole of Manchester City Centre including the Central Business and Retail Districts, Manchester Piccadilly, Piccadilly Gardens, Market Street, Shudehill, the Northern Quarter, Chinatown, Salford Central, the outskirts of Ordsall and Old Trafford, Hulme, Moss Side, Brunswick, Manchester Science Park and the University of Manchester campus are all within reach. The Site is strategically situated within Manchester City Centre such that the surrounding facilities can benefit future residents of all ages.
- 4.3.9 As part of the Manchester and Salford Inner Relief Route (MSIRR) works programme, the Mancunian Way / A56 Chester Road roundabout (Deansgate Interchange) has been recently improved to offer capacity improvements and also improved pedestrian and cycle linkages, which will therefore be of benefit to residents of the Proposed Development when passing through this junction.
- 4.3.10 The topography of the local area is generally flat and conducive to pedestrian trips, and the area benefits from natural surveillance from the commercial and residential properties that abut all the main walk routes.
- 4.3.11 The Site is therefore considered to be highly accessible by foot with various employment, education, health, retail and leisure facilities within walking distance of the Site. The Site is also conveniently located to various public transport routes and interchanges.

4.4 Cycle Accessibility

- 4.4.1 The Greater Manchester Cycling Strategy has been introduced to set out a regional approach to prioritise future investment in cycling and associated infrastructure. Greater Manchester's vision is of a city "fit for the future" – a healthy, safe, sustainable city where people want to live, work and visit and where a well-established cycling culture is integral.
- 4.4.2 In order to assist in assessing the accessibility of this Site by cycle, **Plan 081453-CUR-XX-XX-G-TP-06002**, to the rear of this report, presents an 8km cycle catchment for the Site. The 8km cycling distance is based on 2019 National Travel Survey statistics, which demonstrates that 82% of cycling trips were under 5 miles (8km). The National Model Design Code – Part 2 (DLUHC, 2021) also references this distance, expressing *"the aim that walking and cycling should be the first choice for short local journeys, particularly those of 5 miles [8km] or less"*.
- 4.4.3 The 8km catchment extends as far as Blackley in the north, Fairfield to the east, Didsbury in the south and Trafford Park to the west.
- 4.4.4 There are multiple local on and off-road routes that surround the Site, for example; along Great Jackson Street and City Road East, the A56 Chester Road, Whitworth Street West and Medlock Street and adjacent to the Bridgewater Canal, as shown on **Figure 4.1** below:

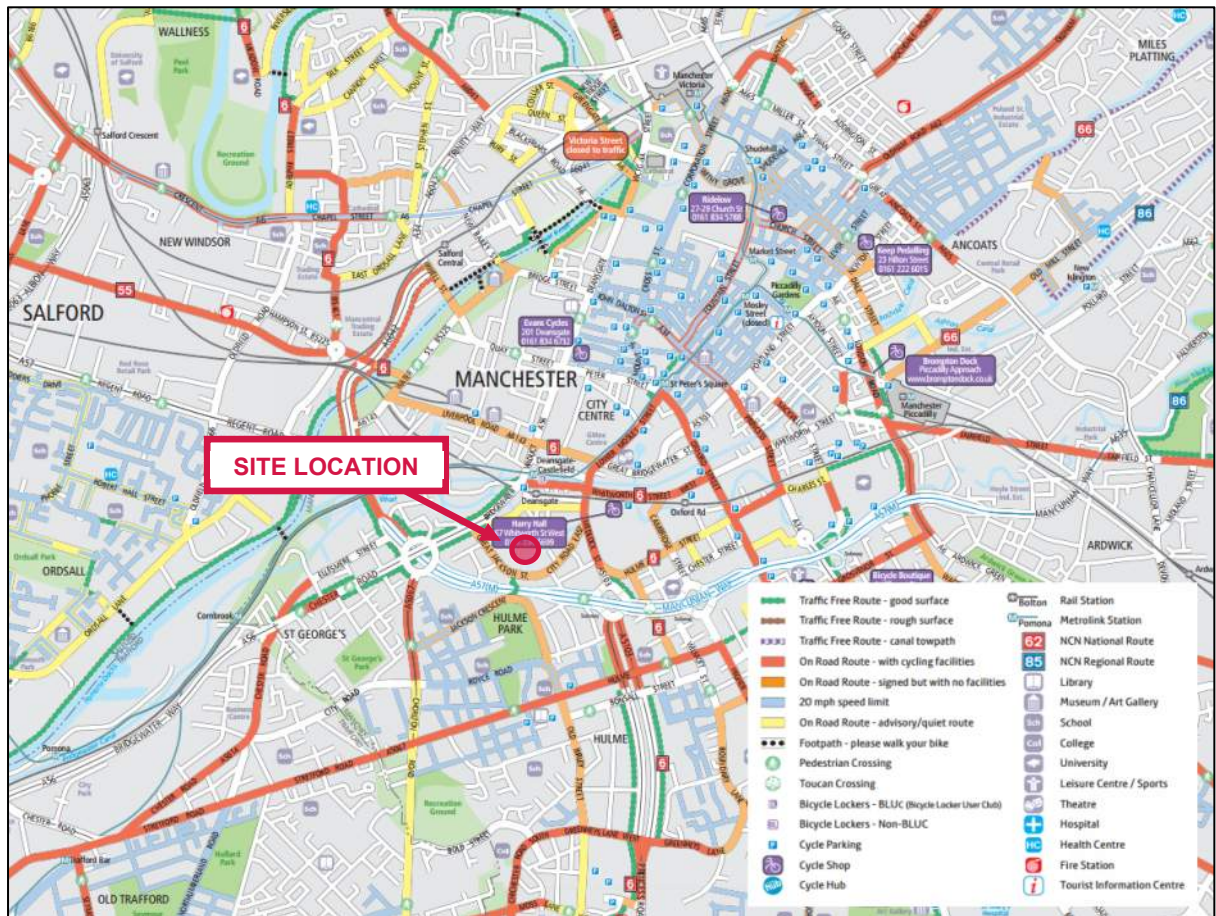


Figure 4.1 – Local Cycle Routes (Source TfGM)

- 4.4.5 Some of the most attractive cycle routes in the area lie alongside the waterway network. There are cycle routes alongside both the Bridgewater Canal and the River Irwell that are easily accessible from the Site. Local routes in the vicinity of the Site have been developed to include segregated cycle lanes as part of the Oxford Road Bus Priority Package. The segregated cycle lanes are part of the city's new high-quality cycle infrastructure to improve cyclist safety along the Oxford Road Corridor.
- 4.4.6 National Cycle Route 6 is located some 650m to the north of the Site on Liverpool Road. Route 6 passes through Watford, Luton, Milton Keynes, Northampton, Market Harborough, Leicester, Derby, Nottingham, Worksop, Sheffield, Manchester, Blackburn, Preston, Lancaster, Kendal and Windermere, and will connect London and Threlkeld in Cumbria when complete. More locally, the route connects the Site to areas in the north west of Greater Manchester such as Radcliffe, and to the south west including areas such as Chorlton-cum-Hardy.
- 4.4.7 The local cycle network shown above is also a part of Greater Manchester's cycling and walking infrastructure proposal, named the "Bee Network". The Bee Network comprises signed routes that mark the most direct and pleasant way to navigate an area on foot or by bike.

- 4.4.8 The site is surrounded by Beeways and confirmed infrastructure improvements, as illustrated in **Figure 4.2** below, allowing future residents and visitors that cycle to benefit from better safety and quality of commute:

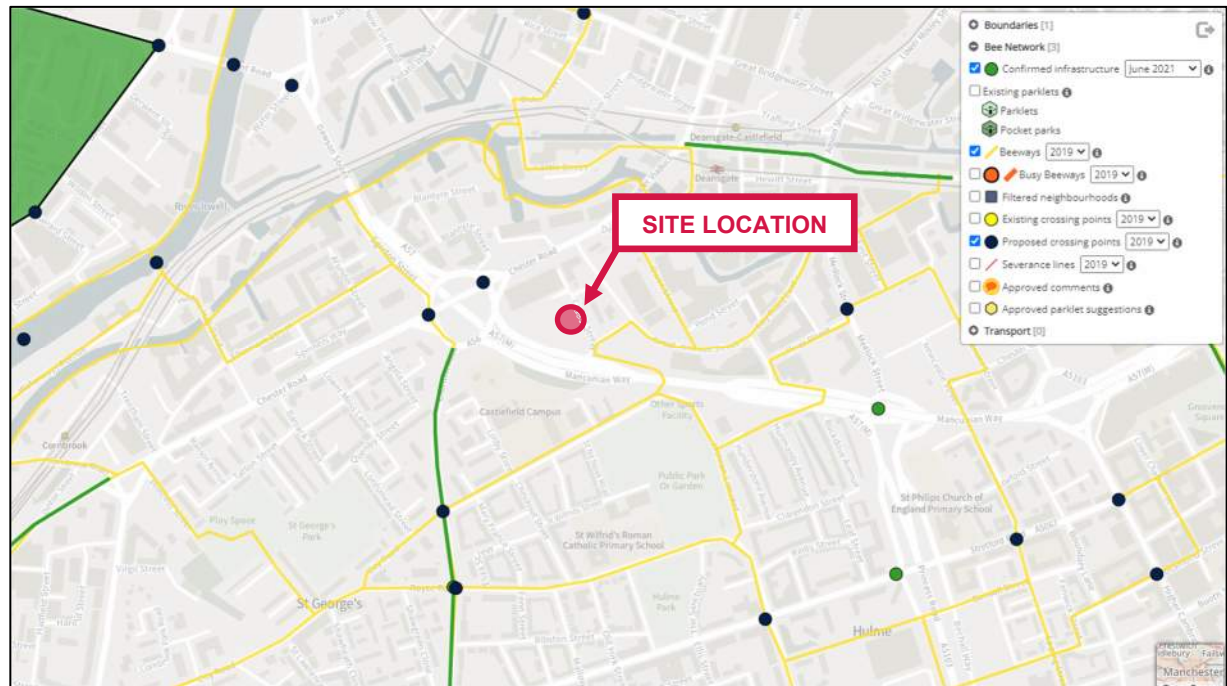


Figure 4.2 – Proposed Bee Network (Source: MappingGM)

- 4.4.9 As mentioned earlier, there will be 100% provision of secure, covered cycle parking spaces provided at the Proposed Development, thereby encouraging this mode of transport.
- 4.4.10 The Site is therefore considered to be highly accessible by bicycle and would provide a realistic alternative to travel by car.

4.5 Public Transport Accessibility

- 4.5.1 Developed by Transport for Greater Manchester, Greater Manchester Accessibility Levels (GMAL) are a measure of the accessibility of a point to both the conventional public transport network (i.e. bus, Metrolink and rail) and Greater Manchester's Local Link (flexible transport service), considering walk access time, service availability, and average waiting time. The method is essentially a way of measuring the density of the public transport provision at any location within the Greater Manchester region.
- 4.5.2 The accessibility index score is categorised into eight levels (1 to 8), where level 8 represents a high level of accessibility (described as 'excellent') and level 1 represents a low level of accessibility (described as 'very poor'). The Site is located in an area with a GMAL rating of 8, with excellent accessibility. This is a particular strength of the Site, which offers strong multi-modal opportunities.

4.5.3 **Plan 081453-CUR-XX-XX-G-TP-06003**, to the rear of this report, demonstrates the areas accessible via public transport within 20, 40 and 60 minutes of the site. Accessibility by bus, rail and Metrolink are considered further below.

Bus Accessibility

4.5.4 Guidance within the National Model Design Code – Part 2 (DLUHC, 2021) states: “Generally, people are prepared to walk further to a railway station or tram stop (10 minutes) [800m walking distance] than to a bus stop (5 minutes) [400m walking distance].” These distances are also cited in the CIHT document ‘Planning for Walking’ (2015).

4.5.5 The nearest bus stop is located to the north-east of the Site on Medlock Street, within a c. 400m (c. 5-minute) walk of the Site. Future residents could also walk c. 550m (c. 6.5-minute walk) to the bus stops along Whitworth Street West and opposite the Deansgate rail station with more services and the Number 2 Free Bus. **Table 4.3** below details the bus services that call at these stops and their associated frequencies:

Bus Service	Route	Peak Hourly Frequency		
		Mon – Fri	Sat	Sun/Hols
From Medlock Street				
84	Manchester – Whalley Range – Chorlton – Chorlton Green	Hourly	Hourly	-
256	Manchester – Hulme – Stretford – Davyhulme – Flixton	10 mins	15 mins	30 mins
733	Cheetham Hill – Whalley Range High School (school bus)	1 in the AM 1 in the PM	-	-
From Whitworth Street West				
255	Manchester – Old Trafford – Stretford – Urmston – Flixton – Partington	30 mins	30 mins	Hourly
291	Manchester – Old Trafford – Trafford Park – intu Trafford Centre	30 mins in the early AM	-	-
X50	Manchester – Old Trafford – intu Trafford Centre	10 mins	10 mins	10 mins
X58	Manchester – Davyhulme – Flixton Express	1 in the AM	-	-

Table 4.2 – Summary of Bus Service Frequencies

4.5.6 As shown in **Table 4.3**, there are frequent bus services (in combination) stopping close to the Site, which provide convenient access to locations such as The Trafford Centre, Manchester City Centre, Urmston and Stretford, amongst others.

4.5.7 Furthermore, the Site is situated within a c. 550m walking distance to Whitworth Street West, which is one of the calling points of the Number 2 Manchester free bus route. The free bus is a service providing

direct access to the Deansgate and Oxford Road railway stations along with key city centre locations. The free bus frequencies are detailed in **Table 4.4** below:

Free Bus Service		Peak Frequency		
		Weekday	Saturdays	Sun/Hols
1	Piccadilly – Piccadilly Gardens – Chinatown – Market Street – Deansgate – Opera House – Albert Square – New York Street – Central Coach Station circular	07:00 – 22:00 Every 10 mins (Every 15 mins after 18:30)	08:30 – 22:00 Every 10 mins (Every 15 mins after 18:30)	09:30 – 18:00 Every 12 mins
2	Piccadilly – Oxford Road – Deansgate – Manchester Victoria – Shudehill – Northern Quarter circular	06:30 – 22:00 Every 10 mins (Every 15 mins after 18:30)		
2 (Peak Only)	Piccadilly – Oxford Road – Deansgate – Salford Central – Manchester Victoria – Shudehill – Northern Quarter circular	06:30 – 09:10 and 16:00 – 18:30	-	-

Table 4.3 – Free Bus Services

- 4.5.8 Overall, the Site is highly accessible by bus with a large number of services available within walking distance of the site.

Rail Accessibility

- 4.5.9 The Chartered Institution of Highways and Transportation (CIHT) document, '*Planning for Public Transport in Developments*' notes that those travelling to a site by rail will typically be prepared to walk further to the site than those travelling by bus, with a preferred distance of 800m.
- 4.5.10 The nearest railway station is Deansgate Railway Station, located c. 600m (c. 7-minute walk) to the north of the Site. A summary of rail services from the station is summarised in **Table 4.5** below:

Destination	Service Frequency		
	Peak Weekday	Peak Saturday	Peak Sunday
Blackpool North	2	1	1
Bolton	3	2	1
Liverpool Lime Street	2	2	1
Preston	2	1	1
Southport	2	2	1
Stockport	1	1	1
Warrington Central	2	2	1
Wigan	1	1	1

Table 4.4 – Summary of Rail Services from Deansgate Railway Station

- 4.5.11 The rail services that run to Deansgate Railway Station provide regular access to various locations across the North West of England, including, Liverpool, Manchester Airport, Southport and Manchester Oxford Road, amongst others. Trains run throughout the day and evening 7 days a week.
- 4.5.12 In addition to the locations noted above, they also serve key local destinations such as Bolton, Wigan, Preston, Buxton, Birchwood, Widnes and Warrington.
- 4.5.13 A short connection from Deansgate to Manchester Oxford Road or Manchester Piccadilly facilitates for journeys to destinations further afield such as London, Nottingham, Norwich, Leeds, Hull and Sheffield.
- 4.5.14 It is noted that the provision of rail services will change over time in response to current circumstances. The rail frequencies are accurate at the time of writing, whereas up-to-date rail times can be found on Northern Rail's website: northernrailway.co.uk/travel/timetables.
- 4.5.15 It is therefore considered the Site is highly accessible via rail.

Metrolink (Light Rail) Accessibility

- 4.5.16 There are Metrolink stops located at Deansgate-Castlefield (c. 550m or c. 6.5-minute walking distance north of the Site). **Table 4.6** below outlines the frequencies of services that can be utilised at this Metrolink stop:

Route	Monday to Thursday	Friday and Saturday	Sundays/Hols
[Blue Line] Eccles or MediaCity UK – Ashton-Under-Lyne	6-minute frequency between 05:53 and 23:03	6-minute frequency between 05:53 and 00:03	6-minute frequency between 06:53 and 22:53
[Purple Line] Altrincham – Piccadilly	12-minute frequency between 05:49 and 23:37	12-minute frequency between 05:49 and 00:37	12-minute frequency between 06:49 and 23:37
[Green Line] Altrincham – Bury	12-minute frequency between 05:49 and 23:01	12-minute frequency between 05:49 and 00:01	12-minute frequency between 06:49 and 23:01
[Pink Line] East Didsbury – Rochdale	12-minute frequency between 05:50 and 23:14	12-minute frequency between 05:50 and 23:50	12-minute frequency between 06:46 and 22:46
[Navy Line] Victoria – Manchester Airport	12-minute frequency between 05:57 and 23:09	12-minute frequency between 05:57 and 00:09	12-minute frequency between 06:52 and 23:04
	20-minute frequency between 03:00 and 06:00	20-minute frequency between 03:00 and 06:00	20-minute frequency between 03:00 and 07:00

Table 4.5 – Summary of Metrolink Services from Deansgate-Castlefield

4.5.17 The Metrolink services provide access to the Site seven days a week with trams running from a variety of locations within Manchester and the wider area between 6 and 20 minutes all day and into the evening.

4.5.18 It is therefore considered that the Site is highly accessible via Metrolink.

4.6 Summary

4.6.1 The above sections have demonstrated that the site is highly accessible by active and sustainable modes of transport; the surrounding area exhibits excellent levels of pedestrian and cycling infrastructure, and there are a number of public transport opportunities within walking distance of the site.

4.6.2 The site is well located to take advantage of the excellent existing public transport facilities, including bus, Metrolink and rail, in addition to walking and cycling opportunities, which will therefore provide viable alternatives to travel by car.

5.0 Traffic Forecasting

5.1 Introduction

- 5.1.1 This section of the report details the methodology used to predict the demand associated with the Proposed Development and derive traffic flows in order to assess the impact of the Site.
- 5.1.2 This section also sets out the study area as well as the trip rate analysis of the Proposed Development during the weekday AM and PM peak hours, and the subsequent distribution of these trips on the surrounding highway network.
- 5.1.3 The assessment is based on the full quantum of development; whilst it is understood that both the CSP3 Site and the Plot D Site will be phased, both developments will be applied for simultaneously.
- 5.1.4 **Table 5.1** below summarises the overall development quantum to be assessed:

	Land Use	
	Residential	Office
Crown Street Phase 3		
Tower C7	422 apartments	-
Tower C8	422 apartments	-
Tower C7	451 apartments	-
Tower C7	451 apartments	-
Plot D		
Residential Tower	642 apartments	-
Office Building	-	2,059m ² GFA
Total		
Total	2,388 apartments	2,059m ² GFA

Table 5.1 – Development Quantum

- 5.1.5 On the basis of **Table 5.1**, the assessment will consider the trip generation and impact of 2,388 apartments and 2,059m² GFA of office use.

5.2 Traffic Surveys and Assessment Years

Traffic Surveys

- 5.2.1 As part of scoping discussions with Highways Officers at MCC and TfGM, it was agreed that new traffic surveys would be undertaken at key junctions on the local highway network.
- 5.2.2 The assessments focus on the operation of the following junctions:
1. A56/Great Jackson Street priority junction;
 2. City Road East/Medlock Street priority junction; and
 3. A56/A5067/A57(M) Deansgate Interchange signalised roundabout.
- 5.2.3 In addition, consideration would be given to the crossroads junction of Great Jackson Street with the existing section of Melbourne Street (to the west of Great Jackson Street), and the new section of Melbourne Street (to the east of Great Jackson Street), which is proposed to serve the consented Plot F1 of the GJS Framework and Tower E2 of the CSP3 Site.
- 5.2.4 On this basis, traffic surveys were undertaken at Junctions 1 – 3 on 15th November 2022. Full Traffic Survey data is included within **Appendix B** to the rear of this report.
- 5.2.5 The network peak hours were derived as follows:
- AM: 08:30 – 09:30; and
 - PM: 17:45 – 18:45.
- 5.2.6 At the time of writing, Melbourne Street is closed at its southern end and does not currently permit vehicular movement to/from the A57 Mancunian Way due to ongoing construction works associated with CSP2. On this basis, base flows for the 2028 future year have been extracted from the CSP2 development (MCC Planning Reference: 126668/FO/2020) to establish an appropriate and suitable baseline position on Melbourne Street.
- 5.2.7 As such, **Traffic Figures 1** and **2** at the rear of the report show the 2022 survey peak hour traffic flows (and 2028 baseline flows on Melbourne Street) for the AM and PM peaks respectively. All Traffic Figures are provided in **Appendix C** to the rear of this report.

Assessment Years

- 5.2.8 The future assessment years/scenarios include all applicable committed development flows and this represents consideration of background traffic growth. On this basis, additional traffic growth factors (via TEMPro) would not be required.
- 5.2.9 It is noted that the ambition of both MCC Highways and TfGM is to reduce traffic in and out of the City Centre – as noted by being a key aim within the TfGM document City Centre Transport Strategy to

2040, which details the future role of the car and its alternatives within the city. The City Centre Transport Strategy is bold in its vision, with a central aim for 90% of all morning peak trips to the city centre to be made on foot, by cycle or using public transport before 2040, with walking to become the predominant mode of travel within the city centre.

5.2.10 Furthermore, with changes in travel habits/working patterns associated with the post-COVID-19 world, car travel to / from the city will likely further reduce – and not grow in the coming years – with the uptake in home working / flexible working.

5.2.11 It is considered that the 2022 Surveys + Committed Development flows represents a robust future Baseline scenario for assessment. This has been an approach taken on other schemes in Manchester and accepted by MCC and TfGM.

Committed Developments

5.2.12 The following committed developments situated in proximity to the Site have been considered as part of the initial review:

- **2-4 Chester Road** (application reference: 113870/FO/2016);
- **Deansgate Square** (application reference: 111719/FO/2016/C1);
- **Crown Street Phase 1** (application reference: 119806/FO/2018);
- **Crown Street Phase 2** (application reference: 126668/FO/2020);
- **Viadux** (application reference: 126868/JO/2020);
- **10-12 Whitworth Street** (application reference: 111003/FO/2016/C1);
- **Transition** (application reference: 116850/FO/2017);
- **Trinity Islands** (application reference: 132429/FO/2021);
- **1 Alpha Place** (application reference: 120113/FO/2018);
- **Plot 9, First Street** (application reference: 125833/FO/2019);
- **325 Deansgate** (application reference: 125804/FO/2019);
- **Hotspur Press** (application reference: 120635/FO/2018);
- **Plot 11, First Street** (application reference: 125573/FO/2019);
- **One City Road** (application reference: 128002/FO/2020);
- **Arundel Street** (application reference: 123261/FO/2019).
- **Plot F, Great Jackson Street** (application reference: 132199/FO/2021);
- **Plot G, Great Jackson Street** (application reference: 129273/FO/2021); and
- **2-4, Whitworth Street** (application reference: 126308/FO/2020).

5.2.13 Following a review of the Transport Assessments/Statements for the above schemes, it was shown that only a small number of committed developments generated a considerable number of two-way trips in the AM and PM peak hours, with a large number generating negligible or zero car trips.

5.2.14 Many of the committed developments are car-free or a demonstrated a net trip reduction; as such, only the following schemes and subsequent vehicular trip generation were extracted for inclusion within the Baseline scenarios:

- **Crown Street Phase 2** (application reference: 126668/FO/2020);
- **Trinity Islands** (application reference: 132429/FO/2021);
- **Plot F, Great Jackson Street** (application reference: 132199/FO/2021);
- **Plot G, Great Jackson Street** (application reference: 129273/FO/2021); and
- **Arundel Street** (application reference: 123261/FO/2019).

5.2.15 The total Committed Development flows associated with the above schemes have been included within **Traffic Figures 3** and **4** at the rear of this report.

Existing Trip Generation

5.2.16 As noted in **Section 2.2** earlier, parts of both the CSP3 Site and the Plot D Site are currently in use and generate vehicular arrivals/departures during the AM and PM peaks.

5.2.17 All uses at the Site would cease once the Proposed Development is constructed; as such, the vehicular arrivals and departures in the AM and PM peak hours will be deducted from the Baseline scenario to demonstrate the net impact of the Proposed Development.

5.2.18 To establish the existing movements from the uses within the Site, in/out surveys were undertaken at each access point on 15th November 2022. Full Traffic Survey data is included within **Appendix B** to the rear of this report.

5.2.19 The existing trip generation of the uses within the Site during the AM and PM peaks is summarised in **Table 5.2** below:

Sites	AM Peak (08:30 – 09:30)						PM Peak (17:45 – 18:45)					
	Arrive		Depart		Total		Arrive		Depart		Total	
	PCU	HGV	PCU	HGV	PCU	HGV	PCU	HGV	PCU	HGV	PCU	HGV
Site 1. Carers Manchester	7	3	2	1	9	4	1	0	1	0	2	0
Site 2. Carers Manchester	0	0	1	0	0	1	0	0	0	0	0	0
Site 3. Marketing Suite	1	0	0	0	1	0	0	0	0	0	0	0
Site 4. Plot D	5	2	5	2	10	4	2	1	5	0	7	1
Site 5. Plot D	1	0	0	0	1	0	0	0	0	0	0	0
Site 6. Polish and Glow	1	0	1	0	2	0	0	0	0	0	0	0
Site 7. Polish and Glow	2	0	2	0	4	0	0	0	1	0	1	0
Site 8. GJS Car Park	7	0	4	0	11	0	4	0	14	0	18	0
Site 9. Owen St Car Park	9	0	4	0	13	0	7	0	6	0	13	0
Site 10. Owen St Car Park	0	0	0	0	0	0	0	0	0	0	0	0
Total	33	5	19	3	51	9	14	1	27	0	41	1

Table 5.2 – Existing Trip Generation – Uses at CSP3 and Plot D

5.2.20 Based on **Table 5.2**, it is established that there are 51 two-way movements generated by existing uses in the derived AM peak hour (including 9 HGV movements) and 41 two-way movements during the derived PM peak hour (including 1 HGV movement).

5.2.21 The vehicular flows have been assigned to their approximate location on Great Jackson Street/Owen Street/Melbourne Street and subsequently distributed through the wider highway network. These trips have been distributed using Journey to Work Data obtained via the 2011 Census.

5.2.1 The dataset used is the 'Location of Usual Residence and Place of Work by Method of Travel to Work' (MSOA Level). This has been used to find the origins of trips to work to the destination centred around the MSOA where the Sites are located – Manchester 060. The distribution has been calculated with by considering the most likely route to be selected based on the existing traffic conditions, expected route and suggested route by online route planners. This is shown in **Traffic Figure 5**.

5.2.2 The assigned existing traffic for the AM and PM peak hours is included in **Traffic Figures 6 and 7**.

Baseline Flows

5.2.3 To establish suitable Baseline flows for assessment, the vehicular movements associated with the existing uses at the Site (**Traffic Figures 6 and 7**) have been removed from the 2022 Survey flows (**Traffic Figures 1 and 2**) to create the AM and PM Net Impact flows (**Traffic Figures 8 and 9**).

5.2.4 Subsequently, all Committed Development flows (**Traffic Figures 3 and 4**) have been included to the Net Impact flows to create the AM and PM Baseline scenarios in **Traffic Figures 10 and 11**.

5.3 Residential Trip Generation & Distribution

Trip Generation

5.3.1 The Site is located on the south-west edge of Manchester City Centre, situated in the Deansgate-Castlefield area. The Site is also within walking distance of the Deansgate rail station, the Deansgate-Castlefield Metrolink station, and is well connected to central Manchester, Spinningfields, and Hulme. As detailed in **Section 4.5**, the Site is located in an area with a GMAL rating of 8, with excellent accessibility. This is a particular strength of the Site, which offers strong multi-modal opportunities.

5.3.2 Due to the proximity of sustainable transport modes, the Proposed Development has been designed with low parking to further promote the usage of such modes. Overall, it is unlikely that the Site will generate a significant number of vehicle trips during the peak hours.

5.3.3 Notwithstanding, a trip generation assessment has been undertaken to establish the potential trip generation and subsequent highway impact.

5.3.4 In order to derive the trips associated with the Proposed Development, the Trip Rate Information Computer System (TRICS) database (multi-modal) has been interrogated for similar Sites. The selection criteria used is as follows:

- Residential Sites – Flats Privately Owned;

- All Sites in England excluding Greater London;
- Sites located on Edge of Town Centre location;
- Sites with car parking less than one space per unit (to reflect the provision proposed); and
- Surveys undertaken when Covid measures were not in place.

5.3.5 The full TRICS output is provided in **Appendix D** to the rear of this report.

5.3.6 **Table 5.3** below summarises the person trip rates derived from the TRICS database, displaying Total Person trip rates through the AM peak, PM peak, and daily trip rates. It should be noted that the highest peak hour trip rates have been utilised for robustness and this may not correlate to the highway peaks that have been calculated via the traffic surveys.

	Total Person Trip Rates		
	Arrive	Depart	Total
AM Peak (08:00 – 09:00)	0.088	0.387	0.475
PM Peak (17:00 – 18:00)	0.398	0.227	0.625
Daily Trip Rates	2.300	2.142	4.442

Table 5.3 – Total Person Trip Rates

5.3.7 The trip rates from **Table 5.3** have been used in conjunction with the number of overall units for the Proposed Development to calculate the Total Person trip generation. This is summarised in **Table 5.4** below:

	Total Person Trip Generation – 2,388 Units		
	Arrive	Depart	Total
AM Peak (08:00 – 09:00)	210	924	1,134
PM Peak (17:00 – 18:00)	950	542	1,493
Daily Trips	5,115	5,492	10,607

Table 5.4 – Total Person Trip Generation

5.3.8 The Proposed Development could generate a total of 10,607 two-way daily person trips. This includes 1,134 two-way movements during the AM Peak and 1,493 two-way movements during the PM Peak.

5.3.9 In order to gain a greater level of accuracy of modal split at the Site, this assessment has utilised the Greater Manchester Travel Diary Surveys (GMTRADS) data, which has been obtained from TfGM.

5.3.10 The GMTRADS data is Greater Manchester specific and includes information on how City Centre residents commute to their place of work; the latest survey data is from 2019.

5.3.11 As this data source reflects more recent transport infrastructure improvement, such as Phase 3 of the Metrolink expansion which saw new lines to South Manchester (opened 2011), Oldham and Rochdale (opened 2012), East Manchester (opened 2013), and Manchester Airport (2014), and also the Bee Network commencing in recent years, the GMTRADS approach is preferred in comparison to 2011 Census 'Method of Travel to Work' data which would not reflect the significant upgrades to sustainable modes of travel.

5.3.12 A summary of the Mode Share data from TRADS is displayed in **Table 5.5** below.

Mode Share	Arrival Percentage	Departure Percentage	Total Percentage
Car driver	27.0%	27.0%	27.0%
Car passenger	3.0%	3.0%	3.0%
Walk	7.0%	7.0%	7.0%
Cycle	14.0%	14.0%	14.0%
Motorcycle	0.5%	0.5%	0.5%
Train	9.0%	9.0%	9.0%
Metrolink	15.0%	15.0%	15.0%
Bus	25.0%	25.0%	25.0%
Taxi	0.5%	0.5%	0.5%
Total	100%	100%	100%

Table 5.5 – Mode Share

(Source: GMTRADS 2019 Survey Data, TfGM)

5.3.13 Based on **Table 5.5**, it has been established that 27% of City Centre residents travel to their place of work as a car driver.

5.3.14 The data in **Table 5.5** has been used to split the daily trip generation in **Table 5.4** by mode. As such, the multi-modal daily trip generation for all residential units is detailed in full in **Table 5.6** below:

Mode Share	Arrival	Departure	Total
Car driver	1381	1483	2864
Car passenger	153	165	318
Walk	358	384	743
Cycle	716	769	1485
Motorcycle	26	27	53

Train	460	494	955
Metrolink	767	824	1591
Bus	1279	1373	2652
Taxi	26	27	53
Total	5115	5492	10607

Table 5.6 – Multi-Modal Daily Trip Generation (using GMTRADS)

- 5.3.15 Based on **Table 5.6**, it is established that the total residential units would generate 2,864 two-way vehicular trips per day.
- 5.3.16 To establish the hourly profile of the 2,864 two-way daily vehicular trips, the TRICS analysis also derived vehicular trip rates in addition to the total person trip rates. These vehicular trip rates have been used to quantify a vehicular hourly profile between the surveyed hours of 07:00 – 19:00.
- 5.3.17 The calculated vehicle hourly profile is displayed in **Table 5.7** below; the full TRICS output is provided in **Appendix D** to the rear of this report.

Time	Total Person Trip Generation	
	Arrive	Depart
07:00-08:00	4%	13%
08:00-09:00	3%	19%
09:00-10:00	6%	8%
10:00-11:00	4%	5%
11:00-12:00	6%	9%
12:00-13:00	11%	13%
13:00-14:00	8%	5%
14:00-15:00	6%	6%
15:00-16:00	8%	2%
16:00-17:00	10%	4%
17:00-18:00	17%	7%
18:00-19:00	15%	8%
Total	100%	100%

Table 5.7 – Residential Vehicular Hourly Profile (TRICS)

- 5.3.18 To quantify the overall residential vehicular trip generation during peak hours, the daily vehicular trip generation calculated in **Table 5.6** has been combined with the hourly profile derived in **Table 5.7**. On

this basis, **Table 5.8** below demonstrates the peak hour vehicular trip generation for the residential element of the Proposed Development.

Time	Arrivals	Departures	Total
08:00-09:00	35	278	313
17:00-18:00	237	104	341
Daily	1,381	1,483	2,864

Table 5.8 – Residential Peak Hour Vehicular Trip Generation (CSP3 and Plot D)

5.3.19 **Table 5.8** demonstrates that the overall residential uses could generate 313 two-way movements during the AM peak hour and 341 two-way movements during the PM peak hour.

5.3.20 For completeness, **Tables 5.9 – 5.13** demonstrates the residential trip generation for each residential building.

Tower C7

Time	Arrivals	Departures	Total
08:00-09:00	6	49	55
17:00-18:00	42	18	60
Daily	244	262	506

Table 5.9 – Peak Hour Vehicular Trip Generation (Tower C7)

Tower C8

Time	Arrivals	Departures	Total
08:00-09:00	6	49	55
17:00-18:00	42	18	60
Daily	244	262	506

Table 5.10 – Peak Hour Vehicular Trip Generation (Tower C8)

Tower E1

Time	Arrivals	Departures	Total
08:00-09:00	7	52	59
17:00-18:00	45	20	64
Daily	261	280	541

Table 5.11 – Peak Hour Vehicular Trip Generation (Tower E1)**Tower E2**

Time	Arrivals	Departures	Total
08:00-09:00	7	52	59
17:00-18:00	45	20	64
Daily	261	280	541

Table 5.12 – Peak Hour Vehicular Trip Generation (Tower E2)**CSP3 (C7 + C8 + E1 + E2)**

Time	Arrivals	Departures	Total
08:00-09:00	26	203	229
17:00-18:00	174	76	249
Daily	1,010	1,084	2,094

Table 5.13 – Peak Hour Vehicular Trip Generation (CSP3)

- 5.3.21 **Table 5.13** demonstrates that CSP3 could generate 229 two-way vehicular movements during the AM peak hour and 249 two-way vehicular movements during the PM peak hour.

Plot D Residential Tower

Time	Arrivals	Departures	Total
08:00-09:00	9	75	84
17:00-18:00	64	28	92
Daily	371	399	770

Table 5.14 – Peak Hour Vehicular Trip Generation (Plot D Residential Tower)

5.3.22 **Table 5.14** demonstrates that the Plot D Residential Tower could generate 84 two-way vehicular movements during the AM peak hour and 92 two-way vehicular movements during the PM peak hour.

Trip Distribution

5.3.23 The trip distribution for all residential towers has been calculated using journey to work data from the 2011 Census. The dataset used is the 'Location of Usual Residence and Place of Work by Method of Travel to Work' (MSOA Level). This has been used to find the destinations of trips to work from home-based origins centred around the MSOA where the Site is located – Manchester 060.

5.3.24 The distribution has been calculated by considering the total car trips from each phase of the Proposed Development and the most likely route to be selected by future residents to/from the Proposed Development, based on the existing traffic conditions, expected route and suggested route by online route planners.

5.3.25 However, due to each residential tower having its own access to basement car parking, the access/egress arrangements for each tower will differ. In addition, restrictions such as proposed one-way arrangements will define routing for certain towers. As such, the distribution at each junction within the study area will change based on the car park access arrangements.

5.3.26 Plot C7 be directly accessed via Melbourne Street – which can only be accessed via the A57(M) Mancunian Way and continues towards Great Jackson Street as a one-way route. On this basis, the access to Plot C7 will be a left in, left-out arrangement, and the trip distribution for Plot C7 is shown in **Traffic Figure 12**.

5.3.27 The basement car park from Plot C8 will be taken via Silvercroft Street which is a two-way single carriageway road connecting Great Jackson Street to the east at a priority junction. The trip distribution for Plot C8 is shown in **Traffic Figure 13**.

5.3.28 Residents living in Plot E2 will be required to travel along the newly created section of Melbourne Street (to the east of Great Jackson Street) which is proposed to be shared with the recently consented Plot F1. Access and egress to Plot E2 will be via Great Jackson Street/eastern section of Melbourne Street only; trip distribution for Plot E2 is shown in **Traffic Figure 14**.

5.3.29 Located to the east of the Plot E2 access, droppable bollards or a similar control system is proposed. This will allow residents of Plot E1 only to travel through. Past the bollards, residents will turn left onto Owen Street at a priority junction and travel north to the entrance of the Plot E1 basement car park. In addition to access via the eastern section of Melbourne Street, Plot E1 residents can access/egress the car park via Owen Street and A56 Chester Road to the north. The trip distribution for Plot E1 is shown in **Traffic Figure 15**.

5.3.30 The Plot D Residential Tower is to be accessed directly via a priority junction on Great Jackson Street. However, the internal road through Plot D routes traffic through the site to an egress on Melbourne

Street (west of Great Jackson Street). As such, all egress manoeuvres are required to undertake a right turn on Melbourne Street towards the junction with Great Jackson Street. The trip distribution for the Plot D Residential Tower is shown in **Traffic Figure 16**.

Trip Assignment

5.3.31 Based on the distribution of development traffic, the vehicular arrival and departures attributed to each Tower have been prepared for both the AM and PM peaks. The following Traffic Figures demonstrate the trip generation at the specified junctions during the peak hours:

- **Traffic Figures 17 and 18** – Tower C7;
- **Traffic Figures 19 and 20** – Tower C8;
- **Traffic Figures 21 and 22** – Tower E2;
- **Traffic Figures 23 and 24** – Tower E1; and
- **Traffic Figures 25 and 26** – Plot D Residential Tower.

5.4 Office Trip Generation & Distribution

Trip Generation

5.4.1 Whilst it is noted that the Office building only has two surface parking spaces, which acknowledges the sustainable location in proximity to the City Centre and Deansgate rail station/Deansgate-Castlefield Metrolink station, a similar approach to the residential trip generation has been undertaken for robustness and consistency.

5.4.2 As such, a multi-modal trip generation assessment has been undertaken via the TRICS Database. The selection criteria used is as follows:

- Employment – Office Use;
- All Sites in England excluding Greater London and Ireland; and
- Sites located on Edge of Town Centre location.

5.4.3 **Table 5.15** below summarises the person trip rates derived from the TRICS database, displaying Total Person trip rates through the AM peak, PM peak, and daily trip rates. Full TRICS outputs are provided in **Appendix D** to the rear of this report.

	Total Person Trip Rates		
	Arrive	Depart	Total
AM Peak (08:00 – 09:00)	2.964	0.277	3.241
PM Peak (17:00 – 18:00)	0.173	2.450	2.623
Daily Trip Rates	12.157	12.080	24.237

Table 5.15 – Total Person Trip Rates (Office Use)

- 5.4.4 The trip rates from **Table 5.15** have been used in conjunction with the Gross Floor Area (GFA) of the Office Building to calculate the total person trip generation. This has been calculated in **Table 5.16** below:

	Total Person Trip Generation – 2,059m ² GFA		
	Arrive	Depart	Total
AM Peak (08:00 – 09:00)	61	6	67
PM Peak (17:00 – 18:00)	4	50	54
Daily Trips	250	249	499

Table 5.16 – Total Person Trip Generation (Office)

- 5.4.5 The Proposed Development could generate a total of 499 two-way daily person trips. This includes 67 two-way movements during the AM Peak and 54 two-way movements during the PM Peak.
- 5.4.6 The GMTRADS Data used within the residential mode share assessment is not available for travel of non-residents who commute into the City Centre. As such, Method of Journey to Work Data from the 2011 Census has been utilised.
- 5.4.7 **Table 5.17** summarises the mode share data for Manchester 060 obtained from the 2011 Census:

Mode	Percentage
Car driver	38.6%
Car passenger	4.0%
Walk	11.5%
Cycle	2.4%
Motorcycle	0.6%
Train	16.6%
Metrolink	6.1%
Bus	19.8%
Taxi	0.3%
Total	100%

Table 5.17 – Office Mode Share
(Source: Census Journey to Work Data, 2011)

- 5.4.8 Based on **Table 5.17**, it has been established that 38.6% of those working within Manchester 060 travel to their place of work by driving a car.

5.4.9 **Table 5.17** has been used to split the multi-modal daily trip generation of the total trips identified in **Table 5.16**. As such, the multi-modal daily trip generation for the Plot D Office Building is detailed in full in **Table 5.18** below:

Mode Share	Arrival	Departure	Total
Car driver	96	96	192
Car passenger	10	10	20
Walk	29	29	58
Cycle	6	6	12
Motorcycle	1	1	3
Train	41	41	83
Metrolink	15	15	31
Bus	50	49	99
Taxi	1	1	2
Total	250	249	499

Table 5.18 – Multi-Modal Daily Trip Generation (using Census)

5.4.10 Based on **Table 5.18**, it is established that the Office Building would generate 192 two-way vehicular trips per day.

5.4.11 To establish the hourly profile of the 192 two-way daily vehicular trips, the TRICS analysis also derived vehicular trip rates in addition to the total person trip rates. These vehicular trip rates have been used to quantify a vehicular hourly profile between the surveyed hours of 07:00 – 19:00.

5.4.12 The calculated vehicle hourly profile is displayed in **Table 5.19** below; the full TRICS output is provided in **Appendix D** to the rear of this report.

Time	Total Person Trip Generation	
	Arrive	Depart
07:00-08:00	10%	1%
08:00-09:00	31%	4%
09:00-10:00	17%	7%
10:00-11:00	7%	7%
11:00-12:00	5%	5%
12:00-13:00	6%	10%

13:00-14:00	9%	8%
14:00-15:00	4%	8%
15:00-16:00	4%	8%
16:00-17:00	4%	13%
17:00-18:00	2%	22%
18:00-19:00	0%	7%
Total	100%	100%

Table 5.19 – Office Vehicular Hourly Profile (TRICS)

5.4.13 To quantify the office vehicular trip generation during peak hours, the daily vehicular trip generation calculated in **Table 5.18** has been combined with the profile derived in **Table 5.19**. On this basis, **Table 5.20** below demonstrates the peak hour vehicular trip generation for the office element of the Proposed Development.

Time	Arrivals	Departures	Total
08:00-09:00	30	4	34
17:00-18:00	2	21	24
Daily	96	96	193

Table 5.20 – Office Peak Hour Vehicular Trip Generation (Plot D)

5.4.14 **Table 5.20** demonstrates that the Plot D Office Building could generate 34 two-way movements during the AM peak hour and 24 two-way movements during the PM peak hour.

5.4.15 It should be again noted that this is a robust trip generation assessment to the Office use with consideration given to the low parking provision proposed.

Trip Distribution

5.4.16 The trip distribution for the office use has been calculated using journey to work data from the 2011 Census. This has been used to find the origins of trips to work to the destination centred around the MSOA where the Plot D Office Building is located – Manchester 060.

5.4.17 As per the residential distribution, this has been calculated by considering the total car trips and the most likely route to be selected by future residents to/from the Proposed Development, based on the existing traffic conditions, expected route and suggested route by online route planners.

5.4.18 The Plot D Office Building distribution follows the same access strategy as the Plot D Residential Tower; access is taken directly via a priority junction on Great Jackson Street, with the internal road routing

through to the egress on Melbourne Street (west of Great Jackson Street). The trip distribution for the Plot D Office Building is shown in **Traffic Figure 27**.

Trip Assignment

- 5.4.19 Based on the distribution of development traffic, the vehicular arrival and departures attributed to the Plot D Office Building have been prepared for both the AM and PM peaks; this is shown in **Traffic Figures 28** and **29**.

5.5 Assessment Traffic Flows

- 5.5.1 All development flows associated with the Proposed Development have been combined; the total AM and PM trip generation flows are included in **Traffic Figures 30** and **31**. Due to the low levels of car parking at the Site, these flows are considered a worst-case assessment.
- 5.5.1 The resultant flows for the CSP3 Site and the Plot D Site have been added to the Base scenario (2022 Surveys + Committed Developments) to form the 'Base + Development' scenario traffic flows. The resultant figures are set out in **Traffic Figures 32** and **33**.

6.0 Capacity Assessments

6.1 Introduction

6.1.1 In this section of the report, the operation of the local highway network has been assessed at the following locations:

- **Junction 1** – Great Jackson Street/Melbourne Street crossroads junction;
- **Junction 2** – A56/Great Jackson Street priority junction;
- **Junction 3** – City Road East/Medlock Street priority junction; and
- **Junction 4** – A56/A5067/A57(M) Deansgate Interchange signalised roundabout.

6.1.2 The above junctions operating under priority control have been modelled utilising TRL's JUNCTIONS programme and those under signal control via JCT Consultancy's LinSig programme.

6.1.3 JUNCTIONS (PICADY for priority junctions and ARCADY for roundabouts) results refer to the Ratio of Flow to Capacity (RFC), delay and queue length predicted on each arm of the junction. An RFC of 1.00 indicates that the arm in question is operating at its theoretical capacity, whilst an RFC of 0.85 or less indicates that the arm is operating within its practical capacity.

6.1.4 LinSig allows traffic engineers to model traffic signals and their effect on traffic capacities and queuing. As well as modelling the effects of traffic signals, LinSig also optimises signal timings to reduce delay or increase capacity at a junction or group of interlinked junctions.

6.1.5 LinSig results refer to the Degree of Saturation (DoS) and Mean Maximum Queue (MMQ) predicted in each lane of the junction. A DoS of 100% indicates that the lane in question is operating at its theoretical capacity (point of saturation), whilst a DoS of 90% or less indicates that the lane is operating within its practical capacity.

6.1.6 The results of the assessments are shown in the following sub-sections and the relevant junction modelling output reports are attached in **Appendix E** to the rear of this report.

6.2 Junction 1 – Great Jackson Street/Melbourne Street Crossroads Junction

6.2.1 **Table 6.1** presents a summary of the PICADY results for the Base scenario, whilst **Table 6.2** presents the results of the Base + Development scenario.

6.2.2 This assessment accounts for the western section of Melbourne Street (to the west of Great Jackson Street) becoming one-way only in an easterly direction.

Approach	Base					
	AM Peak			PM Peak		
	RFC	Ave Queue	Delay (s)	RFC	Ave Queue	Delay (s)
Melbourne Street (W) - Left Turn	0.23	0.3	8.69	0.24	0.4	10.07
Melbourne Street (W) - Ahead/Right Turn	0.09	0.1	9.73	0.27	0.4	12.31
Great Jackson St (S)	0.01	0.0	5.55	0.03	0.0	5.66
Melbourne Street (E)	0.19	0.3	11.41	0.07	0.1	10.62

Table 6.1 – Great Jackson Street/Melbourne Street Crossroads Junction – Base Scenario

Approach	Base + Development					
	AM Peak			PM Peak		
	RFC	Ave Queue	Delay (s)	RFC	Ave Queue	Delay (s)
Melbourne Street (W) - Left Turn	0.41	0.8	11.91	0.44	0.8	14.30
Melbourne Street (W) - Ahead/Right Turn	0.24	0.3	12.28	0.42	0.8	16.40
Great Jackson St (S)	0.02	0.0	5.62	0.12	0.2	5.96
Melbourne Street (E)	0.37	0.6	14.65	0.15	0.2	11.80

Table 6.2 – Great Jackson Street/Melbourne Street Crossroads Junction – Base + Development Scenario

6.2.3 Based on the results shown in the above **Tables 6.1** and **6.2**, the Great Jackson Street/Melbourne Street Crossroads Junction is predicted to operate within practical capacity in all the assessed scenarios.

6.3 Junction 2 – Great Jackson Street / A56 Chester Road Junction

6.3.1 **Table 6.3** presents a summary of the PICADY results for the Base scenario, whilst **Table 6.4** presents the results of the Base + Development scenario.

6.3.2 As this junction does not allow a right turn from the A56 Chester Road to Great Jackson Street, there is only one arm giving way.

Approach	Base					
	AM Peak			PM Peak		
	RFC	Ave Queue	Delay (s)	RFC	Ave Queue	Delay (s)
Great Jackson Street	0.54	1.3	13.19	0.52	1.2	13.87

Table 6.3 – Great Jackson Street/A56 Chester Road – Base Scenario

Approach	Base + Development					
	AM Peak			PM Peak		
	RFC	Ave Queue	Delay (s)	RFC	Ave Queue	Delay (s)
Great Jackson Street	0.81	4.2	30.65	0.66	2.0	19.54

Table 6.4 – Great Jackson Street/A56 Chester Road – Base + Development Scenario

- 6.3.3 Based on the results shown in the **Tables 6.3** and **6.4**, the Great Jackson Street / A56 Chester Road priority junction is predicted to operate within practical capacity in all the assessed scenarios.

6.4 Junction 3 – City Road East / Medlock Street Priority Junction

- 6.4.1 **Table 6.5** presents a summary of the PICADY results for the Base scenario, whilst **Table 6.6** presents the results of the Base + Development scenario.

Approach	Base					
	AM Peak			PM Peak		
	RFC	Ave Queue	Delay (s)	RFC	Ave Queue	Delay (s)
City Road East (to Medlock St N)	0.14	0.2	8.33	0.10	0.1	7.39
City Road East (to Medlock St S)	0.24	0.3	13.55	0.20	0.3	13.46
Medlock St (N)	0.07	0.1	7.14	0.09	0.1	7.02

Table 6.5 – City Road East / Medlock Street – Base Scenario

Approach	Base + Development					
	AM Peak			PM Peak		
	RFC	Ave Queue	Delay (s)	RFC	Ave Queue	Delay (s)
City Road East (to Medlock St N)	0.20	0.3	9.68	0.12	0.1	7.82
City Road East (to Medlock St S)	0.37	0.6	16.63	0.26	0.4	15.01
Medlock St (N)	0.08	0.1	7.23	0.12	0.2	7.38

Table 6.6 – City Road East / Medlock Street – Base + Development Scenario

6.4.2 Based on the results shown in the **Tables 6.5** and **6.6**, the City Road East / Medlock Street priority junction is predicted to operate within practical capacity in all the assessed scenarios.

6.5 Junction 4 – A56/A5067/A57(M) Deansgate Interchange

6.5.1 **Table 6.7** presents a summary of the LinSig results for the Base scenario, whilst **Table 6.8** presents the results of the Base + Development scenario.

Link	Lane Descriptor	Base			
		AM Peak		PM Peak	
		DoS	MMQ	DoS	MMQ
1/1	A56 Eastbound Left	69.9%	8.3	58.6%	6.3
1/2+1/3	A56 Eastbound Ahead Ahead2	75.6 : 89.5%	11.0	66.3 : 74.7%	7.8
2/1	Chorlton Road Left Left2	92.8%	9.6	74.5%	5.2
2/2	Chorlton Road Left	84.7%	7.4	70.0%	5.1
3/1	Egerton Street Ahead Left	29.2%	1.4	43.3%	2.3
3/2	Egerton Street Ahead	53.7%	3.0	57.1%	3.5
4/1	A56 Westbound Left Ahead	52.2%	4.3	65.7%	4.8
4/3+4/2	A56 Westbound Ahead Left Ahead2	70.3 : 70.3%	6.7	71.9 : 71.9%	5.6
4/4	A56 Westbound Ahead	54.8%	5.0	59.7%	4.7
5/1	Mancunian Way WB Slip Road Ahead Left	79.9%	5.8	55.3%	1.9
5/2	Mancunian Way WB Slip Road Ahead Ahead2	79.8%	5.8	55.4%	1.9
6/1	Ahead	21.4%	0.0	14.1%	0.1
6/2	Ahead	59.8%	8.7	46.5%	4.0
7/1	Ahead	27.7%	1.0	36.9%	1.2
7/2	Ahead	44.3%	5.4	38.5%	4.7
8/2+8/1	Ahead	54.5 : 54.5%	4.7	35.1 : 35.1%	2.3
9/1	Ahead	33.6%	2.9	23.8%	1.3
9/2	Ahead	61.7%	5.7	47.1%	3.3
10/1	Left	60.0%	5.4	39.5%	3.3
10/2	Left	59.9%	5.4	39.4%	3.2
11/1	Ahead	75.8%	8.3	56.2%	5.1
11/2+11/3	Right Ahead Right2	89.7 : 89.7%	7.2	73.6 : 73.6%	5.1
12/2+12/1	Left Ahead Right	86.2 : 86.2%	6.4	73.6 : 73.6%	5.1
12/3+12/4	Right Ahead Right2	86.9 : 86.9%	8.8	75.6 : 75.6%	5.5
14/1	Ahead	33.6%	4.7	35.3%	5.1

Table 6.7 – Deansgate Interchange – Base Scenario

Link	Lane Descriptor	Base + Development			
		AM Peak		PM Peak	
		DoS	MMQ	DoS	MMQ
1/1	A56 Eastbound Left	70.6%	8.4	54.9%	6.1
1/2+1/3	A56 Eastbound Ahead Ahead2	75.7 : 89.7%	11.0	62.4 : 62.2%	7.3
2/1	Chorlton Road Left Left2	93.1%	9.8	62.0%	4.4
2/2	Chorlton Road Left	84.7%	7.4	60.6%	4.6
3/1	Egerton Street Ahead Left	35.0%	1.8	52.2%	3.1
3/2	Egerton Street Ahead	51.1%	2.7	60.7%	3.8
4/1	A56 Westbound Left Ahead	58.6%	5.0	58.7%	4.8
4/3+4/2	A56 Westbound Ahead Left Ahead2	0.0 : 85.0%	9.8	68.3 : 68.3%	6.0
4/4	A56 Westbound Ahead	70.1%	7.2	53.5%	4.7
5/1	Mancunian Way WB Slip Road Ahead Left	84.2%	7.4	57.5%	2.2
5/2	Mancunian Way WB Slip Road Ahead Ahead2	84.3%	7.5	57.7%	2.2
6/1	Ahead	19.0%	0.0	12.7%	0.0
6/2	Ahead	62.3%	8.8	42.2%	2.9
7/1	Ahead	22.6%	0.1	30.8%	1.1
7/2	Ahead	54.2%	6.9	40.9%	5.0
8/2+8/1	Ahead	54.5 : 54.5%	5.1	36.9 : 36.9%	2.6
9/1	Ahead	41.5%	3.6	34.2%	2.1
9/2	Ahead	69.6%	6.5	53.1%	3.6
10/1	Left	60.0%	5.6	43.7%	3.4
10/2	Left	59.9%	5.6	43.5%	3.4
11/1	Ahead	84.2%	9.4	69.9%	6.2
11/2+11/3	Right Ahead Right2	98.4 : 98.4%	9.4	82.3 : 82.3%	5.2
12/2+12/1	Left Ahead Right	87.9 : 87.9%	8.0	89.1 : 89.1%	9.0
12/3+12/4	Right Ahead Right2	88.9 : 88.9%	8.9	90.6 : 90.6%	9.1
14/1	Ahead	33.8%	4.8	37.4%	5.2

Table 6.8 – Deansgate Interchange – Base + Development Scenario

6.5.2 It is recognised that the signalised junction operates using SCOOT signal technology, therefore the in each scenario, the signal timings have been optimised.

6.5.3 **Tables 6.7** demonstrates that during the Base scenario, the majority of approaches at the Deansgate Interchange operate within practical capacity. It is noted that during the AM peak hour, Link 2/1 (Chorlton Road) is noted to be above practical capacity with DoS of 92.8%, resulting in a maximum queue length

of 9.6 PCUs. In addition, internal links 11/2 and 11/3 are noted to be approaching its practical capacity, with DoS of 89.7%.

- 6.5.4 When the development flows are included, all approach links (apart from Links 2/1, 11/2 and 11/3) are within practical capacity in the AM peak hour. **Table 6.8** demonstrates that during the AM peak, the DoS of the Chorlton Road link (2/1) increases to 93.1% (an increase of 0.3% from the Base) with the queuing increasing to 9.8 PCUs. It should be noted that this equates to a queue of c.60m; this can be accommodated on the Chorlton Road approach without blocking back towards any adjacent junctions.
- 6.5.5 The results indicate that Links 11/2 and 11/3 would exceed practical capacity with the development flows in place - but remain within theoretical capacity. There is an increase in DoS to 98.4% and an increase in queueing of 2.2 PCUs as a result of the Proposed Development.
- 6.5.6 With respect to the PM peak, all approaches are within practical capacity during the Base scenario. When development flows are included, all approach links remain within practical capacity – apart from Links 12/3 + 12/4, which increase slightly over practical capacity to 90.6%, but remain well within the theoretical capacity.
- 6.5.7 The results with the Proposed Development flows therefore show an expected, slight increase in both DoS and queue lengths. Notwithstanding this, the increases are not considered significant or severe in the context of the National Planning Policy Framework (NPPF).

6.6 Summary and Conclusions

- 6.6.1 As discussed in **Section 5.3**, the Site is located on the south-west edge of Manchester City Centre with excellent accessibility. This is a particular strength of the Site, which offers strong multi-modal opportunities.
- 6.6.2 Due to the proximity of sustainable transport modes, the Proposed Development has been designed with low parking to further promote the usage of such modes. Overall, it is unlikely that the Site will generate a significant number of vehicle trips during the peak hours. The trip generation assessment is therefore considered a worst-case assessment.
- 6.6.3 The capacity assessment results demonstrate that Junctions 1 – 3 will continue to operate within capacity in all scenarios.
- 6.6.1 Whilst certain approaches at Junction 4 – Deansgate Interchange – would operate above practical capacity in the Baseline scenario during the AM peak, all operate within theoretical capacity. This continues when the Proposed Development flows are included.
- 6.6.2 In addition, during the PM peak, all approaches are within practical capacity during the Base scenario. When development flows are included, all approach links remain within practical capacity – apart from

Links 12/3 + 12/4, which increase slightly over practical capacity to 90.6%, but remain well within the theoretical capacity.

- 6.6.3 It is concluded that the traffic impacts of the development would not be significant or severe in the context of the National Planning Policy Framework (NPPF).

7.0 Transport Planning Policy

7.1 Introduction

- 7.1.1 The following section sets out key local and national transport planning policies, and how the development proposals relate to them.

7.2 National Planning Policy Framework (2021)

- 7.2.1 The National Planning Policy Framework (NPPF) sets out the current national transport planning policy and outlines the important role that transport policies have to play in facilitating sustainable development.

- 7.2.2 Paragraph 11 states that:

“Plans and decisions should apply a presumption in favour of sustainable development.”

- 7.2.3 For decision taking this means granting permission unless:

“...any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies.”

- 7.2.4 Section 9 of the NPPF is entitled *Promoting Sustainable Transport* and outlines the important role that transport policies have to play in facilitating sustainable development. It states that:

“The planning system should actively manage patterns of growth ...Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.”

- 7.2.5 The document emphasises the need for developments to offer a choice of sustainable modes of transport to *“reduce congestion and emissions, and improve air quality and public health”* and provide *“safe and suitable access”* for all users.

- 7.2.6 Paragraph 110 of the NPPF states that in assessing Sites that may be allocated for development in plans, or specific applications in development, it should be ensured that:

- a) *“appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*
- b) *safe and suitable access to the Site can be achieved for all users;*
- c) *the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*

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

7.2.7 The Proposed Development shows that safe and suitable access to the Site can be achieved, where improvements would be put in place to improve pedestrian and cycle amenity and permeability. There is excellent public transport accessibility and it is also not anticipated that the proposals would result in any significant impacts on the highway network.

7.2.8 Paragraph 111 of the NPPF states that:

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

7.2.9 The junction capacity assessment results demonstrate that Junctions 1 – 3 on the local highway network continue to operate well during peak hours with a sufficient amount of residual capacity available in both the Base assessment scenarios, without and with the Proposed Development in place, and the Proposed Development would not have a severe impact on Junction 4 – the Deansgate Interchange signalised junction.

7.2.10 Paragraph 112 of the NPPF states that applications for development should:

- *“give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*
- *address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
- *create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
- *allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
- *be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.”*

7.2.11 The Proposed Development is situated in a highly accessible location at the edge of Manchester City Centre. There is a good level of walking and cycling infrastructure adjacent to the Site, and a wide range of public transport services are accessible within walking distance of the Site. The streetscape has been designed to provide access for all users, and the parking proposals include provision for EV charging points.

7.2.12 The Proposed Development therefore accords with the general principles of the NPPF.

7.3 National Planning Practice Guidance (NPPG)

7.3.1 In addition to the NPPF, a National Planning Practice Guidance (NPPG) document has also been developed by the Ministry of Housing, Communities & Local Government in 2012, with a revised version in 2020. It brings together planning practice guidance for England and sits alongside the NPPF. Within this document there is a specific section that clarifies the over-arching principles on Travel Plans, Transport Assessments and Transport Statements. The guidance states that:

“Travel Plans, Transport Assessments and Statements can positively contribute to:

- *Encouraging sustainable travel;*
- *Lessening traffic generation and its detrimental impacts;*
- *Reducing carbon emissions and climate impacts;*
- *Creating accessible, connected, inclusive communities;*
- *Improving health outcomes and quality of life;*
- *Improving road safety; and*
- *Reducing the need for new development to increase existing road capacity or provide new roads.”*

7.3.2 The guidance on Transport Assessments and Statements re-iterates the circumstances in which either document would usually be required. Based on the size and nature of the proposed development, and through discussions with Highways Officers at MCC and TfGM, a TA has been prepared to consider the impacts of the Proposed Development.

7.3.3 The NPPG has been considered in the production of this TA and the accompanying FTP (**Document Reference: 081453-CUR-XX-XX-T-TP-00002**).

7.3.4 As outlined above, this TA demonstrates that the Site is accessible by active and sustainable modes of travel, and that safe and suitable access can be gained to the development. Moreover, sustainability is a key theme that runs through all aspects of the development proposals, with a strong emphasis on active and sustainable travel, promoting low and zero carbon travel choices. The development proposals therefore apply the principles set out in the NPPG and will seek to create a sustainable development and make a positive contribution to the local area.

7.4 Manchester Core Strategy (2012 – 2027)

7.4.1 The Manchester Core Strategy promotes similar principles to the NPPF. It contains three specific “Transport” policies, comprising:

- Policy T1 – Sustainable Transport;
- Policy T2 – Accessible areas of opportunity and need; and
- Policy T3 – Strategic Integration.

7.4.2 Policy T1 focuses on sustainable transport and access for all. The accessibility of the Site would encourage users of the Proposed Development to travel by sustainable modes.

7.4.3 Policy T2 of the Manchester Core Strategy states:

“The Council will actively manage the pattern of development to ensure that new development...Within the City Centre, provides a level of car parking which reflects the highly accessible nature of the location, as well as the realistic requirements of the users of the development.”

7.4.4 The proposed parking provision at the Site is reflective of the highly accessible nature of the Proposed Development, whilst considering the realistic requirements of the users. The Proposed Development would benefit from active and sustainable transport links across the city centre.

7.4.5 Manchester City Council considers parking provision in the city on a case-by-case basis, and it is noted that Manchester City Council has recently accepted new developments with low or no parking provision in areas that have high levels of public transport accessibility in the vicinity and proximity to City Centre locations. The approach to car parking was agreed as part of the GJS Framework and consistent with other recently approved Plots.

7.4.6 The cycle parking proposals are in accordance with the transport policies set out in the Manchester City Council Core Strategy, with 100% provision for residents.

7.4.7 Policy T3 is in relation to strategic integration of developments with the sustainable transport network. The Proposed Development would not prejudice the implementation of any of the strategic integration projects.

7.5 Greater Manchester Transport Strategy 2040

7.5.1 In January 2021, TfGM published a 2040 Vision for Transport to develop flexible and customer-focused travel choices, supported by smart information, ticketing and payment systems, across a truly integrated Greater Manchester transport network. This Transport Strategy outlined that road transport is responsible for 80% of NO₂ pollution at the roadside, where it is most damaging to health, and that the cost of congestion in Greater Manchester has been estimated by TfGM to be £1.3 billion per year. The Transport Strategy states an ambition for a well-connected, zero carbon Regional Centre at the heart of the North.

7.5.2 Under Policy 3, the Transport Strategy states that TfGM will “maintain a programme of interventions encouraging people to make sustainable journeys, supported through journey planning tools, and information to encourage travel behaviour change and mode shift, in order to make the most efficient use of available capacity (particularly during peak periods)”. Such interventions comprise:

- *“Reducing the carbon and environmental cost of journeys;*

- *New ways of working which make the best use of the transport network;*
- *Delivering public health benefits through enabling more active travel;*
- *Improving access to key services and jobs;*
- *Maximising sustainable travel in new developments; and*
- *Becoming more resilient to disruption.”*

7.5.3 Under Policy 4, TfGM will also “work with developers to ensure that new developments are accessible by sustainable modes, and to reduce transport emissions and impacts on the highway network”. This will be in accordance with the principles of:

- *“Reducing the need to travel;*
- *Reducing the need to travel by car, and the distance travelled;*
- *Maximising accessibility by sustainable modes;*
- *Making the best use of existing infrastructure, particularly through increasing the density of development close to public transport nodes;*
- *Maximising opportunities to provide additional public transport; and*
- *Designing to encourage active travel.”*

7.5.4 The above principles are reflected in the accompanying FTP, together with a wide range of initiatives to minimise the number of car trips generated by the development and encourage residents, staff and visitors to use sustainable modes of transport.

7.5.5 It is considered that the Proposed Development will not adversely impact the transport network, and instead would support the Transport Strategy by enhancing opportunities for sustainable travel by integrating into existing infrastructure.

7.6 Manchester Residential Quality Guidance

7.6.1 The ‘Manchester Residential Quality Guidance’ document sets out guidance for design quality standards for residential development in Manchester including maximum car parking provision.

7.6.2 The document seeks to promote development that will be designed with full regard to the principles of sustainability, including accessibility for all, energy efficiency and the contribution that the public realm can make to the ‘greening’ of the city.

7.6.3 It also seeks to underpin and contribute to the ambitions for the city of being a beacon for sustainable design; energy-efficient, sustainable and affordable homes to rent and buy; encourage walking, cycling and the use of public transport. The document also seeks to promote the development of neighbourhoods that make it easy for people to get around by means other than the car.

7.6.4 Finally, it also states: *"City Centre - Developments will be required to provide where possible, an appropriate level of car parking within the constraints of site specific circumstances and other requirements"*.

7.6.5 The Proposed Development supports these principles through the provision of an accessible and connected sustainable development, with sufficient parking based on its accessible location.

7.7 Great Jackson Street Development Framework

7.7.1 The GJS Framework was prepared in 2018 in order to guide the future comprehensive regeneration of the Great Jackson Street area of Manchester City Centre. It updated the previous 2007 and 2015 Development Frameworks, which were endorsed by Manchester City Council.

7.7.2 The vision of the GJS Framework remains to create a vibrant, safe, secure and sustainable community.

7.7.3 The masterplan principally relates to creation of an enhanced format of high density development, which will enable the provision of a higher level of public realm and will improve the quality of the residential environment.

7.7.4 The GJS Framework key principles include the following:

- *"Create a series of robustly tested tall buildings located around the perimeter of the site, in line with the originally agreed locations in the 2015 Framework;*
- *Create a larger network of pleasant, landscaped and naturally secure streets throughout the site to enhance the amenity of future residents, as well as strengthen connections with Hulme Park, adjoining neighbourhoods, adjoining regeneration areas, and the wider City Centre;*
- *Create fully accessible public and private spaces, as part of a distinctive and broader place-making strategy. This will be essential in terms of supporting high density forms of development, as well as improving the amenity for the communities that are proposed to be formed within this area;*
- *New public realm will continue to incorporate well-designed hard and soft landscaping, open up the River Medlock, and establish successful linkages back to Hulme Park."*

7.7.5 The Proposed Development supports these principles through the creation of an accessible and sustainable development with a focus on open, public spaces. This will be achieved by opening up new routes between the buildings and the high-quality public realm environment.

7.8 Conclusions

7.8.1 This policy review demonstrates that the Proposed Development is in line with national and local transport policies and guidance. The Site is located within an area which has a wide range of existing local facilities and plenty of sustainable travel choices.

- 7.8.2 The Proposed Development supports these principles through the provision of an accessible and connected sustainable development, with sufficient parking based on its accessible location.

8.0 Summary and Conclusions

8.1 Summary

- 8.1.1 Curtins has been appointed by Renaker Build Limited to provide traffic and transport advice in relation to the redevelopment of the Site known as Crown Street Phase 3 (CSP3) and Plot D at Great Jackson Street, Manchester. Together, the CSP3 Site and the Plot D Site comprise the Site and the Proposed Development.
- 8.1.2 The Proposed Development includes the demolition of the existing buildings on-site, including the removal of the Deansgate Square Marketing Suite, Gaddum House and existing light industrial units at the CSP3 Site, and the removal of a concrete batching plant from the Plot D Site, and the construction of a high-quality residential development comprising of five separate towers and a separate three-storey office building.
- 8.1.3 The CSP3 Site includes two towers at 47 storeys (Towers E1 and E2) and two towers at 51 storeys (Towers C7 and C8) totalling 1,746 apartments and including ground floor flexible commercial use.
- 8.1.4 The Plot D Site comprises a single residential tower with 71 storeys containing 642 apartments and a separate 3-storey office building.
- 8.1.5 A review of baseline conditions and highway safety in the vicinity of the Site has been undertaken, which has identified there are no existing highway safety issues that are likely to be exacerbated by the Proposed Development.
- 8.1.6 The scope of this Transport Assessment and the accompanying Framework Travel Plan has been agreed with Highways Officers at Manchester City Council and Transport for Greater Manchester.
- 8.1.1 Each plot will have a separate access to basement car parking provision, with a total of 454 car parking spaces, distributed between the four towers of the CSP3 Site. In addition, the residential use at the Plot D Site will have 160 car parking spaces, distributed across the three levels of basement car park. This level of car parking at c. 25 – 26% is considered to be a suitable level of parking to meet demand yet reflect the highly accessible location of the Site in terms of opportunities for active and sustainable travel.
- 8.1.2 The scheme will facilitate up to 20% EV charging points, these will provided on a demand lead basis through the apartment sales process.
- 8.1.3 The Proposed Development will offer 100% cycle parking provision. The spaces will be covered and secure, distributed across the levels of basement car park. These spaces will be complemented by visitor cycle parking, which will be provided at ground floor level, within the landscaped proposals.

- 8.1.4 Accessibility by sustainable modes of travel is excellent, reflected by the Greater Manchester Accessibility Level 8. The Site is well located to benefit from existing pedestrian, cycle and public transport networks within its immediate vicinity. This will be further enhanced by opening up new routes between the buildings and the high-quality public realm environment.
- 8.1.5 The junction capacity assessment results demonstrate that Junctions 1 – 3 on the local highway network continue to operate well during peak hours with a sufficient amount of residual capacity available in both the Base assessment scenarios, without and with the Proposed Development in place, and the Proposed Development would not have a severe impact on Junction 4 – the Deansgate Interchange signalised junction.
- 8.1.6 A review of relevant local and national transport planning guidance has been undertaken. It is demonstrated that Proposed Development conforms with such policy and represents a sustainable development.

8.2 Conclusions

- 8.2.1 It is Curtins' view that from a traffic and transportation perspective there are no reasons why the Proposed Development should not be granted planning approval.

Plans



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Project:
CROWN STREET PHASE 3 AND PLOT D

Drg Title:
SITE LOCATION
REGIONAL VIEW

Status:
PRELIMINARY

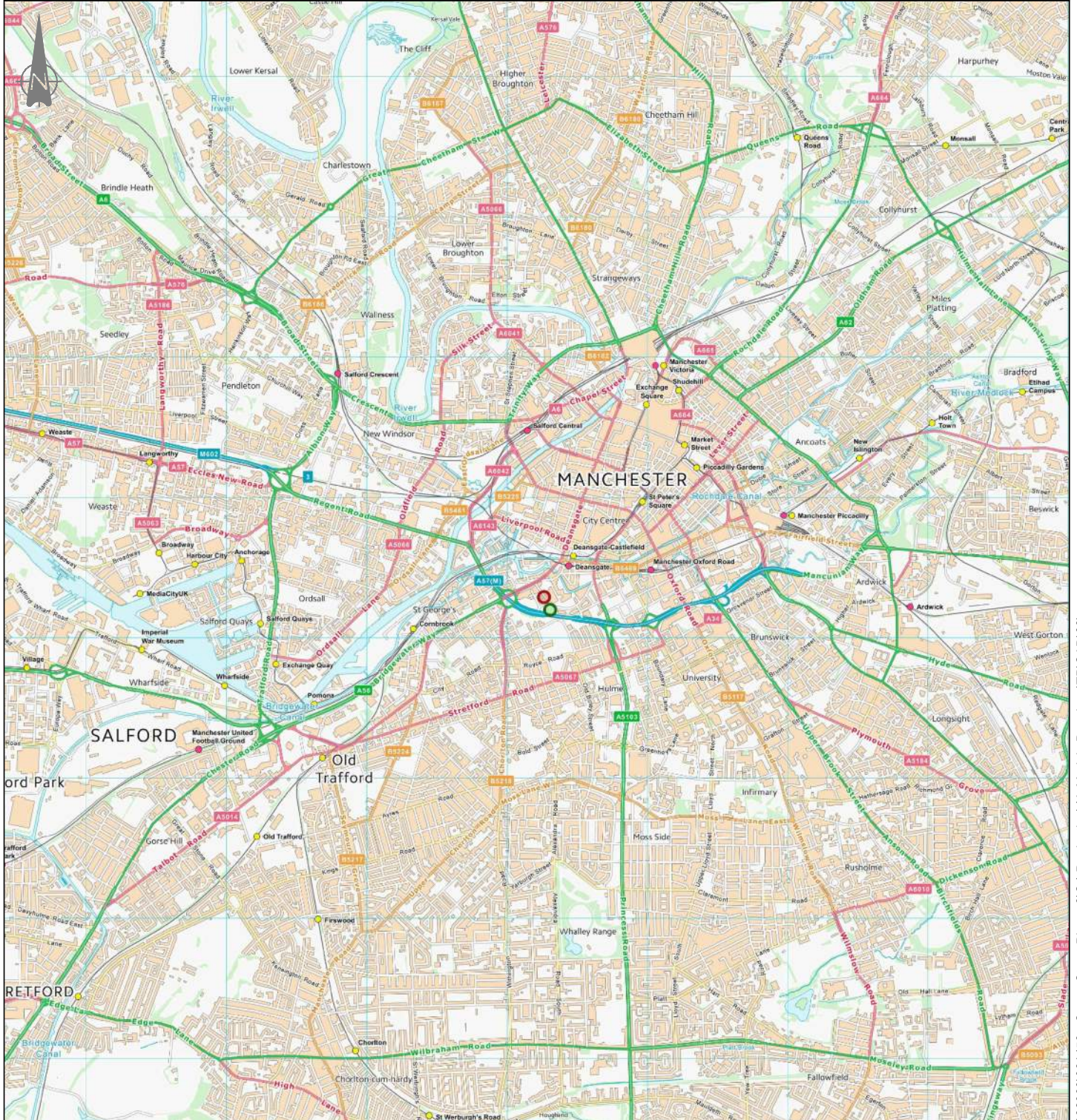
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Designed By: JM Date: 07/02/23

Scale: NTS

Project No: Originator: Volume: Level: Type: Role: Category / Number: Rev:

81453 - CUR - XX - XX - G - TP - 06001 - P01



KEY:

- Phase 3 - Indicative Centre of Site
- Plot D - Indicative Centre of Site

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Project:
CROWN STREET PHASE 3 AND PLOT D

Drg Title:

SITE LOCATION
LOCAL VIEW

Status:
PRELIMINARY

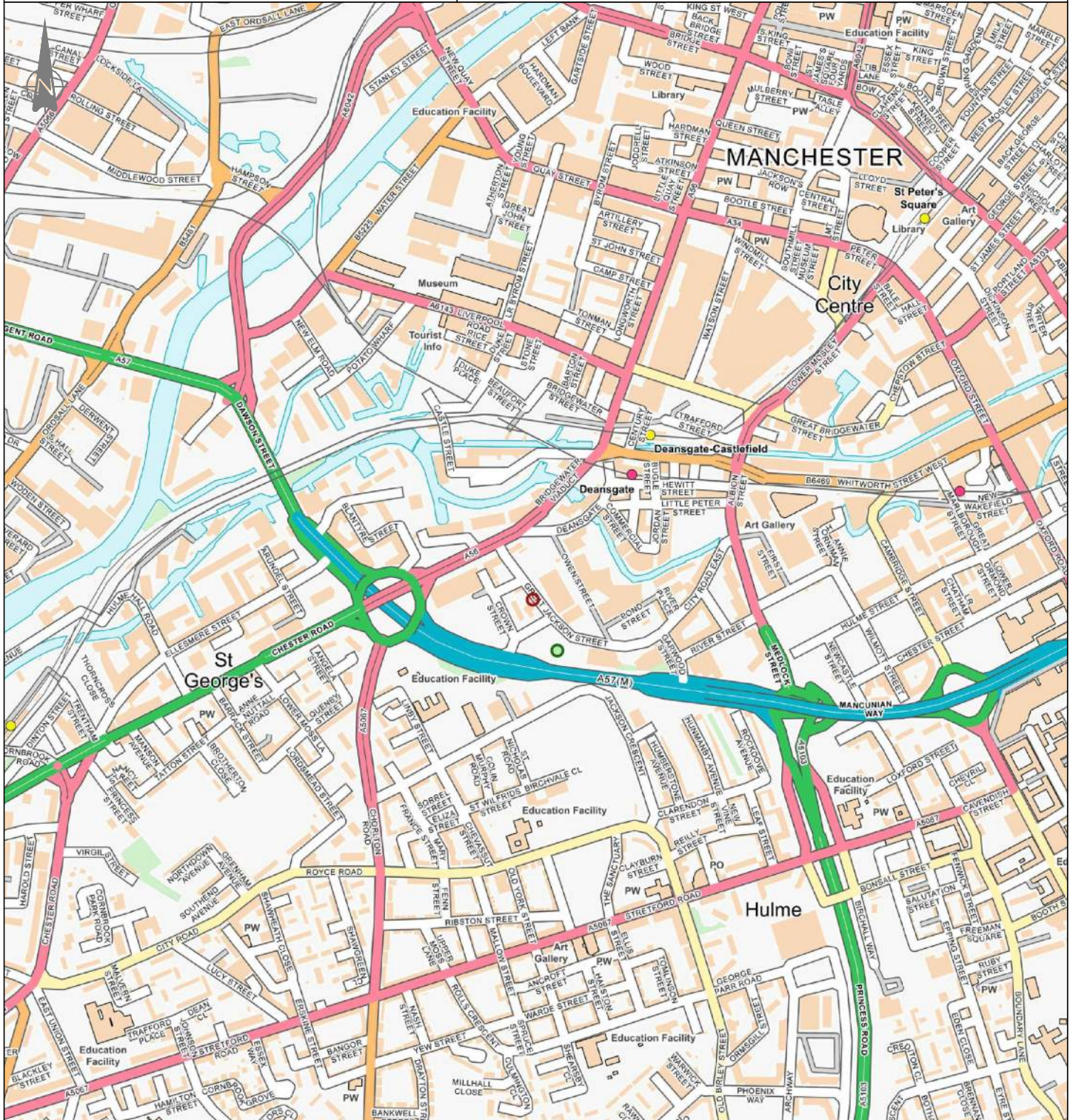
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Designed By: JM Date: 07/02/23

Scale: NTS

Project No: Originator: Volume: Level: Type: Role: Category / Number: Rev:

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KEY:

- Phase 3 - Indicative Centre of Site
- Plot D - Indicative Centre of Site

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Project:
CROWN STREET PHASE 3 AND PLOT D

Drg Title:
ACCESSIBILITY
INDICATIVE WALKING CATCHMENT

Status:
PRELIMINARY

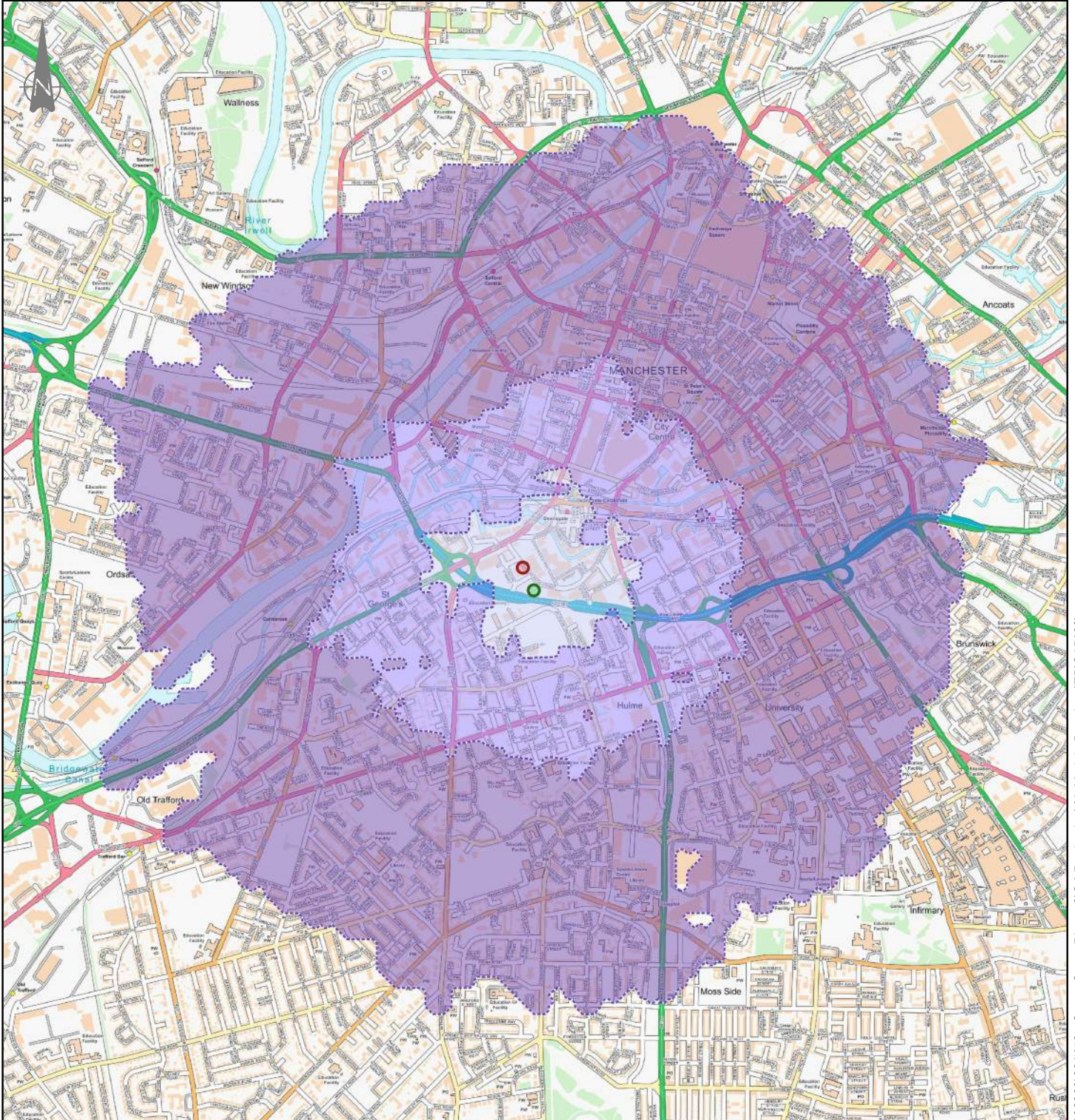
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Designed By: JM Date: 07/02/23

Scale: NTS

Project No: Originator: Volume: Level: Type: Role: Category / Number: Rev:

81453 - CUR - XX - XX - G - TP - 06003 - P01



KEY:
● Phase 3 - Indicative Centre of Site
● Plot 3 - Indicative Centre of Site

Walking Catchment:
500m
1000m
2000m

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Project:
CROWN STREET PHASE 3 AND PLOT D

Drg Title:
ACCESSIBILITY
INDICATIVE CYCLE CATCHMENT

Status:
PRELIMINARY

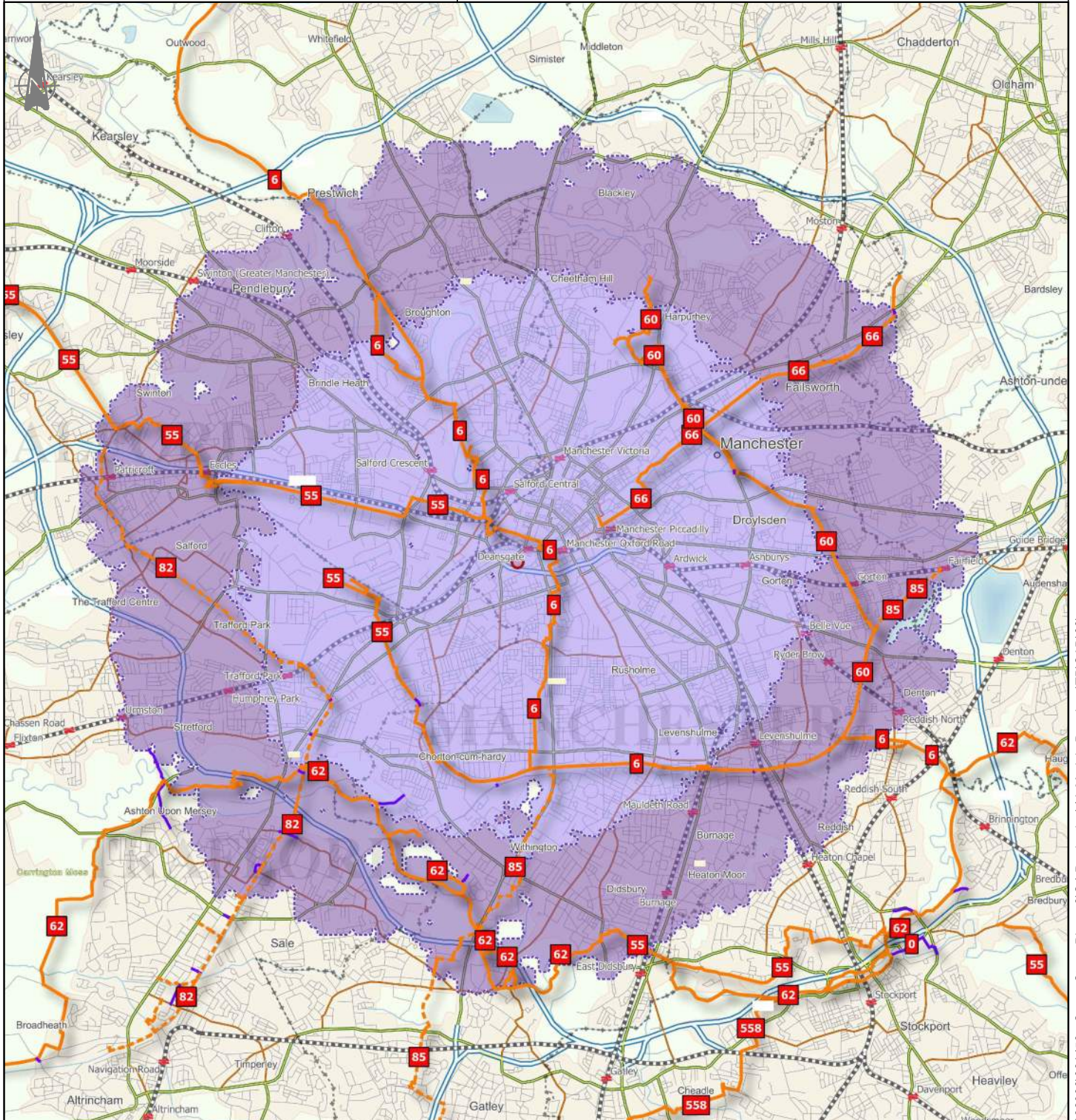
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Designed By: JM Date: 07/02/23

Scale: NTS

Project No: Originator: Volume: Level: Type: Role: Category / Number: Rev:

81453 - CUR - XX - XX - G - TP - 06004 - P01



KEY: Crown Street Development
Cycle Catchment:
 5500m
 8000m

Cycle Network:
 Route not on Cycle Network
 Route on Regional Cycle Network
 Route on National Cycle Network

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Project: CROWN STREET PHASE 3 AND PLOT D

Drg Title: ACCESSIBILITY
INDICATIVE PUBLIC
TRANSPORT CATCHMENT

Status: PRELIMINARY

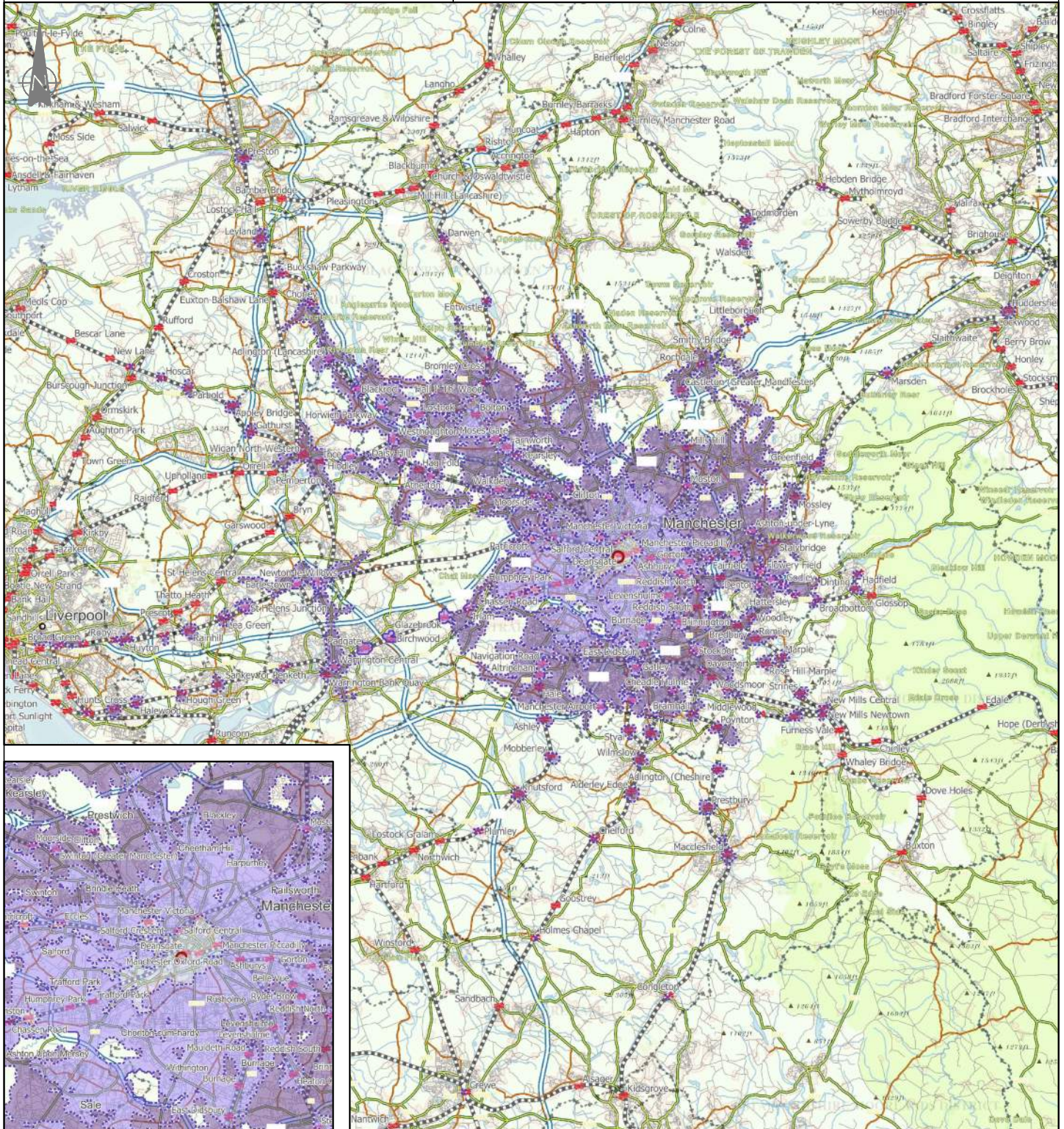
Drawn By: JM Checked By: CP

Designed By: JM Date: 07/02/23

Scale: NTS

Project No: Originator: Volume: Level: Type: Role: Category / Number: Rev:

81453 - CUR - XX - XX - G - TP - 06005 - P01



KEY: Crown Street Development

Public Transport Catchment:

20 minutes
 40 minutes
 60 minutes

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Drawings



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6. BASED ON SIMPSON HAUGHS LAYOUT: 'Z1-SHP-G100-PL-GRD-B5D801'
7. BASED ON LAND SURVEY PROVIDED BY RENAKER WHERE AVAILABLE. SOME ON-STREET PARKING SPACES ESTIMATED FROM AERIAL IMAGERY AND SHOWN FOR INFORMATION PURPOSES ONLY.

- KEY:
- RED LINE BOUNDARY
 - PROPOSED RAISED KERB
 - PROPOSED FLUSH KERB
 - PROPOSED ROAD MARKINGS
 - PROPOSED RAMP
 - PROPOSED OVERRUN AREA
 - PROPOSED RAISED TABLE
 - PUBLIC HIGHWAY EXTENTS

P07	Layout updated	31/05/23	MQ	DD
P06	Access arrangement updated	27/03/23	DD	DD
P05	Layout updated	20/03/23	DD	CP
P04	Silvercroft Street arrangement updated	09/02/23	DD	CP
P03	Access arrangement updated	23/01/23	DD	CP
P02	Access arrangement updated	17/01/23	DD	CP

Rev:	Description:	Date:	By:	Chkd:
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Status:

PLANNING

Project: PHASE 3 - GREAT JACKSON STREET MANCHESTER

Orig Title:

PROPOSED ACCESS ARRANGEMENT

Size:	Date:	Drawn By:	Designed By:	Checked By:			
A1	11/01/23	DD	DD	CP			
Scale: 1:250							
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:

081453 - CUR - XX - 00 - D - TP - 75002 - P07

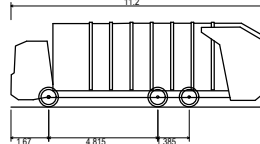


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KEY: RED LINE BOUNDARY
PROPOSED RAISED KERB
PROPOSED ROAD MARKINGS

VEHICLE PROFILE:



Phoenix 2 Duo (P2-15V with Elite 6x4 chassis)
Overall Length 11.200m
Overall Width 3.250m
Overall Height 3.250m
Track Width 2.500m
Wheelbase 4.500m
Kerb to Kerb Turning Radius 9.500m

P02	Layout updated	31/05/23	MQ	DD
Rev:	Description:	Date:	By:	Chkd:



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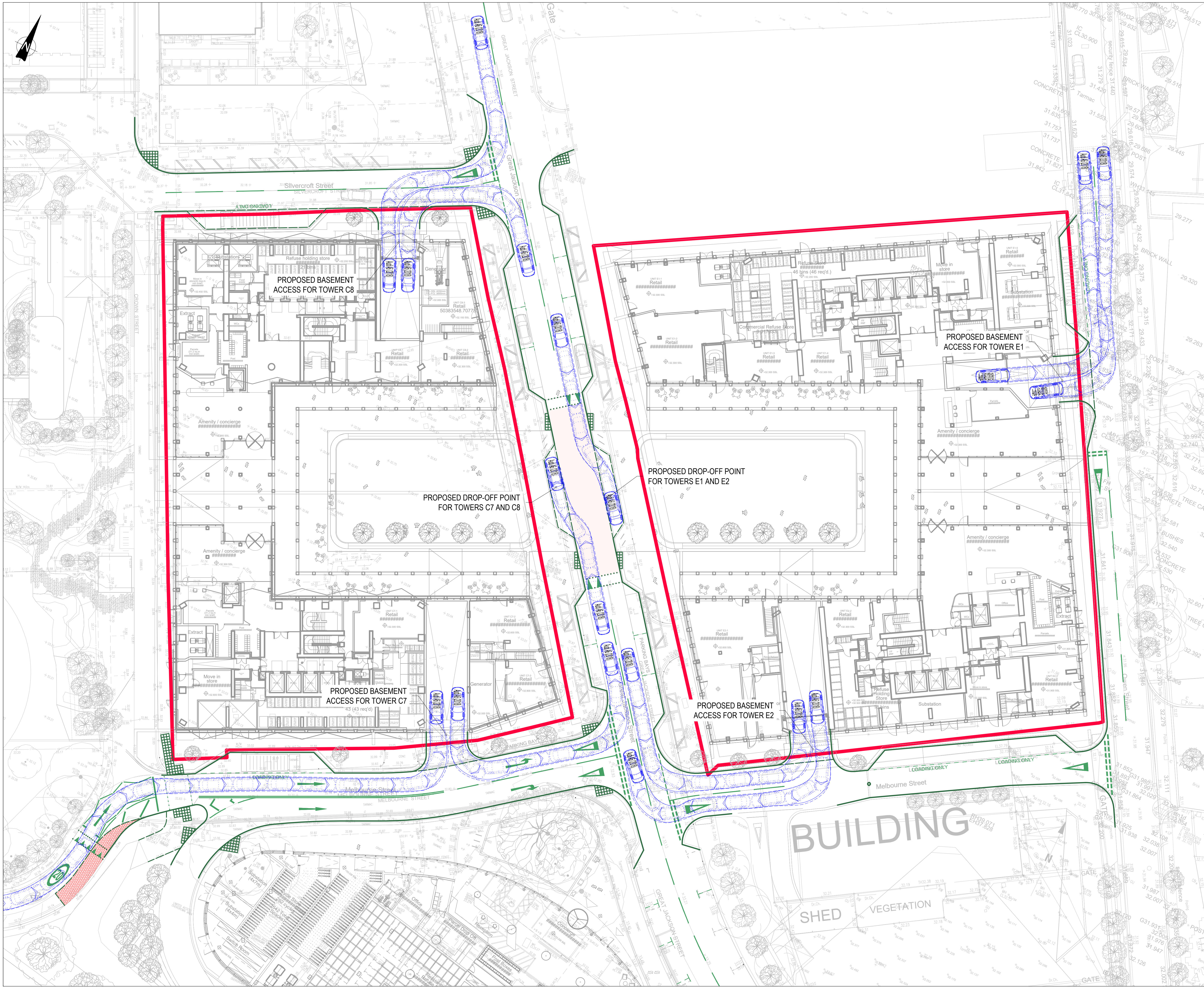
Status: PLANNING

Project: PHASE 3 - GREAT JACKSON STREET
MANCHESTER

Orig Title: SWEPT PATH ANALYSIS
SERVICING

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	20/03/23	DD	DD	CP
Scale:	1:250			
Project No:	Originator:	Volume:	Level:	Type:
081453 - CUR - XX - 00 - D - TP -	05008 - P02			

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6. BASED ON SIMPSON HAUGHS LAYOUT: 'Z1-SHP-G100-PLD-B5D801'

KEY: — RED LINE BOUNDARY
— PROPOSED RAISED KERB
— PROPOSED ROAD MARKINGS

VEHICLE PROFILE:



Audi A5 (2018)
Overall Length: 4.539m
Overall Width: 1.914m
Overall Height: 1.456m
Min Body Ground Clearance: 0.145m
Max Tyre Width: 0.255m
Lock to Lock: 9.5m
Kerb to Kerb Turning Radius: 9.500m

P02	Layout updated	31/05/23	MQ	DD
Rev:	Description:	Date:	By:	Chk:



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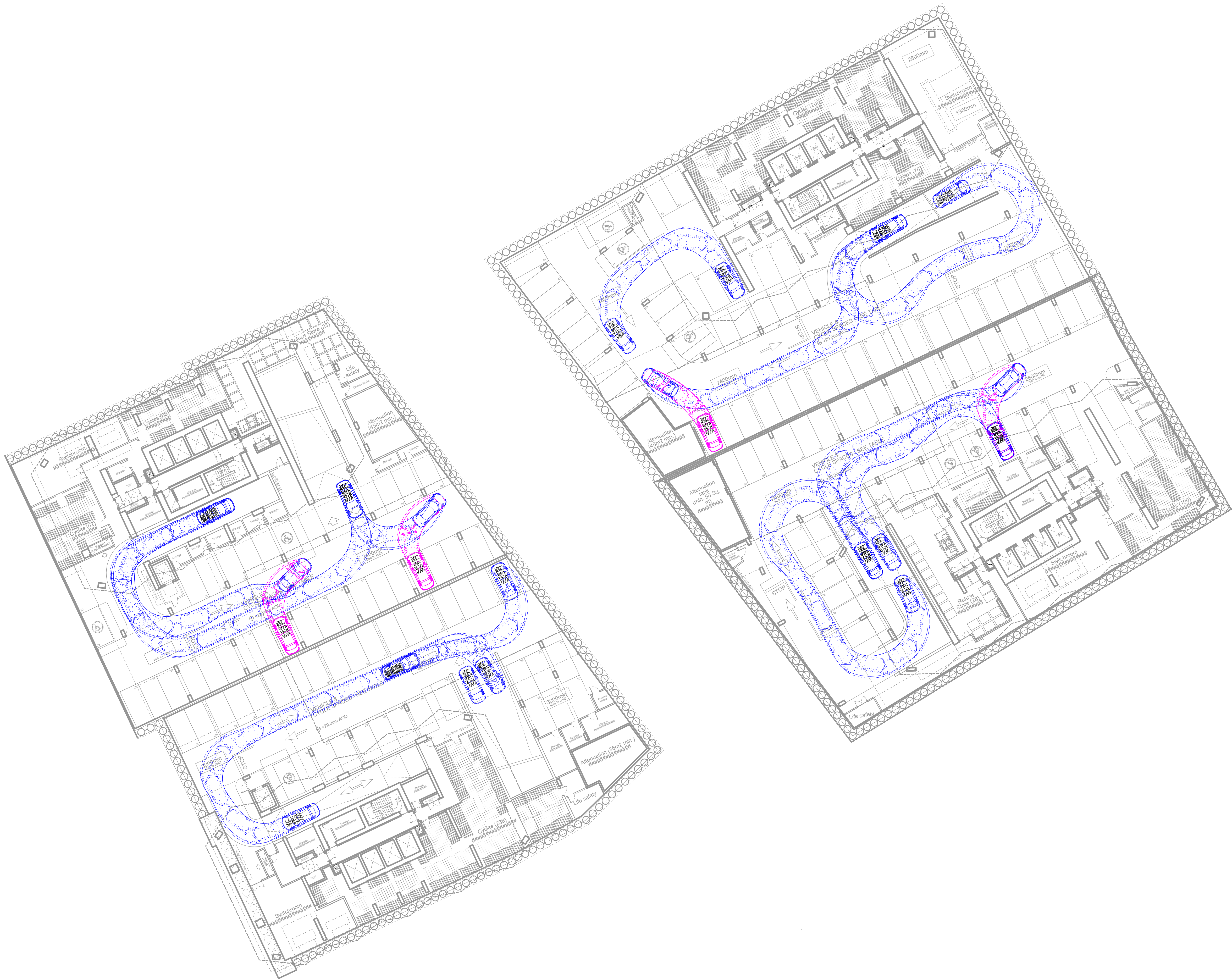
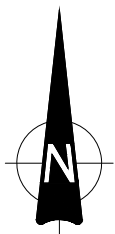
Status: **PLANNING**

Project: **PHASE 3 - GREAT JACKSON STREET MANCHESTER**

Orig Title: **SWEPT PATH ANALYSIS GROUND FLOOR ACCESS LARGE CAR**

Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	20/03/23	DD	DD	CP
Scale:	1:250			
Project No:	Originator:	Volume:	Level:	Type:
081453 - CUR - XX - 00 - D - TP - 05010 - P02				

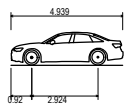
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- THE CONTENT OF THIS DRAWING IS FOR INDICATIVE INFORMATION ONLY AND NOT SUITABLE FOR CONSTRUCTION PURPOSES
- BASED ON SIMPSON HAUGHS LAYOUT: 'Z1-SHP-G100-PL-B1-B5D801'

VEHICLE PROFILE:



Audi A6 (2016)	4.00m
Overall Length	4.90m
Overall Width	2.11m
Overall Body Height	1.42m
Min Body Ground Clearance	0.143m
Max Track Width	1.85m
Lock to Lock Time	4.10s
Kerb to Kerb Turning Radius	9.90m

P05	Layout updated	31/05/23	MQ	DD
P04	Layout updated	20/03/23	JM	DD
P03	Layout updated	06/03/23	MQ/JM	DD
P02	E2 Layout updated	07/12/22	DD	CP
Rev:	Description:	Date:	By:	Chkd:



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Status: **PLANNING**

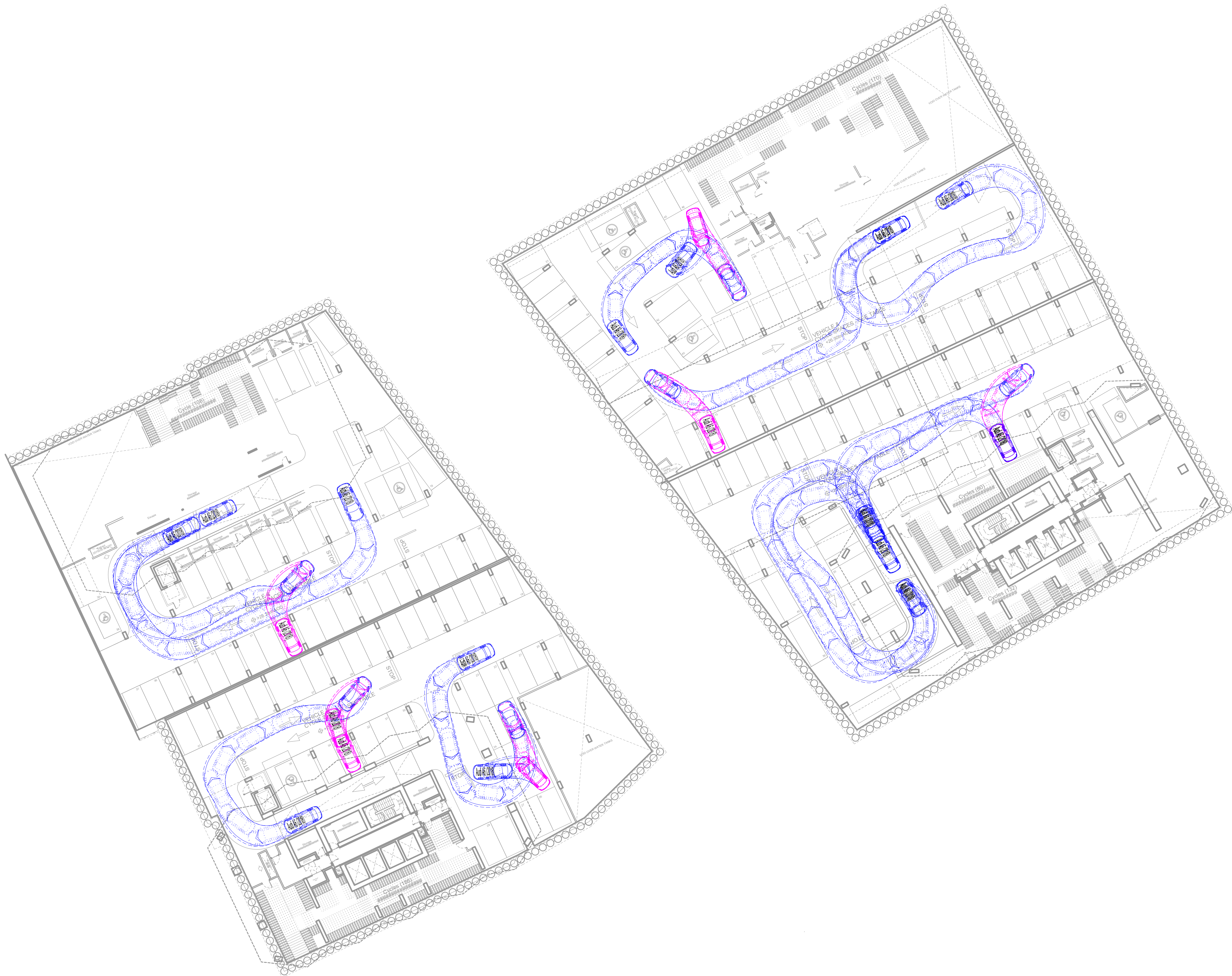
Project: **PLOT C3 - GREAT JACKSON STREET
MANCHESTER**

Orig Title: **SWEPT PATH ANALYSIS
BASEMENT LEVEL 1
LARGE CAR**

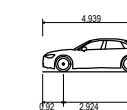
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A1	20/09/22	DD	DD	DD
Scale:	1:250			
Project No:	Originator:	Volume:	Level:	Type:
081453 - CUR - XX - 00 - D - TP -	05004	- P05		

081453 - CUR - XX - 00 - D - TP - 05004 - P05

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VEHICLE PROFILE:



Audi A6 (2018)	
Overall Length	4.909m
Overall Width	2.114m
Overall Body Height	1.457m
Min Body Ground Clearance	0.142m
Max Track Width	1.875m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.950m

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6. BASED ON SIMPSON HAUGHS LAYOUT: 'Z1-SHP-G100-P12-B2-B50801'

P05	Layout updated	31/05/23	MQ	DD
P04	Layout updated	20/03/23	JM	DD
P03	Layout updated	06/03/23	MQ/JM	DD
P02	E2 Layout updated	08/12/22	DD	CP
Rev:	Description:	Date:	By:	Chkd:



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Status

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Project

PLOT C3 - GREAT JACKSON STREET
MANCHESTER

Drug Title

SWEPT PATH ANALYSIS
BASEMENT LEVEL 2
LARGE CAR

Size:	Date:	Drawn By:	Designed By:	Checked By:			
A1	20/09/22	DD	DD	DD			
Scale: 1:250							
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:

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5. THE CONTENT OF THIS DRAWING IS FOR INDICATIVE INFORMATION ONLY AND NOT SUITABLE FOR CONSTRUCTION PURPOSES
6. BASED ON SIMPSON HAUGHS LAYOUT: 'Z1-SHP-G100-PL-B3-B5D801'

Audi A6 (2018)
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Max Track Width
Lock to lock time
Kerb to Kerb Turning Radius

4.939m
2.114m
1.457m
0.142m
1.875m
4.00s
5.960m

P05	Layout updated	31/05/23	MQ	DD
P04	Layout updated	20/03/23	JM	DD
P03	Layout updated	06/03/23	MQ/JM	DD
P02	E2 Layout updated	08/12/22	DD	CP

Rev:	Description:	Date:	By:	Chkd:
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	Status
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Project: PLOT C3 - GREAT JACKSON STREET
MANCHESTER

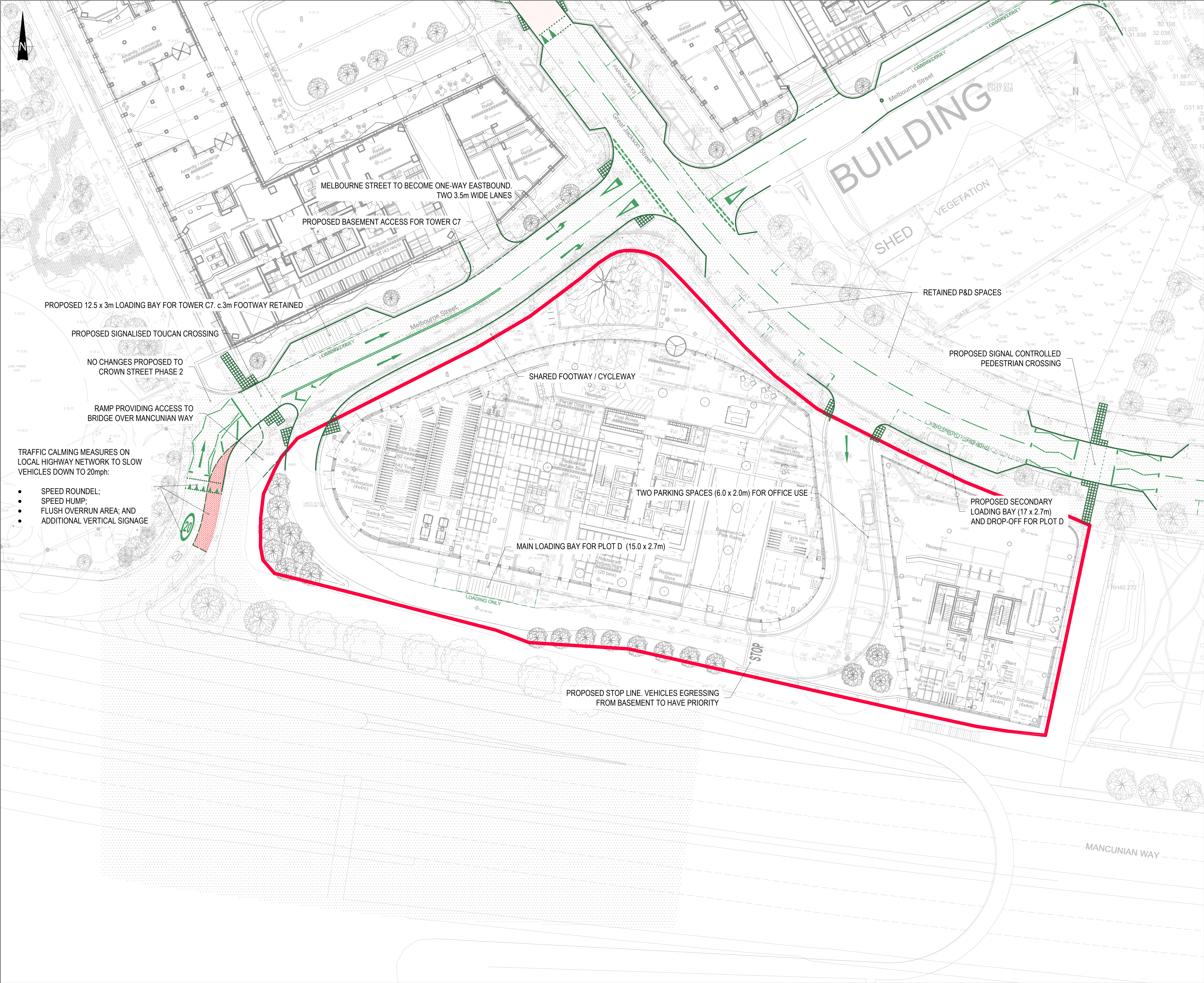
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Size:	Date:	Drawn By:	Designed By:	Checked By:
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Scale: 1:250				

Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
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6. BASED ON SIMPSON HAUGHS PLOT D LAYOUT: 'Z1-SHP-G100-PL-GRD-B5D801'
7. BASED ON LAND SURVEY PROVIDED BY RENAKER WHERE AVAILABLE. SOME ON-STREET PARKING SPACES ESTIMATED FROM AERIAL IMAGERY AND SHOWN FOR INFORMATION PURPOSES ONLY.

- KEY:
- RED LINE BOUNDARY
 - PROPOSED RAISED KERB
 - PROPOSED FLUSH KERB
 - PROPOSED ROAD MARKINGS
 - PROPOSED RAMP
 - PROPOSED OVERRUN AREA
 - PROPOSED RAISED TABLE
 - PUBLIC HIGHWAY EXTENTS

P09	Layout updated	31/05/23	MQ	DD
P08	Plot D secondary loading bay updated	12/04/23	DD	CP
P07	Layout updated	20/03/23	DD	CP
P06	Access arrangement updated	23/01/23	DD	CP
P05	Signalised crossing added	17/01/23	DD	CP
P04	Access arrangement and layout updated	11/01/23	DD	CP
P03	Traffic calming updated	29/11/22	DD	CP
P02	Access arrangement and layout updated	24/11/22	DD	CP
Rev:	Description:	Date:	By:	Chkd:

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Status: **PLANNING**

Project: **PLOT D - GREAT JACKSON STREET MANCHESTER**

Orig Title: **PROPOSED ACCESS ARRANGEMENT**

Size:	Date:	Drawn By:	Designed By:	Checked By:			
A1	29/09/22	DD	DD	CP			
Scale: 1:250							
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
081453 - CUR - XX - 00 - D - TP - 75001 - P09							



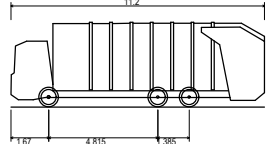
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6. BASED ON SIMPSON HAUGHS LAYOUT: Z1-SHP-G100-PL-GRD-B5D801"

KEY:

- RED LINE BOUNDARY
- PROPOSED RAISED KERB
- PROPOSED ROAD MARKINGS

VEHICLE PROFILE:



Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock to lock time
Kerb to Kerb Turning Radius

P04	Layout updated	31/05/23	MQ	DD
P03	Layout updated	20/03/23	DD	CP
P02	Layout updated	24/11/22	DD	CP
Rev:	Description:	Date:	By:	Chkd:



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Status:

PLANNING

Project

PLOT D - GREAT JACKSON STREET
MANCHESTER

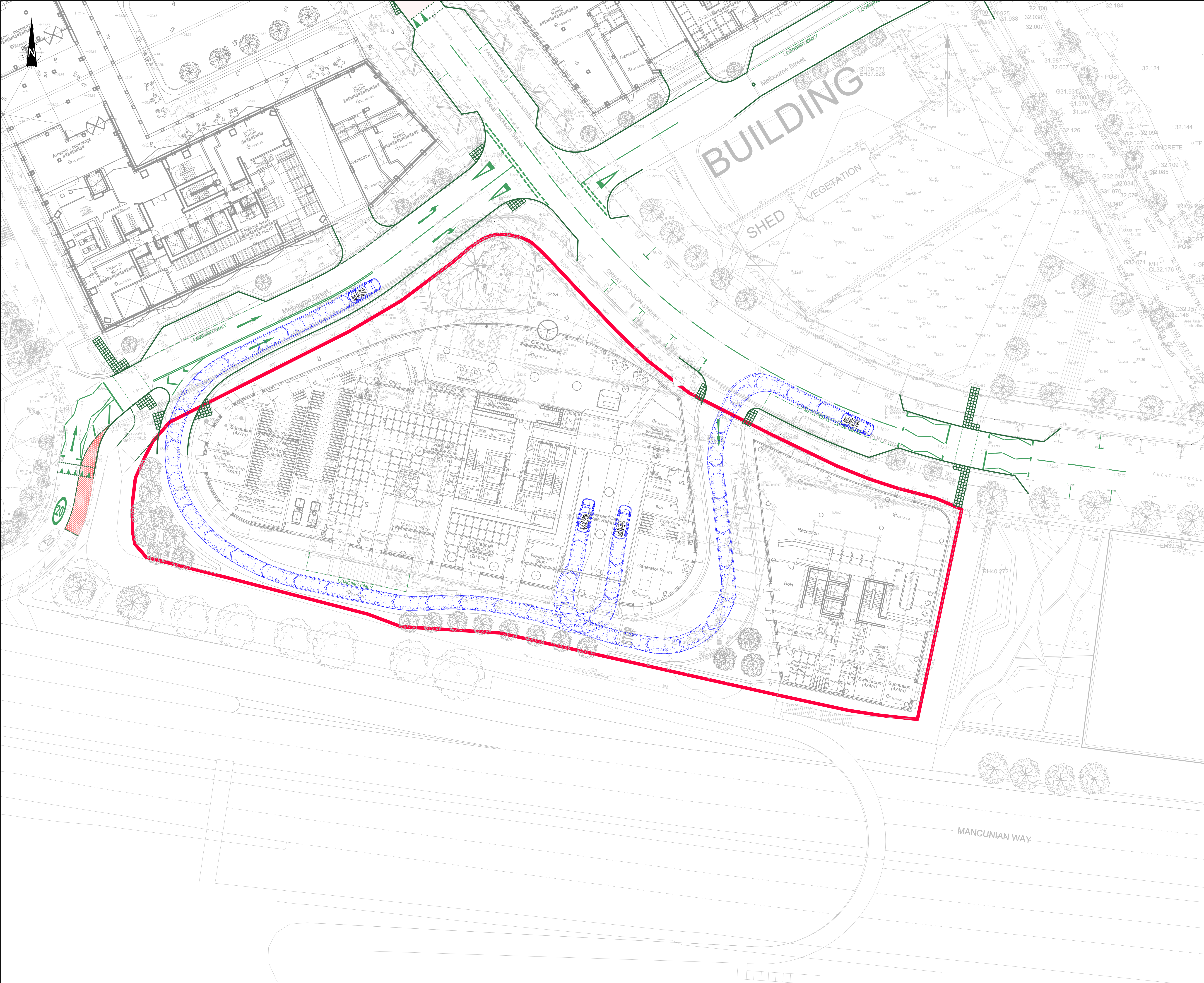
Drg Title

SWEPT PATH ANALYSIS SERVICING

Size:	Date:	Drawn By:	Designed By:	Checked By:			
A1	14/09/22	DD	DD	CP			
Scale: 1:250							
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
081453 - CUR - XX - 00 - D - TP- 05001 - P04							

081453 - CUR - XX - 00 - D - TP - 05001 - P04

p:\mfs02\Projects\081001 - 082000\081453 - Crown Street Phase 3\Q4-Production\4A-Models-Drawings\TPICAD\051



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- 5. THE CONTENT OF THIS DRAWING IS FOR INDICATIVE INFORMATION ONLY AND NOT SUITABLE FOR CONSTRUCTION PURPOSES
- 6. BASED ON SIMPSON HAUGHS LAYOUT: Z1-SHP-G100-PL-GRD-B5D801

KEY: RED LINE BOUNDARY
PROPOSED RAISED KERB
PROPOSED ROAD MARKINGS

VEHICLE PROFILE:



Audi A5 (2018)
Overall Length: 4.69m
Overall Width: 1.92m
Overall Height: 1.42m
Min Body Ground Clearance: 0.14m
Max Tyre Width: 1.85m
Look to Box Size: 4.69m
Kerb to Kerb Turning Radius: 9.50m

P02	Layout updated	31/05/23	MQ	DD
Rev:	Description:	Date:	By:	Chk:



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Status:

PLANNING

Project: PLOT D - GREAT JACKSON STREET MANCHESTER

Orig Title: SWEPT PATH ANALYSIS ACCESS ARRANGEMENT LARGE CAR

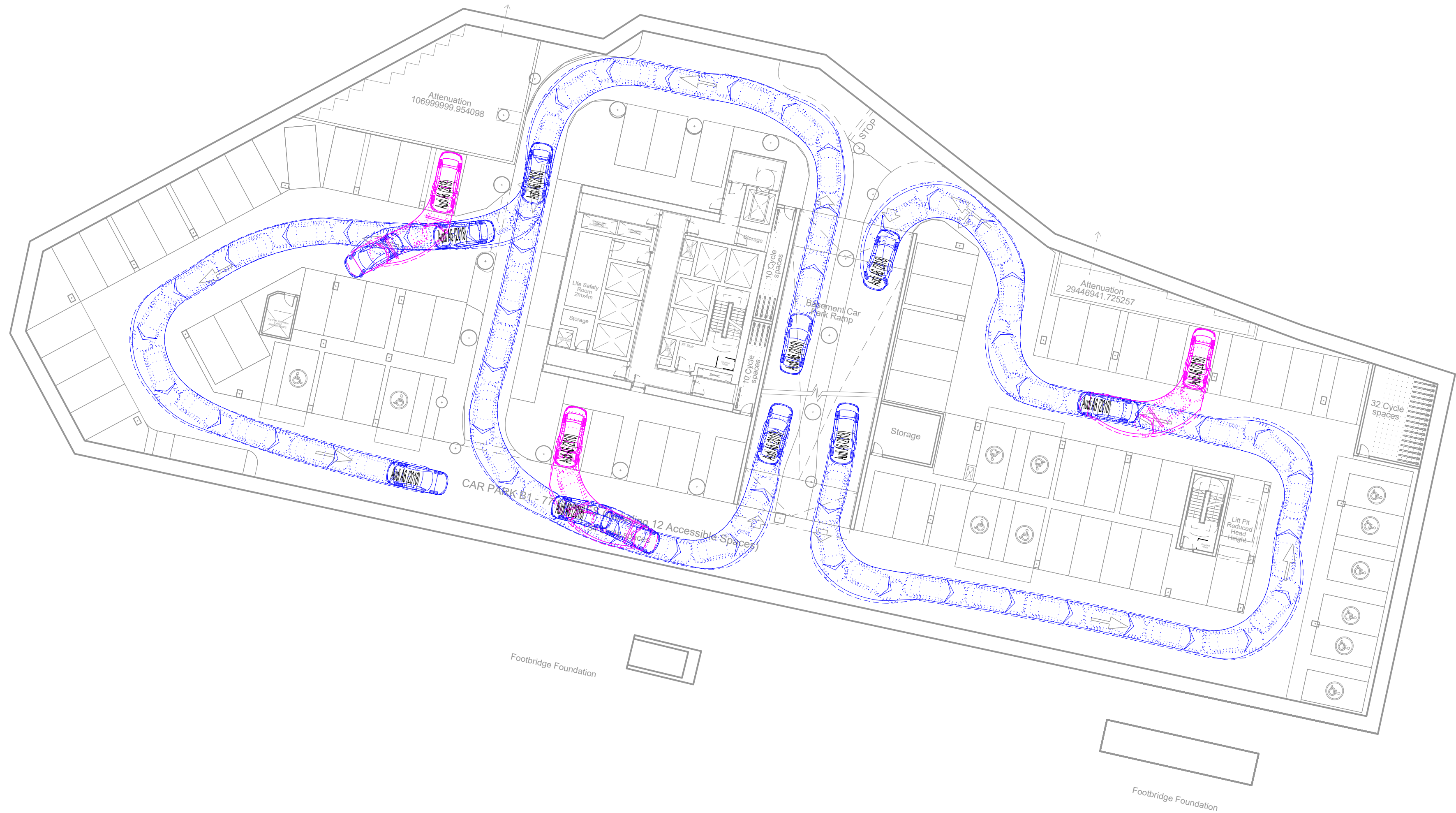
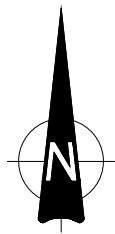
Size:	Date:	Drawn By:	Designed By:	Checked By:
A1	20/03/23	DD	DD	CP

Scale: 1:250

Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:
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081453 - CUR - XX - 00 - D - TP - 05009 - P02

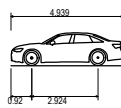
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6. BASED ON SIMPSON HAUGH'S LAYOUT: 'Z1-SHP-G100-PL-B1-B5D801'

VEHICLE PROFILE:



Auto A6 (2019)
Overall Length 4.50m
Overall Width 1.90m
Overall Body Height 1.42m
Max. Body Ground Clearance 0.13m
Max. Wheel Width 1.37m
Lock to Lock Time 4.00s
Max. Wheel Turning Radius 5.00m

4.50m
1.90m
1.42m
0.13m
1.37m
4.00s
5.00m

P05	Layout updated	31/05/23	MQ	DD
P04	Layout updated	20/03/23	MQ	DD
P03	Layout updated	23/02/23	JM	DD
P02	Layout updated	24/11/22	DD	CP

Rev:	Description:	Date:	By:	Chkd:
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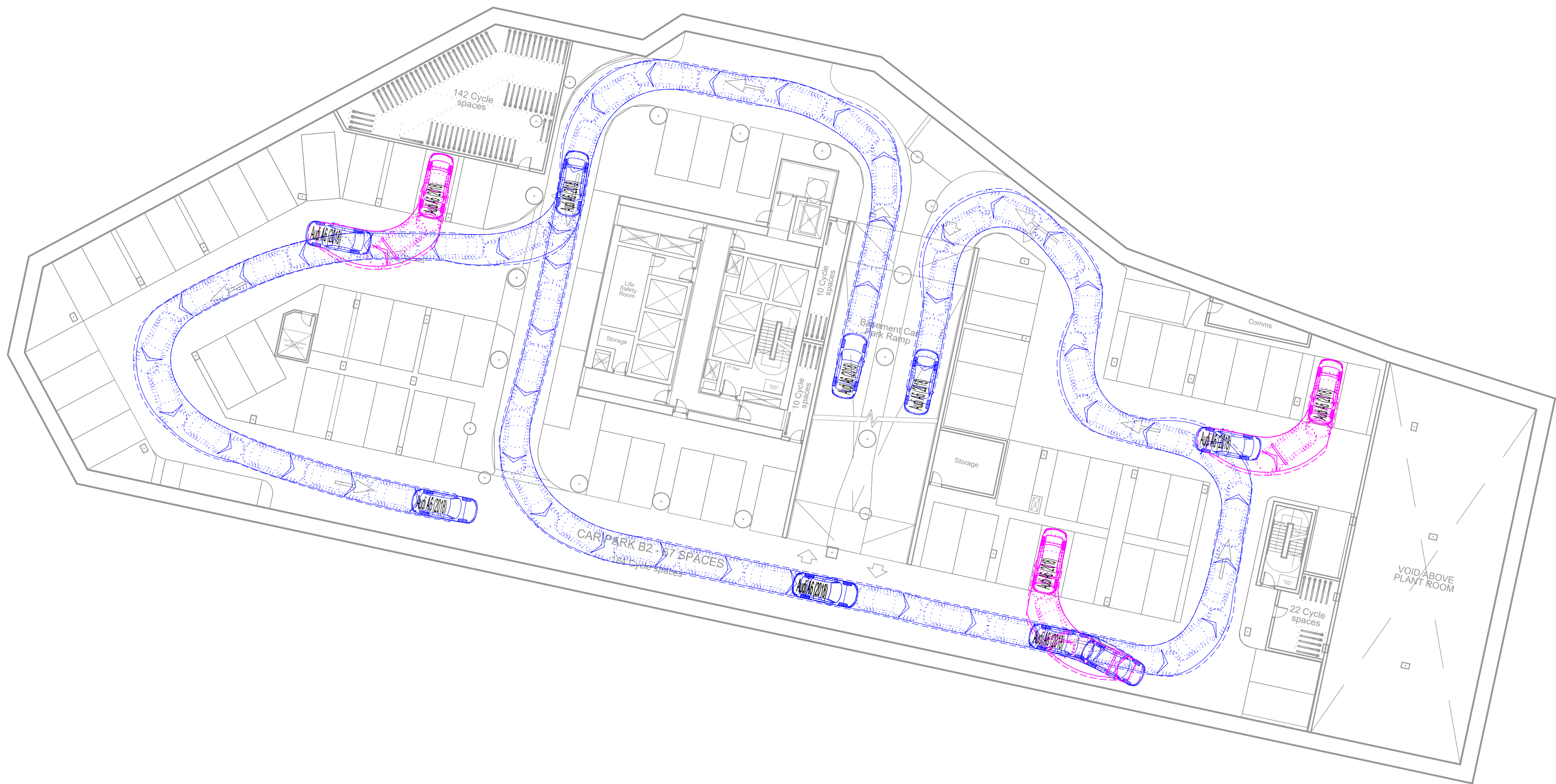
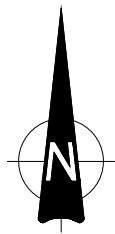
Status:	PLANNING
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Project:	PLOT D - GREAT JACKSON STREET MANCHESTER
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Orig Title:	SWEPT PATH ANALYSIS BASEMENT LEVEL 1 LARGE CAR
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Size:	Date:	Drawn By:	Designed By:	Checked By:			
A1	16/09/22	DD	DD	DD			
Scale: 1:250							
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:

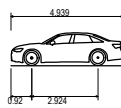
081453 - CUR - XX - 00 - D - TP - 05002 - P05



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6. BASED ON SIMPSON HAUGH'S LAYOUT: 'Z1-SHP-G100-PL-B2-B5D801'

VEHICLE PROFILE:



Axis A6 (2019)	4.500m
Overall Length	4.500m
Overall Width	2.114m
Overall Body Height	1.427m
Min. Body-Clearance	0.150m
Min. Tyre Width	1.375m
Min. Tyre Height	0.250m
Lock to Lock Time	4.00s
Min to Max Turning Radius	5.000m

P05	Layout updated	31/05/23	MQ	DD
P04	Layout updated	20/03/23	MQ	DD
P03	Layout updated	23/02/23	JM	DD
P02	Layout updated	24/11/22	DD	CP

Rev:	Description:	Date:	By:	Chkd:
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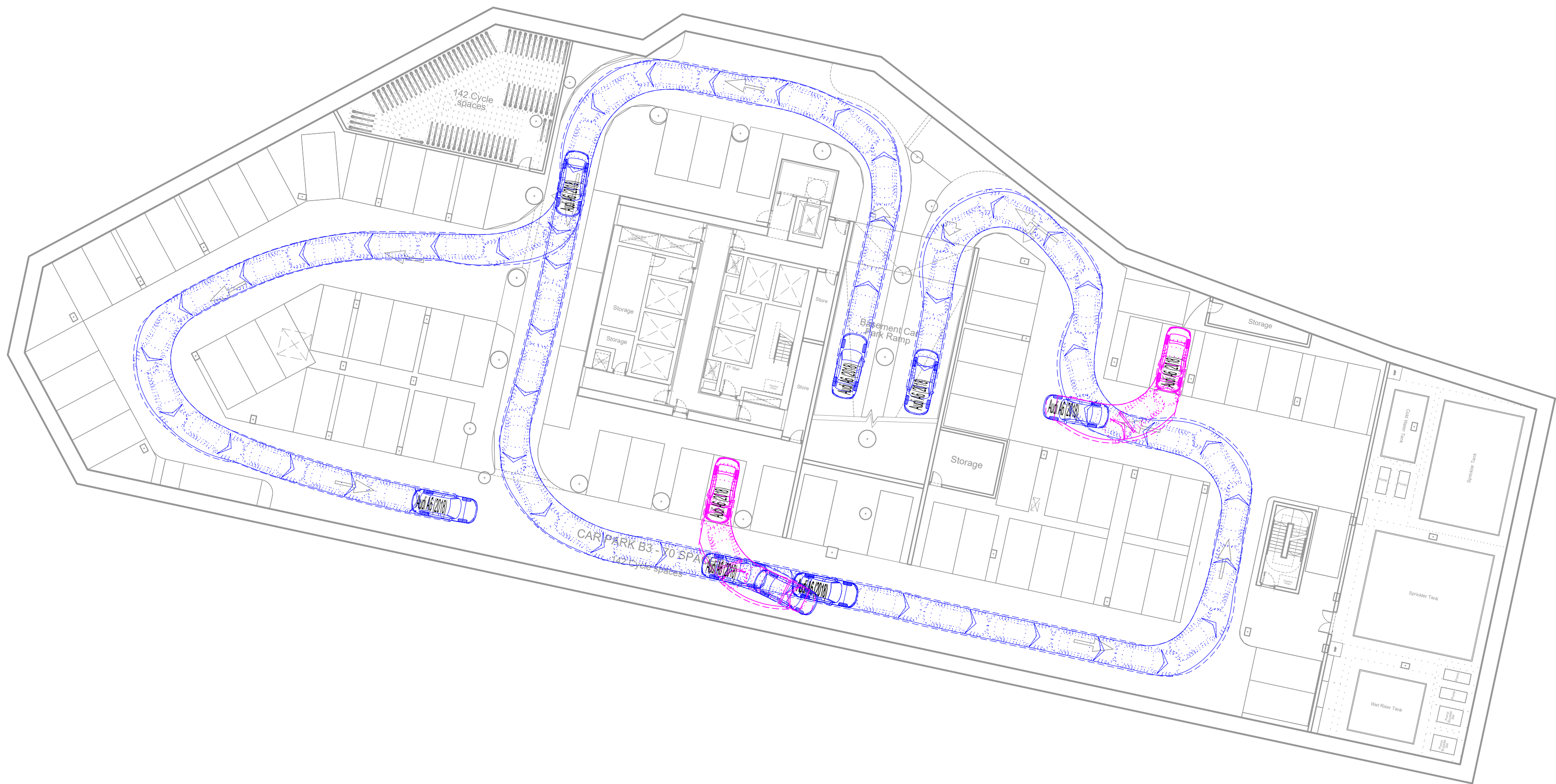
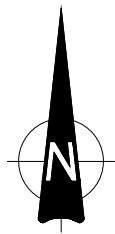
Status: **PLANNING**

Project: **PLOT D - GREAT JACKSON STREET
MANCHESTER**

Orig Title: **SWEPT PATH ANALYSIS
BASEMENT LEVEL 2
LARGE CAR**

Size:	Date:	Drawn By:	Designed By:	Checked By:			
A1	16/09/22	DD	DD	DD			
Scale: 1:250							
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Rev:

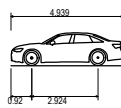
081453 - CUR - XX - 00 - D - TP - 05003 - P05



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5. THE CONTENT OF THIS DRAWING IS FOR INDICATIVE INFORMATION ONLY AND NOT SUITABLE FOR CONSTRUCTION PURPOSES
6. BASED ON SIMPSON HAUGH'S LAYOUT: 'Z1-SHP-G100-PL-B3-B5D801'

VEHICLE PROFILE:



Axis A6 (2019)
Overall Length
Overall Width
Overall Body Height
Max. Body Offset Clearance
Max. Body Width
Lock to lock time
Min to Max Turning Radius

4.50m
1.90m
1.42m
0.15m
1.90m
4.00s
5.00m

P03	Layout updated	31/05/23	MQ	DD
P02	Layout updated	20/03/23	MQ	DD
Rev:	Description:	Date:	By:	Chkd:



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Status:	PLANNING			
Project:	PLOT D - GREAT JACKSON STREET MANCHESTER			
Orig Title:	SWEPT PATH ANALYSIS BASEMENT LEVEL 3 LARGE CAR			
Size:	A1	Date:	23/02/23	Drawn By:
Scale:	1:250			JM
Project No:	081453	Originator:	XX	Volume:
		Level:	00	Type:
		Role:	TP	Category / Number:
		Rev:	05007	P03

Appendix A – Site Layout Plan & Accommodation Schedule



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Scale Bar

0 10 20m

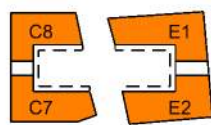
NOTE:

NORTH



Rev	Date	Description
X01	20.04.2023	Planning Issue

Key Plan



Project Title
Crown Street Phase 3
Manchester

Status
Planning

Drawing Title
Zone 1 - Ground Floor
Site Plan

Job No
10418

Scale
1:500@A3

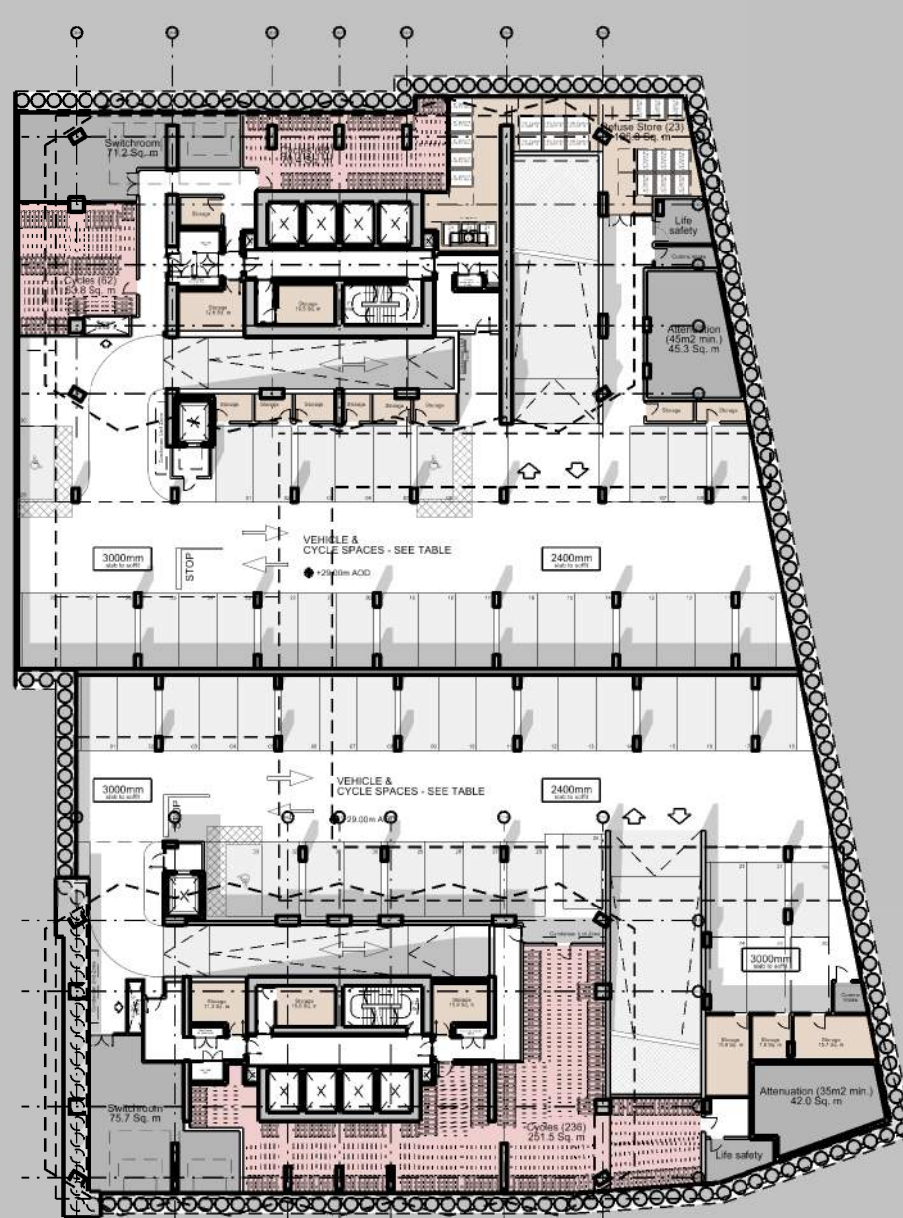
Drawing No
Z1-SHP-G100-PL-GRD-B5D801

Revision
X01

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NOTE: CAR PARKING		C7	C8	E1	E2
B1	2.5x5m	29	27	43	33
	Tandem	2	33	2	48
	Accessible	1	2	3	2
B2	2.5x5m (2.5x4.8m)	38	38	45	38 (1)
	Tandem	1	36	1	39
	Accessible	1	2	3	2
B3	2.5x5m (2.5x4.8m)	33	30	48	40 (1)
	Tandem	1	38	4	36
	Accessible	4	2	2	2
Total		66%	10/25%	60%	105/25%

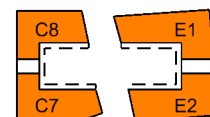
CYCLES		C7	C8	E1	E2
		236	130	281	116
		186	108	170	212
		0	184	0	123
		422	422	451	451
		100%	100%	100%	100%

Rev Date Description

X01 20.04.2023 Planning Issue

Rev	Date	Description
X01	20.04.2023	Planning Issue

Key Plan



Project Title
Crown Street Phase 3
Manchester

Status
Planning

Drawing Title
Zone 1 - Basement Level 01
Site Plan

Job No
10418

Scale
1:500

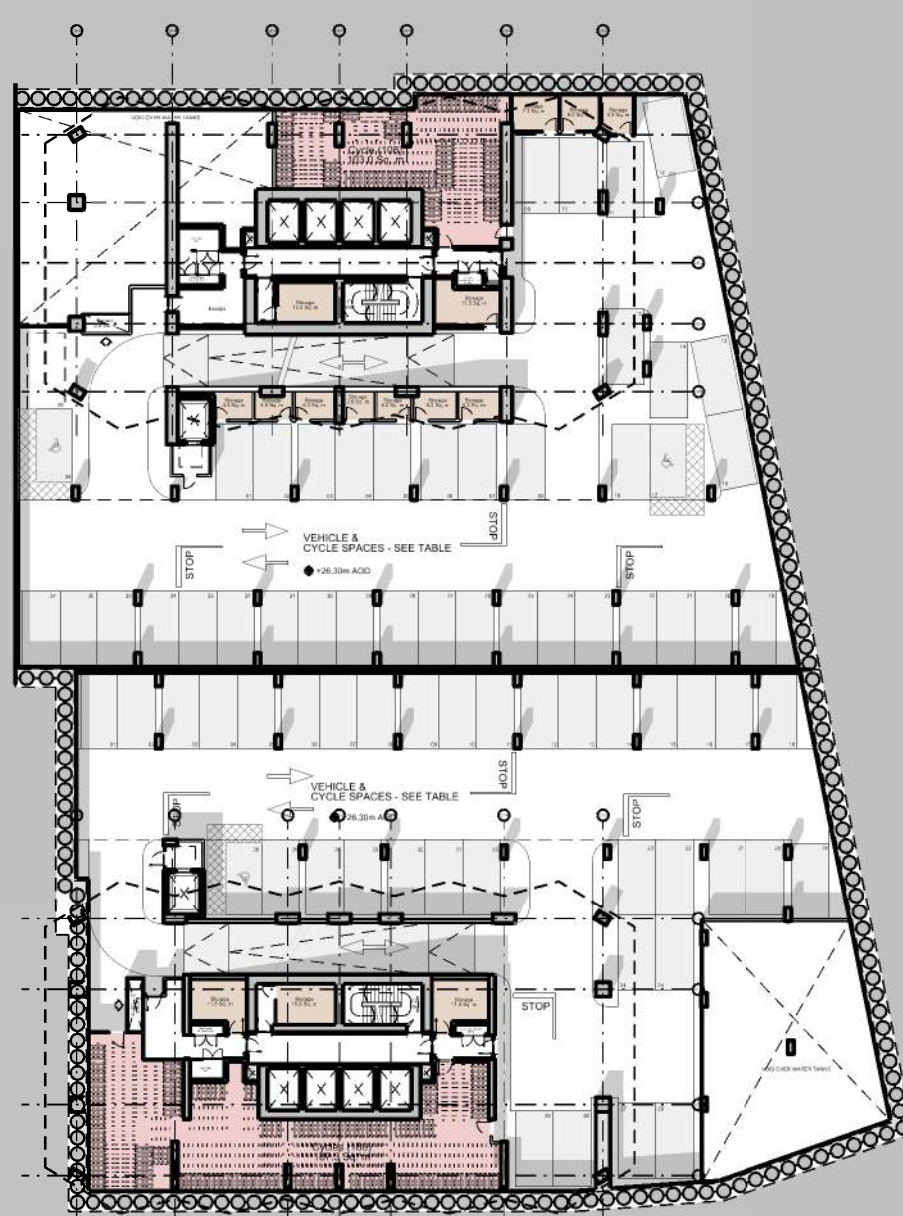
Drawing No
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Revision
X01

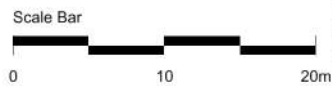
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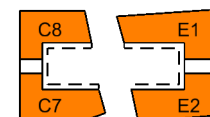
NOTE: CAR PARKING		C7	C8	E1	E2
B1	2.5x5m	29	27	43	33
	Tandem	2	3	45	2
	Accessible	1	2	3	2
B2	2.5x5m (2.5x4.8m)	38	38	45	38 (1)
	Tandem	36	1	39	2
	Accessible	1	2	3	2
B3	2.5x5m (2.5x4.8m)	33	30	48	40 (1)
	Tandem	1	38	4	52
	Accessible	4	2	2	2
Total		66%	100(25%)	60%	100(25%)

CYCLES	C7	C8	E1	E2
	236	130	281	116
	186	108	170	212
	0	184	0	123
	422	422	451	451
	100%	100%	100%	100%

NORTH

Rev	Date	Description
XB1	20.04.2023	Planning Issue

Key Plan



Project Title
Crown Street Phase 3
Manchester

Status
Planning

Drawing Title
Zone 1 - Basement Level 02
Site Plan

Job No
10418

Scale
1:500

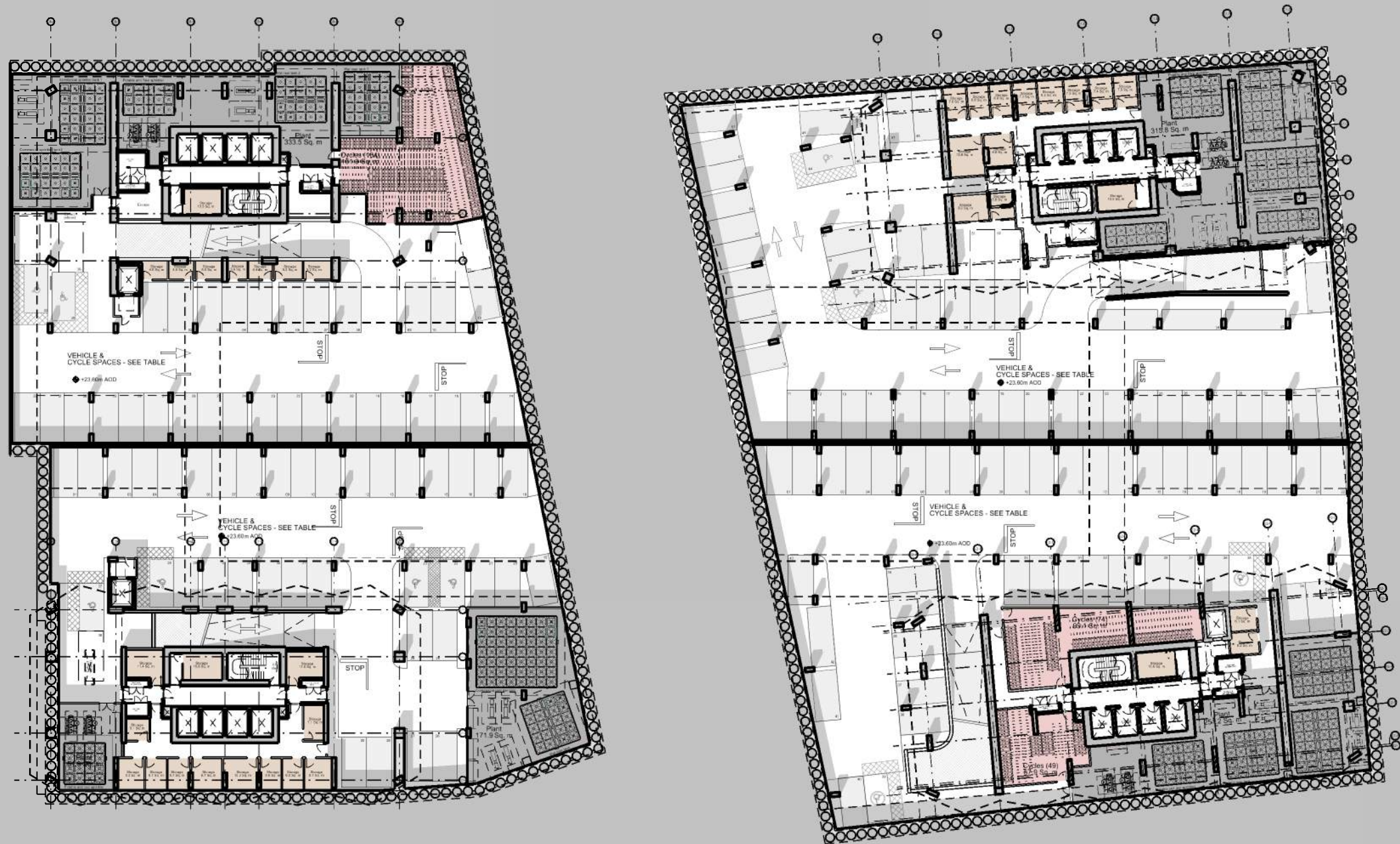
Drawing No
Z1-SHP-G100-PL-B2-B5D801

Revision
X01

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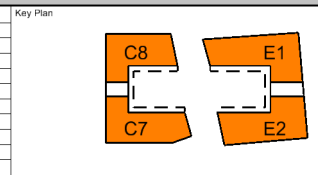
Scale Bar

0 10 20m

NOTE:	CAR PARKING	C7	C8	E1	E2
B1	2.5x5m	29	27	43	33
	Tandem	2	33	2	48
	Accessible	1	2	3	2
B2	2.5x5m (2.5x4.8m)	38	38	45	38 (1)
	Tandem	1	36	1	50
	Accessible	1	2	3	2
B3	2.5x5m (2.5x4.8m)	33	30	48	40 (1)
	Tandem	1	38	4	52
	Accessible	4	2	2	2
Total		66%	100(25%)	60%	100(25%)

CYCLES	C7	C8	E1	E2
	236	130	281	116
	186	108	170	212
	0	184	0	123
	422	422	451	451
	100%	100%	100%	100%

Rev	Date	Description
XB1	20.04.2023	Planning Issue



Project Title
Crown Street Phase 3
Manchester

Status
Planning

Drawing Title
Zone 1 - Basement Level 03
Site Plan

Job No
10418

Scale
1:500

Drawing No
Z1-SHP-G100-PL-B3-B5D801

Revision
X01

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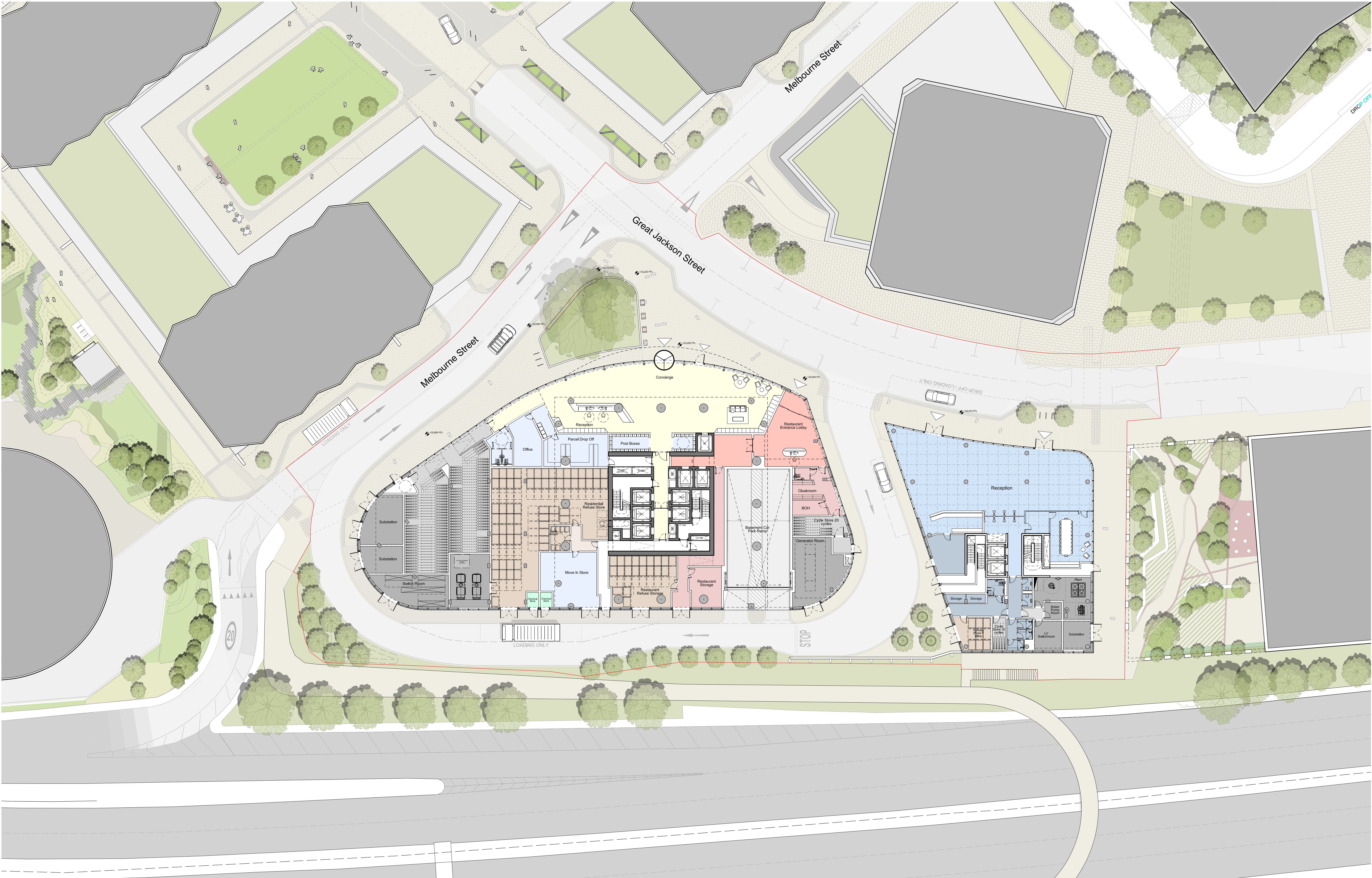
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Commercial	NIA (m2)	GIA (m2)	GEA (m2)
C7-1	72.4		
C7-2	62.8		
C7-3	40.2		
C7	175.4	209.7	237.6
C8-1	67.2		
C8-2	66		
C8-3	50.4		
C8	183.6	205.3	236.9
E1-1	94.1		
E1-2	103.3		
E1-3	56.2		
E1-4	39.2		
E1-5	32.4		
E1	325.2	376.4	424.7
E2-1	169.9		
E2-2	44.1		
E2-3	66.5		
E2	280.5	312.3	363.7
TOTAL	964.7	1103.7	1262.9

Total GIA
186,006

Total NIA
119,124



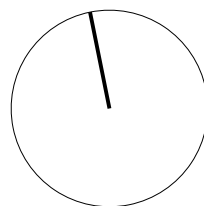
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Scale Bar

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NOTE:

NORTH



Rev	Date	Description
P 01	20-04-2023	Planning Issue

Project Title
Great Jackson Street - Plot D
Manchester

Status
Planning

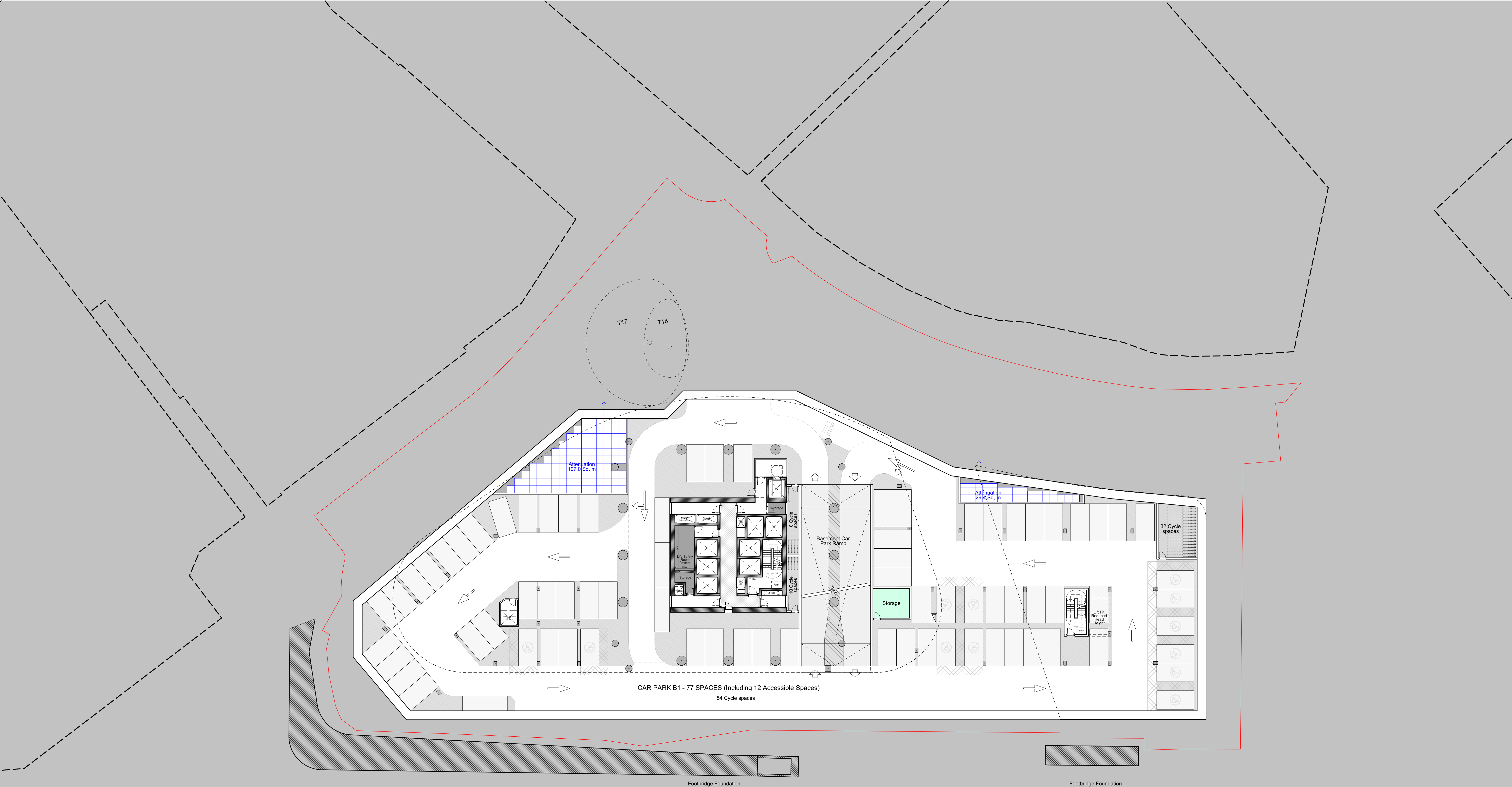
Drawing Title
Z1 Site Ground Level Plan

Job No 10419	Scale 1:250 @ A1	Date APR 2023
Drawing No 10419-Z1-SHP-G100-PL-GRD-B5D801	Revision P 01	

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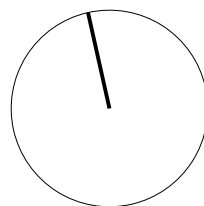
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Scale Bar

0 10 20m

NOTE:

NORTH



Rev	Date	Description
P 01	20-04-2023	Planning Issue

Project Title
Great Jackson Street - Plot D
Manchester

Status
Planning

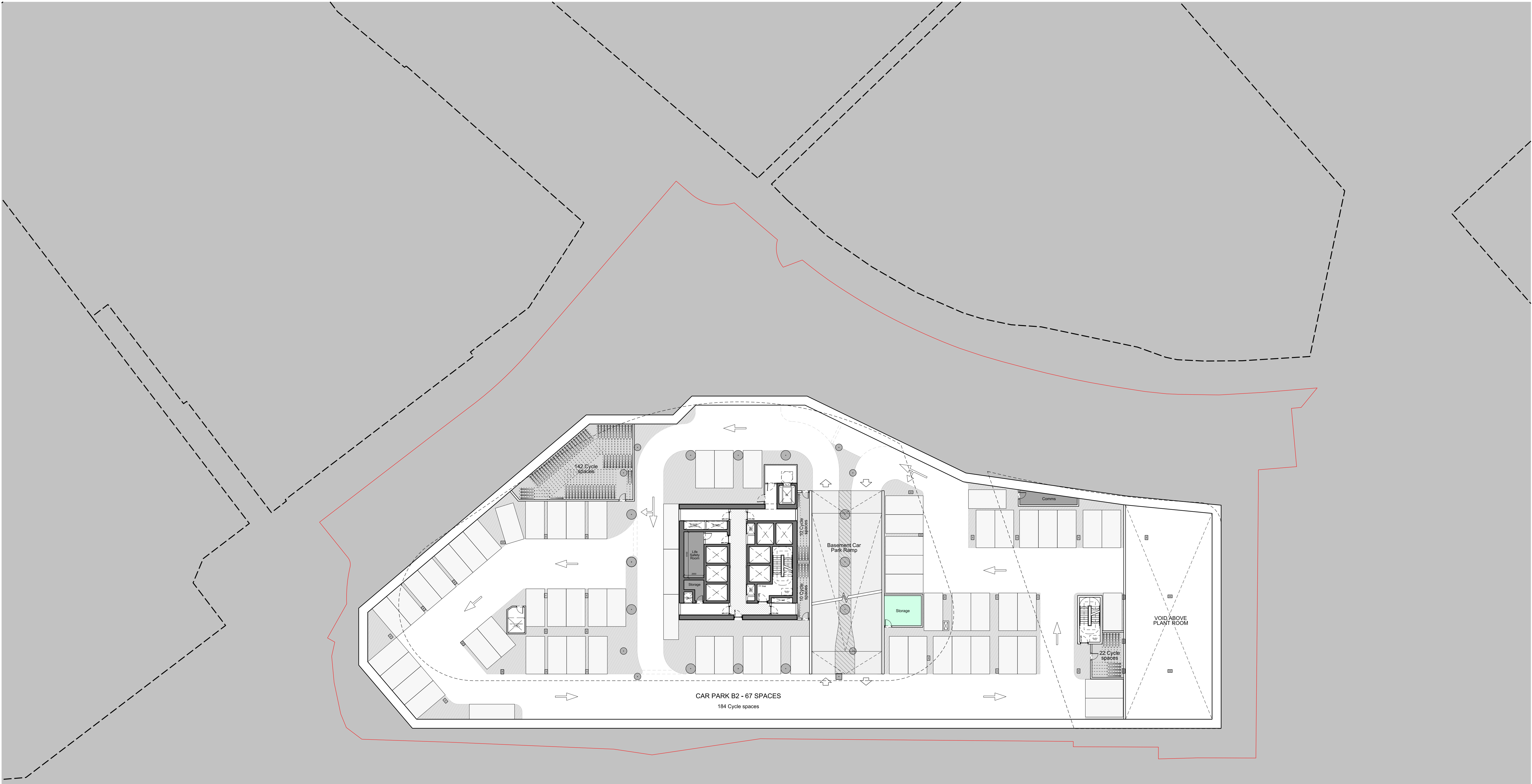
Drawing Title
Z1 Site
Level B1 Plan

Job No 10419	Scale 1:250 @ A1	Date APR 2023
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Drawing No 10419-Z1-SHP-G100-PL-B1-B5D801	Revision P 01
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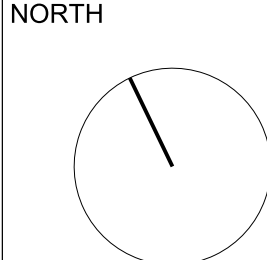
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Scale Bar

A horizontal scale bar with tick marks at 0, 10, and 20m. The bar is divided into four equal segments by three vertical tick marks.

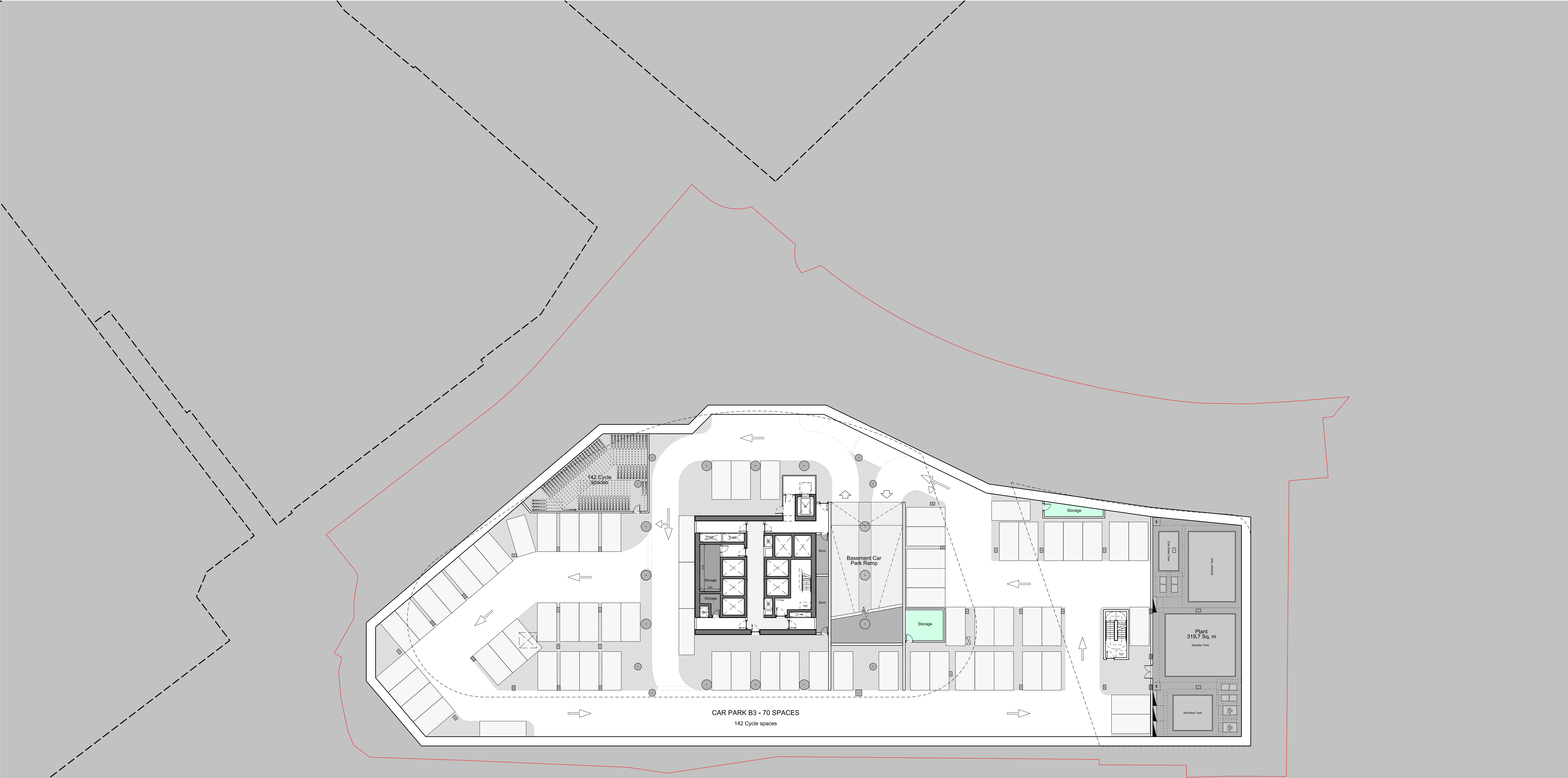
[illegible]

Status
Planning

Drawing No
10419-Z1-SHP-G100-PL-B2-B5D801

Revision
P 01

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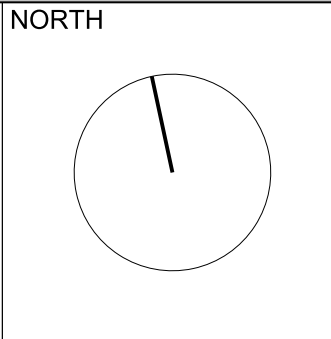


This drawing is copyright
Do not scale off dimensions.
All dimensions to be checked on site by contractor.
Contractor to report any dimensional discrepancies,
errors or omissions prior to commencing on site.

Scale Bar

0 10 20m

NOTE:



Rev	Date	Description
P 01	20-04-2023	Planning Issue

Project Title
Great Jackson Street - Plot D
Manchester

Status
Planning

Drawing Title
Z1 Site
Level B3 Plan

Job No 10419	Scale 1:250 @ A1	Date APR 2023
Drawing No 10419-Z1-SHP-G100-PL-B3-B5D801		Revision P 01

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simpsonhaugh	Great Jackson Street - Plot D Residential Area Schedule	16/01/2023
---------------------	--	-------------------

LEVEL	FL-FL	HEIGHT	HEIGHT (AOD)	STUDIO (1b 1p)	1 BED APT (1b 2p)	2 BED APT (2b 4p)	3 BED APT (3b 6p)	TOTAL NO. RESI UNITS
				(min. 42 sqm)	(min. 50 sqm)	(min. 70 sqm)	(min. 81 sqm)	
LEVEL 00	4000	0	33450					
LEVEL 01	3625	4000	37450					
LEVEL 02	2338	7625	41075					
LEVEL 03	2338	9962.5	43412.5					
LEVEL 04	2850	12300	45750	1	5	4	1	11
LEVEL 05	2850	15150	48600	0	2	8	0	10
LEVEL 06	2850	18000	51450	1	5	4	1	11
LEVEL 07	2850	20850	54300	0	2	8	0	10
LEVEL 08	2850	23700	57150	1	5	4	1	11
LEVEL 09	2850	26550	60000	0	2	8	0	10
LEVEL 10	2850	29400	62850	1	5	4	1	11
LEVEL 11	2850	32250	65700	0	2	8	0	10
LEVEL 12	2850	35100	68550	1	5	4	1	11
LEVEL 13	2850	37950	71400	0	2	8	0	10
LEVEL 14	2850	40800	74250	1	5	4	1	11
LEVEL 15	2850	43650	77100	0	2	8	0	10
LEVEL 16	2850	46500	79950	1	5	4	1	11
LEVEL 17	2850	49350	82800	0	2	8	0	10
LEVEL 18	2850	52200	85650	1	5	4	1	11
LEVEL 19	2850	55050	88500	0	2	8	0	10
LEVEL 20	2850	57900	91350	1	5	4	1	11
LEVEL 21	2850	60750	94200	0	2	8	0	10
LEVEL 22	2850	63600	97050	1	5	4	1	11
LEVEL 23	2850	66450	99900	0	2	8	0	10
LEVEL 24	2850	69300	102750	1	5	4	1	11
LEVEL 25	2850	72150	105600	0	2	8	0	10
LEVEL 26	2850	75000	108450	1	5	4	1	11
LEVEL 27	2850	77850	111300	0	2	8	0	10
LEVEL 28	2850	80700	114150	1	5	4	1	11
LEVEL 29	2850	83550	117000	0	2	8	0	10
LEVEL 30	2850	86400	119850	1	5	4	1	11
LEVEL 31	2850	89250	122700	0	2	8	0	10
LEVEL 32	2850	92100	125550	1	5	4	1	11
LEVEL 33	2850	94950	128400	0	2	8	0	10
LEVEL 34	2850	97800	131250	1	5	4	1	11
LEVEL 35	2850	100650	134100	0	2	8	0	10
LEVEL 36	2850	103500	136950	0	3	6	1	10
LEVEL 37	2850	106350	139800	0	2	8	0	10
LEVEL 38	2850	109200	142650	0	3	6	1	10
LEVEL 39	2850	112050	145500	0	2	8	0	10
LEVEL 40	2850	114900	148350	0	3	6	1	10
LEVEL 41	2850	117750	151200	0	2	8	0	10
LEVEL 42	2850	120600	154050	0	3	6	1	10
LEVEL 43	2850	123450	156900	0	2	8	0	10
LEVEL 44	2850	126300	159750	0	3	6	1	10
LEVEL 45	2850	129150	162600	0	2	8	0	10
LEVEL 46	2850	132000	165450	0	3	6	1	10
LEVEL 47	2850	134850	168300	0	2	8	0	10
LEVEL 48	2850	137700	171150	0	3	6	1	10
LEVEL 49	2850	140550	174000	0	2	8	0	10
LEVEL 50	2850	143400	176850	0	3	6	1	10
LEVEL 51	2850	146250	179700	0	2	8	0	10
LEVEL 52	2850	149100	182550	0	3	6	1	10
LEVEL 53	2850	151950	185400	0	2	8	0	10
LEVEL 54	2850	154800	188250	0	3	6	1	10
LEVEL 55	2850	157650	191100	0	2	8	0	10
LEVEL 56	2850	160500	193950	0	3	6	1	10
LEVEL 57	2850	163350	196800	0	2	8	0	10
LEVEL 58	2850	166200	199650	0	3	6	1	10
LEVEL 59	2850	169050	202500	0	2	8	0	10
LEVEL 60	2850	171900	205350	0	3	6	1	10
LEVEL 61	2850	174750	208200	0	2	8	0	10
LEVEL 62	2850	177600	211050	0	3	6	1	10
LEVEL 63	2850	180450	213900	0	2	8	0	10

LEVEL 64	2850	183300	216750	0	3	6	1	10
LEVEL 65	3250	186150	219600	0	2	8	0	10
LEVEL 66 Penthouse	3500	189400	222850	0	0	0	6	6
LEVEL 67	3500	192900	226350					
LEVEL 68	3500	196400	229850					
LEVEL 69	3500	199900	233350					
LEVEL 70	4700	203400	236850					
ROOF	4900	208100	241550					
TOP		213000	246450					
Totals				16	187	402	37	642
Unit Mix %				2.5%	29.1%	62.6%	5.8%	
				31.6%				

Notes:

*Areas measured according to RICS Code of Measuring Practice - 6th Ed.

*NIA excludes structural columns within units and party walls between different use types. This figure should not be used as the residential net sales area which includes structural elements.

*GIA figure excludes external plant.

*GEA /GIA excludes voids above base level.

*These areas relate to the relevant areas of the building at the current state of scheme design.

*Any decisions to be made on the basis of these measurements, whether as to the project viability, pre-letting, Lease agreements or otherwise should include due allowance for the increases and decreases inherent in the design development and construction proce

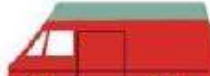
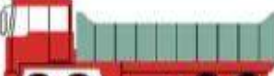
Appendix B – Traffic Surveys



APPENDIX A

Vehicle Categories

COBA VEHICLE CATEGORIES

CAR	 SALOON  ESTATE  PEOPLE CARRIER  CAR TOWING CARAVAN/TRAILER
LIGHT GOODS VEHICLE (LGV)	 VAN  <3.5 TONNES – single rear tyres  PICK-UP
OTHER GOODS VEHICLE (OGV1)	 >3.5 TONNES > 3.5 TONNES – twin rear tyres  2 AXLES RIGID 2-AXLES RIGID  2 AXLES RIGID 2-AXLES RIGID  3 AXLES RIGID 3 AXLES-RIGID
OTHER GOODS VEHICLE (OGV2)	 4 OR MORE AXLES RIGID 4 OR MORE AXLES RIGID  3 AXLES ARTIC 3-AXLES ARTIC  4 OR MORE AXLES ARTIC 4 OR MORE AXLES ARTIC  OTHER GOODS VEHICLE WITH TRAILER OTHER GOODS VEHICLE WITH TRAILER
BUSES & COACHES (PSV)	 DOUBLE DECK BUS DOUBLE DECK BUS  SINGLE DECK BUS OR COACH SINGLE DECK BUS OR COACH

COBA VEHICLE CATEGORIES

Definition of Categories

The various components of traffic have different characteristics in terms of operating costs, growth and occupancy. The most common categories into which the traffic is split in COBA; these are defined as:

Cars (CARS)

Including taxis, estate cars, 'people carriers' and other passenger vehicles (for example, minibuses and camper vans) with a gross vehicle weight of less than 3.5 tonnes, normally ones which can accommodate not more than 15 seats. Three-wheeled cars, motor invalid carriages, Land Rovers, Range Rovers and Jeeps and smaller ambulances are included. Cars towing caravans or trailers are counted as one vehicle unless included as a separate class.

Light Goods Vehicles (LGV)

Includes all goods vehicles up to 3.5 tonnes gross vehicle weight (goods vehicles over 3.5 tonnes have sideguards fitted between axles), including those towing a trailer or caravan. This includes all car delivery vans and those of the next larger carrying capacity such as transit vans. Included here are small pickup vans, three-wheeled goods vehicles, milk floats and pedestrian controlled motor vehicles. Most of this group is delivery vans of one type or another.

Other Goods Vehicles (OGV 1)

Includes all rigid vehicles over 3.5 tonnes gross vehicle weight with two or three axles Includes larger ambulances, tractors (without trailers), road rollers for tarmac pressing, box vans and similar large vans. A two or three axle motor tractive unit without a trailer is also included.

Other Goods Vehicles (OGV 2)

This category includes all rigid vehicles with four or more axles and all articulated vehicles. Also included in this class are OGV1 goods vehicles towing a caravan or trailer.

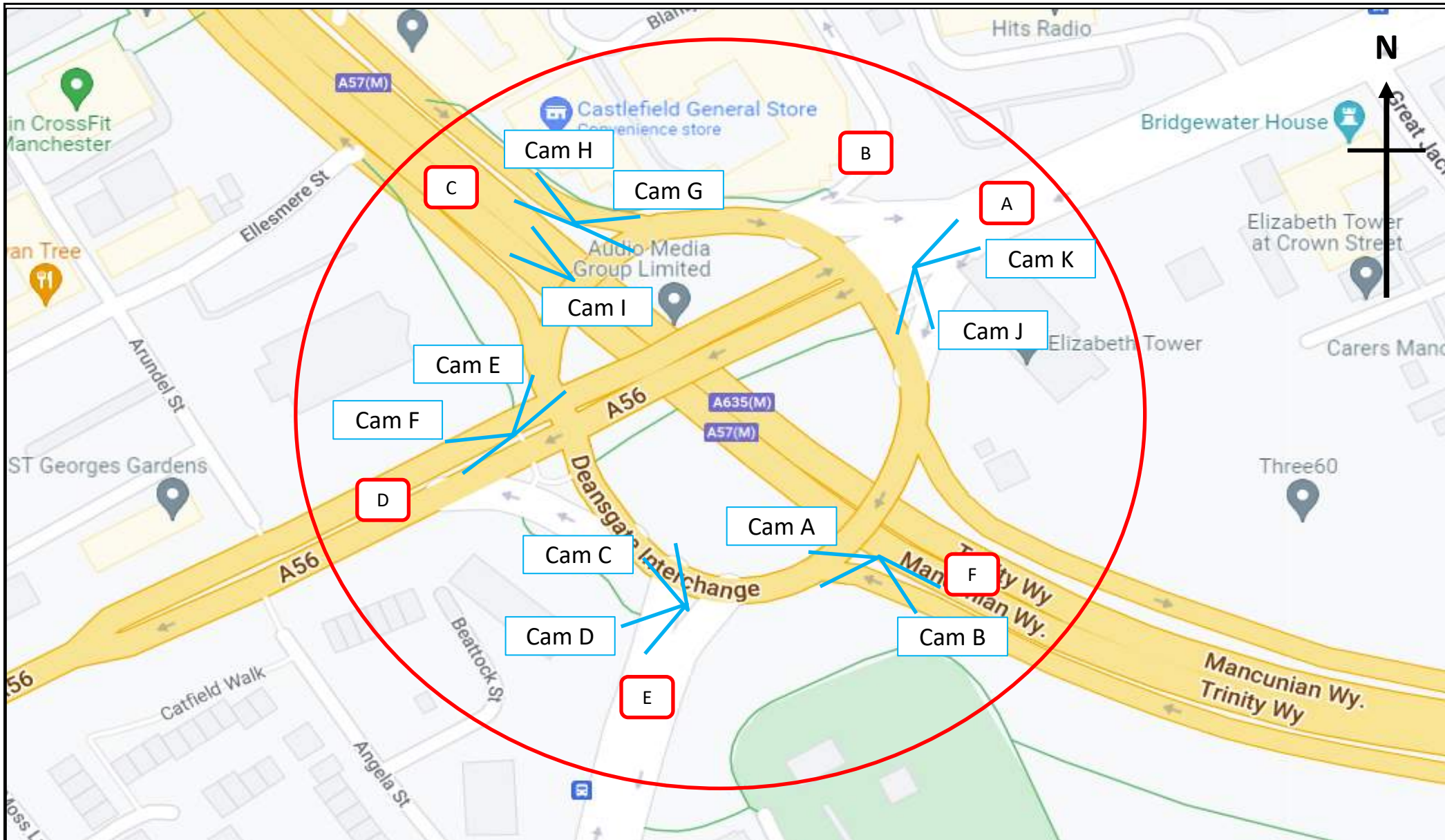
Buses and Coaches (PSV)

Includes all public service vehicles and works buses with a gross vehicle weight of 3.5 tonnes or more, usually vehicles with more than 16 seats.



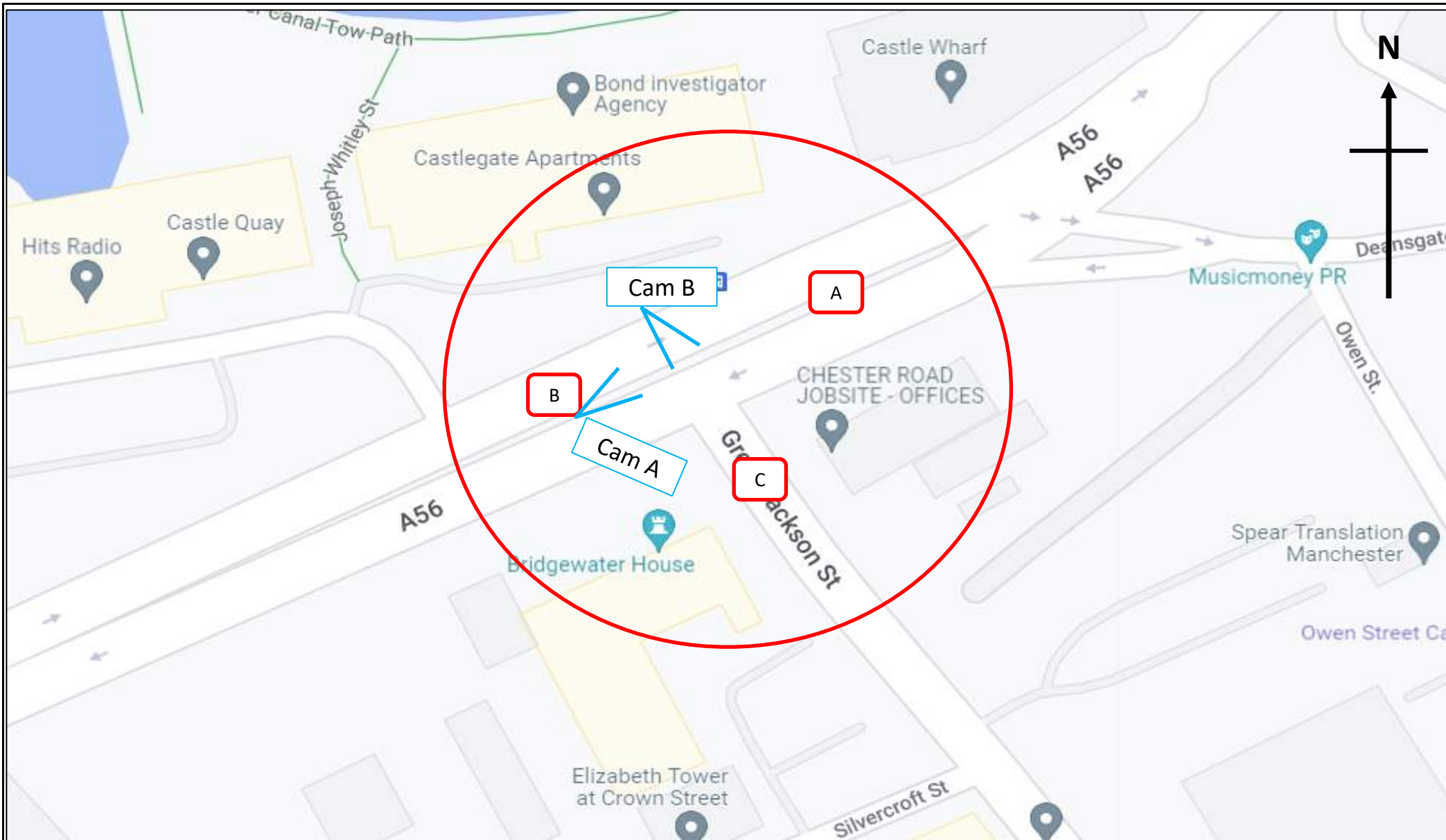
APPENDIX B

Manual Classified Count



	Site / Location:	Site 1 - A56/A57(M) (roundabout and A57(M) mainline)	Project No:	13464	Drawing No:	13464-01	Drawn By:	MN
	Survey Date:	Tuesday 15th November 2022	Project Name: JACKSON ST					
	Survey Times:	07:00 to 10:00 & 16:00 to 19:00	Drawing Title: Site Layout and Observed Movements					

[illegible]



	Site / Location:	Site 2 - A56/Great Jackson Street	Project No:	13464	Drawing No:	13464-02	Drawn By:	MN
	Survey Date:	Tuesday 15th November 2022	Project Name:		JACKSON ST			
	Survey Times:	07:00 to 10:00 & 16:00 to 19:00	Drawing Title:		Site Layout and Observed Movements			

SITE: 2

LOCATION: A56/Great Jackson Street

DATE: 15/11/2022

DAY: Tuesday

SITE: 2

LOCATION: A56/Great Jackson Street

DATE: 15/11/2022

DAY: Tuesday

SITE: 2

LOCATION: A56/Great Jackson Street

DATE: 15/11/2022

DAY: Tuesday

SITE: 2

LOCATION: A56/Great Jackson Street

DATE: 15/11/2022

DAY: Tuesday

A to C								A to B								
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	22	4	0	0	0	0	0	26								0
07:15	20	8	0	1	0	0	0	29								0
07:30	25	3	0	0	0	0	0	28								0
07:45	19	3	0	0	0	0	0	22								0
H/TOT	86	18	0	1	0	0	0	105								0
08:00	13	3	2	0	0	0	0	18								0
08:15	6	2	0	0	0	0	0	8								0
08:30	10	1	0	0	0	0	0	11								0
08:45	17	1	0	0	0	0	0	18								0
H/TOT	46	7	2	0	0	0	0	55	0	0	0	0	0	0	0	0
09:00	10	0	0	0	0	0	0	10								0
09:15	9	0	0	0	0	0	0	9								0
09:30	13	0	0	0	0	0	0	13								0
09:45	15	1	0	0	0	0	0	16								0
H/TOT	47	1	0	0	0	0	0	48								0
P/TOT	179	26	2	1	0	0	0	208	0	0	0	0	0	0	0	0

	A to C								A to B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	10	1	1	0	0	0	0	12								0
16:15	4	1	1	0	0	0	0	6								0
16:30	7	1	1	0	0	0	0	9								0
16:45	9	0	0	0	0	0	0	9								0
H/TOT	30	3	3	0	0	0	0	36	0	0	0	0	0	0	0	0
17:00	23	0	0	0	0	0	0	23								0
17:15	11	1	0	0	0	0	0	12								0
17:30	10	0	0	0	0	0	0	10								0
17:45	7	1	0	0	0	0	0	8								0
H/TOT	51	2	0	0	0	0	0	53	0	0	0	0	0	0	0	0
18:00	15	0	0	0	0	0	0	15								0
18:15	15	0	0	0	0	0	0	15								0
18:30	18	1	0	0	0	0	0	19								0
18:45	4	0	0	0	0	0	0	4								0
H/TOT	52	1	0	0	0	0	0	53	0	0	0	0	0	0	0	0
P/TOT	133	6	3	0	0	0	0	142	0	0	0	0	0	0	0	0

TIME	A to A							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
07:00								0
07:15								0
07:30								0
07:45								0
H/TOT	0	0	0	0	0	0	0	0
08:00								0
08:15								0
08:30								0
08:45								0
H/TOT	0	0	0	0	0	0	0	0
09:00								0
09:15								0
09:30								0
09:45								0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0

	A to A							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00								0
16:15								0
16:30								0
16:45								0
H/TOT	0	0	0	0	0	0	0	0
17:00								0
17:15								0
17:30								0
17:45								0
H/TOT	0	0	0	0	0	0	0	0
18:00								0
18:15								0
18:30								0
18:45								0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0

[illegible][illegible]

	B to B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00								0
07:15								0
07:30								0
07:45								0
H/TOT	0	0	0	0	0	0	0	0
08:00								0
08:15								0
08:30								0
08:45								0
H/TOT	0	0	0	0	0	0	0	0
09:00								0
09:15								0
09:30								0
09:45								0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0

	B to B							TOT
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
16:00								0
16:15								0
16:30								0
16:45								0
H/TOT	0	0	0	0	0	0	0	0
17:00								0
17:15								0
17:30								0
17:45								0
H/TOT	0	0	0	0	0	0	0	0
18:00								0
18:15								0
18:30								0
18:45								0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0



SITE: 2
LOCATION: A56/Great Jackson Street

DATE: 15/11/2022 SITE: 2
DAY: Tuesday LOCATION: A56/Great Jackson Street

DATE: 15/11/2022 SITE: 2
DAY: Tuesday LOCATION: A56/Great Jackson Street

DATE: 15/11/2022 SITE: 2
DAY: Tuesday LOCATION: A56/Great Jackson Street

TIME	C to B							TOT	C to A							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
07:00	12	3	0	1	0	0	0	16	0	0	0	0	0	0	0	0
07:15	16	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0
07:30	16	2	0	0	0	0	1	19	0	0	0	0	0	0	2	2
07:45	24	0	0	0	0	0	0	24	0	0	0	0	0	0	1	1
H/TOT	68	5	0	1	0	0	1	75	0	0	0	0	0	0	3	3
08:00	17	2	2	1	0	0	0	22	0	0	0	0	0	0	0	0
08:15	18	0	1	0	0	0	1	20	0	0	0	0	0	0	1	1
08:30	13	0	0	2	0	0	0	15	0	0	0	0	0	0	1	1
08:45	26	0	2	1	0	0	0	29	0	0	0	0	0	0	0	0
H/TOT	74	2	5	4	0	0	1	86	0	0	0	0	0	0	2	2
09:00	19	0	1	0	0	0	1	21	0	0	0	0	0	0	1	1
09:15	15	1	0	0	0	0	0	16	0	0	0	0	0	0	0	0
09:30	15	1	0	0	0	0	2	18	0	0	0	0	0	0	0	0
09:45	17	1	0	0	0	0	0	18	0	0	0	0	0	0	0	0
H/TOT	66	3	1	0	0	0	3	73	0	0	0	0	0	0	1	1
P/TOT	208	10	6	5	0	0	5	234	0	0	0	0	0	0	6	6

TIME	C to B							TOT	C to A							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
16:00	33	6	1	0	0	0	4	44	0	0	0	0	0	0	0	0
16:15	41	5	4	1	0	0	2	53	0	0	0	0	0	0	0	0
16:30	39	7	2	0	0	1	3	52	0	0	0	0	0	0	0	0
16:45	56	5	2	0	0	0	6	69	0	0	0	0	0	0	0	0
H/TOT	169	23	9	1	0	1	15	218	0	0	0	0	0	0	0	0
17:00	45	2	1	0	0	0	2	50	0	0	0	0	0	0	0	0
17:15	52	4	0	0	0	0	0	56	0	0	0	0	0	0	0	0
17:30	44	2	0	0	0	1	1	48	0	0	0	0	0	0	0	0
17:45	52	5	0	0	0	0	7	64	0	0	0	0	0	0	0	0
H/TOT	193	13	1	0	0	1	10	218	0	0	0	0	0	0	0	0
18:00	46	0	0	0	0	0	5	51	0	0	0	0	0	0	0	0
18:15	45	1	0	0	0	0	0	46	0	0	0	0	0	0	0	0
18:30	22	2	2	0	0	0	2	28	0	0	0	0	0	0	1	1
18:45	15	1	0	0	0	0	1	17	0	0	0	0	0	0	2	2
H/TOT	128	4	2	0	0	0	8	142	0	0	0	0	0	0	3	3
P/TOT	490	40	12	1	0	2	33	578	0	0	0	0	0	0	3	3

TIME	C to C							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
07:00	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0
09:30	1	0	0	0	0	0	0	1
09:45	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	0	0	1
P/TOT	1	0	0	0	0	0	0	1

TIME	C to C							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	1	0	1
16:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	1	0	1
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	1	0	1

TIME	TO ARM A							TOT	FROM ARM A							TOT	TIME	TO ARM B							TOT	FROM ARM				
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	PSV	MCL	PCL			CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	
07:00	0	0	0	0	0	0	0	0	22	4	0	0	0	0	0	26	07:00	12	3	0	1	0	0	0	16	0	0	0	0	
07:15	0	0	0	0	0	0	0	0	20	8	0	1	0	0	0	29	07:15	16	0	0	0	0	0	0	16	0	0	0	0	
07:30	0	0	0	0	0	0	2	2	25	3	0	0	0	0	0	28	07:30	16	2	0	0	0	0	1	19	0	0	0	0	
07:45	0	0	0	0	0	0	1	1	19	3	0	0	0	0	0	22	07:45	24	0	0	0	0	0	0	24	0	0	0	0	
H/TOT	0	0	0	0	0	0	3	3	86	18	0	1	0	0	0	105	H/TOT	68	5	0	1	0	0	1	75	0	0	0	0	
08:00	0	0	0	0	0	0	0	0	13	3	2	0	0	0	0	18	08:00	17	2	2	1	0	0	0	22	0	0	0	0	
08:15	0	0	0	0	0	0	1	1	6	2	0	0	0	0	0	8	08:15	18	0	1	0	0	0	1	20	0	0	0	0	
08:30	0	0	0	0	0	0	1	1	10	1	0	0	0	0	0	11	08:30	13	0	0	2	0	0	0	15	0	0	0	0	
08:45	0	0	0	0	0	0	0	0	17	1	0	0	0	0	0	18	08:45	26	0	2	1	0	0	0	29	0	0	0	0	
H/TOT	0	0	0	0	0	0	2	2	46	7	2	0	0	0	0	55	H/TOT	74	2	5	4	0	0	1	86	0	0	0	0	
09:00	0	0	0	0	0	0	1	1	10	0	0	0	0	0	0	10	09:00	19	0	1	0	0	0	1	21	0	0	0	0	
09:15	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	09:15	15	1	0	0	0	0	0	16	0	0	0	0	
09:30	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	13	09:30	15	1	0	0	0	0	2	18	0	0	0	0	
09:45	0	0	0	0	0	0	0	0	15	1	0	0	0	0	0	16	09:45	17	1	0	0	0	0	0	18	0	0	0	0	
H/TOT	0	0	0	0	0	0	1	1	47	1	0	0	0	0	0	48	H/TOT	66	3	1	0	0	0	3	73	0	0	0	0	
P/TOT	0	0	0	0	0	0	6	6	179	26	2	1	0	0	0	208	P/TOT	208	10	6	5	0	0	5	234	0	0	0	0	

TIME	TO ARM A							TOT	FROM ARM A							TOT	TIME	TO ARM B							TOT	FROM ARM				
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	PSV	MCL	PCL			CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	
16:00	0	0	0	0	0	0	0	0	10	1	1	0	0	0	0	12	16:00	33	6	1	0	0	0	4	44	0	0	0	0	
16:15	0	0	0	0	0	0	0	0	4	1	1	0	0	0	0	6	16:15	41	5	4	1	0	0	2	53	0	0	0	0	
16:30	0	0	0	0	0	0	0	0	7	1	1	0	0	0	0	9	16:30	39	7	2	0	0	1	3	52	0	0	0	0	
16:45	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	16:45	56	5	2	0	0	0	6	69	0	0	0	0	
H/TOT	0	0	0	0	0	0	0	0	30	3	3	0	0	0	0	36	H/TOT	169	23	9	1	0	1	15	218	0	0	0	0	
17:00	0	0	0	0	0	0	0	0	23	0	0	0	0	0	0	23	17:00	45	2	1	0	0	0	2	50	0	0	0	0	
17:15	0	0	0	0	0	0	0	0	11	1	0	0	0	0	0	12	17:15	52	4	0	0	0	0	0	56	0	0	0	0	
17:30	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	10	17:30	44	2	0	0	0	1	1	48	0	0	0	0	
17:45	0	0	0	0	0	0	0	0	7	1	0	0	0	0	0	8	17:45	52	5	0	0	0	0	0	7	64	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	51	2	0	0	0	0	0	53	H/TOT	193	13	1	0	0	1	10	218	0	0	0	0	
18:00	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	15	18:00	46	0	0	0	0	0	5	51	0	0	0	0	
18:15	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	15	18:15	45	1	0	0	0	0	0	46	0	0	0	0	
18:30	0	0	0	0	0	0	1	1	18	1	0	0	0	0	0	19	18:30	22	2	2	0	0	0	2	28	0	0	0	0	
18:45	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	4	18:45	15	1	0	0	0	0	1	17	0	0	0	0	
H/TOT	0	0	0	0	0	0	3	3	52	1	0	0	0	0	0	53	H/TOT	128	4	2	0	0	0	8	142	0	0	0	0	
P/TOT	0	0	0	0	0	0	3	3	133	6	3	0	0	0	0	142	P/TOT	490	40	12	1	0	2	33	578	0	0	0	0	

DATE: 15/11/2022

SITE: 2

DAY: Tuesday

LOCATION: A56/Great Jackson Street

DATE: 15/11/2022

SITE: 2

DAY: Tuesday

LOCATION: A56/Great Jackson Street

DATE: 15/11/2022

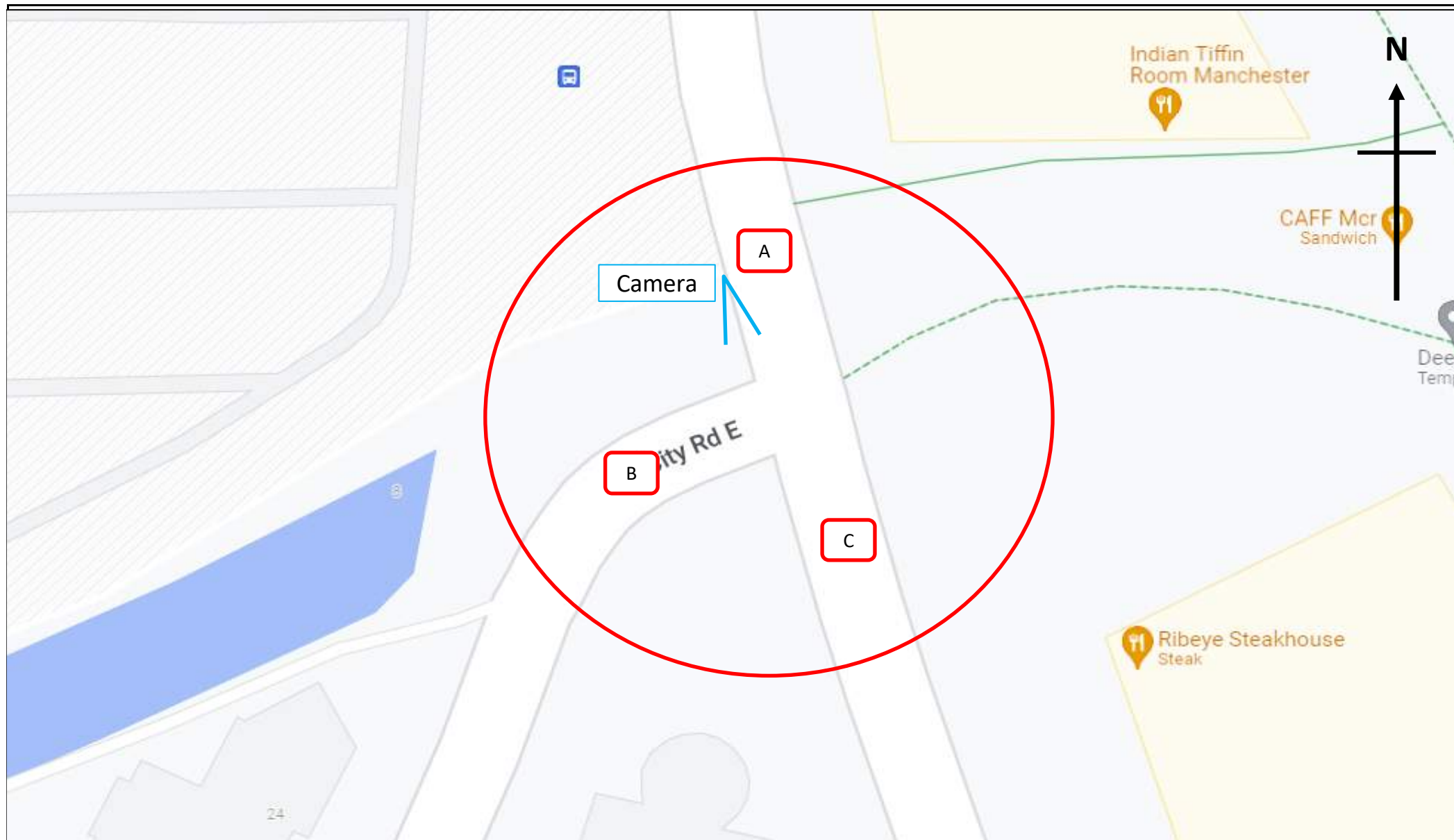
DAY: Tuesday

A		B		TO ARM C										FROM ARM C										JUNCTION TOTAL									
PSV	MCL	PCL	TOT	TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT				
0	0	0	0	07:00	22	4	0	0	0	0	0	26	12	3	0	1	0	0	0	16	07:00	34	7	0	1	0	0	0	42				
0	0	0	0	07:15	20	8	0	1	0	0	0	29	16	0	0	0	0	0	0	16	07:15	36	8	0	1	0	0	0	45				
0	0	0	0	07:30	25	3	0	0	0	0	0	28	16	2	0	0	0	0	0	21	07:30	41	5	0	0	0	0	3	49				
0	0	0	0	07:45	19	3	0	0	0	0	0	22	24	0	0	0	0	0	1	25	07:45	43	3	0	0	0	0	1	47				
0	0	0	0	H/TOT	86	18	0	1	0	0	0	105	68	5	0	1	0	0	4	78	H/TOT	154	23	0	2	0	0	4	183				
0	0	0	0	08:00	13	3	2	0	0	0	0	18	17	2	2	1	0	0	0	22	08:00	30	5	4	1	0	0	0	40				
0	0	0	0	08:15	6	2	0	0	0	0	0	8	18	0	1	0	0	0	2	21	08:15	24	2	1	0	0	0	2	29				
0	0	0	0	08:30	10	1	0	0	0	0	0	11	13	0	0	2	0	0	1	16	08:30	23	1	0	2	0	0	1	27				
0	0	0	0	08:45	17	1	0	0	0	0	0	18	26	0	2	1	0	0	0	29	08:45	43	1	2	1	0	0	0	47				
0	0	0	0	H/TOT	46	7	2	0	0	0	0	55	74	2	5	4	0	0	3	88	H/TOT	120	9	7	4	0	0	3	143				
0	0	0	0	09:00	10	0	0	0	0	0	0	10	19	0	1	0	0	0	2	22	09:00	29	0	1	0	0	0	2	32				
0	0	0	0	09:15	9	0	0	0	0	0	0	9	15	1	0	0	0	0	0	16	09:15	24	1	0	0	0	0	0	25				
0	0	0	0	09:30	14	0	0	0	0	0	0	14	16	1	0	0	0	0	2	19	09:30	29	1	0	0	0	0	2	32				
0	0	0	0	09:45	15	1	0	0	0	0	0	16	17	1	0	0	0	0	0	18	09:45	32	2	0	0	0	0	0	34				
0	0	0	0	H/TOT	48	1	0	0	0	0	0	49	67	3	1	0	0	0	4	75	H/TOT	114	4	1	0	0	0	4	123				
0	0	0	0	P/TOT	180	26	2	1	0	0	0	209	209	10	6	5	0	0	11	241	P/TOT	388	36	8	6	0	0	11	449				

PEAK HOUR CALCULATION	TOT
07:00 to 08:00	183
07:15 to 08:15	181
07:30 to 08:30	165
07:45 to 08:45	143
08:00 to 09:00	143
08:15 to 09:15	135
08:30 to 09:30	131
08:45 to 09:45	136
09:00 to 10:00	123
AM PEAK	183

A		B		TO ARM C										FROM ARM C										JUNCTION TOTAL									
PSV	MCL	PCL	TOT	TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT				
0	0	0	0	16:00	10	1	1	0	0	0	0	12	33	6	1	0	0	0	4	44	16:00	43	7	2	0	0	0	4	56				
0	0	0	0	16:15	4	1	1	0	0	0	0	6	41	5	4	1	0	0	2	53	16:15	45	6	5	1	0	0	2	59				
0	0	0	0	16:30	7	1	1	0	0	1	0	10	39	7	2	0	0	2	3	53	16:30	46	8	3	0	0	2	3	62				
0	0	0	0	16:45	9	0	0	0	0	0	0	9	56	5	2	0	0	0	6	69	16:45	65	5	2	0	0	0	6	78				
0	0	0	0	H/TOT	30	3	3	0	0	1	0	37	169	23	9	1	0	2	15	219	H/TOT	199	26	12	1	0	2	15	255				
0	0	0	0	17:00	23	0	0	0	0	0	0	23	45	2	1	0	0	0	2	50	17:00	68	2	1	0	0	0	2	73				
0	0	0	0	17:15	11	1	0	0	0	0	0	12	52	4	0	0	0	0	0	56	17:15	63	5	0	0	0	0	0	68				
0	0	0	0	17:30	10	0	0	0	0	0	0	10	44	2	0	0	0	1	1	48	17:30	54	2	0	0	0	1	1	58				
0	0	0	0	17:45	7	1	0	0	0	0	0	8	52	5	0	0	0	0	7	64	17:45	59	6	0	0	0	0	7	72				
0	0	0	0	H/TOT	51	2	0	0	0	0	0	53	193	13	1	0	0	1	10	218	H/TOT	244	15	1	0	0	1	10	271				
0	0	0	0	18:00	15	0	0	0	0	0	0	15	46	0	0	0	0	0	5	51	18:00	61	0	0	0	0	0	5	66				
0	0	0	0	18:15	15	0	0	0	0	0	0	15	45	1	0	0	0	0	0	46	18:15	60	1	0	0	0	0	0	61				
0	0	0	0	18:30	18	1	0	0	0	0	0	19	22	2	2	0	0	0	3	29	18:30	40	3	2	0	0	0	3	48				
0	0	0	0	18:45	4	0	0	0	0	0	0	4	15	1	0	0	0	0	3	19	18:45	19	1	0	0	0	0	3	23				
0	0	0	0	H/TOT	52	1	0	0	0	0	0	53	128	4	2	0	0	0	11	145	H/TOT	180	5	2	0	0	0	11	198				
0	0	0	0	P/TOT	133	6	3	0	0	1	0	143	490	40	12	1	0	3	36	582	P/TOT	623	46	15	1	0	3	36	724				

PEAK HOUR CALCULATION	TOT
16:00 to 17:00	255
16:15 to 17:15	272
16:30 to 17:30	281
16:45 to 17:45	277
17:00 to 18:00	271
17:15 to 18:15	264
17:30 to 18:30	257
17:45 to 18:45	247
18:00 to 19:00	198
PM PEAK	281



	Site / Location:	Site 3 - City Road East/Medlock Street	Project No:	13464	Drawing No:	13464-03	Drawn By:	MN
	Survey Date:	Tuesday 15th November 2022	Project Name:		JACKSON ST			
	Survey Times:	07:00 to 10:00 & 16:00 to 19:00	Drawing Title:		Site Layout and Observed Movements			

SITE: 3

LOCATION: City Road East/Medlock Street

DATE: 15/11/2022

DAY: Tuesday

SITE: 3

LOCATION: City Road East/Medlock Street

DATE: 15/11/20
DAY: Tuesday

SITE: 3

LOCATION: City Road East/Medlock Street

DATE: 15/11/20
DAY: Tuesday

SITE: 3

LOCATION: City Road East/Medlock Street

DATE: 15/11/2022

DAY: Tuesday

A to C								A to B								
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	38	1	0	1	2	0	4	46	6	0	0	0	0	0	0	6
07:15	44	1	1	0	1	0	0	47	6	1	0	0	0	0	2	9
07:30	51	5	0	0	2	0	0	58	11	0	0	0	0	0	1	12
07:45	55	7	4	0	2	0	1	69	8	0	0	0	0	0	0	8
H/TOT	188	14	5	1	7	0	5	220	31	1	0	0	0	0	3	35
08:00	43	5	0	0	1	1	6	56	5	0	1	0	0	0	0	6
08:15	53	3	3	0	2	0	2	63	4	0	0	0	0	0	2	6
08:30	48	3	0	0	2	1	1	55	11	0	0	0	0	0	0	10
08:45	42	6	6	0	2	0	3	59	10	0	0	0	0	0	2	13
H/TOT	186	17	9	0	7	2	12	233	30	0	1	0	0	0	4	35
09:00	51	3	0	0	1	0	1	56	5	1	1	0	0	0	1	8
09:15	51	3	1	0	3	0	2	60	5	2	0	0	0	0	1	8
09:30	39	3	1	0	1	0	1	45	10	0	0	0	0	0	1	11
09:45	62	8	6	1	3	1	0	81	8	1	1	0	0	0	1	11
H/TOT	203	17	8	1	8	1	4	242	28	4	2	0	0	0	4	38
P/TOT	577	48	22	2	22	3	21	695	89	5	3	0	0	0	11	108

A to C								A to B								
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	124	14	2	0	1	0	3	144	7	0	0	0	0	0	3	10
16:15	114	9	2	1	2	1	7	136	9	0	0	0	0	0	1	10
16:30	124	6	2	1	3	0	5	141	5	1	0	0	0	0	2	8
16:45	121	11	1	0	4	0	7	144	3	1	0	0	0	0	10	14
H/TOT	483	40	7	2	10	1	22	565	24	2	0	0	0	0	16	42
17:00	127	6	1	1	2	1	6	144	12	1	0	0	0	1	5	19
17:15	156	8	0	0	2	0	12	178	14	2	0	0	0	0	11	27
17:30	143	4	1	0	2	0	7	157	12	0	0	0	0	0	6	18
17:45	134	7	0	0	1	1	8	151	7	2	0	0	0	0	12	21
H/TOT	560	25	2	1	7	2	33	630	45	5	0	0	0	1	34	85
18:00	141	1	1	0	3	1	9	156	8	0	0	0	0	0	10	18
18:15	129	3	0	0	6	0	8	146	11	0	1	0	0	0	7	19
18:30	97	1	1	0	1	0	11	111	5	0	0	0	0	0	6	11
18:45	114	3	2	0	6	1	3	129	10	1	0	0	0	0	9	20
H/TOT	481	8	4	0	16	2	31	542	34	1	1	0	0	0	32	68
F/TOT	1524	73	13	3	33	5	86	1737	103	8	1	0	0	1	82	195

	A to A							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0

	A to A							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0

TIME	B to A						TOT	B to C						TOT		
	CAR	LGV	OGV1	OGV2	PSV	MCL		PCL	CAR	LGV	OGV1	OGV2	PSV		MCL	PCL
07:00	3	0	0	0	0	0	1	4	0	2	1	0	0	0	0	3
07:15	4	0	0	0	0	0	2	6	4	2	0	0	0	0	0	6
07:30	11	2	1	0	0	0	0	14	8	0	1	2	0	0	1	12
07:45	7	0	0	0	0	0	1	8	7	0	0	0	0	0	4	11
H/TOT	25	2	1	0	0	0	4	32	19	4	2	2	0	0	5	32
08:00	7	0	0	0	0	0	1	8	6	1	1	0	0	0	4	12
08:15	7	1	0	0	0	0	3	11	10	1	0	0	0	0	1	12
08:30	12	0	0	0	0	0	3	15	6	0	1	0	0	0	0	7
08:45	10	0	0	0	0	0	2	12	8	0	0	0	0	0	0	8
H/TOT	36	1	0	0	0	0	9	46	30	2	2	0	0	0	5	39
09:00	14	2	0	0	0	1	5	22	7	1	0	0	0	0	0	8
09:15	12	3	0	0	0	0	3	18	4	0	0	0	0	0	0	4
09:30	9	1	1	0	0	0	1	12	4	0	1	0	0	0	0	5
09:45	11	0	3	0	0	1	0	15	9	1	0	2	0	0	0	12
H/TOT	46	6	4	0	0	2	9	67	24	2	1	2	0	0	0	29
P/TOT	107	9	5	0	0	2	22	145	73	8	5	4	0	0	10	100

TIME	B to A						TOT	B to C						TOT		
	CAR	LGV	OGV1	OGV2	PSV	MCL		PCL	CAR	LGV	OGV1	OGV2	PSV		MCL	PCL
16:00	5	3	0	0	0	0	2	10	7	1	0	0	0	0	0	8
16:15	8	2	0	0	0	0	1	11	7	0	0	0	0	0	1	8
16:30	6	1	0	0	0	0	4	11	5	0	0	1	0	0	0	6
16:45	18	1	0	0	0	0	0	22	10	0	0	0	0	0	0	10
H/TOT	37	7	0	0	0	0	10	54	29	1	0	1	0	0	1	32
17:00	15	0	1	0	0	0	8	24	23	0	0	0	0	0	0	23
17:15	15	0	0	0	0	0	3	18	7	0	0	0	0	0	1	8
17:30	9	1	0	0	0	0	0	13	12	0	0	0	0	0	0	12
17:45	12	4	0	0	0	0	3	19	13	0	1	0	0	0	0	14
H/TOT	51	5	1	0	0	0	17	74	55	0	1	0	0	0	1	57
18:00	12	0	0	0	0	0	6	18	5	3	0	0	0	0	0	9
18:15	10	0	0	0	0	0	3	13	11	0	0	0	0	0	0	11
18:30	7	0	0	0	0	0	6	13	11	0	0	0	0	0	0	11
18:45	10	0	1	0	0	2	6	19	5	0	0	0	0	0	0	5
H/TOT	39	0	1	0	0	2	21	63	32	3	0	0	0	0	1	36
P/TOT	127	12	2	0	0	2	48	191	116	4	1	1	0	0	3	125

	B to B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0

	B to B							
TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0



SITE:

3

DATE: 15/11/2022

SITE:

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DATE: 15/11/2022

SITE:

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DATE: 15/11/2022

SITE:

3

LOCATION: City Road East/Medlock Street

DAY: Tuesday

LOCATION: City Road East/Medlock Street

DAY: Tuesday

LOCATION: City Road East/Medlock Street

DAY: Tuesday

LOCATION: City Road East/Medlock Street

TIME	C to B							TOT	C to A							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
07:00	15	3	0	0	0	0	0	18	87	15	2	1	2	2	2	111
07:15	7	3	0	0	0	0	0	10	88	13	3	1	3	0	6	114
07:30	8	2	0	0	0	0	1	11	95	15	3	1	1	0	4	119
07:45	6	0	0	0	0	0	0	6	125	9	1	0	1	2	8	146
H/TOT	36	8	0	0	0	0	1	45	395	52	9	3	7	4	20	490
08:00	9	2	0	0	0	0	0	11	120	12	1	0	2	3	4	142
08:15	3	0	0	0	0	0	0	3	122	7	1	0	0	2	13	145
08:30	4	0	0	0	0	0	0	4	119	7	1	0	1	2	15	145
08:45	5	0	0	0	0	0	0	5	149	10	1	0	1	1	12	174
H/TOT	21	2	0	0	0	0	0	23	510	36	4	0	4	8	44	606
09:00	17	0	0	1	0	0	0	18	150	9	3	1	2	0	8	173
09:15	9	0	0	0	0	0	0	9	123	9	2	1	0	0	8	143
09:30	5	1	0	0	0	0	0	6	146	11	0	0	4	0	2	163
09:45	4	1	0	0	0	0	0	5	143	14	2	2	2	0	3	166
H/TOT	35	2	0	1	0	0	0	38	562	43	7	4	8	0	21	645
P/TOT	92	12	0	1	0	0	1	106	1467	131	20	7	19	12	85	1741

TIME	C to B							TOT	C to A							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
16:00	10	1	0	0	0	0	0	11	76	2	2	0	1	0	1	82
16:15	16	2	1	0	0	0	0	19	89	6	3	2	0	0	6	106
16:30	21	3	1	0	0	1	1	27	97	4	0	0	1	1	0	103
16:45	27	0	0	0	0	0	0	27	85	3	0	0	1	0	4	93
H/TOT	74	6	2	0	0	1	1	84	347	15	5	2	3	1	11	384
17:00	22	2	0	0	0	0	0	24	96	7	1	1	2	0	5	112
17:15	16	2	0	0	0	0	0	18	116	3	1	0	1	1	10	132
17:30	11	1	0	0	0	0	0	12	86	4	0	0	2	1	5	98
17:45	20	1	1	0	0	0	0	22	115	4	1	0	5	0	5	130
H/TOT	69	6	1	0	0	0	0	76	413	18	3	1	10	2	25	472
18:00	13	0	0	0	0	0	0	13	120	3	1	0	1	1	6	132
18:15	12	1	0	0	0	0	1	14	92	2	0	0	4	0	6	104
18:30	7	1	0	0	0	0	0	8	95	5	1	0	4	0	4	109
18:45	5	2	0	0	0	0	0	7	100	7	0	0	1	2	5	115
H/TOT	37	4	0	0	0	0	1	42	407	17	2	0	10	3	21	460
P/TOT	180	16	3	0	0	1	2	202	1167	50	10	3	23	6	57	1316

TIME	C to C							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
07:00	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
P/TOT	0	0	0	0	0	0	0	0

TIME	C to C							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
16:00	0	0	0	0	0	0	0	0
16:15	1	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0
18:00	1	0	0	0	0	0	0	1
18:15	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	0	0	1
P/TOT	2	0	0	0	0	0	0	2

TIME	TO ARM A							TOT	FROM ARM A							TOT	TIME	TO ARM B							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	PSV	MCL	PCL			CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
07:00	90	15	2	1	2	2	3	115	44	1	0	1	2	0	4	52	07:00	21	3	0	0	0	0	0	24
07:15	92	13	3	1	3	0	8	120	50	2	1	0	1	0	2	56	07:15	13	4	0	0	0	0	2	19
07:30	106	17	4	1	1	0	4	133	62	5	0	0	2	0	1	70	07:30	19	2	0	0	0	0	2	23
07:45	132	9	1	0	1	2	9	154	63	7	4	0	2	0	1	77	07:45	14	0	0	0	0	0	0	14
H/TOT	420	54	10	3	7	4	24	522	219	15	5	1	7	0	8	255	H/TOT	67	9	0	0	0	0	4	80
08:00	127	12	1	0	2	3	5	150	48	5	1	0	1	1	6	62	08:00	14	2	1	0	0	0	0	17
08:15	129	8	1	0	0	2	16	156	57	3	3	0	2	0	4	69	08:15	7	0	0	0	0	0	2	9
08:30	131	7	1	0	1	2	18	160	58	3	0	0	2	1	1	65	08:30	14	0	0	0	0	0	0	14
08:45	159	10	1	0	1	1	14	186	53	6	6	0	2	0	5	72	08:45	16	0	0	0	0	0	2	18
H/TOT	546	37	4	0	4	8	53	652	216	17	10	0	7	2	16	268	H/TOT	51	2	1	0	0	0	4	58
09:00	164	11	3	1	2	1	13	195	56	4	1	0	1	0	2	64	09:00	22	1	1	1	0	0	1	26
09:15	135	12	2	1	0	0	11	161	56	5	1	0	3	0	3	68	09:15	14	2	0	0	0	0	1	17
09:30	155	12	1	0	4	0	3	175	49	3	1	0	1	0	2	56	09:30	15	1	0	0	0	0	1	17
09:45	154	14	5	2	2	1	3	181	70	9	7	1	3	1	1	92	09:45	12	2	1	0	0	0	1	16
H/TOT	608	49	11	4	8	2	30	712	231	21	10	1	8	1	8	280	H/TOT	63	6	2	1	0	0	4	76
P/TOT	1574	140	25	7	19	14	107	1886	666	53	25	2	22	3	32	803	P/TOT	181	17	3	1	0	0	12	214

TIME	TO ARM A							TOT	FROM ARM A							TOT	TIME	TO ARM B							TOT	
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		CAR	LGV	OGV1	OGV2	PSV	MCL	PCL			CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
16:00	81	5	2	0	1	0	3	92	131	14	2	0	1	0	6	154	16:00	17	1	0	0	0	0	0	3	21
16:15	97	8	3	2	0	0	7	117	123	9	2	1	2	1	8	146	16:15	25	2	1	0	0	0	0	1	29
16:30	103	5	0	0	1	1	4	114	129	7	2	1	3	0	7	149	16:30	26	4	1	0	0	0	1	3	35
16:45	103	4	0	0	1	0	7	115	124	12	1	0	4	0	17	158	16:45	30	1	0	0	0	0	0	10	41
H/TOT	384	22	5	2	3	1	21	438	507	42	7	2	10	1	38	607	H/TOT	98	8	2	0	0	0	1	17	126
17:00	111	7	2	1	2	0	13	136	139	7	1	1	2	2	11	163	17:00	34	3	0	0	0	0	1	5	43
17:15	131	3	1	0	1	1	13	150	170	10	0	0	2	0	23	205	17:15	30	4	0	0	0	0	0	11	55
17:30	95	5	0	0	2	1	8	111	155	4	1	0	2	0	13	175	17:30	23	1	0	0	0	0	0	6	30
17:45	127	8	1	0	5	0	8	149	141	9	0	0	1	1	20	172	17:45	27	3	1	0	0	0	0	12	43
H/TOT	464	23	4	1	10	2	42	546	605	30	2	1	7	3	67	715	H/TOT	114	11	1	0	0	0	1	34	160
18:00	132	3	1	0	1	1	12	150	149	1	1	0	3	1	19	174	18:00	21	0	0	0	0	0	0	10	31
18:15	102	2	0	0	4	0	9	117	140	3	1	0	6	0	15	165	18:15	23	1	1	0	0	0	0	8	33
18:30	102	5	1	0	4	0	10	122	102	1	1	0	1	0	17	122	18:30	12	1	0	0	0	0	0	6	19
18:45	110	7	1	0	1	4	11	134	124	4	2	0	6	1	12	149	18:45	15	3	0	0	0	0	0	9	27
H/TOT	446	17	3	0	10	5	42	523	515	9	5	0	16	2	63	610	H/TOT	71	5	1	0	0	0	0	33	110
P/TOT	1294	62	12	3	23	8	105	1507	1627	81	14	3	33	6	168	1932	P/TOT	283	24	4	0	0	0	2	84	1000

DATE: 15/11/2022 SITE: 3

DAY: Tuesday LOCATION: City Road East/Medlock Street

DATE: 15/11/2022 SITE: 3

DAY: Tuesday LOCATION: City Road East/Medlock Street

DATE: 15/11/2022

DAY: Tuesday

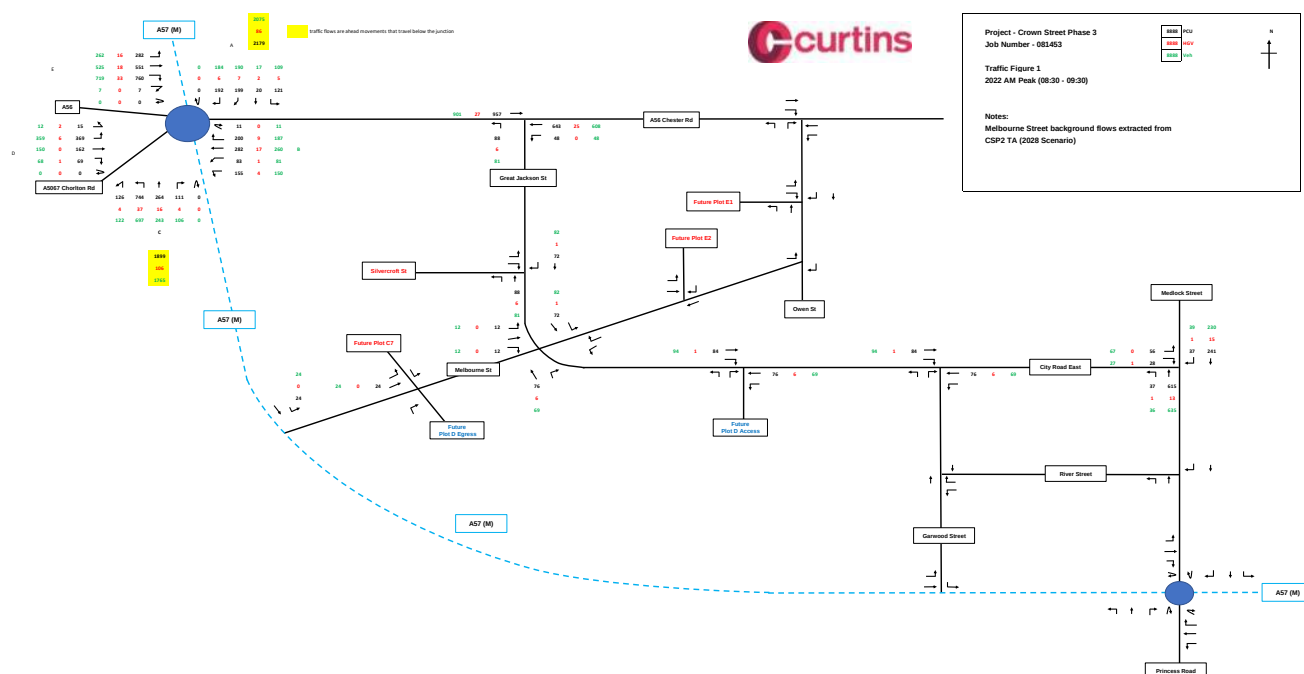
A		B		TO ARM C												FROM ARM C												JUNCTION TOTAL											
PSV	MCL	PCL	TOT	TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT										
0	0	1	7	07:00	38	3	1	1	2	0	4	49	102	18	2	1	2	2	2	2	129	07:00	149	21	3	2	4	2	7	188									
0	0	2	12	07:15	48	3	1	0	1	0	0	53	95	16	3	1	3	0	6	124	07:15	153	20	4	1	4	0	10	192										
0	0	1	26	07:30	59	5	1	2	2	0	1	70	103	17	3	1	1	0	5	130	07:30	184	24	5	3	3	0	7	226										
0	0	5	19	07:45	62	7	4	0	2	0	5	80	131	9	1	0	1	2	8	152	07:45	208	16	5	0	3	2	14	248										
0	0	9	64	H/TOT	207	18	7	3	7	0	10	252	431	60	9	3	7	4	21	535	H/TOT	694	81	17	6	14	4	38	854										
0	0	5	20	08:00	49	6	1	0	1	1	10	68	129	14	1	0	2	3	4	153	08:00	190	20	3	0	3	4	15	235										
0	0	4	23	08:15	63	4	3	0	2	0	3	75	125	7	1	0	0	2	13	148	08:15	199	12	4	0	2	2	21	240										
0	0	3	22	08:30	54	3	1	0	2	1	1	62	123	7	1	0	1	2	15	149	08:30	199	10	2	0	3	3	19	236										
0	0	2	20	08:45	50	6	6	0	2	0	3	67	154	10	1	0	1	1	12	179	08:45	225	16	7	0	3	1	19	271										
0	0	14	85	H/TOT	216	19	11	0	7	2	17	272	531	38	4	0	4	8	44	629	H/TOT	813	58	16	0	11	10	74	982										
0	1	5	30	09:00	58	4	0	0	1	0	1	64	167	9	3	2	2	0	8	191	09:00	244	16	4	2	3	1	15	285										
0	0	3	22	09:15	55	3	1	0	3	0	2	64	132	9	2	1	0	0	8	152	09:15	204	17	3	1	3	0	14	242										
0	0	1	17	09:30	43	3	2	0	1	0	1	50	151	12	0	0	4	0	2	169	09:30	213	16	3	0	5	0	5	242										
0	1	0	27	09:45	71	9	6	3	3	1	0	93	147	15	2	2	2	0	3	171	09:45	237	25	12	5	5	2	4	290										
0	2	9	96	H/TOT	227	19	9	3	8	1	4	271	597	45	7	5	8	0	21	683	H/TOT	898	74	22	8	16	3	38	1059										
0	2	32	245	P/TOT	650	56	27	6	22	3	31	795	1559	143	20	8	19	12	86	1847	P/TOT	2405	213	55	14	41	17	150	2895										

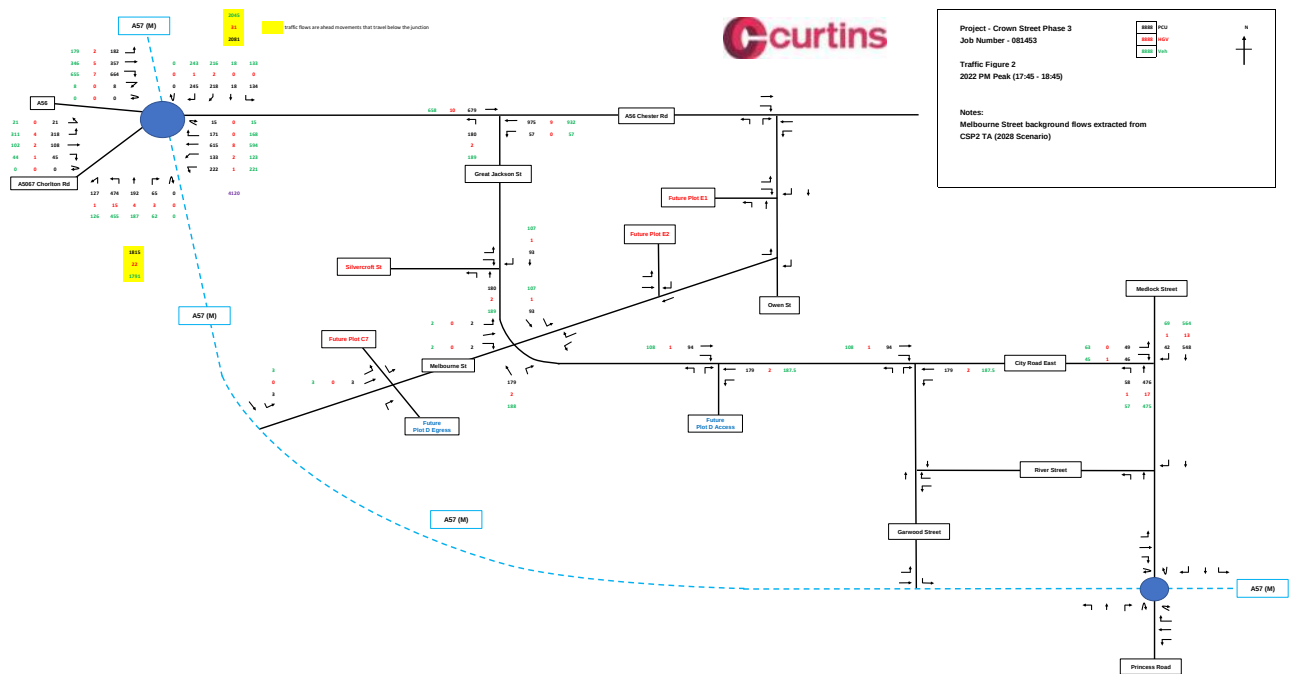
PEAK HOUR CALCULATION	TOT
07:00 to 08:00	854
07:15 to 08:15	901
07:30 to 08:30	949
07:45 to 08:45	959
08:00 to 09:00	982
08:15 to 09:15	1032
08:30 to 09:30	1034
08:45 to 09:45	1040
09:00 to 10:00	1059
AM PEAK	1059

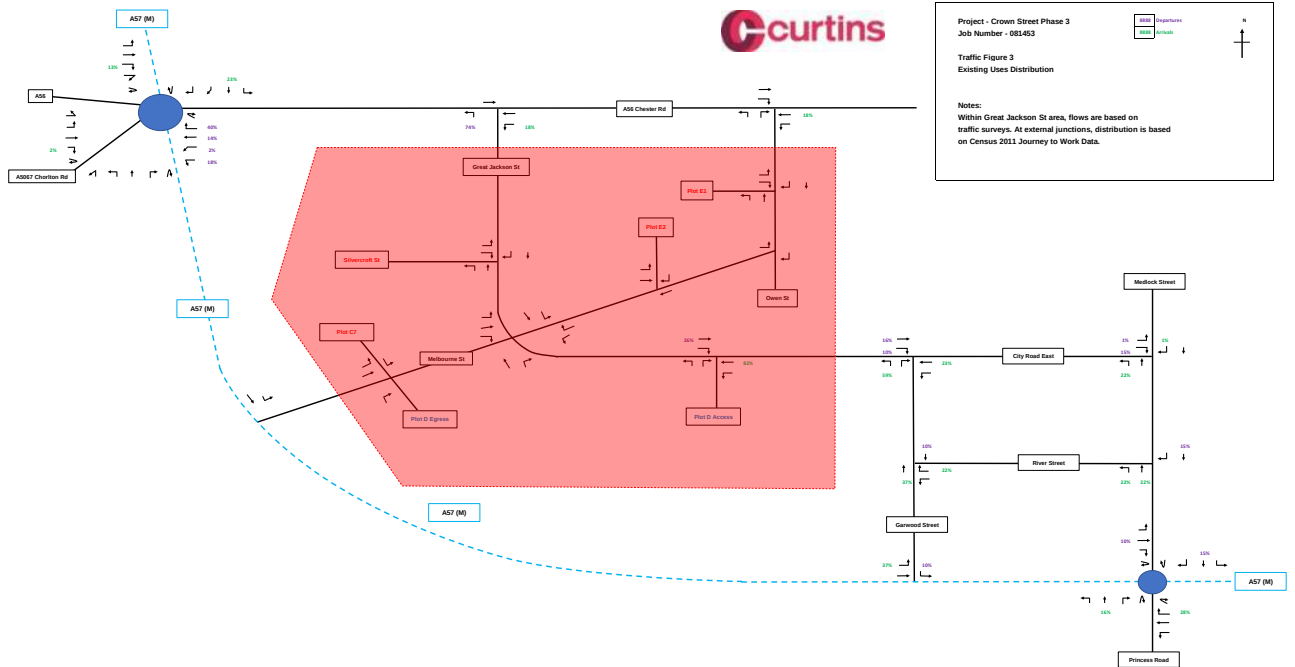
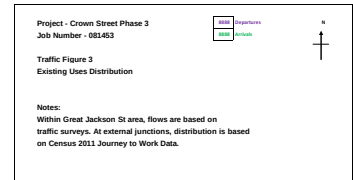
A		B		TO ARM C								FROM ARM C								JUNCTION TOTAL									
PSV	MCL	PCL	TOT	TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	TIME	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
0	0	2	18	16:00	131	15	2	0	1	0	3	152	86	3	2	0	1	0	1	93	16:00	229	21	4	0	2	0	9	265
0	0	2	19	16:15	122	9	2	1	2	1	8	145	106	8	4	2	0	0	6	126	16:15	244	19	6	3	2	1	16	291
0	0	4	17	16:30	129	6	2	2	3	0	5	147	118	7	1	0	1	2	1	130	16:30	258	15	3	2	4	2	12	296
0	0	3	32	16:45	131	11	1	0	4	0	7	154	112	3	0	0	1	0	4	120	16:45	264	16	1	0	5	0	24	310
0	0	11	86	H/TOT	513	41	7	3	10	1	23	598	422	21	7	2	3	2	12	469	H/TOT	995	71	14	5	13	3	61	1162
0	0	8	47	17:00	150	6	1	1	2	1	6	167	118	9	1	1	2	0	5	136	17:00	295	16	3	2	4	2	24	346
0	0	4	26	17:15	163	8	0	0	2	0	13	186	132	5	1	0	1	1	10	150	17:15	324	15	1	0	3	1	37	381
0	0	3	25	17:30	155	4	1	0	2	0	7	169	97	5	0	0	2	1	5	110	17:30	273	10	1	0	4	1	21	310
0	0	3	33	17:45	147	7	1	0	1	1	8	165	135	5	2	0	5	0	5	152	17:45	301	18	3	0	6	1	28	357
0	0	18	131	H/TOT	615	25	3	1	7	2	34	687	482	24	4	1	10	2	25	548	H/TOT	1193	59	8	2	17	5	110	1394
0	0	7	27	18:00	147	4	1	0	3	1	10	166	134	3	1	0	1	1	6	146	18:00	300	7	2	0	4	2	32	347
0	0	3	24	18:15	140	3	0	0	6	0	8	157	104	3	0	0	4	0	7	118	18:15	265	6	1	0	10	0	25	307
0	0	6	24	18:30	108	1	1	0	1	0	11	122	102	6	1	0	4	0	4	117	18:30	222	7	2	0	5	0	27	263
0	2	6	24	18:45	119	3	2	0	6	1	3	134	105	9	0	0	1	2	5	122	18:45	244	13	3	0	7	5	23	295
0	2	22	99	H/TOT	514	11	4	0	16	2	32	579	445	21	2	0	10	3	22	503	H/TOT	1031	33	8	0	26	7	107	1212
0	2	51	316	P/TOT	1642	77	14	4	33	5	89	1864	1349	66	13	3	23	7	59	1520	P/TOT	3219	163	30	7	56	15	278	3768

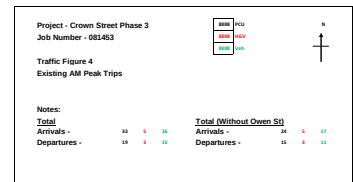
PEAK HOUR CALCULATION	TOT
16:00 to 17:00	1162
16:15 to 17:15	1243
16:30 to 17:30	1333
16:45 to 17:45	1347
17:00 to 18:00	1394
17:15 to 18:15	1395
17:30 to 18:30	1321
17:45 to 18:45	1274
18:00 to 19:00	1212
PM PEAK	1395

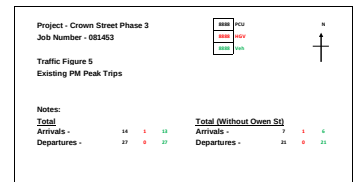
Appendix C – Traffic Figures

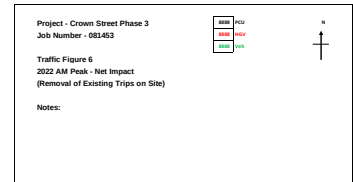










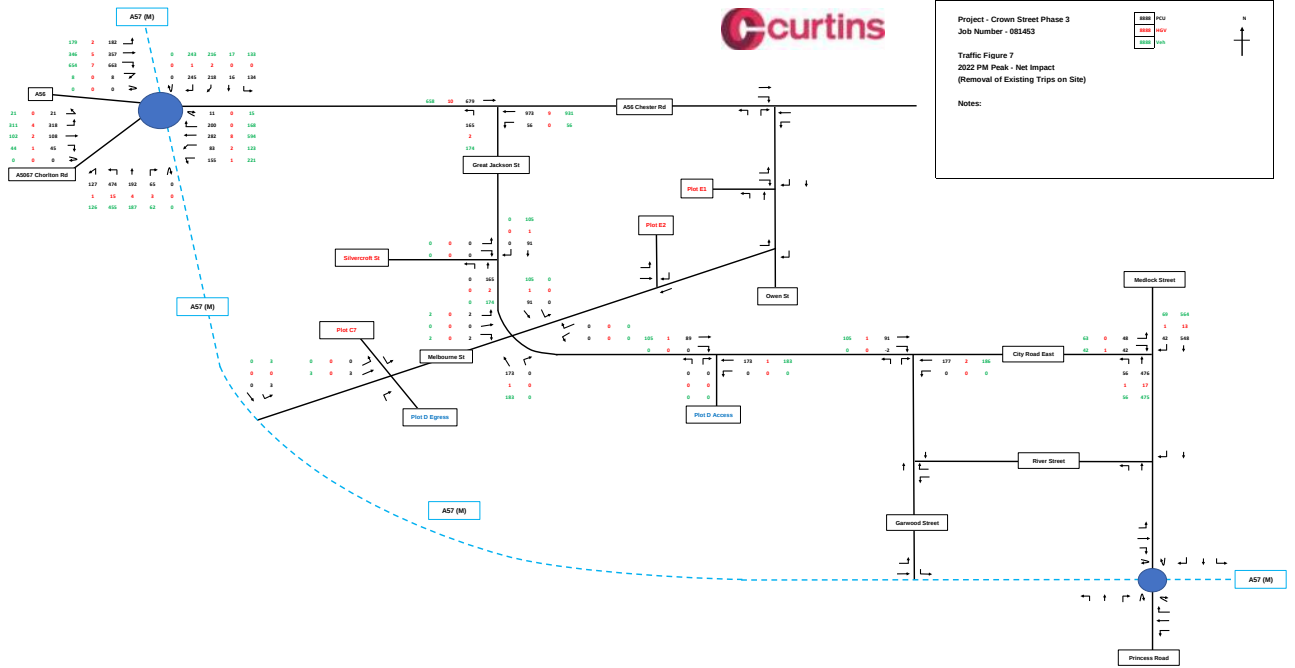


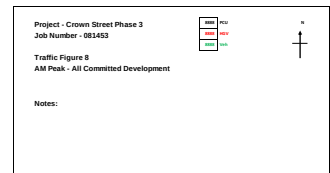


Project - Crown Street Phase 3
Job Number - 081453

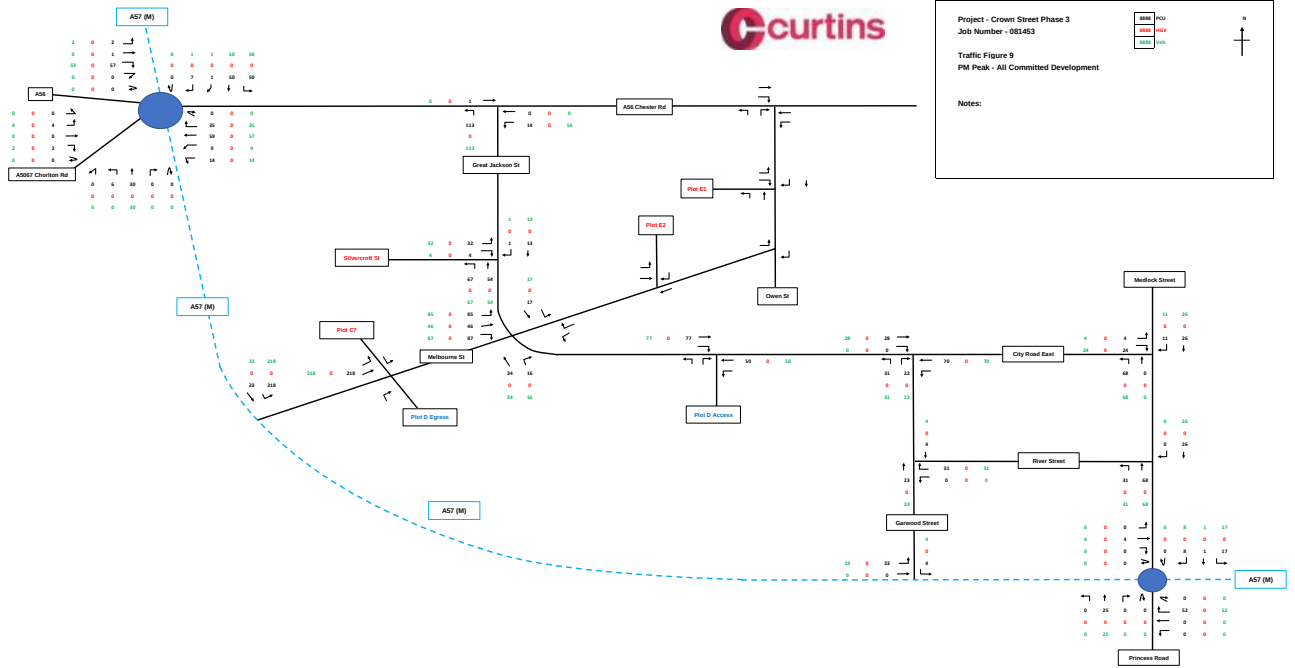
Traffic Figure 7
2022 PM Peak - Net Impact
(Removal of Existing Trips on Site)

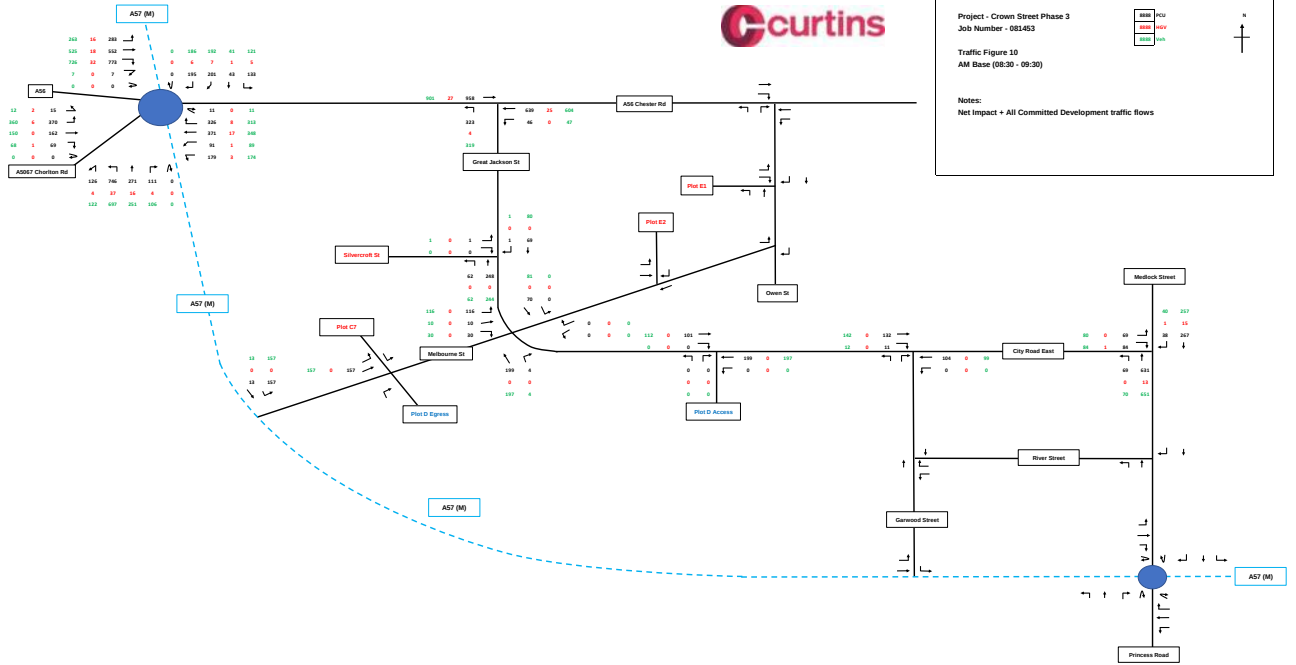
Notes:

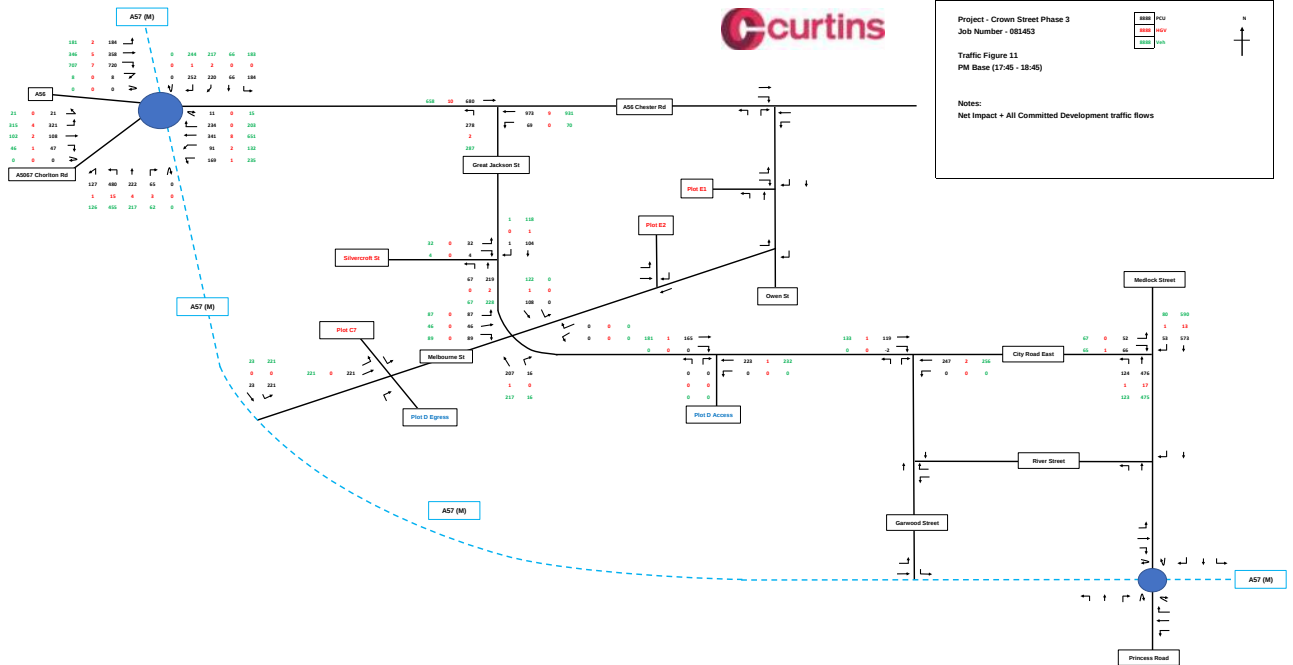


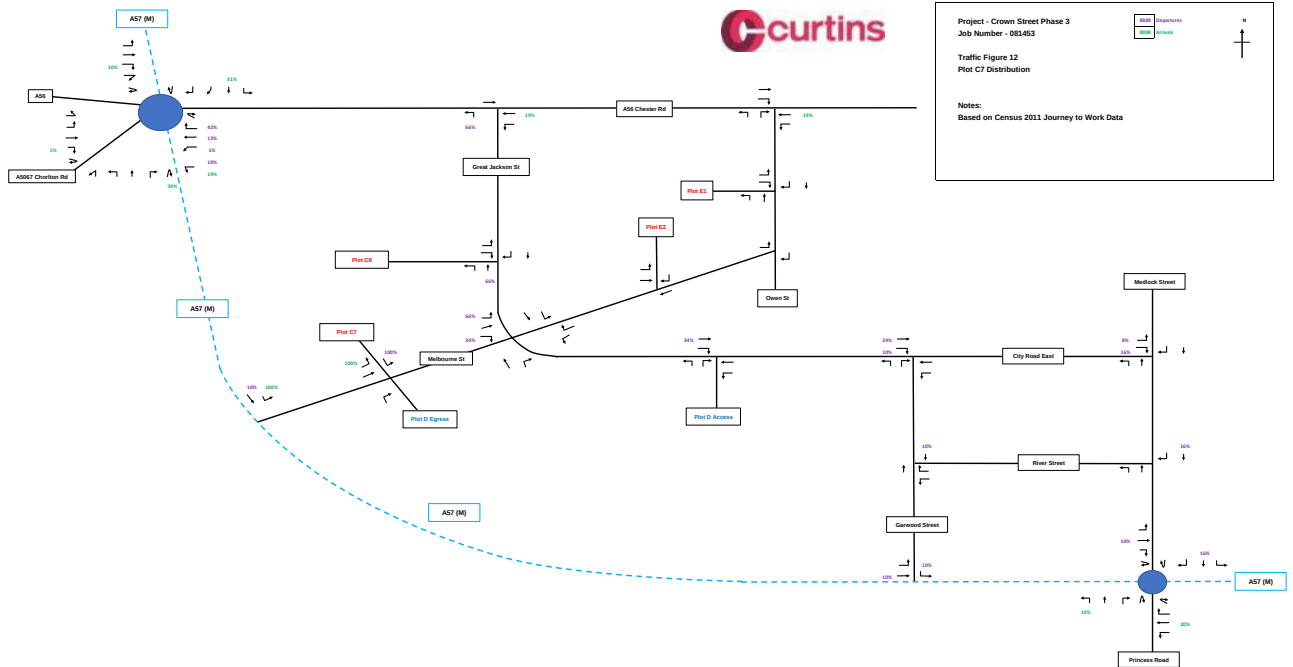
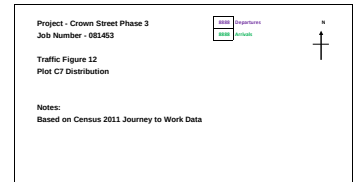


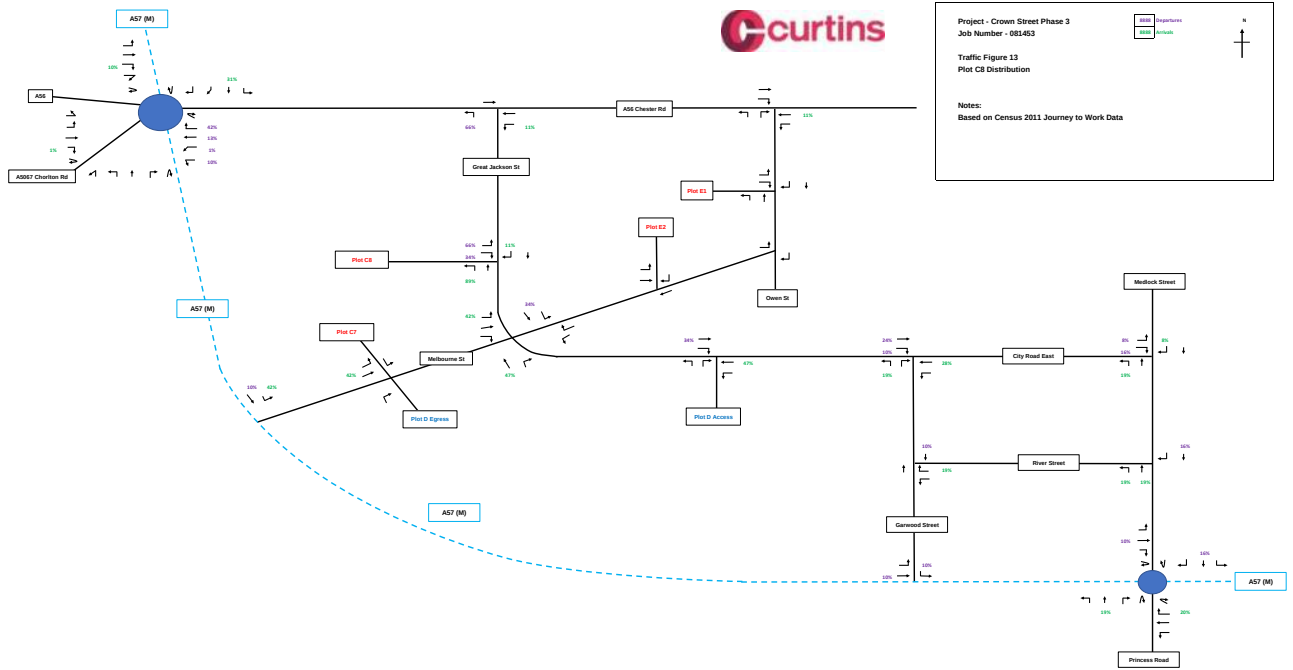
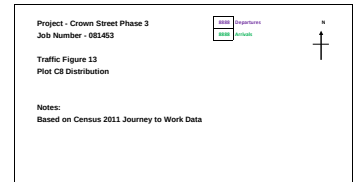
Notes:

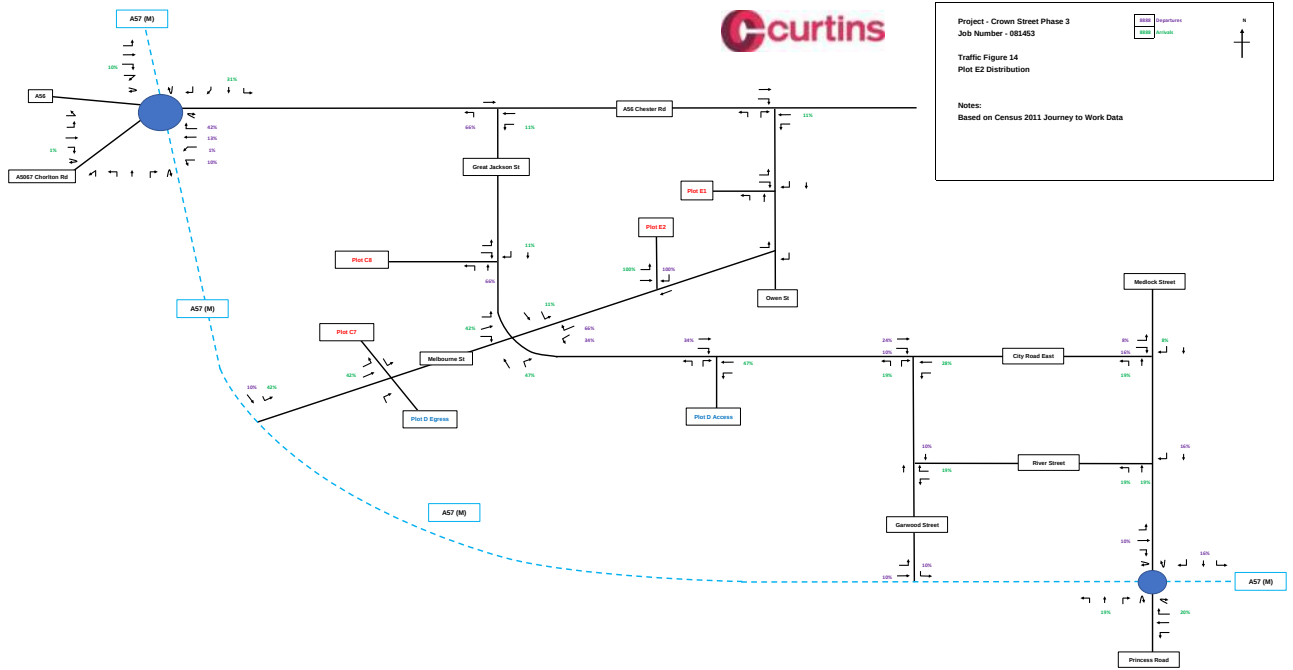
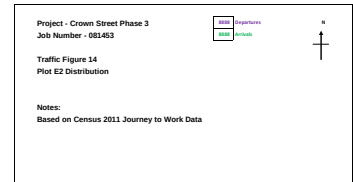


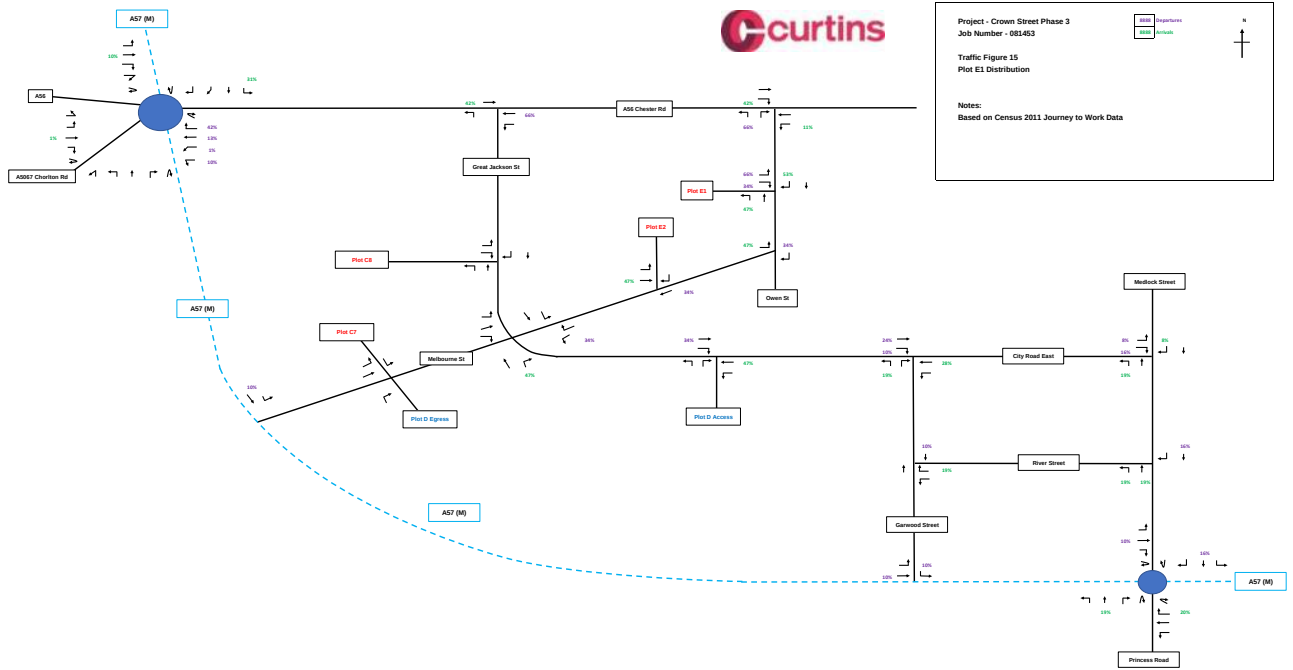
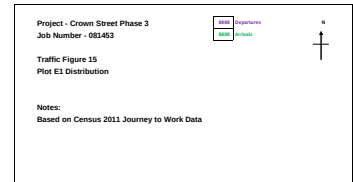


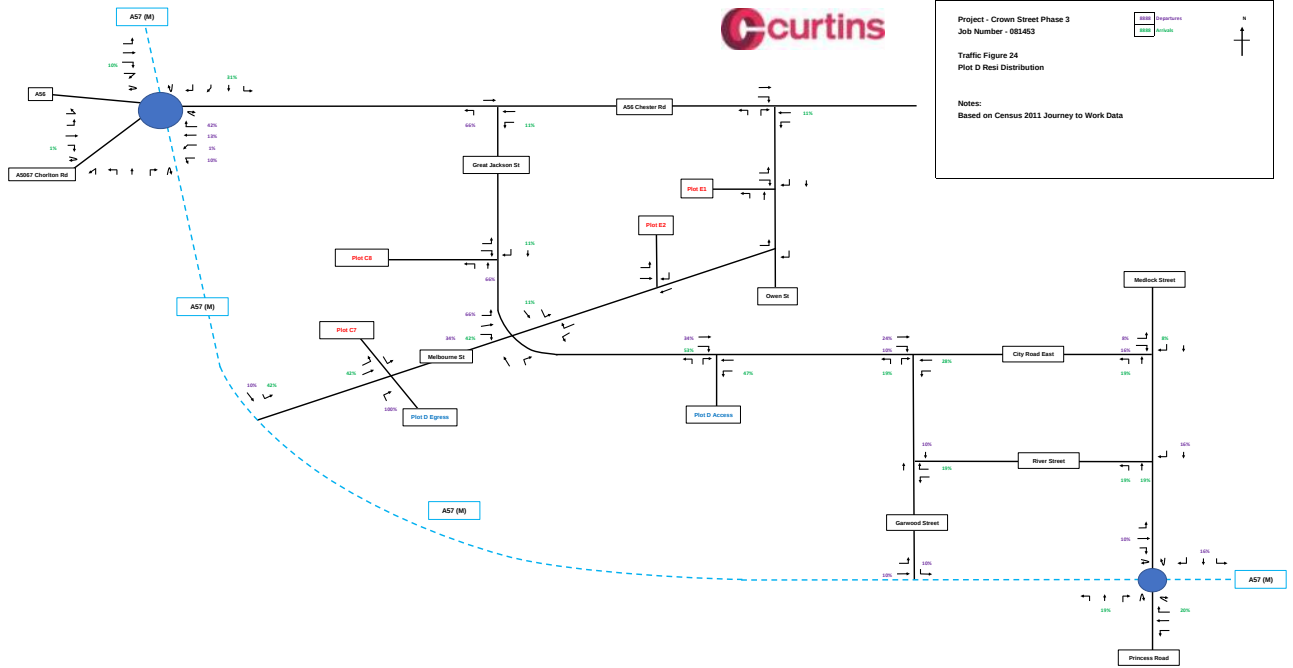


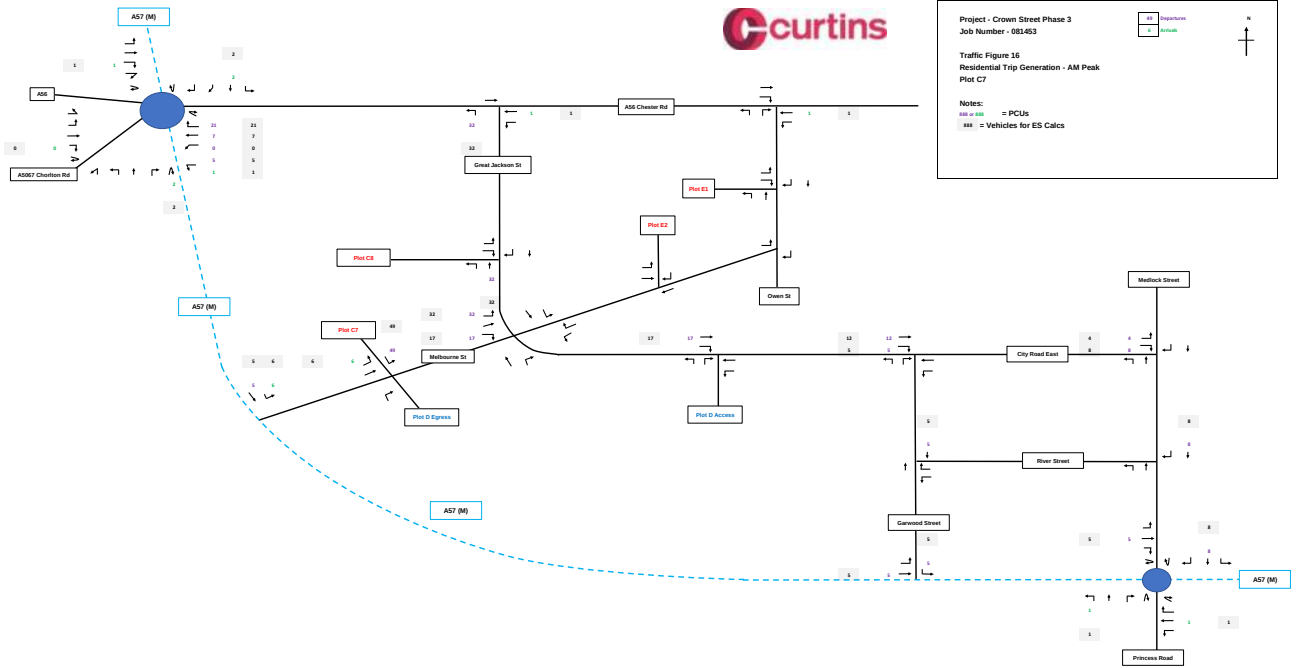


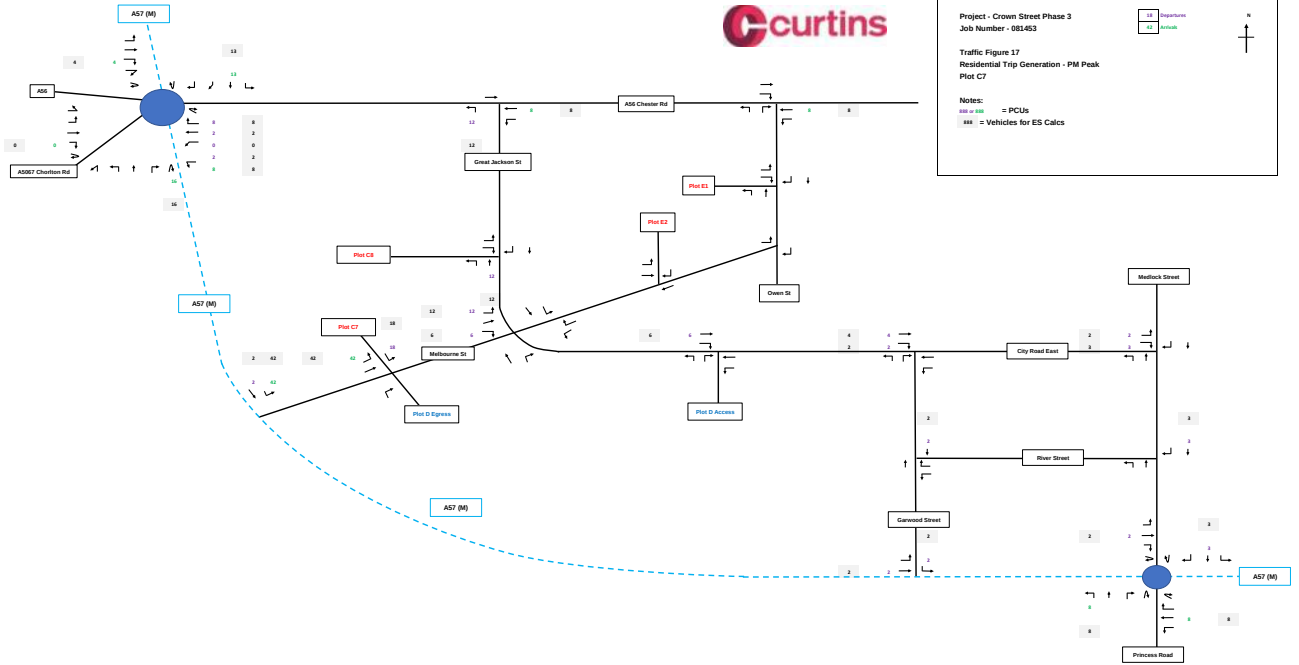












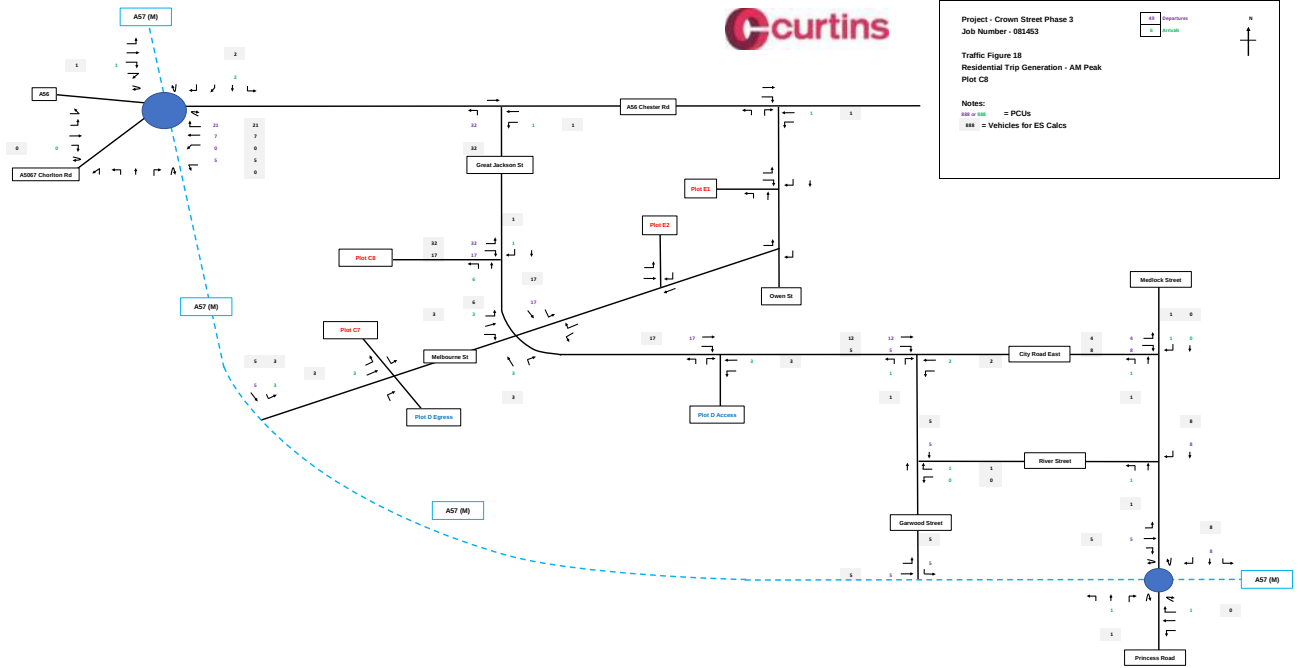


Project - Crown Street Phase 3
Job Number - 081453

Traffic Figure 18
Residential Trip Generation - AM Peak
Plot C8

Notes:
1000 = PCUs
400 = Vehicles for ES Calcs

1000 = PCUs
400 = Vehicles for ES Calcs





Project - Crown Street Phase 3

Job Number - 081453

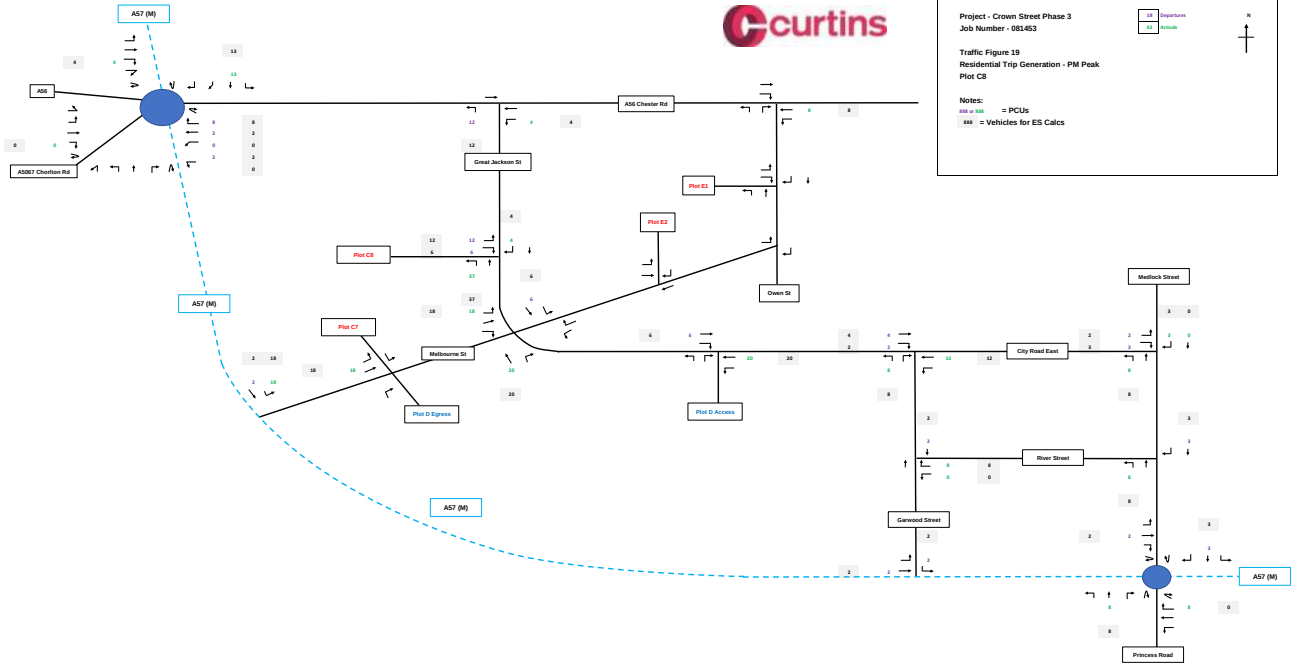
Traffic Figure 19
Residential Trip Generation - PM Peak
Plot C8

Notes:
1000 = 1000 = PCUs

1000 = 1000 = Vehicles for ES Calcs

Legend

Legend



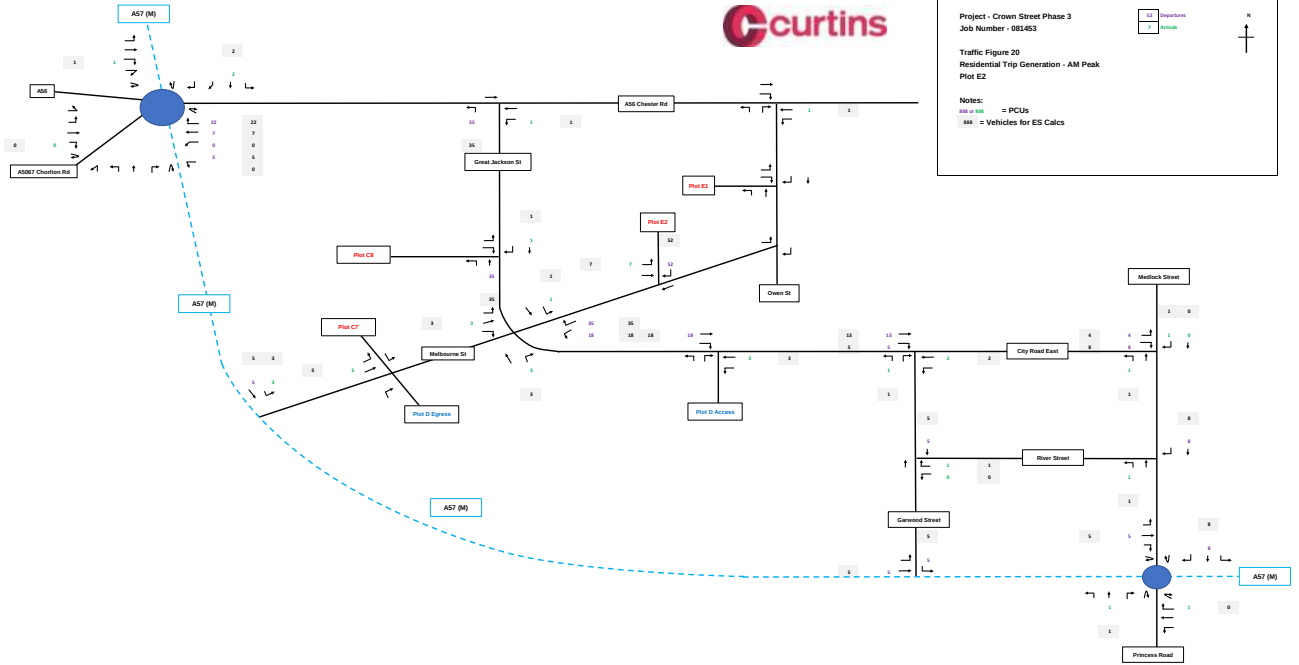


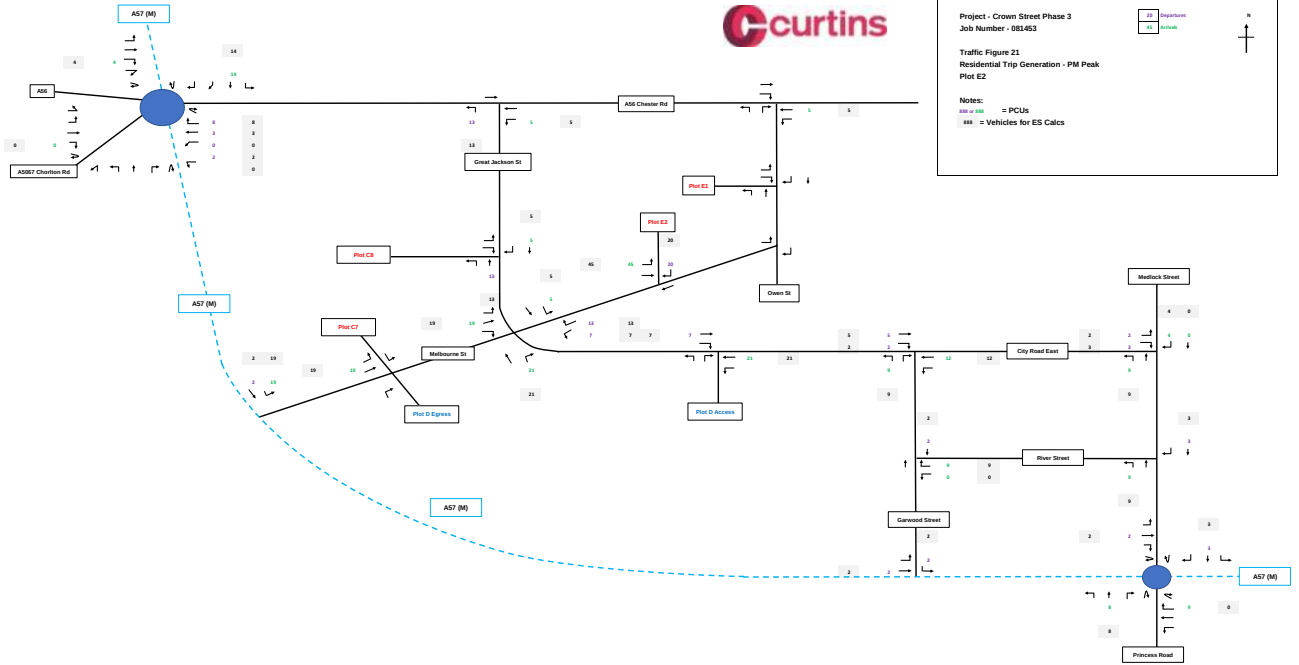
Project - Crown Street Phase 3
Job Number - 081453

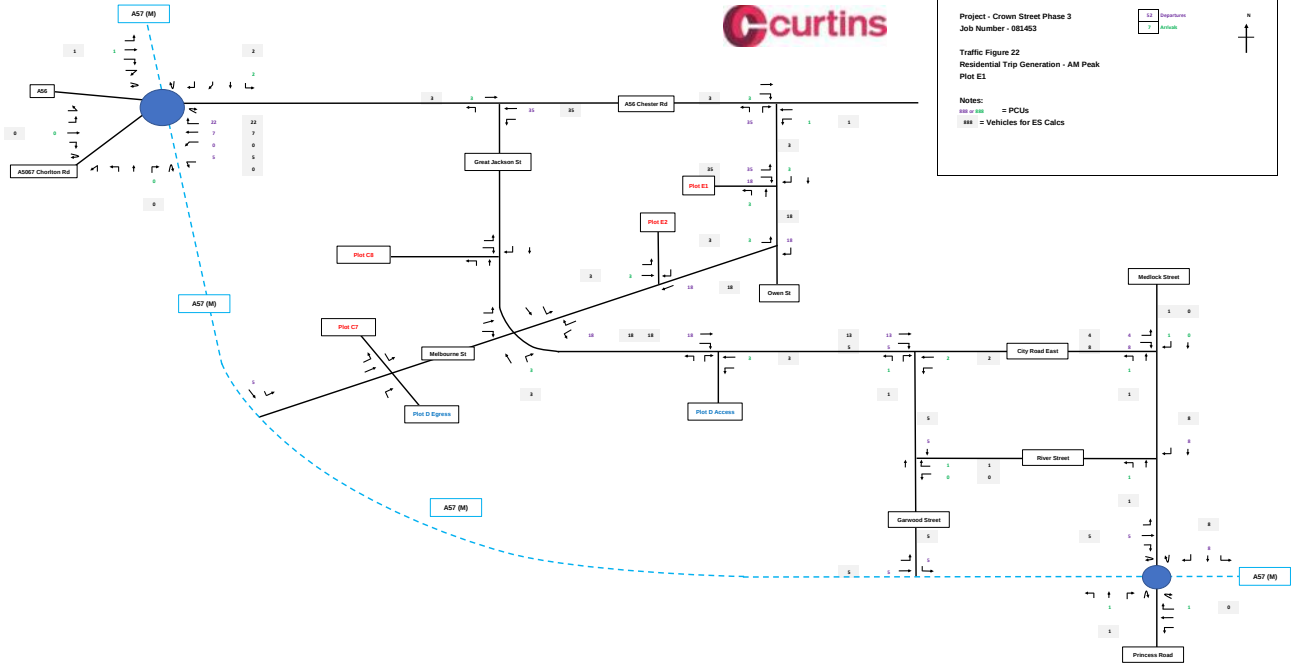
Traffic Figure 20
Residential Trip Generation - AM Peak
Plot E2

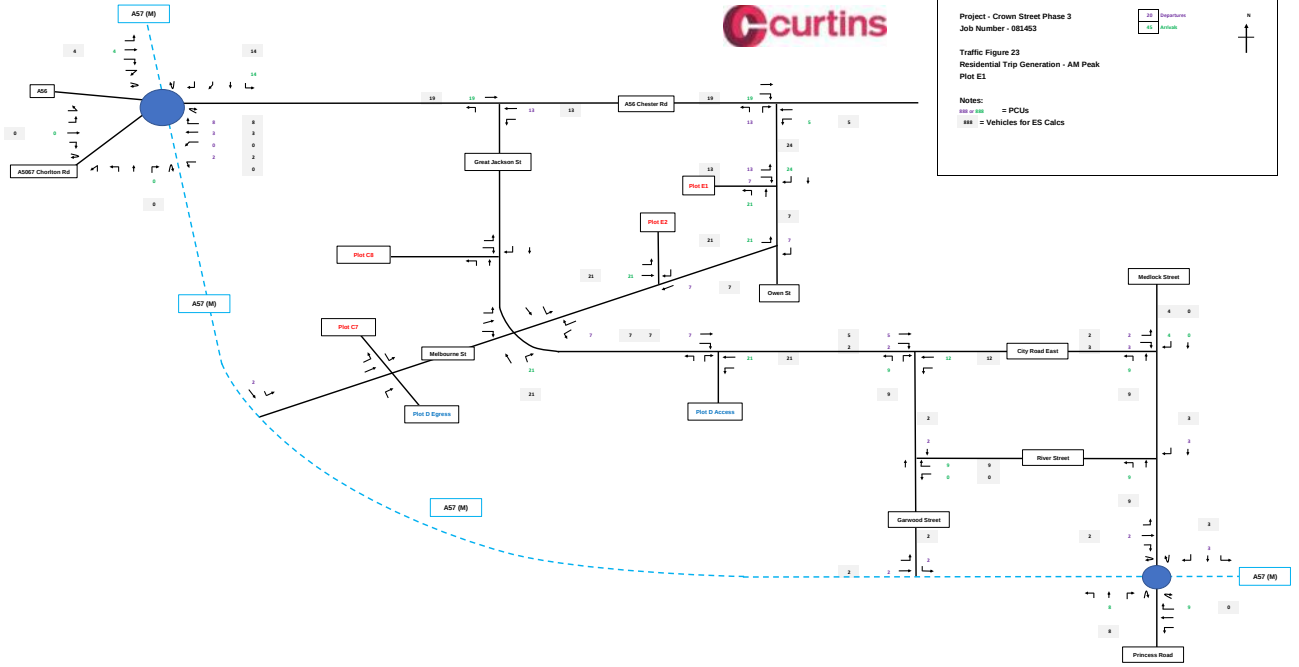
Notes:
1000 = 1000 = PCUs
1000 = 1000 = Vehicles for ES Calcs

1000 = 1000 = PCUs
1000 = 1000 = Vehicles for ES Calcs











Project - Crown Street Phase 3

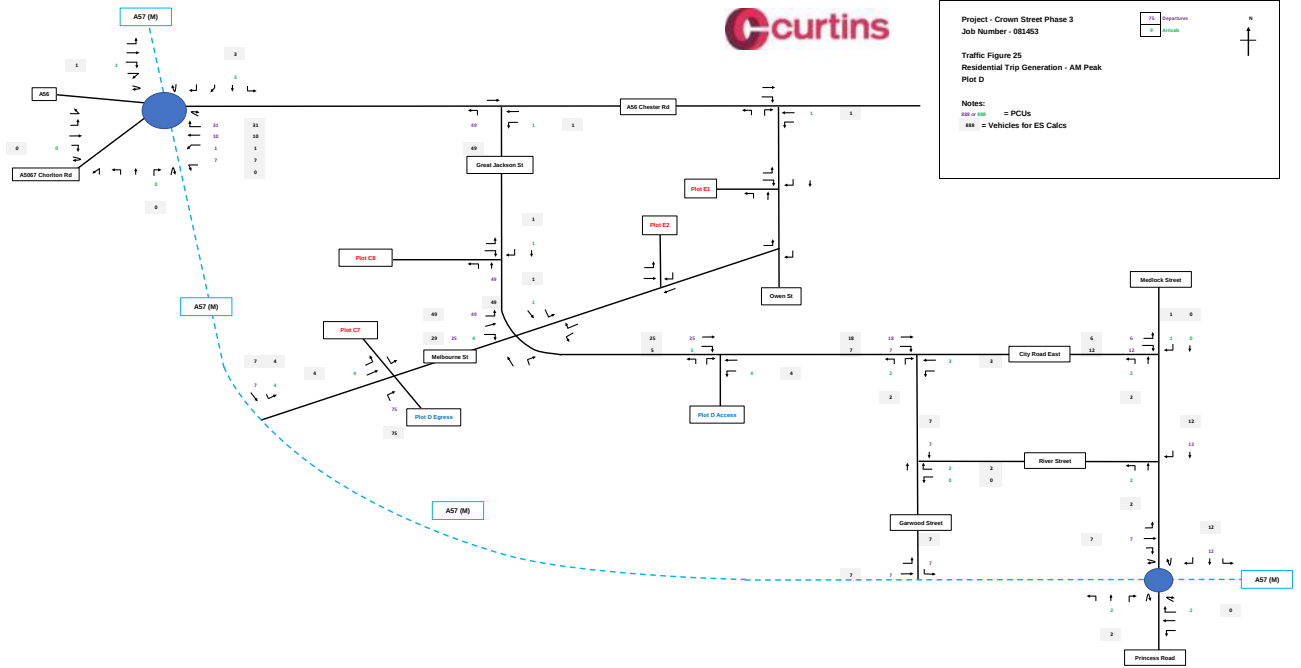
Job Number - 081453

Traffic Figure 25
Residential Trip Generation - AM Peak
Plot D

Notes:
1000 = PCUs
400 = Vehicles for ES Calcs

75 Lightblue

5 Red





Project - Crown Street Phase 3

Job Number - 081453

Traffic Figure 26

Residential Trip Generation - PM Peak

Plot D

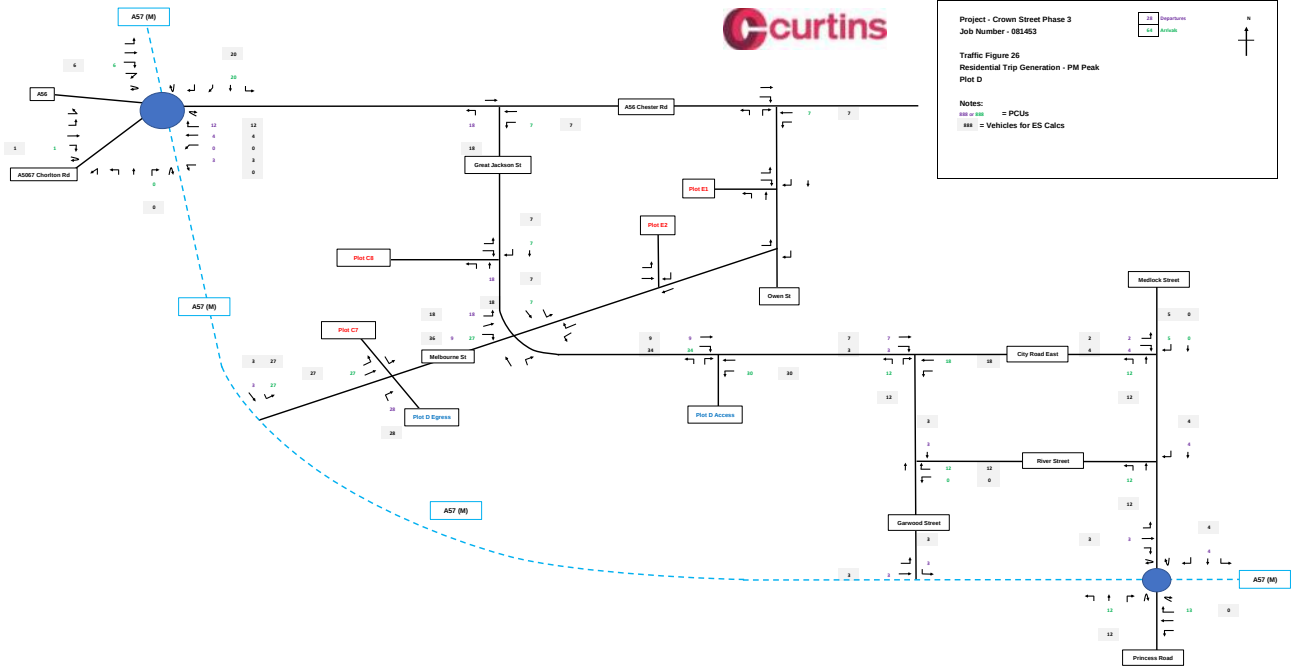
Notes:

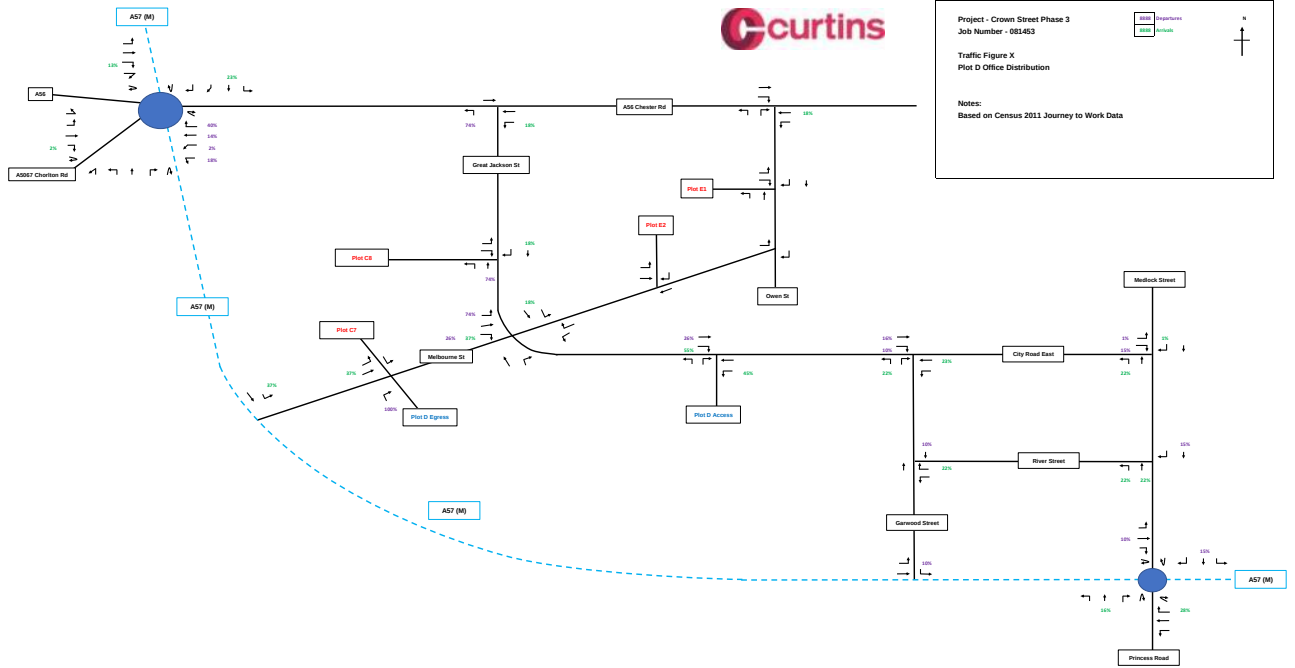
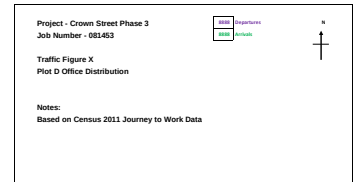
1000 = 100 = PCUs

400 = Vehicles for ES Calcs

1000 = 100

400 = Vehicles for ES Calcs

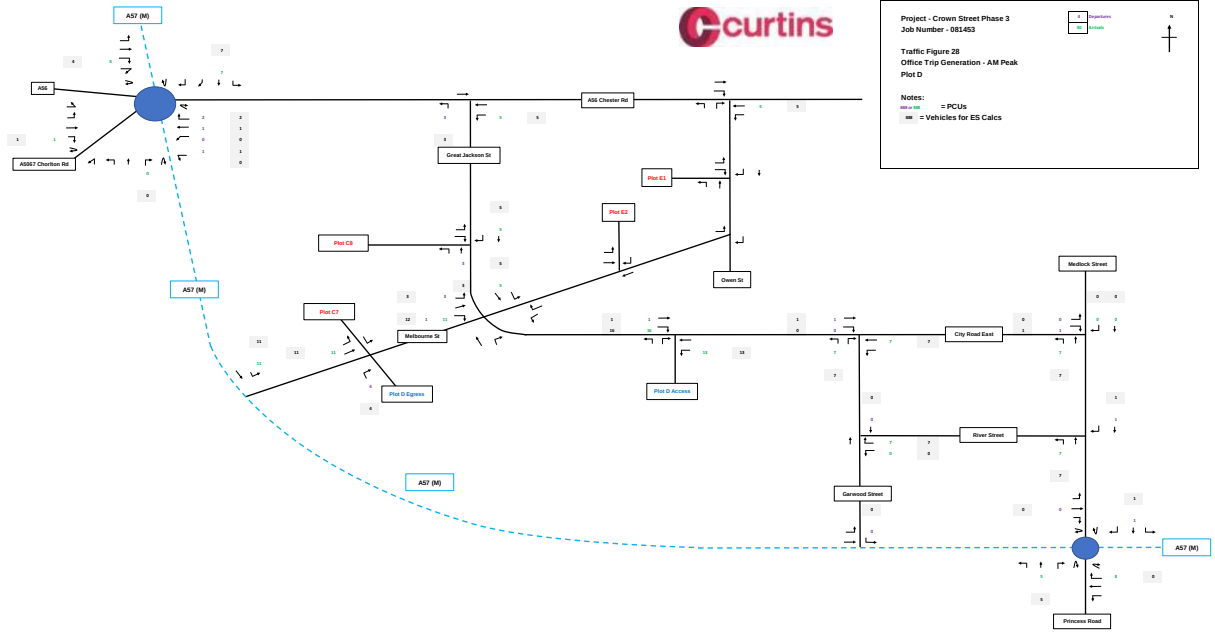




Project - Crown Street Phase 3
 Job Number - 081453

Traffic Figure 28
 Office Trip Generation - AM Peak
 Plot D

Notes:
 = PCUs
 = Vehicles for ES Calcs

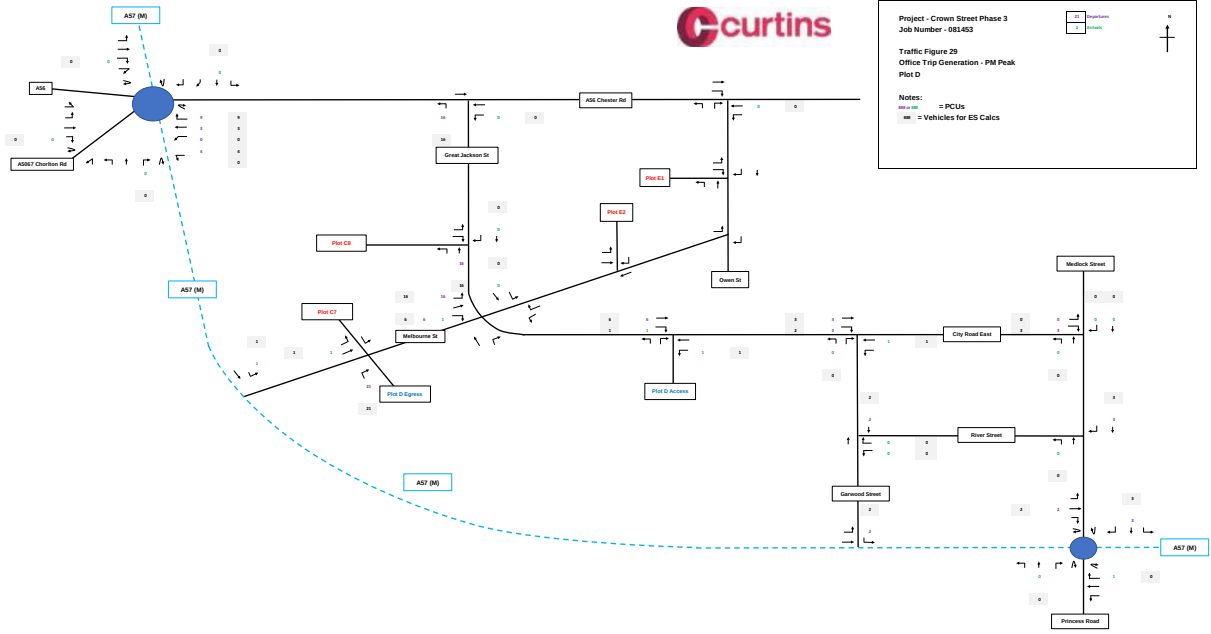




Project - Crown Street Phase 3
Job Number - 081453

Traffic Figure 29
Office Trip Generation - PM Peak
Plot D

Notes:
= PCUs
= Vehicles for ES Calcs

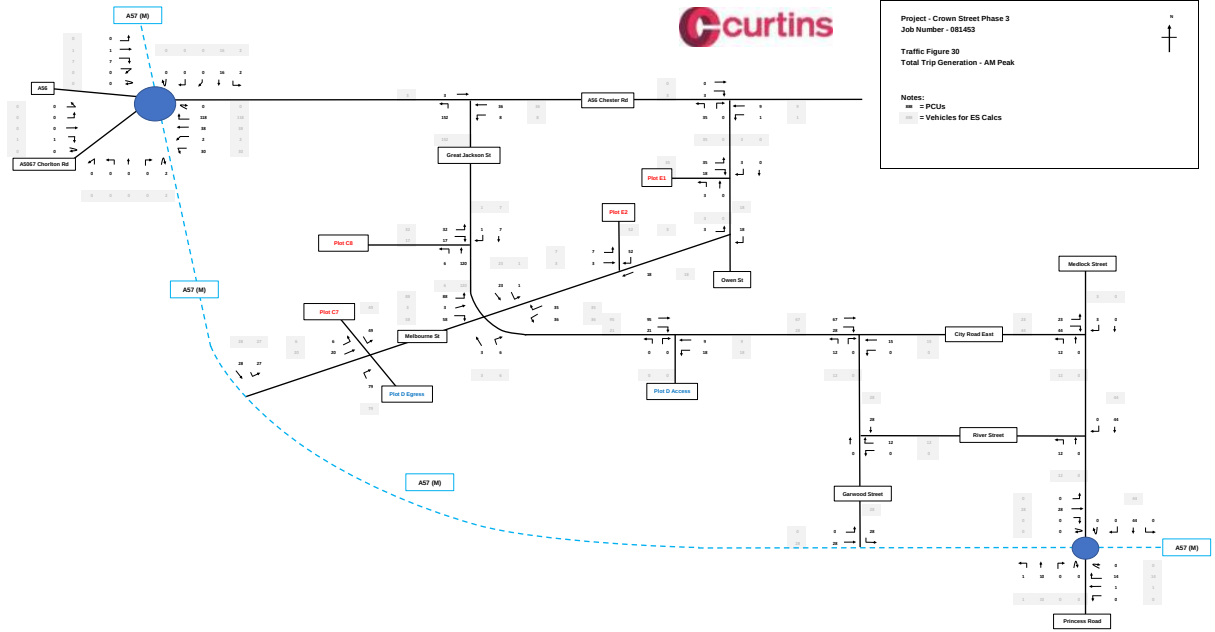




Project - Crown Street Phase 3
Job Number - 081453
Traffic Figure 30
Total Trip Generation - AM Peak



Notes:
= PCUs
= Vehicles for ES Calcs

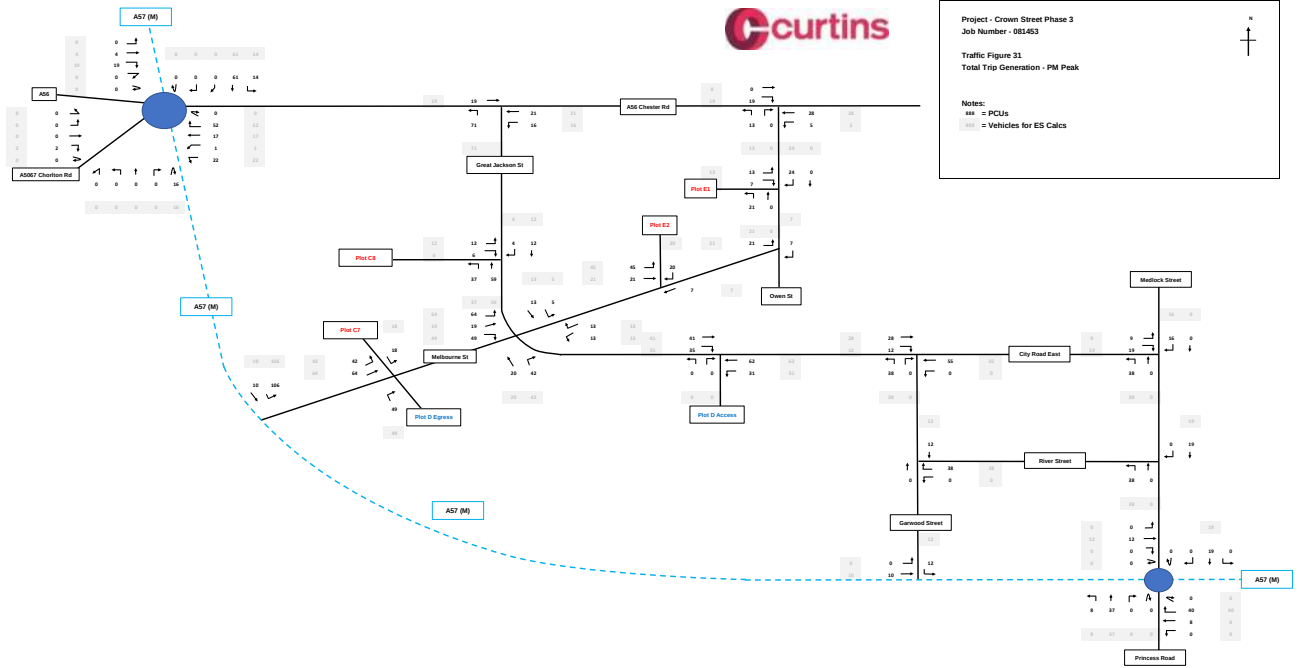




Project - Crown Street Phase 3
Job Number - 081453

Traffic Figure 31
Total Trip Generation - PM Peak

Notes:
800 = PCUs
1000 = Vehicles for ES Calcs





Project - Crown Street Phase 3
Job Number - 081453

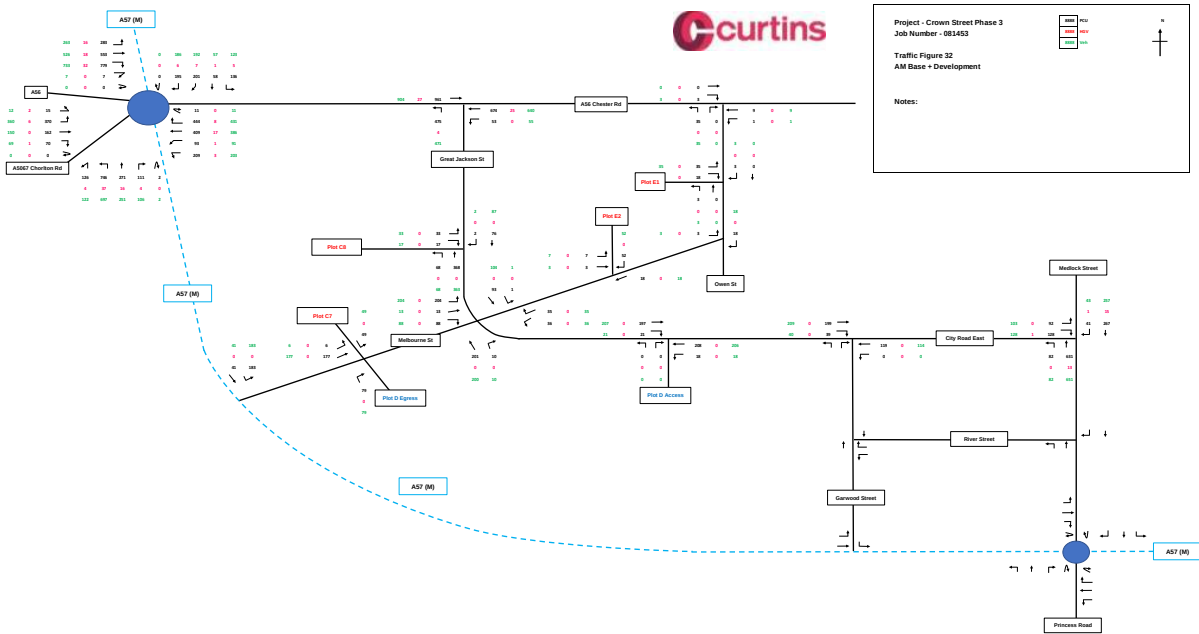
100%

90%

80%

Traffic Figure 32
AM Base + Development

Notes:

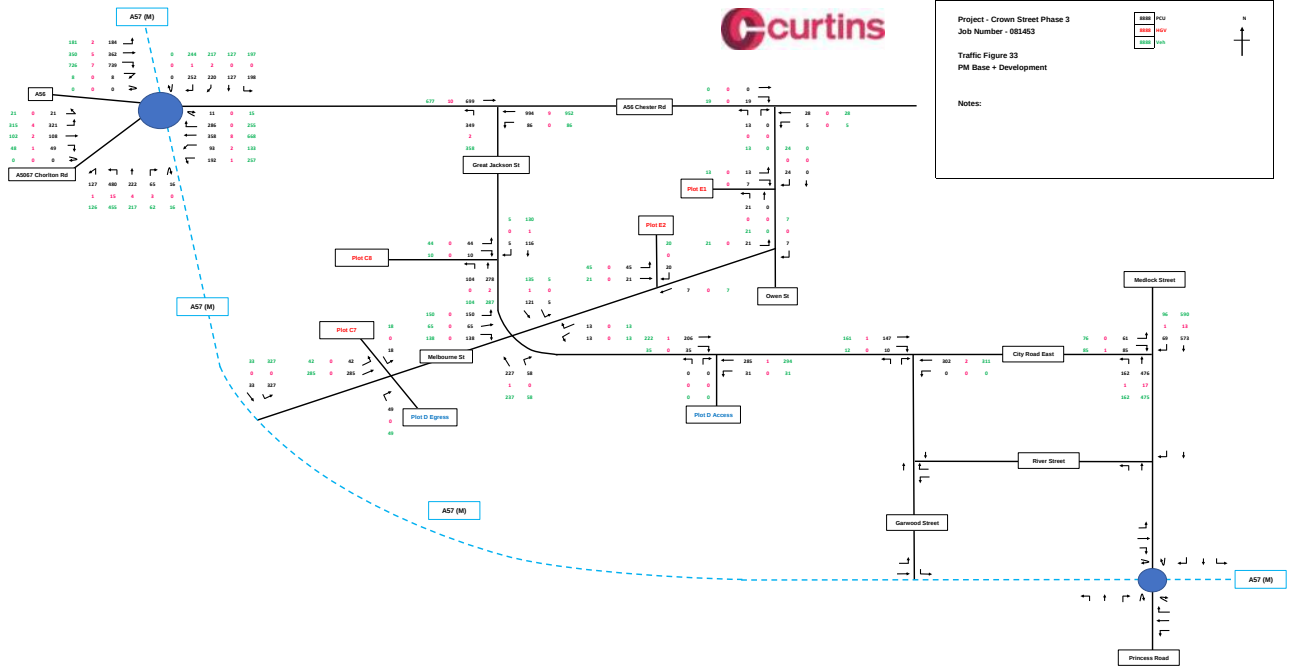




Project - Crown Street Phase 3
Job Number - 081453
Traffic Figure 33
PM Base + Development



Notes:



Appendix D – TRICS Output

Calculation Reference: AUDIT-148301-220915-0929

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : C - FLATS PRIVATELY OWNED
 MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
HC	HAMPSHIRE	1 days
HF	HERTFORDSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	No of Dwellings
Actual Range:	90 to 91 (units:)
Range Selected by User:	6 to 184 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/14 to 15/10/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Tuesday	1 days
Thursday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town Centre	2
---------------------	---

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Built-Up Zone	2
---------------	---

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3

2 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

25,001 to 50,000

2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

250,001 to 500,000

2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0

2 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes

2 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present

2 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	HC-03-C-01 CROSS STREET PORTSMOUTH	BLOCKS OF FLATS	HAMPSHIRE
	Edge of Town Centre Built-Up Zone Total No of Dwellings:	90	
	Survey date: TUESDAY	05/06/18	Survey Type: MANUAL
2	HF-03-C-03 SHENLEY ROAD BOREHAMWOOD	BLOCK OF FLATS	HERTFORDSHIRE
	Edge of Town Centre Built-Up Zone Total No of Dwellings:	91	
	Survey date: THURSDAY	14/11/19	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
BD-03-C-01	Parking
BD-03-C-02	Parking
BD-03-C-03	Parking
MS-03-C-04	Covid
NF-03-C-01	Parking
SF-03-C-01	Parking
SF-03-C-05	Covid

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 2.45

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	91	0.039	2	91	0.127	2	91	0.166
08:00 - 09:00	2	91	0.022	2	91	0.177	2	91	0.199
09:00 - 10:00	2	91	0.055	2	91	0.077	2	91	0.132
10:00 - 11:00	2	91	0.039	2	91	0.050	2	91	0.089
11:00 - 12:00	2	91	0.055	2	91	0.083	2	91	0.138
12:00 - 13:00	2	91	0.099	2	91	0.122	2	91	0.221
13:00 - 14:00	2	91	0.072	2	91	0.050	2	91	0.122
14:00 - 15:00	2	91	0.050	2	91	0.055	2	91	0.105
15:00 - 16:00	2	91	0.072	2	91	0.022	2	91	0.094
16:00 - 17:00	2	91	0.088	2	91	0.039	2	91	0.127
17:00 - 18:00	2	91	0.149	2	91	0.066	2	91	0.215
18:00 - 19:00	2	91	0.127	2	91	0.077	2	91	0.204
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.867			0.945			1.812

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	90 - 91 (units:)
Survey date range:	01/01/14 - 15/10/21
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	7

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 2.45

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	91	0.094	2	91	0.337	2	91	0.431
08:00 - 09:00	2	91	0.088	2	91	0.387	2	91	0.475
09:00 - 10:00	2	91	0.105	2	91	0.155	2	91	0.260
10:00 - 11:00	2	91	0.116	2	91	0.105	2	91	0.221
11:00 - 12:00	2	91	0.105	2	91	0.133	2	91	0.238
12:00 - 13:00	2	91	0.215	2	91	0.265	2	91	0.480
13:00 - 14:00	2	91	0.188	2	91	0.138	2	91	0.326
14:00 - 15:00	2	91	0.110	2	91	0.144	2	91	0.254
15:00 - 16:00	2	91	0.171	2	91	0.061	2	91	0.232
16:00 - 17:00	2	91	0.243	2	91	0.160	2	91	0.403
17:00 - 18:00	2	91	0.398	2	91	0.227	2	91	0.625
18:00 - 19:00	2	91	0.309	2	91	0.188	2	91	0.497
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.142			2.300			4.442

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

Calculation Reference: AUDIT-148301-230201-0244

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT

Category : A - OFFICE

MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	BH BRIGHTON & HOVE	1 days
	ES EAST SUSSEX	1 days
	HF HERTFORDSHIRE	1 days
04	EAST ANGLIA	
	NF NORFOLK	2 days
05	EAST MIDLANDS	
	DY DERBY	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	2 days
08	NORTH WEST	
	GM GREATER MANCHESTER	1 days
09	NORTH	
	CB CUMBRIA	1 days
10	WALES	
	PS POWYS	1 days
11	SCOTLAND	
	DU DUNDEE CITY	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
 Actual Range: 178 to 5000 (units: sqm)
 Range Selected by User: 178 to 5000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/14 to 06/05/22

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	2 days
Wednesday	1 days
Thursday	5 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	12 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town Centre	12
---------------------	----

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	1
Commercial Zone	2
Development Zone	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	6 days - Selected
Servicing vehicles Excluded	8 days - Selected

Secondary Filtering selection:

Use Class:

Not Known	12 days
-----------	---------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

5,001 to 10,000	2 days
15,001 to 20,000	3 days
20,001 to 25,000	3 days
25,001 to 50,000	4 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

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

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	7 days
1.1 to 1.5	5 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	1 days
No	11 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	12 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	BH-02-A-05 ROMAN ROAD HOVE	OFFICES		BRIGHTON & HOVE
	Edge of Town Centre Residential Zone Total Gross floor area:		280 sqm	
	Survey date: WEDNESDAY		04/07/18	Survey Type: MANUAL
2	CB-02-A-02 PORT ROAD CARLISLE	OFFICE		CUMBRIA
	Edge of Town Centre Industrial Zone Total Gross floor area:		925 sqm	
	Survey date: FRIDAY		24/06/16	Survey Type: MANUAL
3	DU-02-A-01 GREENMARKET DUNDEE	OFFICES		DUNDEE CITY
	Edge of Town Centre Development Zone Total Gross floor area:		3200 sqm	
	Survey date: THURSDAY		27/04/17	Survey Type: MANUAL
4	DY-02-A-02 PRIME PARKWAY DERBY	REAL ESTATE DEVELOPERS		DERBY
	Edge of Town Centre No Sub Category Total Gross floor area:		594 sqm	
	Survey date: THURSDAY		21/10/21	Survey Type: MANUAL
5	ES-02-A-12 VICARAGE LANE HAILSHAM	COUNCIL OFFICES		EAST SUSSEX
	Edge of Town Centre Built-Up Zone Total Gross floor area:		3640 sqm	
	Survey date: THURSDAY		26/11/15	Survey Type: MANUAL
6	GM-02-A-09 NEW MOUNT STREET MANCHESTER	LEASED OFFICES		GREATER MANCHESTER
	Edge of Town Centre Built-Up Zone Total Gross floor area:		2500 sqm	
	Survey date: MONDAY		26/09/16	Survey Type: MANUAL
7	HF-02-A-04 STATION WAY ST ALBANS	OFFICES		HERTFORDSHIRE
	Edge of Town Centre Residential Zone Total Gross floor area:		5000 sqm	
	Survey date: THURSDAY		02/10/14	Survey Type: MANUAL
8	NF-02-A-02 NORTH QUAY GREAT YARMOUTH	FINANCIAL PLANNERS		NORFOLK
	Edge of Town Centre Commercial Zone Total Gross floor area:		894 sqm	
	Survey date: MONDAY		11/09/17	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9	NF-02-A-03 NORTH QUAY GREAT YARMOUTH	OFFICES		NORFOLK
	Edge of Town Centre Commercial Zone			
	Total Gross floor area:	5500 sqm		
	Survey date: TUESDAY	12/09/17	Survey Type: MANUAL	
10	NY-02-A-01 NORTH PARK ROAD HARROGATE	SOLICITORS		NORTH YORKSHIRE
	Edge of Town Centre Built-Up Zone			
	Total Gross floor area:	178 sqm		
	Survey date: THURSDAY	04/10/18	Survey Type: MANUAL	
11	NY-02-A-03 STATION ROAD RICHMOND	DISTRICT COUNCIL OFFICES		NORTH YORKSHIRE
	Edge of Town Centre No Sub Category			
	Total Gross floor area:	1590 sqm		
	Survey date: FRIDAY	06/05/22	Survey Type: MANUAL	
12	PS-02-A-01 SEVERN ROAD WELSHPOOL	COUNCIL OFFICES		POWYS
	Edge of Town Centre No Sub Category			
	Total Gross floor area:	3920 sqm		
	Survey date: TUESDAY	12/05/15	Survey Type: MANUAL	

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
 MULTI-MODAL TOTAL VEHICLES
 Calculation factor: 100 sqm
 BOLD print indicates peak (busiest) period
 Total People to Total Vehicles ratio (all time periods and directions): 2.01

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	11	2247	0.583	11	2247	0.065	11	2247	0.648
08:00 - 09:00	12	2075	1.864	12	2075	0.257	12	2075	2.121
09:00 - 10:00	12	2075	1.028	12	2075	0.422	12	2075	1.450
10:00 - 11:00	12	2075	0.442	12	2075	0.398	12	2075	0.840
11:00 - 12:00	12	2075	0.289	12	2075	0.301	12	2075	0.590
12:00 - 13:00	12	2075	0.394	12	2075	0.615	12	2075	1.009
13:00 - 14:00	12	2075	0.534	12	2075	0.478	12	2075	1.012
14:00 - 15:00	12	2075	0.269	12	2075	0.462	12	2075	0.731
15:00 - 16:00	12	2075	0.273	12	2075	0.470	12	2075	0.743
16:00 - 17:00	12	2075	0.249	12	2075	0.751	12	2075	1.000
17:00 - 18:00	12	2075	0.137	12	2075	1.321	12	2075	1.458
18:00 - 19:00	11	2247	0.024	11	2247	0.433	11	2247	0.457
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			6.086			5.973			12.059

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	178 - 5000 (units: sqm)
Survey date range:	01/01/14 - 06/05/22
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE
MULTI-MODAL TOTAL PEOPLE
 Calculation factor: 100 sqm
 BOLD print indicates peak (busiest) period
 Total People to Total Vehicles ratio (all time periods and directions): 2.01

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	11	2247	0.805	11	2247	0.077	11	2247	0.882
08:00 - 09:00	12	2075	2.964	12	2075	0.277	12	2075	3.241
09:00 - 10:00	12	2075	1.932	12	2075	0.594	12	2075	2.526
10:00 - 11:00	12	2075	0.759	12	2075	0.711	12	2075	1.470
11:00 - 12:00	12	2075	0.663	12	2075	0.651	12	2075	1.314
12:00 - 13:00	12	2075	1.149	12	2075	2.073	12	2075	3.222
13:00 - 14:00	12	2075	1.719	12	2075	1.587	12	2075	3.306
14:00 - 15:00	12	2075	0.948	12	2075	0.847	12	2075	1.795
15:00 - 16:00	12	2075	0.550	12	2075	0.827	12	2075	1.377
16:00 - 17:00	12	2075	0.426	12	2075	1.213	12	2075	1.639
17:00 - 18:00	12	2075	0.173	12	2075	2.450	12	2075	2.623
18:00 - 19:00	11	2247	0.069	11	2247	0.773	11	2247	0.842
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			12.157			12.080			24.237

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Appendix E – Junction Capacity Assessment Results

Junctions 9											
PICADY 9 - Priority Intersection Module											
Version: 9.0.2.5947											
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Filename: Melbourne Street W - Great Jackson Street - Melbourne Street E.j9

Path: \\mfs02\Projects\081001 - 082000\081453 - Crown Street Phase 3\Q3-Design\3A-Calculations\TP\Capacity Assessments

Report generation date: 21/03/2023 15:52:34

- »Base, AM
- »Base, PM
- »Base + Dev, AM
- »Base + Dev, PM

Summary of junction performance

	AM						PM					
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	Base											
Stream B-CD	0.3	8.69	0.23	A	4.50	137 % [Stream D-ABC]	0.4	10.07	0.24	B	4.98	109 % [Stream B-CD]
Stream B-AD	0.1	9.73	0.09	A			0.4	12.31	0.27	B		
Stream A-BCD	0.0	5.55	0.01	A			0.0	5.66	0.03	A		
Stream D-ABC	0.3	11.41	0.19	B			0.1	10.62	0.07	B		
Stream C-ABD	0.0	0.00	0.00	A			0.0	0.00	0.00	A		
	Base + Dev											
Stream B-CD	0.8	11.91	0.41	B	7.77	55 % [Stream D-ABC]	0.8	14.30	0.44	B	7.95	42 % [Stream B-CD]
Stream B-AD	0.3	12.28	0.24	B			0.8	16.40	0.42	C		
Stream A-BCD	0.0	5.62	0.02	A			0.2	5.96	0.12	A		
Stream D-ABC	0.6	14.65	0.37	B			0.2	11.80	0.15	B		
Stream C-ABD	0.0	0.00	0.00	A			0.0	0.00	0.00	A		

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	29/06/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CURTINS\thorley_m
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Base	AM	ONE HOUR	08:30	10:00	15	✓
D4	Base	PM	ONE HOUR	17:45	19:15	15	✓
D5	Base + Dev	AM	ONE HOUR	08:30	10:00	15	✓
D6	Base + Dev	PM	ONE HOUR	17:45	19:15	15	✓

Analysis Set Details

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

Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Great Jackson Street - Melbourne Street	Crossroads	Two-way	4.50	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	137	Stream D-ABC

Arms

Arms

Arm	Name	Description	Arm type
A	Great Jackson St (S)		Major
B	Melbourne Street (W)		Minor
C	Great Jackson St (N)		Major
D	Melbourne Street (E)		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Great Jackson St (S)	6.00			100.0	✓	0.00
C - Great Jackson St (N)	6.00			60.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Melbourne Street (W)	Two lanes		3.50	3.50	20	20
D - Melbourne Street (E)	One lane	3.50			20	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
1	A-D	632	-	-	-	-	-	-	0.245	0.350	0.245	-	-	-
1	B-A	519	0.094	0.239	0.239	-	-	-	0.150	0.341	-	0.239	0.239	0.119
1	B-C	668	0.102	0.259	-	-	-	-	-	-	-	-	-	-
1	B-D, nearside lane	519	0.094	0.239	0.239	-	-	-	0.150	0.341	0.150	-	-	-
1	B-D, offside lane	519	0.094	0.239	0.239	-	-	-	0.150	0.341	0.150	-	-	-
1	C-B	609	0.236	0.236	0.337	-	-	-	-	-	-	-	-	-
1	D-A	668	-	-	-	-	-	-	0.259	-	0.102	-	-	-
1	D-B, nearside lane	519	0.150	0.150	0.341	-	-	-	0.239	0.239	0.094	-	-	-
1	D-B, offside lane	519	0.150	0.150	0.341	-	-	-	0.239	0.239	0.094	-	-	-
1	D-C	519	-	0.150	0.341	0.119	0.239	0.239	0.239	0.239	0.094	-	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Base	AM	ONE HOUR	08:30	10:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Great Jackson St (S)		ONE HOUR	✓	203	100.000
B - Melbourne Street (W)		ONE HOUR	✓	156	100.000
C - Great Jackson St (N)		ONE HOUR	✓	70	100.000
D - Melbourne Street (E)		ONE HOUR	✓	74	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Great Jackson St (S)	B - Melbourne Street (W)	C - Great Jackson St (N)	D - Melbourne Street (E)
From	A - Great Jackson St (S)	0	0	199	4
	B - Melbourne Street (W)	30	0	116	10
	C - Great Jackson St (N)	70	0	0	0
	D - Melbourne Street (E)	0	0	74	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Great Jackson St (S)	B - Melbourne Street (W)	C - Great Jackson St (N)	D - Melbourne Street (E)
From	A - Great Jackson St (S)	10	10	10	10
	B - Melbourne Street (W)	10	10	10	10
	C - Great Jackson St (N)	10	10	10	10
	D - Melbourne Street (E)	10	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.23	8.69	0.3	A	111	167
B-AD	0.09	9.73	0.1	A	32	48
ABCD	0.01	5.55	0.0	A	5	7
A-B					0	0
A-C					181	272
D-ABC	0.19	11.41	0.3	B	68	102
C-ABD	0.00	0.00	0.0	A	0	0
C-D					0	0
C-A					64	96

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	91	23	612	0.149	91	0.0	0.2	7.581	A
B-AD	26	7	468	0.056	26	0.0	0.1	8.944	A
A-BCD	4	0.95	717	0.005	4	0.0	0.0	5.549	A
A-B	0	0			0				
A-C	149	37			149				
D-ABC	56	14	457	0.122	55	0.0	0.2	9.834	A
C-ABD	0	0	572	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	53	13			53				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	109	27	603	0.181	109	0.2	0.2	8.017	A
B-AD	31	8	459	0.068	31	0.1	0.1	9.261	A
A-BCD	5	1	734	0.006	5	0.0	0.0	5.429	A
A-B	0	0			0				
A-C	178	44			178				
D-ABC	67	17	445	0.149	66	0.2	0.2	10.453	B
C-ABD	0	0	565	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	63	16			63				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	134	33	589	0.227	133	0.2	0.3	8.677	A
B-AD	38	10	445	0.086	38	0.1	0.1	9.724	A
A-BCD	6	2	757	0.008	6	0.0	0.0	5.270	A
A-B	0	0			0				
A-C	217	54			217				
D-ABC	81	20	428	0.190	81	0.2	0.3	11.395	B
C-ABD	0	0	556	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	77	19			77				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	134	33	589	0.227	134	0.3	0.3	8.689	A
B-AD	38	10	445	0.086	38	0.1	0.1	9.728	A
A-BCD	6	2	757	0.008	6	0.0	0.0	5.272	A
A-B	0	0			0				
A-C	217	54			217				
D-ABC	81	20	428	0.190	81	0.3	0.3	11.414	B
C-ABD	0	0	556	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	77	19			77				

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	109	27	602	0.181	109	0.3	0.2	8.034	A
B-AD	31	8	459	0.068	31	0.1	0.1	9.269	A
A-BCD	5	1	734	0.006	5	0.0	0.0	5.431	A
A-B	0	0			0				
A-C	178	44			178				
D-ABC	67	17	445	0.150	67	0.3	0.2	10.481	B
C-ABD	0	0	565	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	63	16			63				

09:45 - 10:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	91	23	612	0.149	91	0.2	0.2	7.609	A
B-AD	26	7	468	0.056	26	0.1	0.1	8.958	A
A-BCD	4	0.95	717	0.005	4	0.0	0.0	5.549	A
A-B	0	0			0				
A-C	149	37			149				
D-ABC	56	14	457	0.122	56	0.2	0.2	9.880	A
C-ABD	0	0	572	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	53	13			53				

Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Great Jackson Street - Melbourne Street	Crossroads	Two-way	4.98	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	109	Stream B-CD

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	Base	PM	ONE HOUR	17:45	19:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Great Jackson St (S)		ONE HOUR	✓	223	100.000
B - Melbourne Street (W)		ONE HOUR	✓	222	100.000
C - Great Jackson St (N)		ONE HOUR	✓	108	100.000
D - Melbourne Street (E)		ONE HOUR	✓	27	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Great Jackson St (S)	B - Melbourne Street (W)	C - Great Jackson St (N)	D - Melbourne Street (E)
From	A - Great Jackson St (S)	0	0	207	16
	B - Melbourne Street (W)	89	0	87	46
	C - Great Jackson St (N)	108	0	0	0
	D - Melbourne Street (E)	0	0	27	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Great Jackson St (S)	B - Melbourne Street (W)	C - Great Jackson St (N)	D - Melbourne Street (E)
From	A - Great Jackson St (S)	10	10	10	10
	B - Melbourne Street (W)	10	10	10	10
	C - Great Jackson St (N)	10	10	10	10
	D - Melbourne Street (E)	10	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.24	10.07	0.4	B	105	157
B-AD	0.27	12.31	0.4	B	99	148
ABCD	0.03	5.66	0.0	A	20	30
A-B					0	0
A-C					185	277
D-ABC	0.07	10.62	0.1	B	25	37
C-ABD	0.00	0.00	0.0	A	0	0
C-D					0	0
C-A					99	149

Main Results for each time segment

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	85	21	556	0.154	85	0.0	0.2	8.393	A
B-AD	82	20	464	0.176	81	0.0	0.2	10.302	B
ABCD	15	4	715	0.022	15	0.0	0.0	5.661	A
A-B	0	0			0				
A-C	152	38			152				
D-ABC	20	5	440	0.046	20	0.0	0.1	9.430	A
C-ABD	0	0	568	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	81	20			81				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	103	26	541	0.190	102	0.2	0.3	9.031	A
B-AD	97	24	454	0.214	97	0.2	0.3	11.084	B
ABCD	19	5	731	0.026	19	0.0	0.0	5.561	A
A-B	0	0			0				
A-C	181	45			181				
D-ABC	24	6	424	0.057	24	0.1	0.1	9.900	A
C-ABD	0	0	560	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	97	24			97				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	127	32	520	0.244	126	0.3	0.3	10.051	B
B-AD	118	29	439	0.268	117	0.3	0.4	12.283	B
A-BCD	25	6	754	0.034	25	0.0	0.0	5.430	A
A-B	0	0			0				
A-C	220	55			220				
D-ABC	30	7	403	0.074	30	0.1	0.1	10.607	B
C-ABD	0	0	549	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	119	30			119				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	127	32	520	0.244	127	0.3	0.4	10.075	B
B-AD	118	29	439	0.268	118	0.4	0.4	12.315	B
A-BCD	25	6	754	0.034	25	0.0	0.0	5.433	A
A-B	0	0			0				
A-C	220	55			220				
D-ABC	30	7	403	0.074	30	0.1	0.1	10.615	B
C-ABD	0	0	549	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	119	30			119				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	103	26	540	0.190	103	0.4	0.3	9.062	A
B-AD	97	24	454	0.214	97	0.4	0.3	11.123	B
A-BCD	19	5	731	0.026	19	0.0	0.0	5.562	A
A-B	0	0			0				
A-C	181	45			181				
D-ABC	24	6	424	0.057	24	0.1	0.1	9.914	A
C-ABD	0	0	560	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	97	24			97				

19:00 - 19:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	85	21	555	0.154	86	0.3	0.2	8.438	A
B-AD	82	20	464	0.176	82	0.3	0.2	10.366	B
A-BCD	15	4	715	0.022	15	0.0	0.0	5.664	A
A-B	0	0			0				
A-C	152	38			152				
D-ABC	20	5	439	0.046	20	0.1	0.1	9.454	A
C-ABD	0	0	568	0.000	0	0.0	0.0	0.000	A
C-D	0	0			0				
C-A	81	20			81				

Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Great Jackson Street - Melbourne Street	Crossroads	Two-way	7.77	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	55	Stream D-ABC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	Base + Dev	AM	ONE HOUR	08:30	10:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Great Jackson St (S)		ONE HOUR	✓	211	100.000
B - Melbourne Street (W)		ONE HOUR	✓	305	100.000
C - Great Jackson St (N)		ONE HOUR	✓	94	100.000
D - Melbourne Street (E)		ONE HOUR	✓	145	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Great Jackson St (S)	B - Melbourne Street (W)	C - Great Jackson St (N)	D - Melbourne Street (E)
From	A - Great Jackson St (S)	0	0	201	10
	B - Melbourne Street (W)	88	0	204	13
	C - Great Jackson St (N)	93	0	0	1
	D - Melbourne Street (E)	36	0	109	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Great Jackson St (S)	B - Melbourne Street (W)	C - Great Jackson St (N)	D - Melbourne Street (E)
From	A - Great Jackson St (S)	10	10	10	10
	B - Melbourne Street (W)	10	10	10	10
	C - Great Jackson St (N)	10	10	10	10
	D - Melbourne Street (E)	10	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.41	11.91	0.8	B	194	291
B-AD	0.24	12.28	0.3	B	86	128
A-BCD	0.02	5.62	0.0	A	12	19
A-B					0	0
A-C					181	272
D-ABC	0.37	14.65	0.6	B	133	200
C-ABD	0.00	0.00	0.0	A	0	0
C-D					0.92	1
C-A					85	128

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	159	40	598	0.266	158	0.0	0.4	8.963	A
B-AD	70	18	455	0.155	70	0.0	0.2	10.260	B
A-BCD	10	2	714	0.013	9	0.0	0.0	5.619	A
A-B	0	0			0				
A-C	149	37			149				
D-ABC	109	27	469	0.233	108	0.0	0.3	10.922	B
C-ABD	0	0	570	0.000	0	0.0	0.0	0.000	A
C-D	0.75	0.19			0.75				
C-A	70	18			70				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	190	48	584	0.326	190	0.4	0.5	10.021	B
B-AD	84	21	442	0.190	84	0.2	0.3	11.037	B
A-BCD	12	3	731	0.016	12	0.0	0.0	5.510	A
A-B	0	0			0				
A-C	178	44			178				
D-ABC	130	33	453	0.288	130	0.3	0.4	12.251	B
C-ABD	0	0	563	0.000	0	0.0	0.0	0.000	A
C-D	0.90	0.22			0.90				
C-A	84	21			84				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	233	58	566	0.412	232	0.5	0.8	11.835	B
B-AD	102	26	425	0.241	102	0.3	0.3	12.250	B
A-BCD	16	4	753	0.021	16	0.0	0.0	5.367	A
A-B	0	0			0				
A-C	217	54			217				
D-ABC	160	40	430	0.371	159	0.4	0.6	14.556	B
C-ABD	0	0	553	0.000	0	0.0	0.0	0.000	A
C-D	1	0.28			1				
C-A	102	26			102				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	233	58	566	0.412	233	0.8	0.8	11.906	B
B-AD	102	26	425	0.241	102	0.3	0.3	12.280	B
A-BCD	16	4	753	0.021	16	0.0	0.0	5.370	A
A-B	0	0			0				
A-C	217	54			217				
D-ABC	160	40	430	0.371	160	0.6	0.6	14.650	B
C-ABD	0	0	553	0.000	0	0.0	0.0	0.000	A
C-D	1	0.28			1				
C-A	102	26			102				

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	190	48	584	0.326	191	0.8	0.5	10.101	B
B-AD	84	21	442	0.190	84	0.3	0.3	11.079	B
A-BCD	12	3	731	0.016	12	0.0	0.0	5.510	A
A-B	0	0			0				
A-C	178	44			178				
D-ABC	130	33	452	0.288	131	0.6	0.5	12.360	B
C-ABD	0	0	563	0.000	0	0.0	0.0	0.000	A
C-D	0.90	0.22			0.90				
C-A	84	21			84				

09:45 - 10:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	159	40	597	0.267	160	0.5	0.4	9.060	A
B-AD	70	18	455	0.155	71	0.3	0.2	10.322	B
A-BCD	10	2	714	0.013	10	0.0	0.0	5.621	A
A-B	0	0			0				
A-C	149	37			149				
D-ABC	109	27	469	0.233	110	0.5	0.3	11.046	B
C-ABD	0	0	570	0.000	0	0.0	0.0	0.000	A
C-D	0.75	0.19			0.75				
C-A	70	18			70				

Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	Great Jackson Street - Melbourne Street	Crossroads	Two-way	7.95	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	42	Stream B-CD

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	Base + Dev	PM	ONE HOUR	17:45	19:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Great Jackson St (S)		ONE HOUR	✓	285	100.000
B - Melbourne Street (W)		ONE HOUR	✓	353	100.000
C - Great Jackson St (N)		ONE HOUR	✓	126	100.000
D - Melbourne Street (E)		ONE HOUR	✓	53	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
		A - Great Jackson St (S)	B - Melbourne Street (W)	C - Great Jackson St (N)	D - Melbourne Street (E)
From	A - Great Jackson St (S)	0	0	227	58
	B - Melbourne Street (W)	138	0	150	65
	C - Great Jackson St (N)	121	0	0	5
	D - Melbourne Street (E)	13	0	40	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
		A - Great Jackson St (S)	B - Melbourne Street (W)	C - Great Jackson St (N)	D - Melbourne Street (E)
From	A - Great Jackson St (S)	10	10	10	10
	B - Melbourne Street (W)	10	10	10	10
	C - Great Jackson St (N)	10	10	10	10
	D - Melbourne Street (E)	10	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-CD	0.44	14.30	0.8	B	177	265
B-AD	0.42	16.40	0.8	C	147	221
ABCD	0.12	5.96	0.2	A	75	112
A-B					0	0
A-C					187	280
D-ABC	0.15	11.80	0.2	B	49	73
C-ABD	0.00	0.00	0.0	A	0	0
C-D					5	7
C-A					111	167

Main Results for each time segment

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	143	36	539	0.266	142	0.0	0.4	9.934	A
B-AD	123	31	449	0.273	121	0.0	0.4	12.032	B
ABCD	57	14	722	0.079	57	0.0	0.1	5.953	A
A-B	0	0			0				
A-C	157	39			157				
D-ABC	40	10	446	0.090	39	0.0	0.1	9.742	A
C-ABD	0	0	554	0.000	0	0.0	0.0	0.000	A
C-D	4	0.94			4				
C-A	91	23			91				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	173	43	519	0.333	172	0.4	0.5	11.402	B
B-AD	145	36	435	0.333	144	0.4	0.5	13.606	B
ABCD	72	18	740	0.098	72	0.1	0.2	5.933	A
A-B	0	0			0				
A-C	184	46			184				
D-ABC	48	12	424	0.112	48	0.1	0.1	10.515	B
C-ABD	0	0	543	0.000	0	0.0	0.0	0.000	A
C-D	4	1			4				
C-A	109	27			109				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	214	54	491	0.436	213	0.5	0.8	14.165	B
B-AD	174	44	416	0.420	174	0.5	0.8	16.277	C
A-BCD	95	24	765	0.124	95	0.2	0.2	5.911	A
A-B	0	0			0				
A-C	219	55			219				
D-ABC	58	15	394	0.148	58	0.1	0.2	11.769	B
C-ABD	0	0	528	0.000	0	0.0	0.0	0.000	A
C-D	6	1			6				
C-A	133	33			133				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	214	54	491	0.436	214	0.8	0.8	14.301	B
B-AD	174	44	416	0.419	174	0.8	0.8	16.397	C
A-BCD	95	24	765	0.124	95	0.2	0.2	5.918	A
A-B	0	0			0				
A-C	219	55			219				
D-ABC	58	15	394	0.148	58	0.2	0.2	11.798	B
C-ABD	0	0	528	0.000	0	0.0	0.0	0.000	A
C-D	6	1			6				
C-A	133	33			133				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	173	43	518	0.333	174	0.8	0.6	11.539	B
B-AD	145	36	435	0.333	146	0.8	0.6	13.746	B
A-BCD	72	18	740	0.098	72	0.2	0.2	5.940	A
A-B	0	0			0				
A-C	184	46			184				
D-ABC	48	12	423	0.113	48	0.2	0.1	10.553	B
C-ABD	0	0	543	0.000	0	0.0	0.0	0.000	A
C-D	4	1			4				
C-A	109	27			109				

19:00 - 19:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-CD	143	36	538	0.266	144	0.6	0.4	10.068	B
B-AD	123	31	448	0.273	123	0.6	0.4	12.198	B
A-BCD	57	14	722	0.079	58	0.2	0.1	5.963	A
A-B	0	0			0				
A-C	157	39			157				
D-ABC	40	10	445	0.090	40	0.1	0.1	9.792	A
C-ABD	0	0	553	0.000	0	0.0	0.0	0.000	A
C-D	4	0.94			4				
C-A	91	23			91				

Junctions 9											
PICADY 9 - Priority Intersection Module											
Version: 9.0.2.5947 © Copyright TRL Limited, 2017											
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Filename: A56 Chester Road - Great Jackson Street.j9

Path: \\mfs02\Projects\081001 - 082000\081453 - Crown Street Phase 3\Q3-Design\3A-Calculations\TP\Capacity Assessments

Report generation date: 21/03/2023 16:21:25

»2022 Survey, AM
»2022 Survey, PM
»Base, AM
»Base, PM
»Base + Dev, AM
»Base + Dev, PM

Summary of junction performance

	AM						PM					
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2022 Survey											
Stream B-AC	0.2	7.10	0.15	A	0.80	203 %	0.5	10.06	0.33	B	1.49	74 %
Stream C-B	0.0	0.00	0.00	A		[Stream B-AC]	0.0	0.00	0.00	A		[Stream B-AC]
	Base											
Stream B-AC	1.3	13.19	0.54	B	4.23	40 %	1.2	13.87	0.52	B	2.92	36 %
Stream C-B	0.0	0.00	0.00	A		[Stream B-AC]	0.0	0.00	0.00	A		[Stream B-AC]
	Base + Dev											
Stream B-AC	4.2	30.65	0.81	D	12.11	3 %	2.0	19.54	0.66	C	4.77	16 %
Stream C-B	0.0	0.00	0.00	A		[Stream B-AC]	0.0	0.00	0.00	A		[Stream B-AC]

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	29/06/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CURTINS\thorley_m
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022 Survey	AM	ONE HOUR	08:30	10:00	15	✓
D2	2022 Survey	PM	ONE HOUR	17:45	19:15	15	✓
D3	Base	AM	ONE HOUR	08:30	10:00	15	✓
D4	Base	PM	ONE HOUR	17:45	19:15	15	✓
D5	Base + Dev	AM	ONE HOUR	08:30	10:00	15	✓
D6	Base + Dev	PM	ONE HOUR	17:45	19:15	15	✓

Analysis Set Details

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

2022 Survey, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
2	A56 Chester Road - Great Jackson Street	T-Junction	One-way from A to C	0.80	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	203	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	A56 Chester Rd (N)		Major
B	Great Jackson Street		Minor
C	A56 Chester Rd (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - A56 Chester Rd (S)	8.00	✓	2.00	✓				

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Great Jackson Street	One lane	5.00	40	40

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
2	B-A	640	0.063	0.159	0.100	0.228
2	B-C	779	0.067	0.171	-	-
2	C-B	593	0.130	0.130	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022 Survey	AM	ONE HOUR	08:30	10:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A56 Chester Rd (N)		ONE HOUR	✓	691	100.000
B - Great Jackson Street		ONE HOUR	✓	88	100.000
C - A56 Chester Rd (S)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
	From			
	A - A56 Chester Rd (N)	0	48	643
	B - Great Jackson Street	0	0	88
	C - A56 Chester Rd (S)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
	From			
	A - A56 Chester Rd (N)	10	10	10
	B - Great Jackson Street	10	10	10
	C - A56 Chester Rd (S)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.15	7.10	0.2	A	81	121
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
AB					44	66
AC					590	885

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	66	17	694	0.095	66	0.0	0.1	6.299	A
C-A	0	0			0				
C-B	0	0	525	0.000	0	0.0	0.0	0.000	A
AB	36	9			36				
AC	484	121			484				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	79	20	678	0.117	79	0.1	0.1	6.613	A
C-A	0	0			0				
C-B	0	0	512	0.000	0	0.0	0.0	0.000	A
A-B	43	11			43				
A-C	578	145			578				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	97	24	655	0.148	97	0.1	0.2	7.094	A
C-A	0	0			0				
C-B	0	0	494	0.000	0	0.0	0.0	0.000	A
A-B	53	13			53				
A-C	708	177			708				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	97	24	655	0.148	97	0.2	0.2	7.097	A
C-A	0	0			0				
C-B	0	0	494	0.000	0	0.0	0.0	0.000	A
A-B	53	13			53				
A-C	708	177			708				

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	79	20	678	0.117	79	0.2	0.1	6.619	A
C-A	0	0			0				
C-B	0	0	512	0.000	0	0.0	0.0	0.000	A
A-B	43	11			43				
A-C	578	145			578				

09:45 - 10:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	66	17	694	0.095	66	0.1	0.1	6.311	A
C-A	0	0			0				
C-B	0	0	525	0.000	0	0.0	0.0	0.000	A
A-B	36	9			36				
A-C	484	121			484				

2022 Survey, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
2	A56 Chester Road - Great Jackson Street	T-Junction	One-way from A to C	1.49	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	74	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022 Survey	PM	ONE HOUR	17:45	19:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A56 Chester Rd (N)		ONE HOUR	✓	1032	100.000
B - Great Jackson Street		ONE HOUR	✓	180	100.000
C - A56 Chester Rd (S)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
From	A - A56 Chester Rd (N)	0	57	975
	B - Great Jackson Street	0	0	180
	C - A56 Chester Rd (S)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
From	A - A56 Chester Rd (N)	10	10	10
	B - Great Jackson Street	10	10	10
	C - A56 Chester Rd (S)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.33	10.06	0.5	B	165	248
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					52	78
A-C					895	1342

Main Results for each time segment

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	136	34	651	0.208	134	0.0	0.3	7.648	A
C-A	0	0			0				
C-B	0	0	492	0.000	0	0.0	0.0	0.000	A
A-B	43	11			43				
A-C	734	184			734				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	162	40	626	0.258	161	0.3	0.4	8.514	A
C-A	0	0			0				
C-B	0	0	472	0.000	0	0.0	0.0	0.000	A
A-B	51	13			51				
A-C	877	219			877				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	198	50	592	0.335	198	0.4	0.5	10.026	B
C-A	0	0			0				
C-B	0	0	445	0.000	0	0.0	0.0	0.000	A
A-B	63	16			63				
A-C	1073	268			1073				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	198	50	592	0.335	198	0.5	0.5	10.060	B
C-A	0	0			0				
C-B	0	0	445	0.000	0	0.0	0.0	0.000	A
A-B	63	16			63				
A-C	1073	268			1073				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	162	40	626	0.258	162	0.5	0.4	8.551	A
C-A	0	0			0				
C-B	0	0	472	0.000	0	0.0	0.0	0.000	A
A-B	51	13			51				
A-C	877	219			877				

19:00 - 19:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	136	34	651	0.208	136	0.4	0.3	7.694	A
C-A	0	0			0				
C-B	0	0	492	0.000	0	0.0	0.0	0.000	A
A-B	43	11			43				
A-C	734	184			734				

Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
2	A56 Chester Road - Great Jackson Street	T-Junction	One-way from A to C	4.23	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	40	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Base	AM	ONE HOUR	08:30	10:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A56 Chester Rd (N)		ONE HOUR	✓	685	100.000
B - Great Jackson Street		ONE HOUR	✓	323	100.000
C - A56 Chester Rd (S)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
	A - A56 Chester Rd (N)	0	46	639
	B - Great Jackson Street	0	0	323
	C - A56 Chester Rd (S)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
From		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
	A - A56 Chester Rd (N)	10	10	10
	B - Great Jackson Street	10	10	10
	C - A56 Chester Rd (S)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.54	13.19	1.3	B	296	445
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					42	63
A-C					586	880

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	243	61	695	0.350	241	0.0	0.6	8.682	A
C-A	0	0			0				
C-B	0	0	526	0.000	0	0.0	0.0	0.000	A
A-B	35	9			35				
A-C	481	120			481				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	290	73	678	0.428	289	0.6	0.8	10.158	B
C-A	0	0			0				
C-B	0	0	513	0.000	0	0.0	0.0	0.000	A
A-B	41	10			41				
A-C	574	144			574				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	356	89	656	0.542	354	0.8	1.3	13.036	B
C-A	0	0			0				
C-B	0	0	495	0.000	0	0.0	0.0	0.000	A
A-B	51	13			51				
A-C	704	176			704				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	356	89	656	0.542	356	1.3	1.3	13.185	B
C-A	0	0			0				
C-B	0	0	495	0.000	0	0.0	0.0	0.000	A
A-B	51	13			51				
A-C	704	176			704				

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	290	73	678	0.428	292	1.3	0.8	10.302	B
C-A	0	0			0				
C-B	0	0	513	0.000	0	0.0	0.0	0.000	A
A-B	41	10			41				
A-C	574	144			574				

09:45 - 10:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	243	61	695	0.350	244	0.8	0.6	8.806	A
C-A	0	0			0				
C-B	0	0	526	0.000	0	0.0	0.0	0.000	A
A-B	35	9			35				
A-C	481	120			481				

Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
2	A56 Chester Road - Great Jackson Street	T-Junction	One-way from A to C	2.92	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	36	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	Base	PM	ONE HOUR	17:45	19:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A56 Chester Rd (N)		ONE HOUR	✓	1042	100.000
B - Great Jackson Street		ONE HOUR	✓	278	100.000
C - A56 Chester Rd (S)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
	A - A56 Chester Rd (N)	0	69	973
	B - Great Jackson Street	0	0	278
	C - A56 Chester Rd (S)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
From		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
	A - A56 Chester Rd (N)	10	10	10
	B - Great Jackson Street	10	10	10
	C - A56 Chester Rd (S)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.52	13.87	1.2	B	255	383
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					63	95
A-C					893	1339

Main Results for each time segment

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	209	52	651	0.322	207	0.0	0.5	8.890	A
C-A	0	0			0				
C-B	0	0	491	0.000	0	0.0	0.0	0.000	A
A-B	52	13			52				
A-C	733	183			733				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	250	62	626	0.399	249	0.5	0.7	10.491	B
C-A	0	0			0				
C-B	0	0	471	0.000	0	0.0	0.0	0.000	A
A-B	62	16			62				
A-C	875	219			875				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	306	77	591	0.518	304	0.7	1.1	13.719	B
C-A	0	0			0				
C-B	0	0	444	0.000	0	0.0	0.0	0.000	A
A-B	76	19			76				
A-C	1071	268			1071				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	306	77	591	0.518	306	1.1	1.2	13.873	B
C-A	0	0			0				
C-B	0	0	444	0.000	0	0.0	0.0	0.000	A
A-B	76	19			76				
A-C	1071	268			1071				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	250	62	626	0.399	252	1.2	0.7	10.630	B
C-A	0	0			0				
C-B	0	0	471	0.000	0	0.0	0.0	0.000	A
A-B	62	16			62				
A-C	875	219			875				

19:00 - 19:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	209	52	651	0.322	210	0.7	0.5	9.008	A
C-A	0	0			0				
C-B	0	0	491	0.000	0	0.0	0.0	0.000	A
A-B	52	13			52				
A-C	733	183			733				

Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
2	A56 Chester Road - Great Jackson Street	T-Junction	One-way from A to C	12.11	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	3	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	Base + Dev	AM	ONE HOUR	08:30	10:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A56 Chester Rd (N)		ONE HOUR	✓	727	100.000
B - Great Jackson Street		ONE HOUR	✓	475	100.000
C - A56 Chester Rd (S)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
From		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
	A - A56 Chester Rd (N)	0	53	674
	B - Great Jackson Street	0	0	475
	C - A56 Chester Rd (S)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
From		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
	A - A56 Chester Rd (N)	10	10	10
	B - Great Jackson Street	10	10	10
	C - A56 Chester Rd (S)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.81	30.65	4.2	D	436	654
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					49	73
A-C					618	928

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	358	89	690	0.518	353	0.0	1.2	11.605	B
C-A	0	0			0				
C-B	0	0	522	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	507	127			507				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	427	107	673	0.635	424	1.2	1.8	15.771	C
C-A	0	0			0				
C-B	0	0	508	0.000	0	0.0	0.0	0.000	A
A-B	48	12			48				
A-C	606	151			606				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	523	131	649	0.806	514	1.8	4.0	27.830	D
C-A	0	0			0				
C-B	0	0	489	0.000	0	0.0	0.0	0.000	A
A-B	58	15			58				
A-C	742	186			742				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	523	131	649	0.806	522	4.0	4.2	30.650	D
C-A	0	0			0				
C-B	0	0	489	0.000	0	0.0	0.0	0.000	A
A-B	58	15			58				
A-C	742	186			742				

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	427	107	673	0.635	436	4.2	2.0	17.312	C
C-A	0	0			0				
C-B	0	0	508	0.000	0	0.0	0.0	0.000	A
A-B	48	12			48				
A-C	606	151			606				

09:45 - 10:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	358	89	690	0.518	361	2.0	1.2	12.146	B
C-A	0	0			0				
C-B	0	0	522	0.000	0	0.0	0.0	0.000	A
A-B	40	10			40				
A-C	507	127			507				

Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
2	A56 Chester Road - Great Jackson Street	T-Junction	One-way from A to C	4.77	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	16	Stream B-AC

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	Base + Dev	PM	ONE HOUR	17:45	19:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - A56 Chester Rd (N)		ONE HOUR	✓	1080	100.000
B - Great Jackson Street		ONE HOUR	✓	349	100.000
C - A56 Chester Rd (S)		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
From	A - A56 Chester Rd (N)	0	86	994
	B - Great Jackson Street	0	0	349
	C - A56 Chester Rd (S)	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - A56 Chester Rd (N)	B - Great Jackson Street	C - A56 Chester Rd (S)
From	A - A56 Chester Rd (N)	10	10	10
	B - Great Jackson Street	10	10	10
	C - A56 Chester Rd (S)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.66	19.54	2.0	C	320	480
C-A					0	0
C-B	0.00	0.00	0.0	A	0	0
A-B					79	118
A-C					912	1368

Main Results for each time segment

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	263	66	647	0.406	260	0.0	0.7	10.146	B
C-A	0	0			0				
C-B	0	0	487	0.000	0	0.0	0.0	0.000	A
A-B	65	16			65				
A-C	748	187			748				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	314	78	621	0.505	312	0.7	1.1	12.748	B
C-A	0	0			0				
C-B	0	0	467	0.000	0	0.0	0.0	0.000	A
A-B	77	19			77				
A-C	894	223			894				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	384	96	586	0.656	381	1.1	2.0	18.950	C
C-A	0	0			0				
C-B	0	0	438	0.000	0	0.0	0.0	0.000	A
A-B	95	24			95				
A-C	1094	274			1094				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	384	96	586	0.656	384	2.0	2.0	19.543	C
C-A	0	0			0				
C-B	0	0	438	0.000	0	0.0	0.0	0.000	A
A-B	95	24			95				
A-C	1094	274			1094				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	314	78	621	0.505	317	2.0	1.2	13.163	B
C-A	0	0			0				
C-B	0	0	467	0.000	0	0.0	0.0	0.000	A
A-B	77	19			77				
A-C	894	223			894				

19:00 - 19:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	263	66	647	0.406	264	1.2	0.8	10.387	B
C-A	0	0			0				
C-B	0	0	487	0.000	0	0.0	0.0	0.000	A
A-B	65	16			65				
A-C	748	187			748				

Junctions 9											
PICADY 9 - Priority Intersection Module											
Version: 9.0.2.5947 © Copyright TRL Limited, 2017											
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Filename: Medlock Street - City Road East.j9

Path: \\mfs02\Projects\081001 - 082000\081453 - Crown Street Phase 3\Q3-Design\3A-Calculations\TP\Capacity Assessments

Report generation date: 21/03/2023 16:13:46

»2022 Survey, AM
»2022 Survey, PM
»Base, AM
»Base, PM
»Base + Dev, AM
»Base + Dev, PM

Summary of junction performance

	AM						PM					
	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
	2022 Survey											
Stream B-C	0.1	7.88	0.11	A	0.97	111 % [Stream B-A]	0.1	7.44	0.09	A	0.96	85 % [Stream B-A]
Stream B-A	0.1	10.26	0.07	B			0.2	11.35	0.13	B		
Stream C-AB	0.1	6.97	0.07	A			0.1	6.67	0.07	A		
	Base											
Stream B-C	0.2	8.33	0.14	A	1.71	57 % [Stream B-A]	0.1	7.39	0.10	A	1.22	60 % [Stream B-A]
Stream B-A	0.3	13.55	0.24	B			0.3	13.46	0.20	B		
Stream C-AB	0.1	7.14	0.07	A			0.1	7.02	0.09	A		
	Base + Dev											
Stream B-C	0.3	9.68	0.20	A	2.67	33 % [Stream B-A]	0.1	7.82	0.12	A	1.59	45 % [Stream B-A]
Stream B-A	0.6	16.63	0.37	C			0.4	15.01	0.26	C		
Stream C-AB	0.1	7.23	0.08	A			0.2	7.38	0.12	A		

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	29/06/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CURTINS\thorley_m
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022 Survey	AM	ONE HOUR	08:30	10:00	15	✓
D2	2022 Survey	PM	ONE HOUR	17:45	19:15	15	✓
D3	Base	AM	ONE HOUR	08:30	10:00	15	✓
D4	Base	PM	ONE HOUR	17:45	19:15	15	✓
D5	Base + Dev	AM	ONE HOUR	08:30	10:00	15	✓
D6	Base + Dev	PM	ONE HOUR	17:45	19:15	15	✓

Analysis Set Details

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

2022 Survey, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
3	Medlock Street - City Road East	T-Junction	Two-way	0.97	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	111	Stream B-A

Arms

Arms

Arm	Name	Description	Arm type
A	Medlock Street (S)		Major
B	City Road East		Minor
C	Medlock Street (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Medlock Street (N)	11.00		✓	3.25	215.0	✓	6.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - City Road East	One lane plus flare	10.00	4.30	4.30	4.30	4.30		1.00	100	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
3	B-A	624	0.089	0.225	0.141	0.321
3	B-C	728	0.087	0.221	-	-
3	C-B	778	0.236	0.236	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022 Survey	AM	ONE HOUR	08:30	10:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Medlock Street (S)		ONE HOUR	✓	652	100.000
B - City Road East		ONE HOUR	✓	84	100.000
C - Medlock Street (N)		ONE HOUR	✓	278	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
From	A - Medlock Street (S)	0	37	615
	B - City Road East	28	0	56
	C - Medlock Street (N)	241	37	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
From	A - Medlock Street (S)	10	10	10
	B - City Road East	10	10	10
	C - Medlock Street (N)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.11	7.88	0.1	A	51	77
B-A	0.07	10.26	0.1	B	26	39
C-AB	0.07	6.97	0.1	A	34	51
C-A					221	332
A-B					34	51
A-C					564	847

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	42	11	617	0.068	42	0.0	0.1	6.886	A
B-A	21	5	482	0.044	21	0.0	0.0	8.576	A
C-AB	28	7	662	0.042	28	0.0	0.0	6.236	A
C-A	181	45			181				
A-B	28	7			28				
A-C	463	116			463				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	50	13	595	0.085	50	0.1	0.1	7.273	A
B-A	25	6	455	0.055	25	0.0	0.1	9.214	A
C-AB	33	8	640	0.052	33	0.0	0.1	6.526	A
C-A	217	54			217				
A-B	33	8			33				
A-C	553	138			553				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	62	15	564	0.109	62	0.1	0.1	7.878	A
B-A	31	8	417	0.074	31	0.1	0.1	10.260	B
C-AB	41	10	609	0.067	41	0.1	0.1	6.968	A
C-A	265	66			265				
A-B	41	10			41				
A-C	677	169			677				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	62	15	564	0.109	62	0.1	0.1	7.882	A
B-A	31	8	417	0.074	31	0.1	0.1	10.265	B
C-AB	41	10	609	0.067	41	0.1	0.1	6.968	A
C-A	265	66			265				
A-B	41	10			41				
A-C	677	169			677				

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	50	13	595	0.085	50	0.1	0.1	7.277	A
B-A	25	6	455	0.055	25	0.1	0.1	9.221	A
C-AB	33	8	640	0.052	33	0.1	0.1	6.530	A
C-A	217	54			217				
A-B	33	8			33				
A-C	553	138			553				

09:45 - 10:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	42	11	617	0.068	42	0.1	0.1	6.894	A
B-A	21	5	482	0.044	21	0.1	0.1	8.587	A
C-AB	28	7	662	0.042	28	0.1	0.0	6.242	A
C-A	181	45			181				
A-B	28	7			28				
A-C	463	116			463				

2022 Survey, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
3	Medlock Street - City Road East	T-Junction	Two-way	0.96	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	85	Stream B-A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022 Survey	PM	ONE HOUR	17:45	19:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Medlock Street (S)		ONE HOUR	✓	534	100.000
B - City Road East		ONE HOUR	✓	95	100.000
C - Medlock Street (N)		ONE HOUR	✓	590	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
From	A - Medlock Street (S)	0	58	476
	B - City Road East	46	0	49
	C - Medlock Street (N)	548	42	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
From	A - Medlock Street (S)	10	10	10
	B - City Road East	10	10	10
	C - Medlock Street (N)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.09	7.44	0.1	A	45	67
B-A	0.13	11.35	0.2	B	42	63
C-AB	0.07	6.67	0.1	A	39	58
C-A					503	754
A-B					53	80
A-C					437	655

Main Results for each time segment

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	37	9	633	0.058	37	0.0	0.1	6.635	A
B-A	35	9	471	0.074	34	0.0	0.1	9.060	A
C-AB	32	8	683	0.046	31	0.0	0.1	6.072	A
C-A	413	103			413				
A-B	44	11			44				
A-C	358	90			358				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	44	11	614	0.072	44	0.1	0.1	6.950	A
B-A	41	10	441	0.094	41	0.1	0.1	9.909	A
C-AB	38	9	665	0.057	38	0.1	0.1	6.312	A
C-A	493	123			493				
A-B	52	13			52				
A-C	428	107			428				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	54	13	586	0.092	54	0.1	0.1	7.437	A
B-A	51	13	400	0.127	50	0.1	0.2	11.339	B
C-AB	46	12	640	0.072	46	0.1	0.1	6.673	A
C-A	603	151			603				
A-B	64	16			64				
A-C	524	131			524				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	54	13	586	0.092	54	0.1	0.1	7.441	A
B-A	51	13	399	0.127	51	0.2	0.2	11.351	B
C-AB	46	12	640	0.072	46	0.1	0.1	6.673	A
C-A	603	151			603				
A-B	64	16			64				
A-C	524	131			524				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	44	11	614	0.072	44	0.1	0.1	6.957	A
B-A	41	10	441	0.094	42	0.2	0.1	9.924	A
C-AB	38	9	665	0.057	38	0.1	0.1	6.313	A
C-A	493	123			493				
A-B	52	13			52				
A-C	428	107			428				

19:00 - 19:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	37	9	633	0.058	37	0.1	0.1	6.646	A
B-A	35	9	471	0.074	35	0.1	0.1	9.089	A
C-AB	32	8	683	0.046	32	0.1	0.1	6.078	A
C-A	413	103			413				
A-B	44	11			44				
A-C	358	90			358				

Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
3	Medlock Street - City Road East	T-Junction	Two-way	1.71	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	57	Stream B-A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Base	AM	ONE HOUR	08:30	10:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Medlock Street (S)		ONE HOUR	✓	700	100.000
B - City Road East		ONE HOUR	✓	153	100.000
C - Medlock Street (N)		ONE HOUR	✓	305	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
From	A - Medlock Street (S)	0	69	631
	B - City Road East	84	0	69
	C - Medlock Street (N)	267	38	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
From	A - Medlock Street (S)	10	10	10
	B - City Road East	10	10	10
	C - Medlock Street (N)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.14	8.33	0.2	A	63	95
B-A	0.24	13.55	0.3	B	77	116
C-AB	0.07	7.14	0.1	A	35	52
C-A					245	368
A-B					63	95
A-C					579	869

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	52	13	625	0.083	52	0.0	0.1	6.907	A
B-A	63	16	452	0.140	63	0.0	0.2	10.148	B
C-AB	29	7	654	0.044	28	0.0	0.0	6.329	A
C-A	201	50			201				
A-B	52	13			52				
A-C	475	119			475				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	62	16	595	0.104	62	0.1	0.1	7.427	A
B-A	76	19	424	0.178	75	0.2	0.2	11.348	B
C-AB	34	9	630	0.054	34	0.0	0.1	6.647	A
C-A	240	60			240				
A-B	62	16			62				
A-C	567	142			567				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	76	19	552	0.138	76	0.1	0.2	8.320	A
B-A	92	23	385	0.240	92	0.2	0.3	13.505	B
C-AB	42	10	596	0.070	42	0.1	0.1	7.139	A
C-A	294	73			294				
A-B	76	19			76				
A-C	695	174			695				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	76	19	551	0.138	76	0.2	0.2	8.331	A
B-A	92	23	385	0.240	92	0.3	0.3	13.546	B
C-AB	42	10	596	0.070	42	0.1	0.1	7.139	A
C-A	294	73			294				
A-B	76	19			76				
A-C	695	174			695				

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	62	16	595	0.104	62	0.2	0.1	7.440	A
B-A	76	19	424	0.178	76	0.3	0.2	11.394	B
C-AB	34	9	630	0.054	34	0.1	0.1	6.651	A
C-A	240	60			240				
A-B	62	16			62				
A-C	567	142			567				

09:45 - 10:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	52	13	624	0.083	52	0.1	0.1	6.925	A
B-A	63	16	452	0.140	63	0.2	0.2	10.202	B
C-AB	29	7	654	0.044	29	0.1	0.1	6.335	A
C-A	201	50			201				
A-B	52	13			52				
A-C	475	119			475				

Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
3	Medlock Street - City Road East	T-Junction	Two-way	1.22	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	60	Stream B-A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	Base	PM	ONE HOUR	17:45	19:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Medlock Street (S)		ONE HOUR	✓	600	100.000
B - City Road East		ONE HOUR	✓	118	100.000
C - Medlock Street (N)		ONE HOUR	✓	626	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
From	A - Medlock Street (S)	0	124	476
	B - City Road East	66	0	52
	C - Medlock Street (N)	573	53	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
From	A - Medlock Street (S)	10	10	10
	B - City Road East	10	10	10
	C - Medlock Street (N)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.10	7.39	0.1	A	48	72
B-A	0.20	13.46	0.3	B	61	91
C-AB	0.09	7.02	0.1	A	49	73
C-A					526	789
A-B					114	171
A-C					437	655

Main Results for each time segment

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	39	10	652	0.060	39	0.0	0.1	6.452	A
B-A	50	12	439	0.113	49	0.0	0.1	10.134	B
C-AB	40	10	672	0.059	40	0.0	0.1	6.262	A
C-A	431	108			431				
A-B	93	23			93				
A-C	358	90			358				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	47	12	629	0.074	47	0.1	0.1	6.806	A
B-A	59	15	409	0.145	59	0.1	0.2	11.313	B
C-AB	48	12	651	0.073	48	0.1	0.1	6.562	A
C-A	515	129			515				
A-B	111	28			111				
A-C	428	107			428				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	57	14	594	0.096	57	0.1	0.1	7.380	A
B-A	73	18	367	0.198	72	0.2	0.3	13.424	B
C-AB	58	15	622	0.094	58	0.1	0.1	7.019	A
C-A	631	158			631				
A-B	137	34			137				
A-C	524	131			524				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	57	14	593	0.097	57	0.1	0.1	7.386	A
B-A	73	18	367	0.198	73	0.3	0.3	13.455	B
C-AB	58	15	622	0.094	58	0.1	0.1	7.019	A
C-A	631	158			631				
A-B	137	34			137				
A-C	524	131			524				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	47	12	628	0.074	47	0.1	0.1	6.811	A
B-A	59	15	409	0.145	60	0.3	0.2	11.349	B
C-AB	48	12	651	0.073	48	0.1	0.1	6.564	A
C-A	515	129			515				
A-B	111	28			111				
A-C	428	107			428				

19:00 - 19:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	39	10	652	0.060	39	0.1	0.1	6.465	A
B-A	50	12	439	0.113	50	0.2	0.1	10.177	B
C-AB	40	10	672	0.059	40	0.1	0.1	6.270	A
C-A	431	108			431				
A-B	93	23			93				
A-C	358	90			358				

Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
3	Medlock Street - City Road East	T-Junction	Two-way	2.67	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	33	Stream B-A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	Base + Dev	AM	ONE HOUR	08:30	10:00	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Medlock Street (S)		ONE HOUR	✓	713	100.000
B - City Road East		ONE HOUR	✓	220	100.000
C - Medlock Street (N)		ONE HOUR	✓	308	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
	A - Medlock Street (S)	0	82	631
	B - City Road East	128	0	92
	C - Medlock Street (N)	267	41	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
	A - Medlock Street (S)	10	10	10
	B - City Road East	10	10	10
	C - Medlock Street (N)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.20	9.68	0.3	A	84	127
B-A	0.37	16.63	0.6	C	117	176
C-AB	0.08	7.23	0.1	A	38	56
C-A					245	368
A-B					75	113
A-C					579	869

Main Results for each time segment

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	69	17	607	0.114	69	0.0	0.1	7.346	A
B-A	96	24	450	0.214	95	0.0	0.3	11.136	B
C-AB	31	8	652	0.047	31	0.0	0.1	6.375	A
C-A	201	50			201				
A-B	62	15			62				
A-C	475	119			475				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	83	21	570	0.145	83	0.1	0.2	8.120	A
B-A	115	29	420	0.274	115	0.3	0.4	12.928	B
C-AB	37	9	627	0.059	37	0.1	0.1	6.708	A
C-A	240	60			240				
A-B	74	18			74				
A-C	567	142			567				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	101	25	511	0.198	101	0.2	0.3	9.640	A
B-A	141	35	379	0.372	140	0.4	0.6	16.504	C
C-AB	45	11	593	0.076	45	0.1	0.1	7.226	A
C-A	294	73			294				
A-B	90	23			90				
A-C	695	174			695				

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	101	25	511	0.198	101	0.3	0.3	9.675	A
B-A	141	35	379	0.372	141	0.6	0.6	16.630	C
C-AB	45	11	593	0.076	45	0.1	0.1	7.226	A
C-A	294	73			294				
A-B	90	23			90				
A-C	695	174			695				

09:30 - 09:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	83	21	569	0.145	83	0.3	0.2	8.152	A
B-A	115	29	420	0.274	116	0.6	0.4	13.045	B
C-AB	37	9	627	0.059	37	0.1	0.1	6.713	A
C-A	240	60			240				
A-B	74	18			74				
A-C	567	142			567				

09:45 - 10:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	69	17	606	0.114	69	0.2	0.1	7.381	A
B-A	96	24	449	0.214	97	0.4	0.3	11.245	B
C-AB	31	8	652	0.047	31	0.1	0.1	6.379	A
C-A	201	50			201				
A-B	62	15			62				
A-C	475	119			475				

Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
3	Medlock Street - City Road East	T-Junction	Two-way	1.59	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	45	Stream B-A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	Base + Dev	PM	ONE HOUR	17:45	19:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Medlock Street (S)		ONE HOUR	✓	638	100.000
B - City Road East		ONE HOUR	✓	146	100.000
C - Medlock Street (N)		ONE HOUR	✓	642	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
	A - Medlock Street (S)	0	162	476
	B - City Road East	85	0	61
	C - Medlock Street (N)	573	69	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A - Medlock Street (S)	B - City Road East	C - Medlock Street (N)
	A - Medlock Street (S)	10	10	10
	B - City Road East	10	10	10
	C - Medlock Street (N)	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.12	7.82	0.1	A	56	84
B-A	0.26	15.01	0.4	C	78	117
C-AB	0.12	7.38	0.2	A	63	95
C-A					526	789
A-B					149	223
A-C					437	655

Main Results for each time segment

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	46	11	643	0.071	46	0.0	0.1	6.628	A
B-A	64	16	433	0.148	63	0.0	0.2	10.687	B
C-AB	52	13	665	0.078	52	0.0	0.1	6.451	A
C-A	431	108			431				
A-B	122	30			122				
A-C	358	90			358				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	55	14	616	0.089	55	0.1	0.1	7.061	A
B-A	76	19	401	0.190	76	0.2	0.3	12.166	B
C-AB	62	16	643	0.096	62	0.1	0.1	6.815	A
C-A	515	129			515				
A-B	146	36			146				
A-C	428	107			428				

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	67	17	574	0.117	67	0.1	0.1	7.810	A
B-A	94	23	357	0.262	93	0.3	0.4	14.951	B
C-AB	76	19	613	0.124	76	0.1	0.2	7.376	A
C-A	631	158			631				
A-B	178	45			178				
A-C	524	131			524				

18:30 - 18:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	67	17	573	0.117	67	0.1	0.1	7.821	A
B-A	94	23	357	0.262	94	0.4	0.4	15.010	C
C-AB	76	19	613	0.124	76	0.2	0.2	7.379	A
C-A	631	158			631				
A-B	178	45			178				
A-C	524	131			524				

18:45 - 19:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	55	14	615	0.089	55	0.1	0.1	7.071	A
B-A	76	19	401	0.190	77	0.4	0.3	12.226	B
C-AB	62	16	643	0.096	62	0.2	0.1	6.819	A
C-A	515	129			515				
A-B	146	36			146				
A-C	428	107			428				

19:00 - 19:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-C	46	11	642	0.072	46	0.1	0.1	6.641	A
B-A	64	16	433	0.148	64	0.3	0.2	10.752	B
C-AB	52	13	665	0.078	52	0.1	0.1	6.463	A
C-A	431	108			431				
A-B	122	30			122				
A-C	358	90			358				

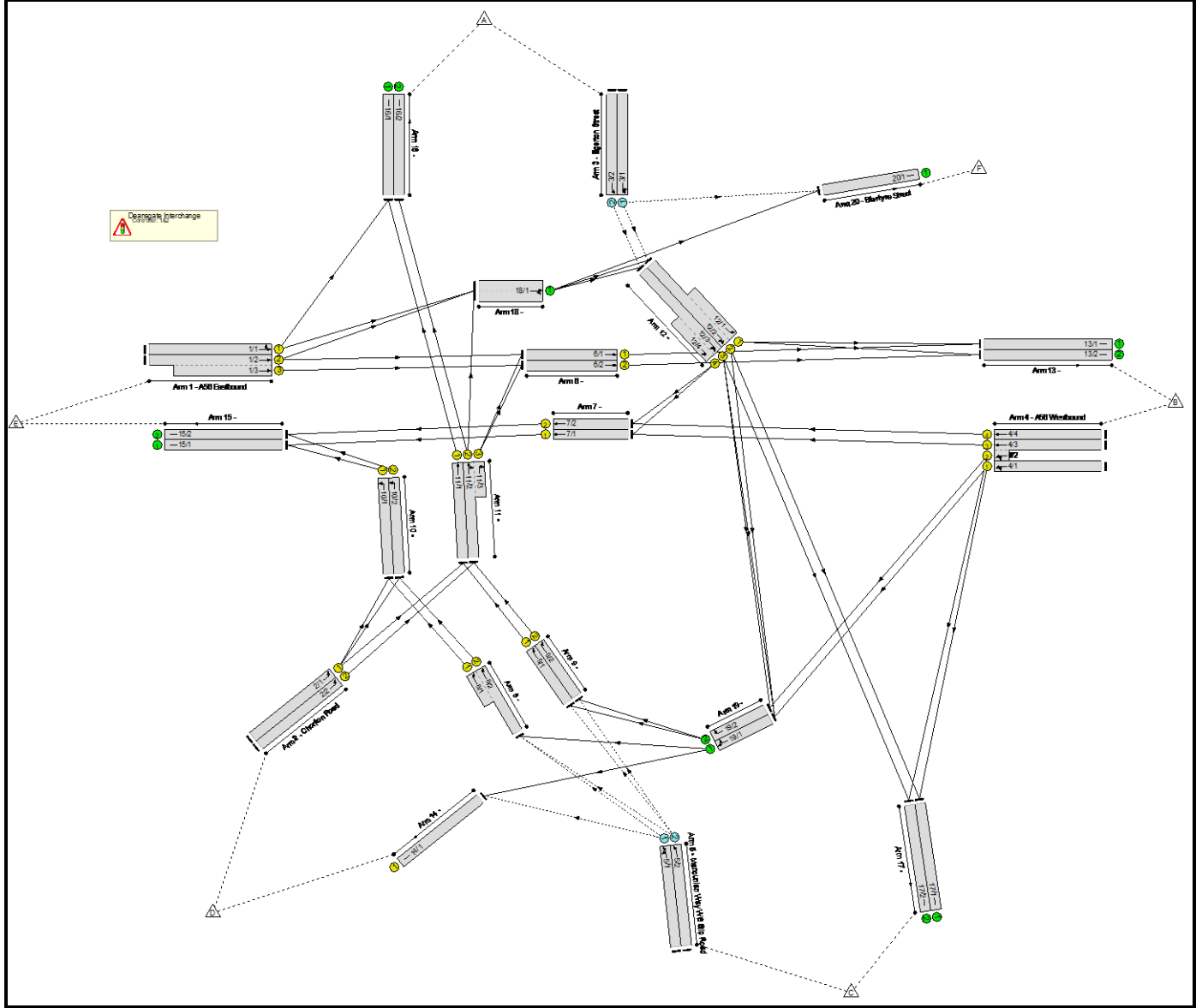
Full Input Data And Results

Full Input Data And Results

User and Project Details

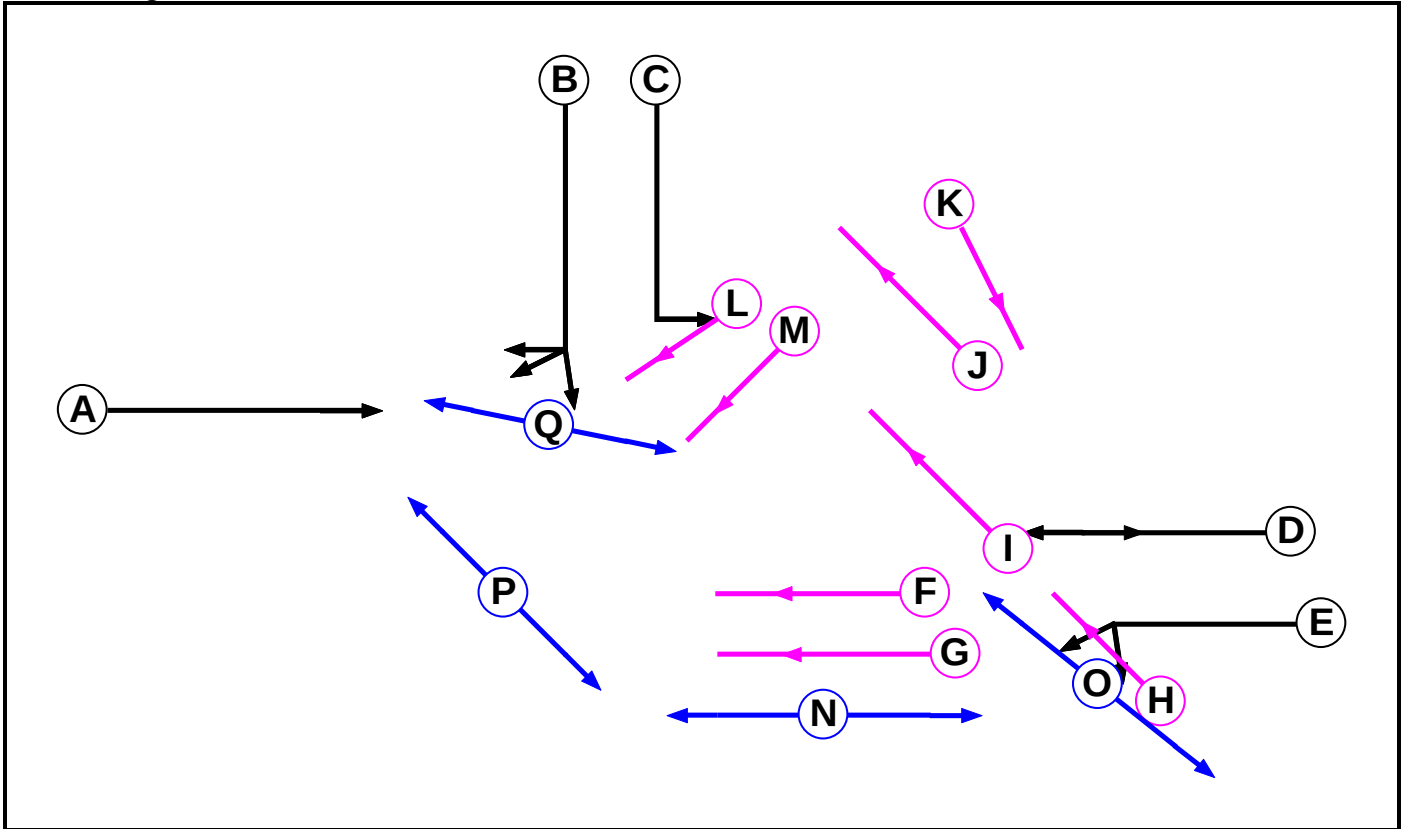
Project:	
Title:	
Location:	
Additional detail:	
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Author:	
Company:	
Address:	

Network Layout Diagram



C1

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Cycle		7	6
G	Cycle		7	6
H	Cycle		7	7
I	Cycle		7	7
J	Cycle		7	7
K	Cycle		7	7
L	Cycle		7	2
M	Cycle		4	0
N	Pedestrian		5	5
O	Pedestrian		5	5
P	Pedestrian		8	8
Q	Pedestrian		5	4

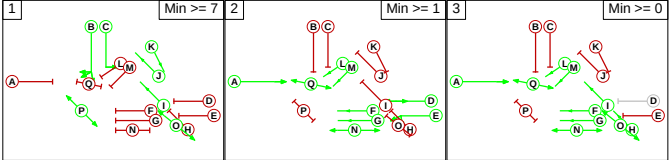
Phase Intergreens Matrix

Terminating Phase	Starting Phase																	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	A		6	6	-	-	-	-	-	-	8	8	-	-	-	-	7	-
	B	5		-	5	6	7	7	-	-	-	-	-	-	8	-	-	-
	C	5	-		-	-	-	-	-	-	-	-	5	15	-	-	-	5
	D	-	7	-		-	-	-	-	-	5	5	-	-	-	-	6	-
	E	-	5	-	-		-	-	5	5	-	-	-	-	-	6	-	-
	F	-	6	-	-	-		-	-	-	-	-	-	-	-	-	-	-
	G	-	6	-	-	-	-		-	-	-	-	-	-	-	-	-	-
	H	-	-	-	-	6	-	-		-	-	-	-	-	-	-	-	-
	I	-	-	-	-	6	-	-	-		-	-	-	-	-	-	-	-
	J	8	-	-	6	-	-	-	-	-		-	-	-	-	-	-	-
	K	6	-	-	8	-	-	-	-	-	-		-	-	-	-	-	-
	L	-	-	5	-	-	-	-	-	-	-	-		-	-	-	-	-
	M	-	-	5	-	-	-	-	-	-	-	-	-		-	-	-	-
	N	-	7	-	-	-	-	-	-	-	-	-	-	-		-	-	-
	O	-	-	-	-	7	-	-	-	-	-	-	-	-	-		-	-
	P	6	-	-	6	-	-	-	-	-	-	-	-	-	-	-		-
	Q	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	B C I J K O P
2	A D E F G L M N Q
3	A F G H I L M N O Q

Stage Diagram



Full Input Data And Results

Phase Delays

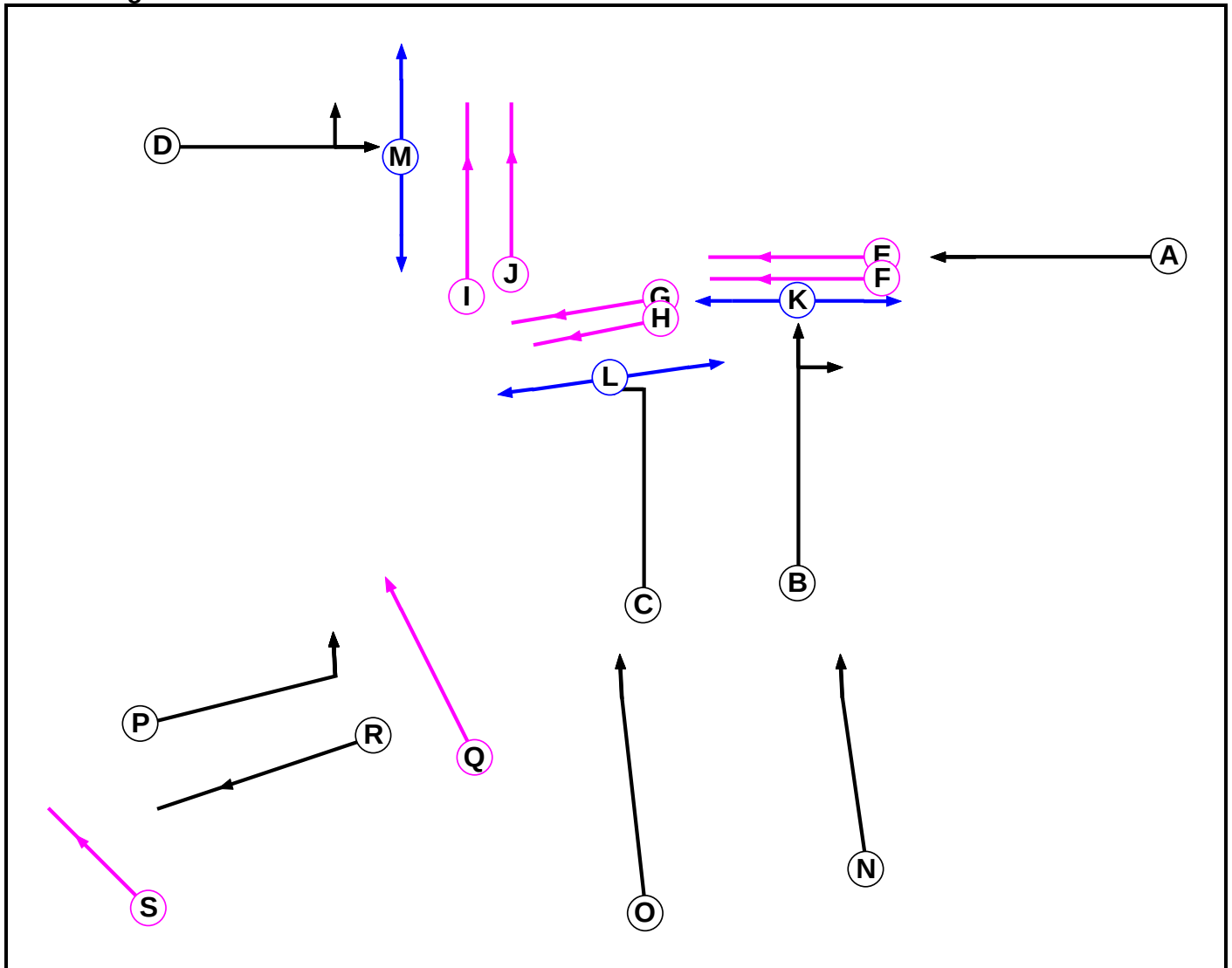
Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	B	Losing	3	3
1	2	I	Losing	3	3
1	2	O	Losing	2	2
1	2	P	Losing	2	2
1	3	H	Gaining absolute	3	3
2	1	F	Losing	1	1
2	1	G	Losing	1	1
2	1	L	Losing	5	5
2	1	M	Losing	5	5
2	1	Q	Losing	1	1
3	1	A	Losing	1	1
3	1	F	Losing	1	1
3	1	G	Losing	1	1
3	1	L	Losing	5	5
3	1	M	Losing	5	5
3	1	Q	Losing	5	5

Prohibited Stage Change

	To Stage			
From Stage	1	2	3	
	1		15	15
	2	10		6
	3	10	7	

C2

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		5	5
C	Traffic		5	5
D	Traffic		7	4
E	Cycle		7	4
F	Cycle		7	3
G	Cycle		7	6
H	Cycle		7	6
I	Cycle		7	7
J	Cycle		6	6
K	Pedestrian		7	7
L	Pedestrian		5	5
M	Pedestrian		7	7
N	Traffic		7	7
O	Traffic		7	7
P	Traffic		5	5
Q	Cycle		7	7
R	Traffic		7	7
S	Cycle		7	7

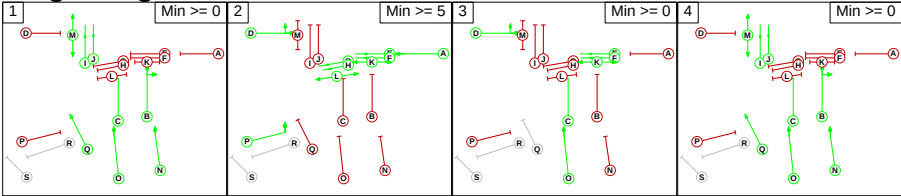
Phase Intergreens Matrix

Terminating Phase	Starting Phase																			
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	A		5	7	-	-	-	-	-	7	7	-	-	8	-	-	-	-	-	-
	B	6		-	7	6	6	-	-	-	-	5	-	-	-	-	-	-	-	
	C	5	-		-	-	-	6	6	-	-	-	5	-	-	-	-	-	-	
	D	-	5	-		-	-	-	-	5	7	-	-	5	-	-	-	-	-	
	E	-	7	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	
	F	-	6	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	
	G	-	-	6	-	-	-		-	-	-	-	-	-	-	-	-	-	-	
	H	-	-	6	-	-	-	-		-	-	-	-	-	-	-	-	-	-	
	I	5	-	-	9	-	-	-	-		-	-	-	-	-	-	-	-	-	
	J	9	-	-	7	-	-	-	-	-		-	-	-	-	-	-	-	-	
	K	-	10	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	
	L	-	-	7	-	-	-	-	-	-	-	-		-	-	-	-	-	-	
	M	6	-	-	8	-	-	-	-	-	-	-	-		-	-	-	-	-	
	N	-	-	-	-	-	-	-	-	-	-	-	-	-		-	4	-	-	
	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-		5	-	-	
	P	-	-	-	-	-	-	-	-	-	-	-	-	-	6	5		5	-	
	Q	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7		-	
	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	

Phases in Stage

Stage No.	Phases in Stage
1	BCIJMNOQ
2	ADEFGHKL P
3	CDEFKO
4	BCIJMNOQ

Stage Diagram



Full Input Data And Results

Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	B	Losing	6	6
1	2	C	Losing	5	5
1	2	I	Losing	3	3
1	2	J	Losing	1	1
1	2	M	Losing	4	4
1	2	O	Losing	8	8
1	2	Q	Losing	8	8
2	1	A	Losing	3	3
2	1	D	Losing	3	3
2	1	E	Losing	3	3
2	1	F	Losing	4	4
2	1	G	Losing	7	7
2	1	H	Losing	7	7
2	1	K	Losing	3	3
2	1	L	Losing	3	3
2	3	G	Losing	1	1
2	3	H	Losing	1	1
2	4	A	Losing	3	3
2	4	D	Losing	3	3
2	4	E	Losing	3	3
2	4	F	Losing	4	4
2	4	G	Losing	7	7
2	4	H	Losing	7	7
2	4	K	Losing	3	3
2	4	L	Losing	3	3
3	1	D	Losing	5	5
3	1	E	Losing	3	3
3	1	F	Losing	4	4
3	1	N	Gaining absolute	1	1
3	4	D	Losing	5	5
3	4	E	Losing	3	3
3	4	F	Losing	4	4
3	4	N	Gaining absolute	1	1
4	2	B	Losing	6	6
4	2	C	Losing	5	5
4	2	I	Losing	2	2
4	2	J	Losing	1	1
4	2	M	Losing	4	4
4	2	O	Losing	8	8

Full Input Data And Results

4	2	Q	Losing	15	15
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Prohibited Stage Change

	To Stage				
From Stage		1	2	3	4
	1		15	9	0
	2	13		7	13
	3	12	6		12
	4	0	22	9	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Deansgate Interchange											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
3/1 (Egerton Street)	12/2 (Ahead)	1000	0	18/1	0.33	All	-	-	-	-	-
	20/1 (Left)	1439	0	18/1	1.09	All					
3/2 (Egerton Street)	12/3 (Ahead)	1000	0	18/1	0.33	All	-	-	-	-	-
5/1 (Mancunian Way WB Slip Road)	8/2 (Ahead)	1000	0	19/1	0.33	All	-	-	-	-	-
	14/1 (Left)	1000	0	19/2	0.33	All					
				19/1	0.33	All					
	8/2 (Ahead)	1000	0	19/1	0.33	All					
				19/2	0.33	All					
				19/1	0.33	All					
5/2 (Mancunian Way WB Slip Road)	9/1 (Ahead)	1000	0	19/1	0.33	All	-	-	-	-	-
				19/2	0.33	All					
	9/2 (Ahead)	1000	0	19/1	0.33	All					
				19/2	0.33	All					

Lane Input Data

Junction: Deansgate Interchange												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A56 Eastbound)	U	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 16 Left	Inf
											Arm 18 Ahead	Inf
1/2 (A56 Eastbound)	U	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead Arm 18 Ahead	Inf Inf
1/3 (A56 Eastbound)	U	D	2	3	13.9	Geom	-	3.00	0.00	N	Arm 6 Ahead	Inf
2/1 (Chorlton Road)	U	P	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 10 Left	Inf
											Arm 11 Left	Inf
2/2 (Chorlton Road)	U	P	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 11 Left	Inf
3/1 (Egerton Street)	O		2	3	60.0	Geom	-	3.80	0.00	Y	Arm 12 Ahead	Inf
											Arm 20 Left	Inf
3/2 (Egerton Street)	O		2	3	60.0	Geom	-	3.80	0.00	Y	Arm 12 Ahead	Inf
4/1 (A56 Westbound)	U	E	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 17 Left Arm 19 Ahead	Inf Inf
4/2 (A56 Westbound)	U	E	2	3	2.0	Geom	-	3.30	0.00	Y	Arm 17 Left	Inf
											Arm 19 Ahead	Inf
4/3 (A56 Westbound)	U	D	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 7 Ahead	Inf
4/4 (A56 Westbound)	U	D	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 7 Ahead	Inf
5/1 (Mancunian Way WB Slip Road)	O		2	3	60.0	Geom	-	3.70	0.00	Y	Arm 8 Ahead	Inf
											Arm 14 Left	Inf
5/2 (Mancunian Way WB Slip Road)	O		2	3	60.0	Geom	-	3.70	0.00	Y	Arm 8 Ahead	Inf
											Arm 9 Ahead	Inf

Full Input Data And Results

6/1	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 13 Ahead	Inf
6/2	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 13 Ahead	Inf
7/1	U	A	2	3	13.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead	Inf
7/2	U	A	2	3	13.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead	Inf
8/1	U	O	2	3	5.0	Geom	-	3.90	0.00	Y	Arm 10 Ahead	Inf
8/2	U	O	2	3	60.0	Geom	-	3.90	0.00	Y	Arm 10 Ahead	Inf
9/1	U	N	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 11 Ahead	Inf
9/2	U	N	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 11 Ahead	Inf
10/1	U	C	2	3	7.8	Geom	-	3.80	0.00	Y	Arm 15 Left	Inf
10/2	U	C	2	3	7.8	Geom	-	3.80	0.00	Y	Arm 15 Left	Inf
11/1	U	B	2	3	7.8	Geom	-	3.50	0.00	Y	Arm 16 Ahead	3.90
11/2	U	B	2	3	7.8	Geom	-	3.50	0.00	Y	Arm 16 Ahead	Inf
											Arm 18 Right	Inf
11/3	U	B	2	3	5.0	Geom	-	3.50	0.00	Y	Arm 6 Right	Inf
12/1	U	C	2	3	8.7	Geom	-	3.90	0.00	Y	Arm 13 Left	Inf
12/2	U	B	2	3	60.0	Geom	-	3.90	0.00	Y	Arm 17 Ahead	Inf
											Arm 19 Right	Inf
12/3	U	B	2	3	60.0	Geom	-	3.90	0.00	Y	Arm 17 Ahead	Inf
											Arm 19 Right	Inf
12/4	U	B	2	3	7.3	Geom	-	3.90	0.00	Y	Arm 7 Right	Inf
13/1	U		2	3	60.0	Inf	-	-	-	-	-	-
13/2	U		2	3	60.0	Inf	-	-	-	-	-	-
14/1	U	Q	2	3	60.0	Geom	-	3.30	0.00	Y		
15/1	U		2	3	60.0	Inf	-	-	-	-	-	-
15/2	U		2	3	60.0	Inf	-	-	-	-	-	-
16/1	U		2	3	60.0	Inf	-	-	-	-	-	-
16/2	U		2	3	60.0	Inf	-	-	-	-	-	-
17/1	U		2	3	60.0	Inf	-	-	-	-	-	-
17/2	U		2	3	60.0	Inf	-	-	-	-	-	-
18/1	U		2	3	8.7	Inf	-	-	-	-	-	-

Full Input Data And Results

19/1	U		2	3	13.9	Inf	-	-	-	-	-	-
19/2	U		2	3	13.9	Inf	-	-	-	-	-	-
20/1 (Blantyre Street)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2022 AM Peak'	08:00	09:00	01:00	
2: '2022 PM Peak'	08:00	09:00	01:00	
3: 'AM Base'	08:00	09:00	01:00	
4: 'PM Base'	08:00	09:00	01:00	
5: 'AM Base + Dev'	08:00	09:00	01:00	
6: 'PM Base + Dev'	08:00	09:00	01:00	

Scenario 1: 'AM Survey' (FG1: '2022 AM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination							
		A	B	C	D	E	F	Tot.
	A	0	121	20	199	192	5	537
	B	200	11	155	83	282	5	736
	C	264	111	0	126	744	5	1250
	D	369	150	69	0	15	5	608
	E	282	551	760	7	0	5	1605
	F	0	0	0	0	0	0	0
	Tot.	1115	944	1004	415	1233	25	4736

Traffic Lane Flows

Lane	Scenario 1: AM Survey
Junction: Deansgate Interchange	
1/1	517
1/2 (with short)	1088(In) 537(Out)
1/3 (short)	551
2/1	300
2/2	308
3/1	169
3/2	368
4/1	237
4/2 (short)	217
4/3 (with short)	292(In) 75(Out)
4/4	207
5/1	626
5/2	624
6/1	218
6/2	605
7/1	238
7/2	236
8/1 (short)	372
8/2 (with short)	744(In) 372(Out)
9/1	107
9/2	489
10/1	380
10/2	379
11/1	392
11/2 (with short)	797(In) 525(Out)
11/3 (short)	272
12/1 (short)	121
12/2 (with short)	676(In) 555(Out)
12/3 (with short)	692(In) 500(Out)
12/4 (short)	192
13/1	279
13/2	665
14/1	415
15/1	618

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15/2	615
16/1	674
16/2	441
17/1	666
17/2	338
18/1	856
19/1	289
19/2	216
20/1	25

Lane Saturation Flows

Junction: Deansgate Interchange								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A56 Eastbound)	3.00	0.00	Y	Arm 16 Left	Inf	54.5 %	1915	1915
				Arm 18 Ahead	Inf	45.5 %		
1/2 (A56 Eastbound)	3.00	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1915	1915
				Arm 18 Ahead	Inf	100.0 %		
1/3 (A56 Eastbound)	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/1 (Chorlton Road)	3.50	0.00	Y	Arm 10 Left	Inf	5.0 %	1965	1965
				Arm 11 Left	Inf	95.0 %		
2/2 (Chorlton Road)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/1 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	97.0 %	1995	1995
				Arm 20 Left	Inf	3.0 %		
3/2 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1995	1995
4/1 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	65.0 %	1945	1945
				Arm 19 Ahead	Inf	35.0 %		
4/2 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	0.5 %	1945	1945
				Arm 19 Ahead	Inf	99.5 %		
4/3 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
4/4 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
5/1 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	79.9 %	1985	1985
				Arm 14 Left	Inf	20.1 %		
5/2 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	39.1 %	1985	1985
				Arm 9 Ahead	Inf	60.9 %		
6/1	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
6/2	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
7/1	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
7/2	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
8/1	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
8/2	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
9/1	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
9/2	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
10/1	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
10/2	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
11/1	3.50	0.00	Y	Arm 16 Ahead	3.90	100.0 %	1419	1419
11/2	3.50	0.00	Y	Arm 16 Ahead	Inf	84.0 %	1965	1965
				Arm 18 Right	Inf	16.0 %		

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11/3	3.50	0.00	Y	Arm 6 Right	Inf	100.0 %	1965	1965
12/1	3.90	0.00	Y	Arm 13 Left	Inf	100.0 %	2005	2005
12/2	3.90	0.00	Y	Arm 17 Ahead	Inf	92.3 %	2005	2005
				Arm 19 Right	Inf	7.7 %		
12/3	3.90	0.00	Y	Arm 17 Ahead	Inf	67.4 %	2005	2005
				Arm 19 Right	Inf	32.6 %		
12/4	3.90	0.00	Y	Arm 7 Right	Inf	100.0 %	2005	2005
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
14/1	3.30	0.00	Y				1945	1945
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1	Infinite Saturation Flow						Inf	Inf
17/2	Infinite Saturation Flow						Inf	Inf
18/1	Infinite Saturation Flow						Inf	Inf
19/1	Infinite Saturation Flow						Inf	Inf
19/2	Infinite Saturation Flow						Inf	Inf
20/1 (Blantyre Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM Survey' (FG2: '2022 PM Peak', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination							
		A	B	C	D	E	F	Tot.
	A	0	134	18	218	245	5	620
	B	171	15	222	133	615	5	1161
	C	192	65	0	127	474	5	863
	D	318	102	45	0	21	5	491
	E	182	357	664	8	0	5	1216
	F	0	0	0	0	0	0	0
	Tot.	863	673	949	486	1355	25	4351

Traffic Lane Flows

Lane	Scenario 2: PM Survey
Junction: Deansgate Interchange	
1/1	375
1/2 (with short)	841(In) 484(Out)
1/3 (short)	357
2/1	228
2/2	263
3/1	256
3/2	364
4/1	327
4/2 (short)	219
4/3 (with short)	469(In) 250(Out)
4/4	365
5/1	431
5/2	432
6/1	87
6/2	452
7/1	411
7/2	449
8/1 (short)	237
8/2 (with short)	474(In) 237(Out)
9/1	111
9/2	342
10/1	248
10/2	247
11/1	318
11/2 (with short)	605(In) 423(Out)
11/3 (short)	182
12/1 (short)	134
12/2 (with short)	632(In) 498(Out)
12/3 (with short)	700(In) 455(Out)
12/4 (short)	245
13/1	154
13/2	519
14/1	486
15/1	659

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15/2	696
16/1	500
16/2	363
17/1	579
17/2	370
18/1	737
19/1	359
19/2	191
20/1	25

Lane Saturation Flows

Junction: Deansgate Interchange								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A56 Eastbound)	3.00	0.00	Y	Arm 16 Left	Inf	48.5 %	1915	1915
				Arm 18 Ahead	Inf	51.5 %		
1/2 (A56 Eastbound)	3.00	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1915	1915
				Arm 18 Ahead	Inf	100.0 %		
1/3 (A56 Eastbound)	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/1 (Chorlton Road)	3.50	0.00	Y	Arm 10 Left	Inf	9.2 %	1965	1965
				Arm 11 Left	Inf	90.8 %		
2/2 (Chorlton Road)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/1 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	98.0 %	1995	1995
				Arm 20 Left	Inf	2.0 %		
3/2 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1995	1995
4/1 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	59.3 %	1945	1945
				Arm 19 Ahead	Inf	40.7 %		
4/2 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	12.8 %	1945	1945
				Arm 19 Ahead	Inf	87.2 %		
4/3 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
4/4 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
5/1 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	70.5 %	1985	1985
				Arm 14 Left	Inf	29.5 %		
5/2 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	39.4 %	1985	1985
				Arm 9 Ahead	Inf	60.6 %		
6/1	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
6/2	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
7/1	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
7/2	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
8/1	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
8/2	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
9/1	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
9/2	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
10/1	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
10/2	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
11/1	3.50	0.00	Y	Arm 16 Ahead	3.90	100.0 %	1419	1419
11/2	3.50	0.00	Y	Arm 16 Ahead	Inf	85.8 %	1965	1965
				Arm 18 Right	Inf	14.2 %		

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11/3	3.50	0.00	Y	Arm 6 Right	Inf	100.0 %	1965	1965
12/1	3.90	0.00	Y	Arm 13 Left	Inf	100.0 %	2005	2005
12/2	3.90	0.00	Y	Arm 17 Ahead	Inf	77.3 %	2005	2005
				Arm 19 Right	Inf	22.7 %		
12/3	3.90	0.00	Y	Arm 17 Ahead	Inf	75.2 %	2005	2005
				Arm 19 Right	Inf	24.8 %		
12/4	3.90	0.00	Y	Arm 7 Right	Inf	100.0 %	2005	2005
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
14/1	3.30	0.00	Y				1945	1945
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1	Infinite Saturation Flow						Inf	Inf
17/2	Infinite Saturation Flow						Inf	Inf
18/1	Infinite Saturation Flow						Inf	Inf
19/1	Infinite Saturation Flow						Inf	Inf
19/2	Infinite Saturation Flow						Inf	Inf
20/1 (Blantyre Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM Base' (FG3: 'AM Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination							
		A	B	C	D	E	F	Tot.
Origin	A	0	133	43	201	195	5	577
	B	326	11	179	91	371	5	983
	C	271	111	0	126	746	5	1259
	D	370	150	69	0	15	5	609
	E	283	552	773	7	0	5	1620
	F	0	0	0	0	0	0	0
	Tot.	1250	957	1064	425	1327	25	5048

Traffic Lane Flows

Lane	Scenario 3: AM Base
Junction: Deansgate Interchange	
1/1	520
1/2 (with short)	1100(In) 548(Out)
1/3 (short)	552
2/1	300
2/2	309
3/1	221
3/2	356
4/1	270
4/2 (short)	342
4/3 (with short)	394(In) 52(Out)
4/4	319
5/1	630
5/2	629
6/1	204
6/2	620
7/1	225
7/2	341
8/1 (short)	373
8/2 (with short)	746(In) 373(Out)
9/1	193
9/2	536
10/1	381
10/2	380
11/1	478
11/2 (with short)	845(In) 573(Out)
11/3 (short)	272
12/1 (short)	133
12/2 (with short)	708(In) 575(Out)
12/3 (with short)	713(In) 518(Out)
12/4 (short)	195
13/1	271
13/2	686
14/1	425
15/1	606

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15/2	721
16/1	761
16/2	489
17/1	672
17/2	392
18/1	869
19/1	299
19/2	342
20/1	25

Lane Saturation Flows

Junction: Deansgate Interchange								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A56 Eastbound)	3.00	0.00	Y	Arm 16 Left	Inf	54.4 %	1915	1915
				Arm 18 Ahead	Inf	45.6 %		
1/2 (A56 Eastbound)	3.00	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1915	1915
				Arm 18 Ahead	Inf	100.0 %		
1/3 (A56 Eastbound)	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/1 (Chorlton Road)	3.50	0.00	Y	Arm 10 Left	Inf	5.0 %	1965	1965
				Arm 11 Left	Inf	95.0 %		
2/2 (Chorlton Road)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/1 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	97.7 %	1995	1995
				Arm 20 Left	Inf	2.3 %		
3/2 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1995	1995
4/1 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	66.3 %	1945	1945
				Arm 19 Ahead	Inf	33.7 %		
4/2 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	0.0 %	1945	1945
				Arm 19 Ahead	Inf	100.0 %		
4/3 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
4/4 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
5/1 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	80.0 %	1985	1985
				Arm 14 Left	Inf	20.0 %		
5/2 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	38.5 %	1985	1985
				Arm 9 Ahead	Inf	61.5 %		
6/1	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
6/2	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
7/1	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
7/2	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
8/1	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
8/2	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
9/1	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
9/2	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
10/1	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
10/2	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
11/1	3.50	0.00	Y	Arm 16 Ahead	3.90	100.0 %	1419	1419
11/2	3.50	0.00	Y	Arm 16 Ahead	Inf	85.3 %	1965	1965
				Arm 18 Right	Inf	14.7 %		

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11/3	3.50	0.00	Y	Arm 6 Right	Inf	100.0 %	1965	1965
12/1	3.90	0.00	Y	Arm 13 Left	Inf	100.0 %	2005	2005
12/2	3.90	0.00	Y	Arm 17 Ahead	Inf	85.7 %	2005	2005
				Arm 19 Right	Inf	14.3 %		
12/3	3.90	0.00	Y	Arm 17 Ahead	Inf	75.7 %	2005	2005
				Arm 19 Right	Inf	24.3 %		
12/4	3.90	0.00	Y	Arm 7 Right	Inf	100.0 %	2005	2005
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
14/1	3.30	0.00	Y				1945	1945
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1	Infinite Saturation Flow						Inf	Inf
17/2	Infinite Saturation Flow						Inf	Inf
18/1	Infinite Saturation Flow						Inf	Inf
19/1	Infinite Saturation Flow						Inf	Inf
19/2	Infinite Saturation Flow						Inf	Inf
20/1 (Blantyre Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM Base' (FG4: 'PM Base', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination							
		A	B	C	D	E	F	Tot.
	A	0	184	66	220	252	5	727
	B	234	11	169	91	341	5	851
	C	222	65	0	127	480	5	899
	D	321	102	47	0	21	5	496
	E	184	358	720	8	0	5	1275
	F	0	0	0	0	0	0	0
	Tot.	961	720	1002	446	1094	25	4248

Traffic Lane Flows

Lane	Scenario 4: PM Base
Junction: Deansgate Interchange	
1/1	427
1/2 (with short)	848(In) 490(Out)
1/3 (short)	358
2/1	235
2/2	261
3/1	307
3/2	420
4/1	260
4/2 (short)	250
4/3 (with short)	329(In) 79(Out)
4/4	262
5/1	449
5/2	450
6/1	119
6/2	417
7/1	295
7/2	298
8/1 (short)	240
8/2 (with short)	480(In) 240(Out)
9/1	145
9/2	397
10/1	251
10/2	250
11/1	359
11/2 (with short)	658(In) 480(Out)
11/3 (short)	178
12/1 (short)	184
12/2 (with short)	742(In) 558(Out)
12/3 (with short)	755(In) 503(Out)
12/4 (short)	252
13/1	211
13/2	509
14/1	446
15/1	546

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15/2	548
16/1	543
16/2	418
17/1	631
17/2	371
18/1	795
19/1	319
19/2	250
20/1	25

Lane Saturation Flows

Junction: Deansgate Interchange								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A56 Eastbound)	3.00	0.00	Y	Arm 16 Left	Inf	43.1 %	1915	1915
				Arm 18 Ahead	Inf	56.9 %		
1/2 (A56 Eastbound)	3.00	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1915	1915
				Arm 18 Ahead	Inf	100.0 %		
1/3 (A56 Eastbound)	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/1 (Chorlton Road)	3.50	0.00	Y	Arm 10 Left	Inf	8.9 %	1965	1965
				Arm 11 Left	Inf	91.1 %		
2/2 (Chorlton Road)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/1 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	98.4 %	1995	1995
				Arm 20 Left	Inf	1.6 %		
3/2 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1995	1995
4/1 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	65.0 %	1945	1945
				Arm 19 Ahead	Inf	35.0 %		
4/2 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	0.0 %	1945	1945
				Arm 19 Ahead	Inf	100.0 %		
4/3 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
4/4 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
5/1 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	71.7 %	1985	1985
				Arm 14 Left	Inf	28.3 %		
5/2 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	35.1 %	1985	1985
				Arm 9 Ahead	Inf	64.9 %		
6/1	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
6/2	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
7/1	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
7/2	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
8/1	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
8/2	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
9/1	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
9/2	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
10/1	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
10/2	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
11/1	3.50	0.00	Y	Arm 16 Ahead	3.90	100.0 %	1419	1419
11/2	3.50	0.00	Y	Arm 16 Ahead	Inf	87.1 %	1965	1965
				Arm 18 Right	Inf	12.9 %		

Full Input Data And Results

11/3	3.50	0.00	Y	Arm 6 Right	Inf	100.0 %	1965	1965
12/1	3.90	0.00	Y	Arm 13 Left	Inf	100.0 %	2005	2005
12/2	3.90	0.00	Y	Arm 17 Ahead	Inf	82.8 %	2005	2005
				Arm 19 Right	Inf	17.2 %		
12/3	3.90	0.00	Y	Arm 17 Ahead	Inf	73.8 %	2005	2005
				Arm 19 Right	Inf	26.2 %		
12/4	3.90	0.00	Y	Arm 7 Right	Inf	100.0 %	2005	2005
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
14/1	3.30	0.00	Y				1945	1945
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1	Infinite Saturation Flow						Inf	Inf
17/2	Infinite Saturation Flow						Inf	Inf
18/1	Infinite Saturation Flow						Inf	Inf
19/1	Infinite Saturation Flow						Inf	Inf
19/2	Infinite Saturation Flow						Inf	Inf
20/1 (Blantyre Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 5: 'AM Base+Dev' (FG5: 'AM Base + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination							
		A	B	C	D	E	F	Tot.
	A	0	136	58	201	195	5	595
	B	444	11	209	93	409	5	1171
	C	271	111	2	126	746	5	1261
	D	370	150	70	0	15	5	610
	E	283	553	779	7	0	5	1627
	F	0	0	0	0	0	0	0
	Tot.	1368	961	1118	427	1365	25	5264

Traffic Lane Flows

Lane	Scenario 5: AM Base+Dev
Junction: Deansgate Interchange	
1/1	522
1/2 (with short)	1105(In) 552(Out)
1/3 (short)	553
2/1	305
2/2	305
3/1	238
3/2	357
4/1	302
4/2 (short)	460
4/3 (with short)	460(In) 0(Out)
4/4	409
5/1	630
5/2	631
6/1	201
6/2	624
7/1	185
7/2	419
8/1 (short)	373
8/2 (with short)	746(In) 373(Out)
9/1	248
9/2	601
10/1	381
10/2	380
11/1	538
11/2 (with short)	906(In) 634(Out)
11/3 (short)	272
12/1 (short)	136
12/2 (with short)	720(In) 584(Out)
12/3 (with short)	728(In) 533(Out)
12/4 (short)	195
13/1	269
13/2	692
14/1	427
15/1	566

Full Input Data And Results

15/2	799
16/1	821
16/2	547
17/1	712
17/2	406
18/1	878
19/1	301
19/2	460
20/1	25

Lane Saturation Flows

Junction: Deansgate Interchange								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A56 Eastbound)	3.00	0.00	Y	Arm 16 Left	Inf	54.2 %	1915	1915
				Arm 18 Ahead	Inf	45.8 %		
1/2 (A56 Eastbound)	3.00	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1915	1915
				Arm 18 Ahead	Inf	100.0 %		
1/3 (A56 Eastbound)	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/1 (Chorlton Road)	3.50	0.00	Y	Arm 10 Left	Inf	4.9 %	1965	1965
				Arm 11 Left	Inf	95.1 %		
2/2 (Chorlton Road)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/1 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	97.9 %	1995	1995
				Arm 20 Left	Inf	2.1 %		
3/2 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1995	1995
4/1 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	69.2 %	1945	1945
				Arm 19 Ahead	Inf	30.8 %		
4/2 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	0.0 %	1945	1945
				Arm 19 Ahead	Inf	100.0 %		
4/3 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	0.0 %	1945	1945
4/4 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
5/1 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	80.0 %	1985	1985
				Arm 14 Left	Inf	20.0 %		
5/2 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	38.4 %	1985	1985
				Arm 9 Ahead	Inf	61.6 %		
6/1	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
6/2	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
7/1	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
7/2	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
8/1	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
8/2	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
9/1	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
9/2	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
10/1	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
10/2	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
11/1	3.50	0.00	Y	Arm 16 Ahead	3.90	100.0 %	1419	1419
11/2	3.50	0.00	Y	Arm 16 Ahead	Inf	86.3 %	1965	1965
				Arm 18 Right	Inf	13.7 %		

Full Input Data And Results

11/3	3.50	0.00	Y	Arm 6 Right	Inf	100.0 %	1965	1965
12/1	3.90	0.00	Y	Arm 13 Left	Inf	100.0 %	2005	2005
12/2	3.90	0.00	Y	Arm 17 Ahead	Inf	86.1 %	2005	2005
				Arm 19 Right	Inf	13.9 %		
12/3	3.90	0.00	Y	Arm 17 Ahead	Inf	76.2 %	2005	2005
				Arm 19 Right	Inf	23.8 %		
12/4	3.90	0.00	Y	Arm 7 Right	Inf	100.0 %	2005	2005
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
14/1	3.30	0.00	Y				1945	1945
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1	Infinite Saturation Flow						Inf	Inf
17/2	Infinite Saturation Flow						Inf	Inf
18/1	Infinite Saturation Flow						Inf	Inf
19/1	Infinite Saturation Flow						Inf	Inf
19/2	Infinite Saturation Flow						Inf	Inf
20/1 (Blantyre Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 6: 'PM Base+Dev' (FG6: 'PM Base + Dev', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

Origin	Destination							
		A	B	C	D	E	F	Tot.
	A	0	198	127	220	252	5	802
	B	286	11	192	93	358	5	945
	C	222	65	16	127	480	5	915
	D	321	102	49	0	21	5	498
	E	184	362	739	8	0	5	1298
	F	0	0	0	0	0	0	0
	Tot.	1013	738	1123	448	1111	25	4458

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: PM Base+Dev
Junction: Deansgate Interchange	
1/1	441
1/2 (with short)	857(In) 495(Out)
1/3 (short)	362
2/1	231
2/2	267
3/1	373
3/2	429
4/1	285
4/2 (short)	302
4/3 (with short)	365(In) 63(Out)
4/4	295
5/1	457
5/2	458
6/1	123
6/2	417
7/1	261
7/2	349
8/1 (short)	240
8/2 (with short)	480(In) 240(Out)
9/1	197
9/2	413
10/1	251
10/2	250
11/1	407
11/2 (with short)	680(In) 502(Out)
11/3 (short)	178
12/1 (short)	198
12/2 (with short)	807(In) 609(Out)
12/3 (with short)	802(In) 550(Out)
12/4 (short)	252
13/1	222
13/2	516
14/1	448
15/1	512

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15/2	599
16/1	591
16/2	422
17/1	686
17/2	437
18/1	832
19/1	321
19/2	302
20/1	25

Lane Saturation Flows

Junction: Deansgate Interchange								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (A56 Eastbound)	3.00	0.00	Y	Arm 16 Left	Inf	41.7 %	1915	1915
				Arm 18 Ahead	Inf	58.3 %		
1/2 (A56 Eastbound)	3.00	0.00	Y	Arm 6 Ahead	Inf	0.0 %	1915	1915
				Arm 18 Ahead	Inf	100.0 %		
1/3 (A56 Eastbound)	3.00	0.00	N	Arm 6 Ahead	Inf	100.0 %	2055	2055
2/1 (Chorlton Road)	3.50	0.00	Y	Arm 10 Left	Inf	9.1 %	1965	1965
				Arm 11 Left	Inf	90.9 %		
2/2 (Chorlton Road)	3.50	0.00	Y	Arm 11 Left	Inf	100.0 %	1965	1965
3/1 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	98.7 %	1995	1995
				Arm 20 Left	Inf	1.3 %		
3/2 (Egerton Street)	3.80	0.00	Y	Arm 12 Ahead	Inf	100.0 %	1995	1995
4/1 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	67.4 %	1945	1945
				Arm 19 Ahead	Inf	32.6 %		
4/2 (A56 Westbound)	3.30	0.00	Y	Arm 17 Left	Inf	0.0 %	1945	1945
				Arm 19 Ahead	Inf	100.0 %		
4/3 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
4/4 (A56 Westbound)	3.30	0.00	Y	Arm 7 Ahead	Inf	100.0 %	1945	1945
5/1 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	72.2 %	1985	1985
				Arm 14 Left	Inf	27.8 %		
5/2 (Mancunian Way WB Slip Road)	3.70	0.00	Y	Arm 8 Ahead	Inf	32.8 %	1985	1985
				Arm 9 Ahead	Inf	67.2 %		
6/1	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
6/2	3.50	0.00	Y	Arm 13 Ahead	Inf	100.0 %	1965	1965
7/1	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
7/2	3.50	0.00	Y	Arm 15 Ahead	Inf	100.0 %	1965	1965
8/1	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
8/2	3.90	0.00	Y	Arm 10 Ahead	Inf	100.0 %	2005	2005
9/1	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
9/2	3.80	0.00	Y	Arm 11 Ahead	Inf	100.0 %	1995	1995
10/1	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
10/2	3.80	0.00	Y	Arm 15 Left	Inf	100.0 %	1995	1995
11/1	3.50	0.00	Y	Arm 16 Ahead	3.90	100.0 %	1419	1419
11/2	3.50	0.00	Y	Arm 16 Ahead	Inf	84.1 %	1965	1965
				Arm 18 Right	Inf	15.9 %		

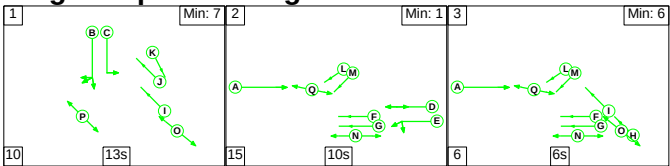
Full Input Data And Results

11/3	3.50	0.00	Y	Arm 6 Right	Inf	100.0 %	1965	1965
12/1	3.90	0.00	Y	Arm 13 Left	Inf	100.0 %	2005	2005
12/2	3.90	0.00	Y	Arm 17 Ahead	Inf	81.1 %	2005	2005
				Arm 19 Right	Inf	18.9 %		
12/3	3.90	0.00	Y	Arm 17 Ahead	Inf	79.5 %	2005	2005
				Arm 19 Right	Inf	20.5 %		
12/4	3.90	0.00	Y	Arm 7 Right	Inf	100.0 %	2005	2005
13/1	Infinite Saturation Flow						Inf	Inf
13/2	Infinite Saturation Flow						Inf	Inf
14/1	3.30	0.00	Y				1945	1945
15/1	Infinite Saturation Flow						Inf	Inf
15/2	Infinite Saturation Flow						Inf	Inf
16/1	Infinite Saturation Flow						Inf	Inf
16/2	Infinite Saturation Flow						Inf	Inf
17/1	Infinite Saturation Flow						Inf	Inf
17/2	Infinite Saturation Flow						Inf	Inf
18/1	Infinite Saturation Flow						Inf	Inf
19/1	Infinite Saturation Flow						Inf	Inf
19/2	Infinite Saturation Flow						Inf	Inf
20/1 (Blantyre Street Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM Survey' (FG1: '2022 AM Peak', Plan 1: 'Network Control Plan 1')

C1

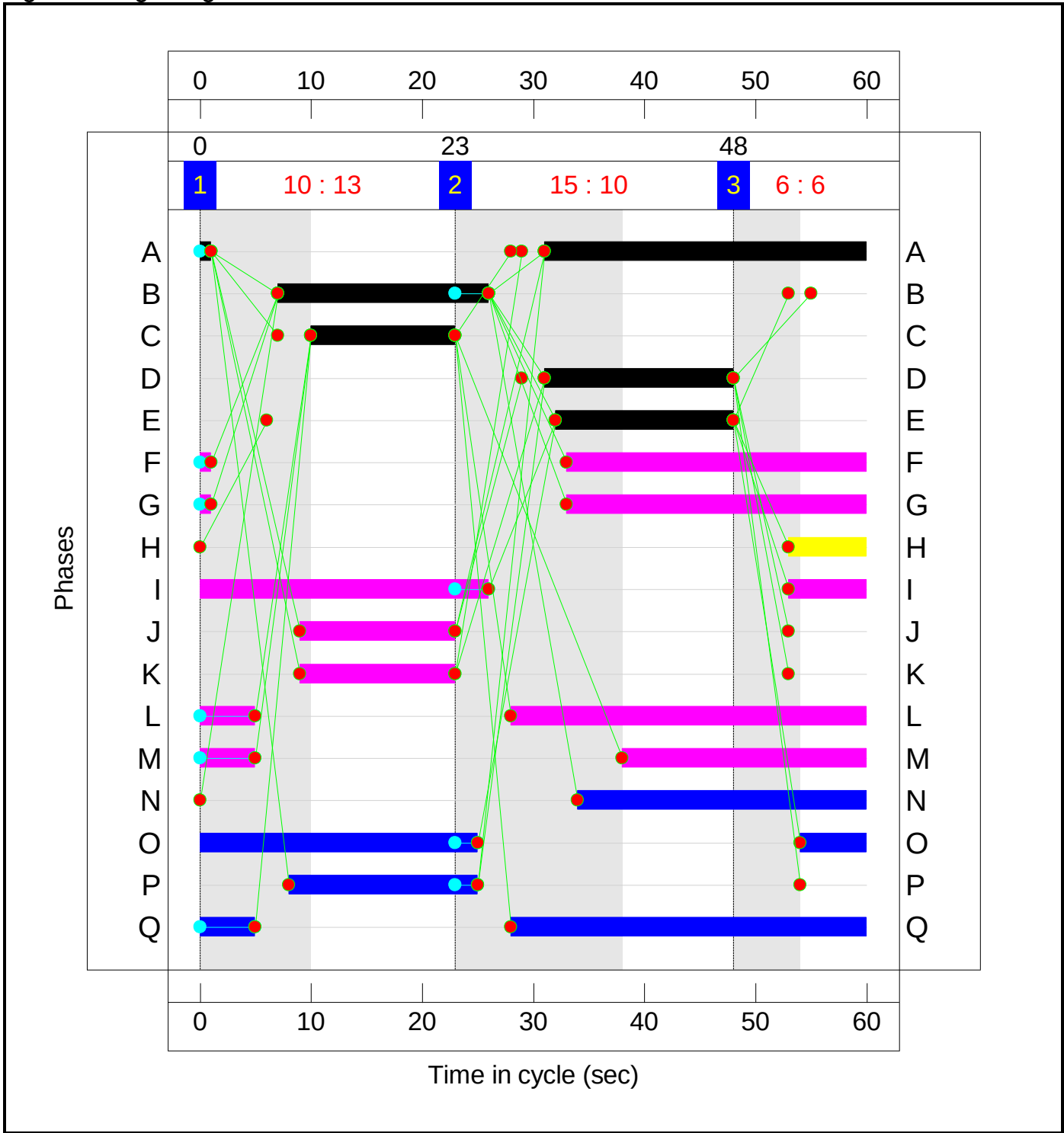
Stage Sequence Diagram



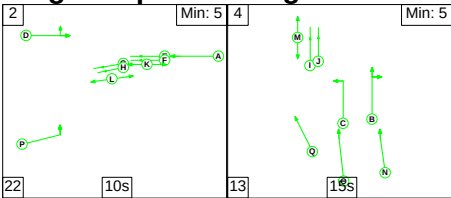
Stage Timings

Stage	1	2	3
Duration	13	10	6
Change Point	0	23	48

Signal Timings Diagram



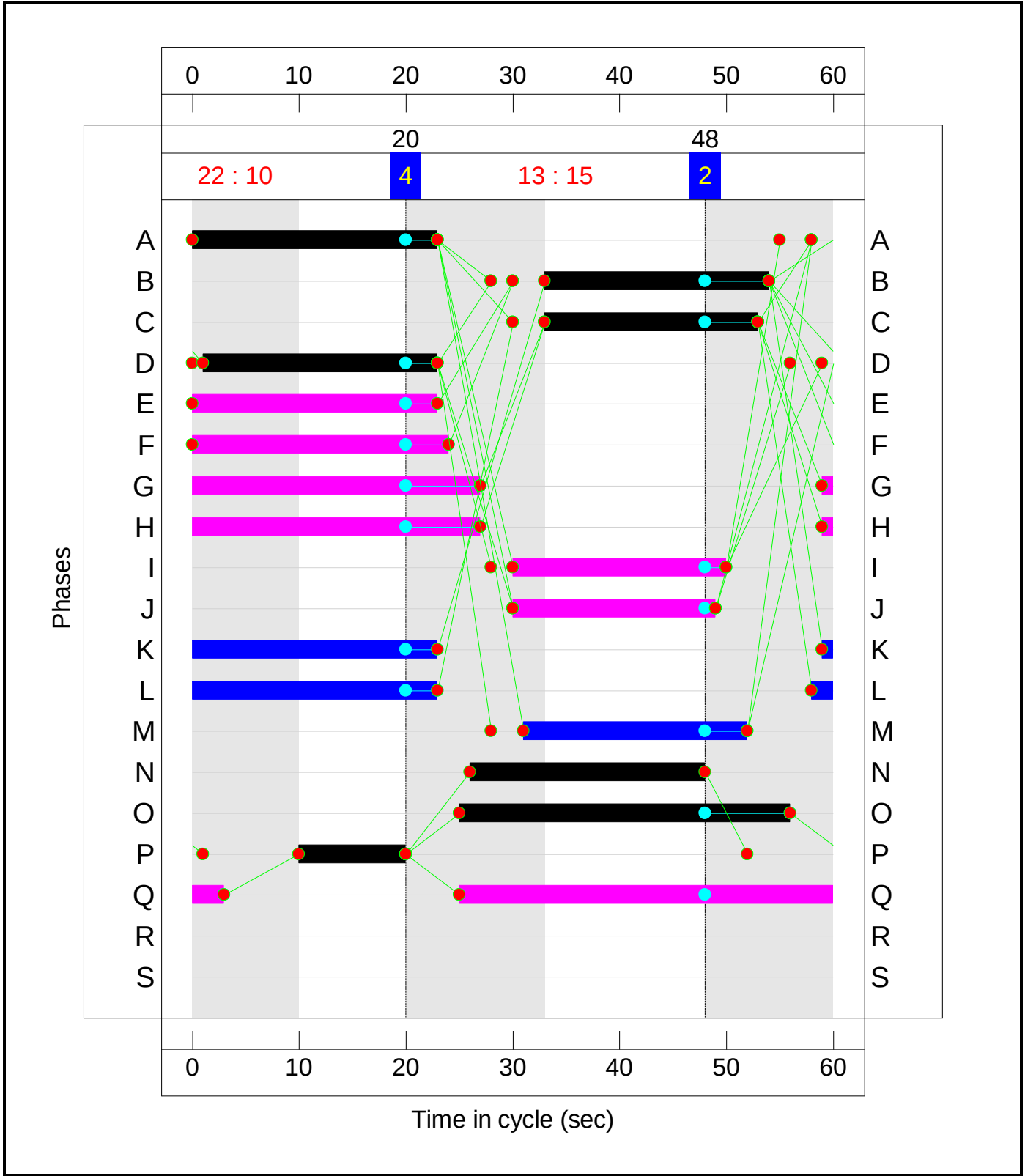
C2
Stage Sequence Diagram



Stage Timings

Stage	2	4
Duration	10	15
Change Point	48	20

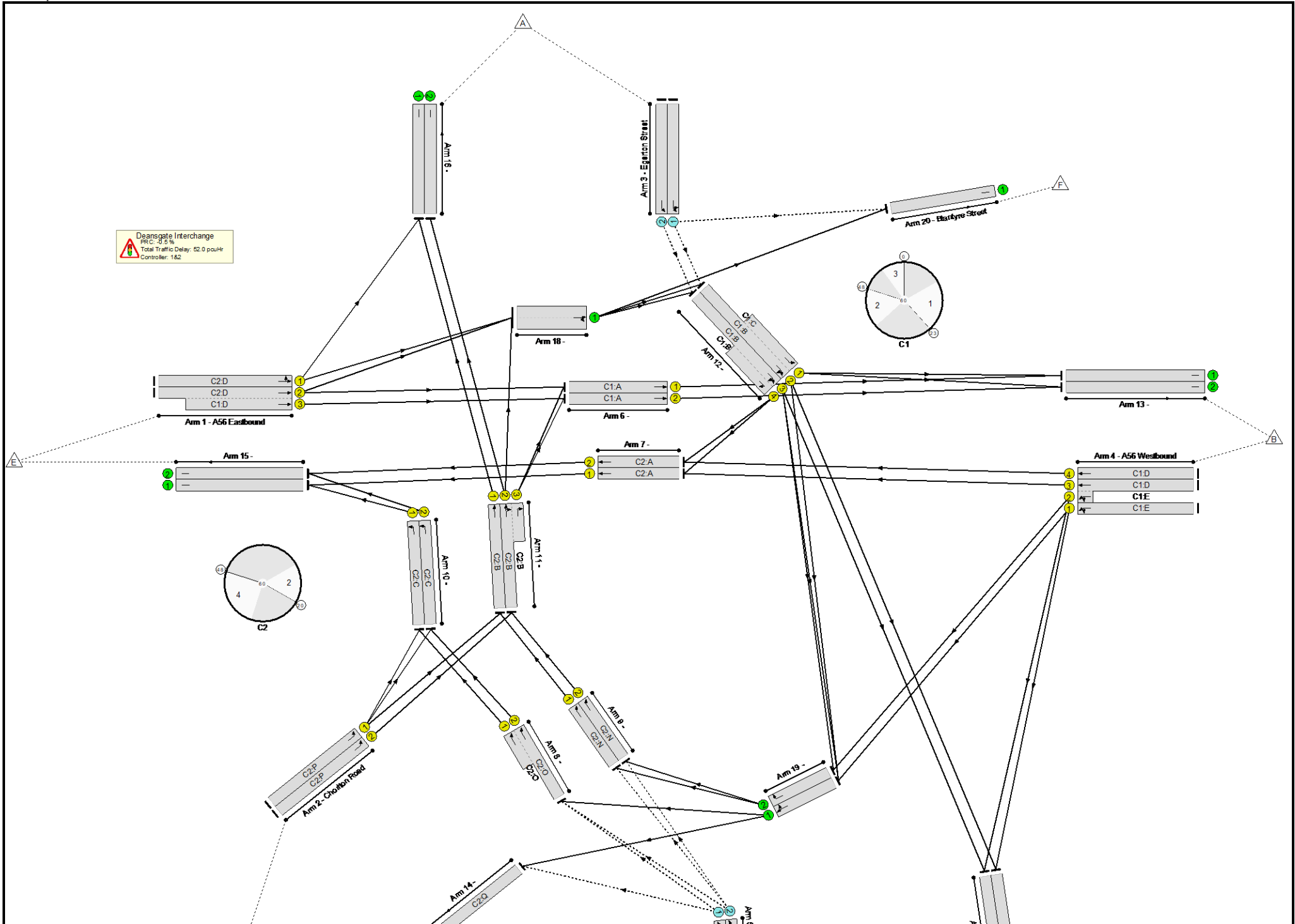
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	90.4%
Deansgate Interchange	-	-	N/A	-	-		-	-	-	-	-	-	90.4%
1/1	A56 Eastbound Left Ahead	U	N/A	N/A	C2:D		1	22	-	517	1915	734	70.4%
1/2+1/3	A56 Eastbound Ahead Ahead2	U	N/A	N/A	C2:D C1:D		1	22:17	-	1088	1915:2055	734+617	73.2 : 89.4%
2/1	Chorlton Road Left Left2	U	N/A	N/A	C2:P		1	10	-	300	1965	360	83.3%
2/2	Chorlton Road Left	U	N/A	N/A	C2:P		1	10	-	308	1965	360	85.5%
3/1	Egerton Street Ahead Left	O	N/A	N/A	-		-	-	-	169	1995	675	25.0%
3/2	Egerton Street Ahead	O	N/A	N/A	-		-	-	-	368	1995	717	51.3%
4/1	A56 Westbound Left Ahead	U	N/A	N/A	C1:E		1	16	-	237	1945	551	43.0%
4/3+4/2	A56 Westbound Ahead Left Ahead2	U	N/A	N/A	C1:D C1:E		1	17:16	-	292	1945:1945	150+433	50.1 : 50.1%
4/4	A56 Westbound Ahead	U	N/A	N/A	C1:D		1	17	-	207	1945	583	35.5%
5/1	Mancunian Way WB Slip Road Ahead Left	O	N/A	N/A	-		-	-	-	626	1985	833	75.1%
5/2	Mancunian Way WB Slip Road Ahead Ahead2	O	N/A	N/A	-		-	-	-	624	1985	833	74.9%
6/1	Ahead	U	N/A	N/A	C1:A		1	30	-	218	1965	1015	21.5%
6/2	Ahead	U	N/A	N/A	C1:A		1	30	-	605	1965	1015	59.6%
7/1	Ahead	U	N/A	N/A	C2:A		1	23	-	238	1965	786	30.3%
7/2	Ahead	U	N/A	N/A	C2:A		1	23	-	236	1965	786	30.0%
8/2+8/1	Ahead	U	N/A	N/A	C2:O		1	31	-	744	2005:2005	684+684	54.4 : 54.4%

Full Input Data And Results

9/1	Ahead	U	N/A	N/A	C2:N		1	22	-	107	1995	765	14.0%
9/2	Ahead	U	N/A	N/A	C2:N		1	22	-	489	1995	765	63.9%
10/1	Left	U	N/A	N/A	C2:C		1	20	-	380	1995	698	54.4%
10/2	Left	U	N/A	N/A	C2:C		1	20	-	379	1995	698	54.3%
11/1	Ahead	U	N/A	N/A	C2:B		1	21	-	392	1419	520	75.3%
11/2+11/3	Right Ahead Right2	U	N/A	N/A	C2:B		1	21	-	797	1965:1965	580+301	90.4 : 90.4%
12/2+12/1	Left Ahead Right	U	N/A	N/A	C1:B C1:C		1	19:13	-	676	2005:2005	668+146	83.0 : 83.0%
12/3+12/4	Right Ahead Right2	U	N/A	N/A	C1:B		1	19	-	692	2005:2005	601+231	83.2 : 83.2%
13/1		U	N/A	N/A	-		-	-	-	279	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	665	Inf	Inf	0.0%
14/1		U	N/A	N/A	C2:Q		1	38	-	415	1945	1264	32.8%
15/1		U	N/A	N/A	-		-	-	-	618	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	615	Inf	Inf	0.0%
16/1		U	N/A	N/A	-		-	-	-	674	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	441	Inf	Inf	0.0%
17/1		U	N/A	N/A	-		-	-	-	666	Inf	Inf	0.0%
17/2		U	N/A	N/A	-		-	-	-	338	Inf	Inf	0.0%
18/1	Right Ahead	U	N/A	N/A	-		-	-	-	856	Inf	Inf	0.0%
19/1	Right Ahead	U	N/A	N/A	-		-	-	-	289	Inf	Inf	0.0%
19/2	Right	U	N/A	N/A	-		-	-	-	216	Inf	Inf	0.0%
20/1	Blantyre Street	U	N/A	N/A	-		-	-	-	25	Inf	Inf	0.0%

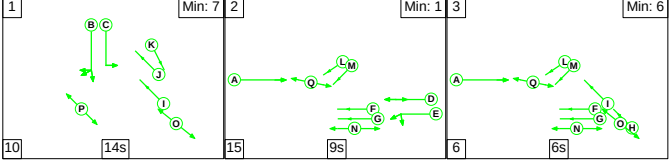
Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1787	0	0	32.4	19.6	0.0	52.0	-	-	-	-
Deansgate Interchange	-	-	1787	0	0	32.4	19.6	0.0	52.0	-	-	-	-
1/1	517	517	-	-	-	2.2	1.2	-	3.4	23.8	7.2	1.2	8.4
1/2+1/3	1088	1088	-	-	-	5.4	2.0	-	7.5	24.8	8.7	2.0	10.8
2/1	300	300	-	-	-	2.0	2.3	-	4.3	51.4	4.7	2.3	7.1
2/2	308	308	-	-	-	2.0	2.7	-	4.7	55.0	5.0	2.7	7.6
3/1	169	169	169	0	0	0.1	0.2	-	0.3	6.1	0.9	0.2	1.1
3/2	368	368	368	0	0	0.2	0.5	-	0.7	6.8	2.2	0.5	2.8
4/1	237	237	-	-	-	1.2	0.4	-	1.5	23.3	3.2	0.4	3.5
4/3+4/2	292	292	-	-	-	1.4	0.5	-	1.9	23.4	3.3	0.5	3.8
4/4	207	207	-	-	-	0.9	0.3	-	1.2	21.2	2.7	0.3	3.0
5/1	626	626	626	0	0	0.1	1.5	-	1.6	9.0	2.3	1.5	3.8
5/2	624	624	624	0	0	0.1	1.5	-	1.5	8.9	2.3	1.5	3.7
6/1	218	218	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	605	605	-	-	-	0.2	0.0	-	0.2	0.9	8.5	0.0	8.5
7/1	238	238	-	-	-	0.5	0.0	-	0.5	7.4	1.4	0.0	1.4
7/2	236	236	-	-	-	1.3	0.0	-	1.3	19.8	3.5	0.0	3.5
8/2+8/1	744	744	-	-	-	1.7	0.6	-	2.3	11.1	3.6	0.6	4.2
9/1	107	107	-	-	-	0.4	0.1	-	0.4	14.7	1.0	0.1	1.1
9/2	489	489	-	-	-	1.8	0.9	-	2.7	19.9	4.8	0.9	5.7
10/1	380	380	-	-	-	0.9	0.0	-	0.9	8.8	5.3	0.0	5.3
10/2	379	379	-	-	-	0.9	0.0	-	0.9	8.8	5.3	0.0	5.3
11/1	392	392	-	-	-	1.8	0.0	-	1.8	16.6	6.2	0.0	6.2
11/2+11/3	797	797	-	-	-	1.8	0.0	-	1.8	7.9	7.3	0.0	7.3
12/2+12/1	676	676	-	-	-	2.2	2.4	-	4.6	24.4	2.9	2.4	5.3
12/3+12/4	692	692	-	-	-	2.8	2.4	-	5.2	27.0	5.1	2.4	7.5

Full Input Data And Results

13/1	279	279	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	665	665	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	415	415	-	-	-	0.6	0.2	-	0.8	7.0	4.4	0.2	4.6
15/1	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	615	615	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	674	674	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	441	441	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	666	666	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	338	338	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	856	856	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/1	289	289	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	216	216	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	25	25	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
			C1	PRC for Signalled Lanes (%):		8.2	Total Delay for Signalled Lanes (pcuHr):		14.58	Cycle Time (s):		60	
			C2	PRC for Signalled Lanes (%):		-0.5	Total Delay for Signalled Lanes (pcuHr):		33.35	Cycle Time (s):		60	
				PRC Over All Lanes (%):		-0.5	Total Delay Over All Lanes(pcuHr):		52.01				

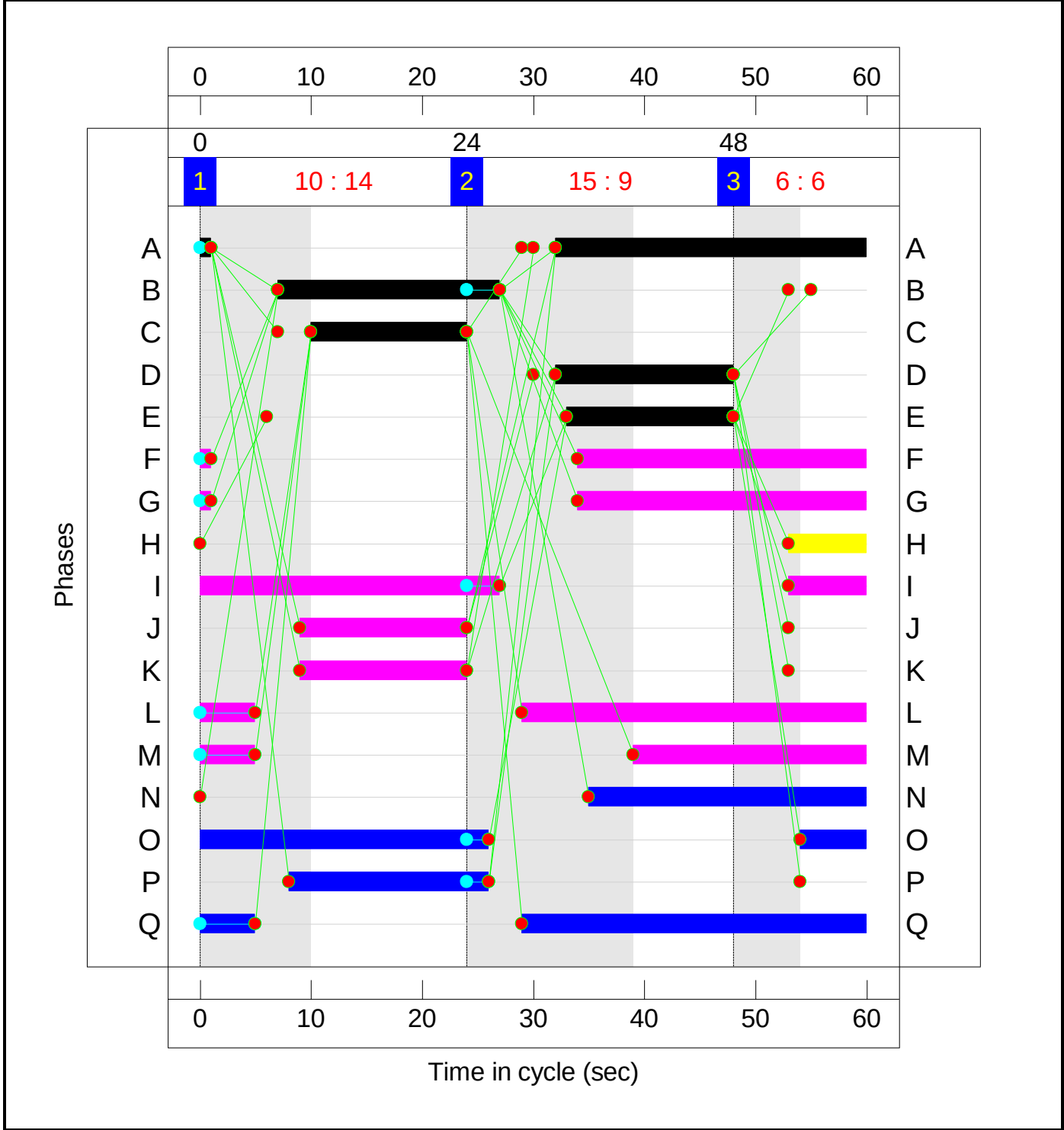
Stage Sequence Diagram



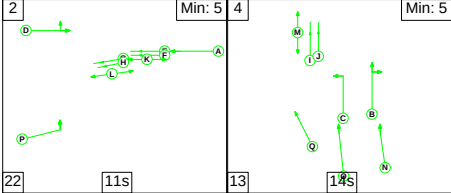
Stage Timings

Stage	1	2	3
Duration	14	9	6
Change Point	0	24	48

Signal Timings Diagram



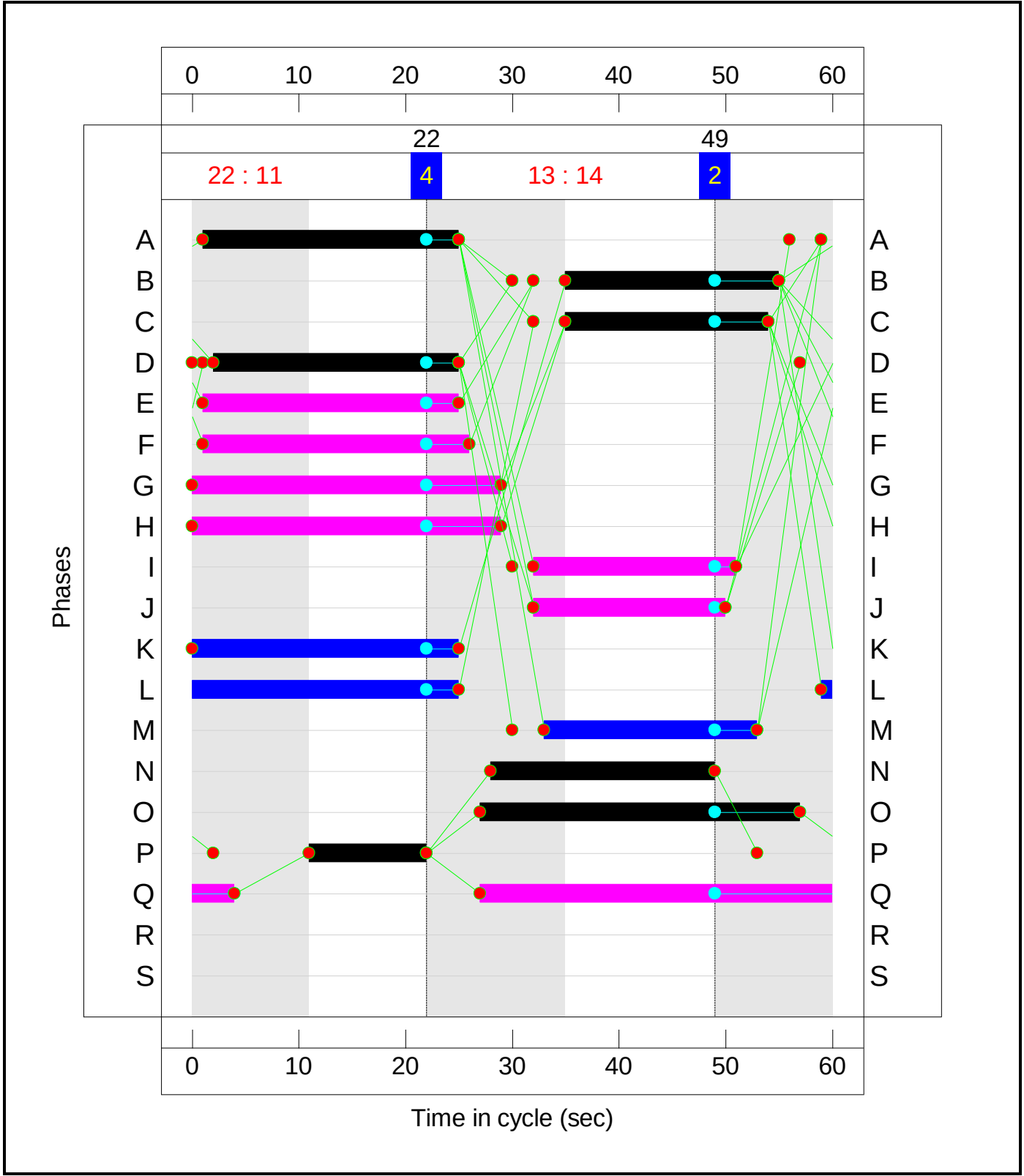
C2
Stage Sequence Diagram



Stage Timings

Stage	2	4
Duration	11	14
Change Point	49	22

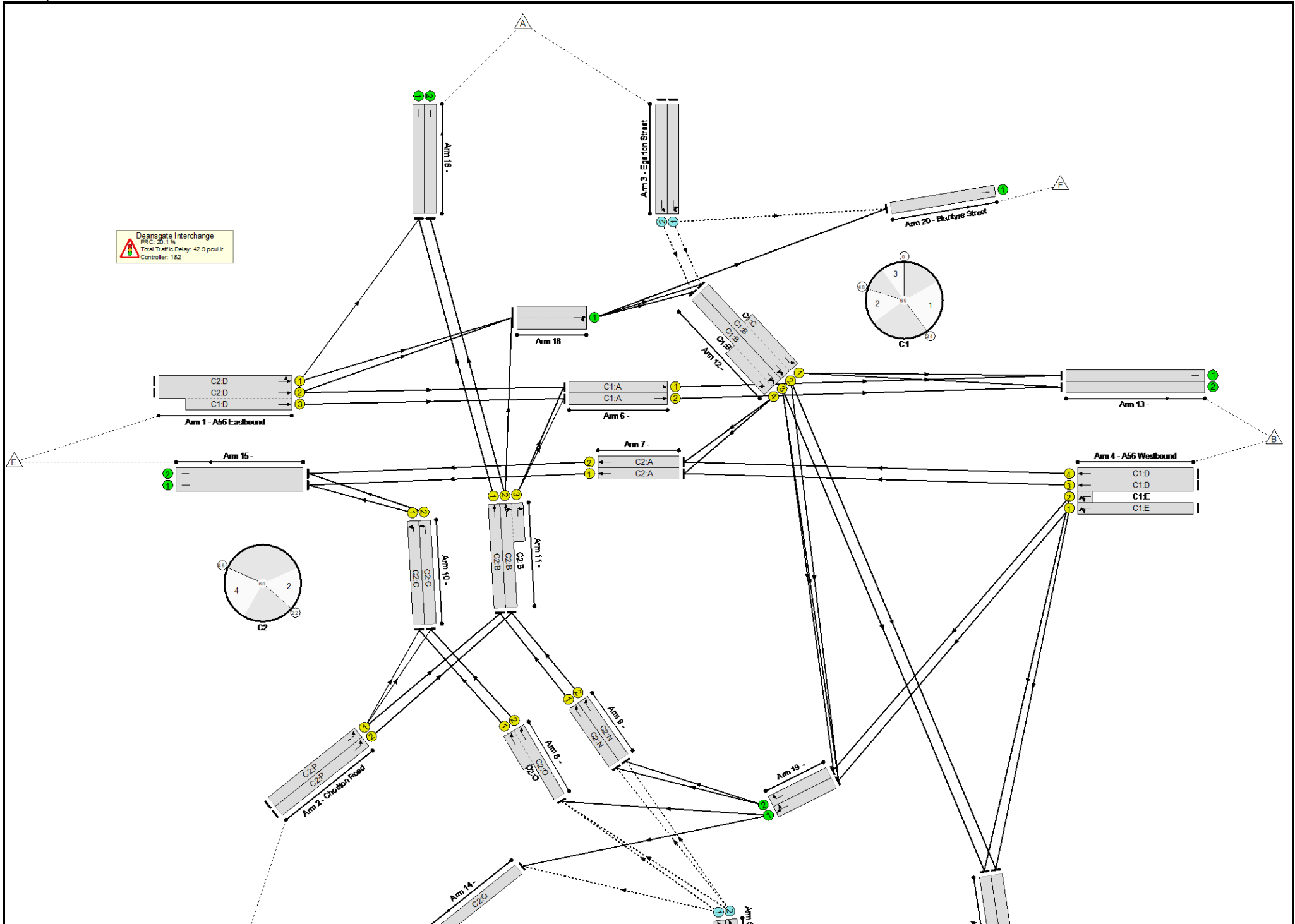
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	75.0%
Deansgate Interchange	-	-	N/A	-	-		-	-	-	-	-	-	75.0%
1/1	A56 Eastbound Left Ahead	U	N/A	N/A	C2:D		1	23	-	375	1915	766	49.0%
1/2+1/3	A56 Eastbound Ahead Ahead2	U	N/A	N/A	C2:D C1:D		1	23:16	-	841	1915:2055	766+582	63.2 : 61.3%
2/1	Chorlton Road Left Left2	U	N/A	N/A	C2:P		1	11	-	228	1965	393	58.0%
2/2	Chorlton Road Left	U	N/A	N/A	C2:P		1	11	-	263	1965	393	66.9%
3/1	Egerton Street Ahead Left	O	N/A	N/A	-		-	-	-	256	1995	719	35.6%
3/2	Egerton Street Ahead	O	N/A	N/A	-		-	-	-	364	1995	757	48.1%
4/1	A56 Westbound Left Ahead	U	N/A	N/A	C1:E		1	15	-	327	1945	519	63.0%
4/3+4/2	A56 Westbound Ahead Left Ahead2	U	N/A	N/A	C1:D C1:E		1	16:15	-	469	1945:1945	342+299	73.1 : 73.1%
4/4	A56 Westbound Ahead	U	N/A	N/A	C1:D		1	16	-	365	1945	551	66.2%
5/1	Mancunian Way WB Slip Road Ahead Left	O	N/A	N/A	-		-	-	-	431	1985	818	52.7%
5/2	Mancunian Way WB Slip Road Ahead Ahead2	O	N/A	N/A	-		-	-	-	432	1985	818	52.8%
6/1	Ahead	U	N/A	N/A	C1:A		1	29	-	87	1965	982	8.9%
6/2	Ahead	U	N/A	N/A	C1:A		1	29	-	452	1965	982	46.0%
7/1	Ahead	U	N/A	N/A	C2:A		1	24	-	411	1965	819	50.2%
7/2	Ahead	U	N/A	N/A	C2:A		1	24	-	449	1965	819	54.8%
8/2+8/1	Ahead	U	N/A	N/A	C2:O		1	30	-	474	2005:2005	668+668	35.5 : 35.5%

Full Input Data And Results

9/1	Ahead	U	N/A	N/A	C2:N		1	21	-	111	1995	732	15.2%
9/2	Ahead	U	N/A	N/A	C2:N		1	21	-	342	1995	732	46.8%
10/1	Left	U	N/A	N/A	C2:C		1	19	-	248	1995	665	37.3%
10/2	Left	U	N/A	N/A	C2:C		1	19	-	247	1995	665	37.1%
11/1	Ahead	U	N/A	N/A	C2:B		1	20	-	318	1419	497	64.0%
11/2+11/3	Right Ahead Right2	U	N/A	N/A	C2:B		1	20	-	605	1965:1965	575+247	73.6 : 73.6%
12/2+12/1	Left Ahead Right	U	N/A	N/A	C1:B C1:C		1	20:14	-	632	2005:2005	689+185	72.3 : 72.3%
12/3+12/4	Right Ahead Right2	U	N/A	N/A	C1:B		1	20	-	700	2005:2005	607+327	75.0 : 75.0%
13/1		U	N/A	N/A	-		-	-	-	154	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	519	Inf	Inf	0.0%
14/1		U	N/A	N/A	C2:Q		1	37	-	486	1945	1232	39.5%
15/1		U	N/A	N/A	-		-	-	-	659	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	696	Inf	Inf	0.0%
16/1		U	N/A	N/A	-		-	-	-	500	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	363	Inf	Inf	0.0%
17/1		U	N/A	N/A	-		-	-	-	579	Inf	Inf	0.0%
17/2		U	N/A	N/A	-		-	-	-	370	Inf	Inf	0.0%
18/1	Right Ahead	U	N/A	N/A	-		-	-	-	737	Inf	Inf	0.0%
19/1	Right Ahead	U	N/A	N/A	-		-	-	-	359	Inf	Inf	0.0%
19/2	Right	U	N/A	N/A	-		-	-	-	191	Inf	Inf	0.0%
20/1	Blantyre Street	U	N/A	N/A	-		-	-	-	25	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1483	0	0	31.0	11.9	0.0	42.9	-	-	-	-
Deansgate Interchange	-	-	1483	0	0	31.0	11.9	0.0	42.9	-	-	-	-
1/1	375	375	-	-	-	1.4	0.5	-	1.9	18.0	4.6	0.5	5.1
1/2+1/3	841	841	-	-	-	3.8	0.8	-	4.6	19.8	6.5	0.8	7.3
2/1	228	228	-	-	-	1.4	0.7	-	2.1	32.6	3.4	0.7	4.1
2/2	263	263	-	-	-	1.6	1.0	-	2.6	35.8	4.0	1.0	5.0
3/1	256	256	256	0	0	0.1	0.3	-	0.4	5.9	1.4	0.3	1.6
3/2	364	364	364	0	0	0.1	0.5	-	0.6	5.5	1.7	0.5	2.2
4/1	327	327	-	-	-	1.8	0.8	-	2.6	28.7	4.7	0.8	5.6
4/3+4/2	469	469	-	-	-	2.4	1.3	-	3.7	28.8	5.0	1.3	6.4
4/4	365	365	-	-	-	1.9	1.0	-	2.9	28.5	5.3	1.0	6.2
5/1	431	431	431	0	0	0.0	0.6	-	0.6	4.7	0.8	0.6	1.4
5/2	432	432	432	0	0	0.0	0.6	-	0.6	4.7	0.8	0.6	1.4
6/1	87	87	-	-	-	0.0	0.0	-	0.0	0.1	0.0	0.0	0.0
6/2	452	452	-	-	-	0.1	0.0	-	0.1	0.9	5.6	0.0	5.6
7/1	411	411	-	-	-	1.7	0.0	-	1.7	14.8	4.4	0.0	4.4
7/2	449	449	-	-	-	2.4	0.0	-	2.4	19.6	6.3	0.0	6.3
8/2+8/1	474	474	-	-	-	1.0	0.3	-	1.3	10.0	2.1	0.3	2.4
9/1	111	111	-	-	-	0.4	0.1	-	0.5	15.2	1.0	0.1	1.1
9/2	342	342	-	-	-	1.2	0.4	-	1.7	17.6	3.1	0.4	3.5
10/1	248	248	-	-	-	0.6	0.0	-	0.6	8.0	3.1	0.0	3.1
10/2	247	247	-	-	-	0.5	0.0	-	0.5	8.0	3.1	0.0	3.1
11/1	318	318	-	-	-	1.3	0.0	-	1.3	15.2	4.8	0.0	4.8
11/2+11/3	605	605	-	-	-	1.5	0.0	-	1.5	8.9	5.2	0.0	5.2
12/2+12/1	632	632	-	-	-	2.4	1.3	-	3.7	21.0	3.4	1.3	4.7
12/3+12/4	700	700	-	-	-	2.5	1.5	-	3.9	20.2	3.4	1.5	4.9

Full Input Data And Results

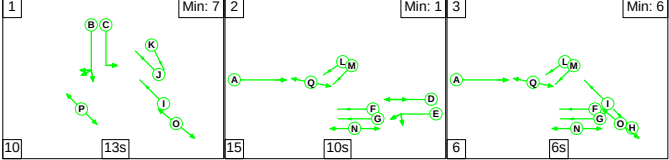
13/1	154	154	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	519	519	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	486	486	-	-	-	0.8	0.3	-	1.1	8.2	4.6	0.3	5.0
15/1	659	659	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	696	696	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	500	500	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	363	363	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	579	579	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	370	370	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	737	737	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/1	359	359	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	191	191	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	25	25	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
			C1	PRC for Signalled Lanes (%):		20.1	Total Delay for Signalled Lanes (pcuHr):		16.98	Cycle Time (s):		60	
			C2	PRC for Signalled Lanes (%):		22.3	Total Delay for Signalled Lanes (pcuHr):		23.81	Cycle Time (s):		60	
				PRC Over All Lanes (%):		20.1	Total Delay Over All Lanes(pcuHr):		42.89				

Full Input Data And Results

Scenario 3: 'AM Base' (FG3: 'AM Base', Plan 1: 'Network Control Plan 1')

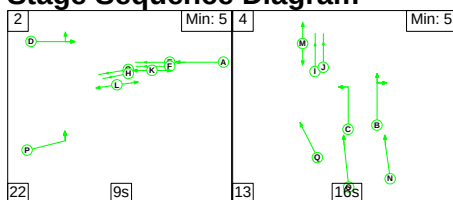
C1

Stage Sequence Diagram



Stage Timings

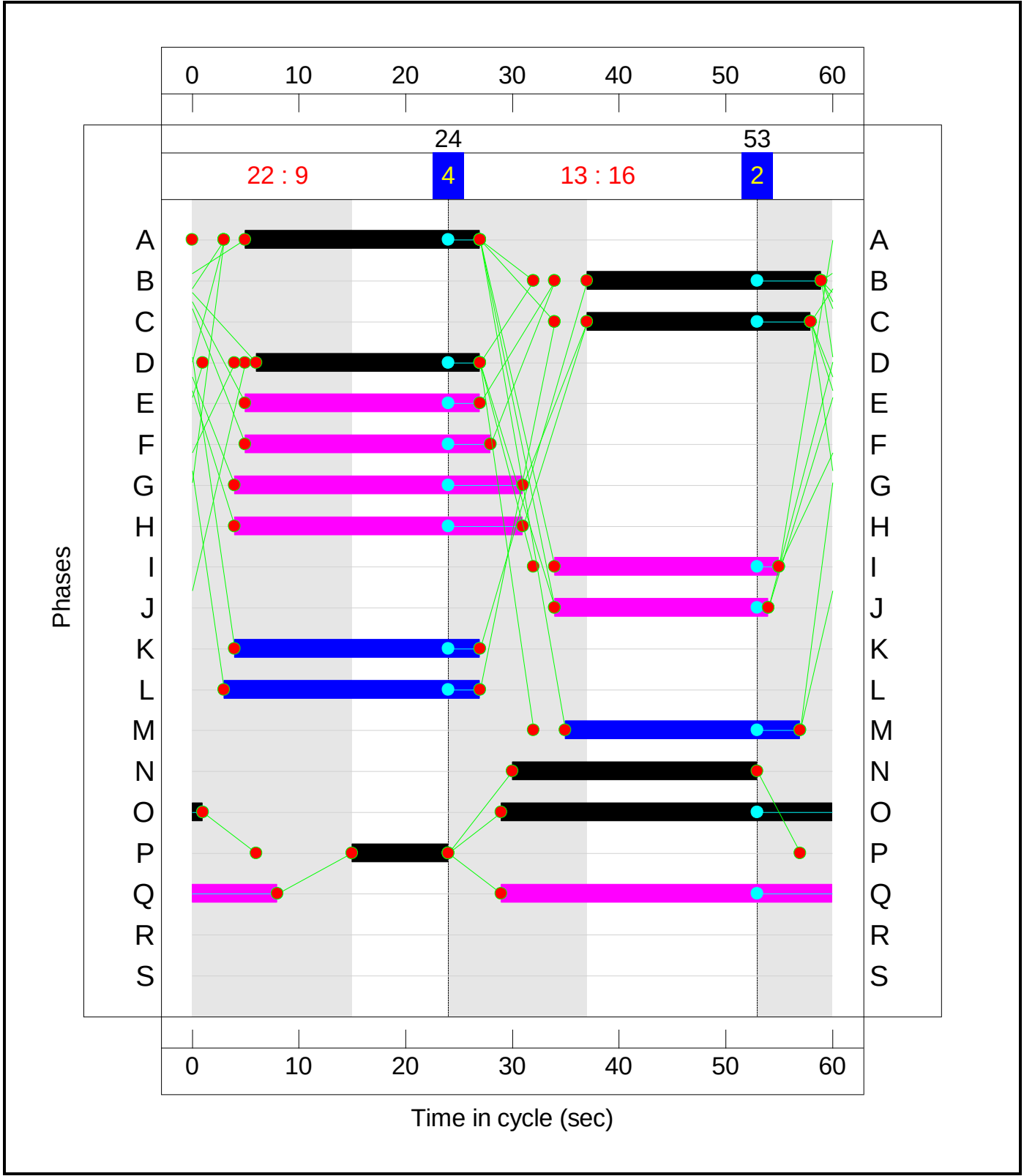
Stage	1	2	3
Duration	13	10	6
Change Point	6	29	54



Stage Timings

Stage	2	4
Duration	9	16
Change Point	53	24

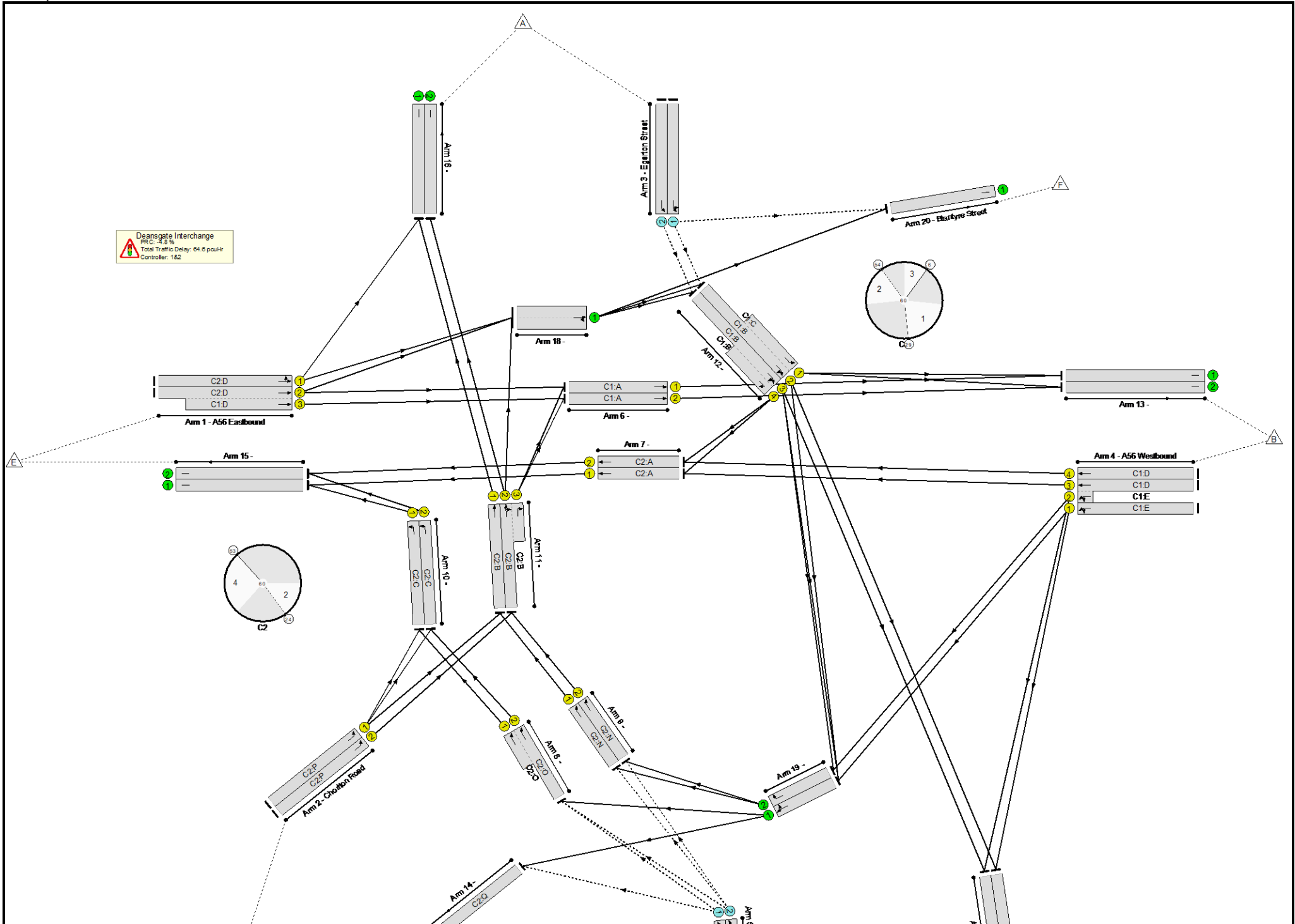
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	94.4%
Deansgate Interchange	-	-	N/A	-	-		-	-	-	-	-	-	94.4%
1/1	A56 Eastbound Left Ahead	U	N/A	N/A	C2:D		1	21	-	520	1915	702	74.1%
1/2+1/3	A56 Eastbound Ahead Ahead2	U	N/A	N/A	C2:D C1:D		1	21:17	-	1100	1915:2055	702+617	78.0 : 89.5%
2/1	Chorlton Road Left Left2	U	N/A	N/A	C2:P		1	9	-	300	1965	327	91.6%
2/2	Chorlton Road Left	U	N/A	N/A	C2:P		1	9	-	309	1965	327	94.4%
3/1	Egerton Street Ahead Left	O	N/A	N/A	-		-	-	-	221	1995	667	33.1%
3/2	Egerton Street Ahead	O	N/A	N/A	-		-	-	-	356	1995	713	49.9%
4/1	A56 Westbound Left Ahead	U	N/A	N/A	C1:E		1	16	-	270	1945	551	49.0%
4/3+4/2	A56 Westbound Ahead Left Ahead2	U	N/A	N/A	C1:D C1:E		1	17:16	-	394	1945:1945	74+486	70.4 : 70.4%
4/4	A56 Westbound Ahead	U	N/A	N/A	C1:D		1	17	-	319	1945	583	54.7%
5/1	Mancunian Way WB Slip Road Ahead Left	O	N/A	N/A	-		-	-	-	630	1985	788	79.9%
5/2	Mancunian Way WB Slip Road Ahead Ahead2	O	N/A	N/A	-		-	-	-	629	1985	788	79.8%
6/1	Ahead	U	N/A	N/A	C1:A		1	30	-	204	1965	1015	20.1%
6/2	Ahead	U	N/A	N/A	C1:A		1	30	-	620	1965	1015	61.1%
7/1	Ahead	U	N/A	N/A	C2:A		1	22	-	225	1965	753	29.9%
7/2	Ahead	U	N/A	N/A	C2:A		1	22	-	341	1965	753	45.3%
8/2+8/1	Ahead	U	N/A	N/A	C2:O		1	32	-	746	2005:2005	701+701	53.2 : 53.2%

Full Input Data And Results

9/1	Ahead	U	N/A	N/A	C2:N		1	23	-	193	1995	798	24.2%
9/2	Ahead	U	N/A	N/A	C2:N		1	23	-	536	1995	798	67.2%
10/1	Left	U	N/A	N/A	C2:C		1	21	-	381	1995	732	52.1%
10/2	Left	U	N/A	N/A	C2:C		1	21	-	380	1995	732	51.9%
11/1	Ahead	U	N/A	N/A	C2:B		1	22	-	478	1419	544	87.9%
11/2+11/3	Right Ahead Right2	U	N/A	N/A	C2:B		1	22	-	845	1965:1965	611+290	93.8 : 93.8%
12/2+12/1	Left Ahead Right	U	N/A	N/A	C1:B C1:C		1	19:13	-	708	2005:2005	667+154	86.2 : 86.2%
12/3+12/4	Right Ahead Right2	U	N/A	N/A	C1:B		1	19	-	713	2005:2005	602+227	86.0 : 86.0%
13/1		U	N/A	N/A	-		-	-	-	271	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	686	Inf	Inf	0.0%
14/1		U	N/A	N/A	C2:Q		1	39	-	425	1945	1297	32.8%
15/1		U	N/A	N/A	-		-	-	-	606	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	721	Inf	Inf	0.0%
16/1		U	N/A	N/A	-		-	-	-	761	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	489	Inf	Inf	0.0%
17/1		U	N/A	N/A	-		-	-	-	672	Inf	Inf	0.0%
17/2		U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%
18/1	Right Ahead	U	N/A	N/A	-		-	-	-	869	Inf	Inf	0.0%
19/1	Right Ahead	U	N/A	N/A	-		-	-	-	299	Inf	Inf	0.0%
19/2	Right	U	N/A	N/A	-		-	-	-	342	Inf	Inf	0.0%
20/1	Blantyre Street	U	N/A	N/A	-		-	-	-	25	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1836	0	0	36.5	28.1	0.0	64.6	-	-	-	-
Deansgate Interchange	-	-	1836	0	0	36.5	28.1	0.0	64.6	-	-	-	-
1/1	520	520	-	-	-	2.4	1.4	-	3.8	26.3	7.5	1.4	8.9
1/2+1/3	1100	1100	-	-	-	5.6	2.5	-	8.1	26.5	8.7	2.5	11.2
2/1	300	300	-	-	-	2.0	4.2	-	6.2	74.8	4.9	4.2	9.1
2/2	309	309	-	-	-	2.1	5.3	-	7.4	86.6	5.1	5.3	10.4
3/1	221	221	221	0	0	0.2	0.2	-	0.4	7.2	1.4	0.2	1.6
3/2	356	356	356	0	0	0.2	0.5	-	0.7	6.8	2.2	0.5	2.7
4/1	270	270	-	-	-	1.3	0.5	-	1.8	24.3	3.7	0.5	4.2
4/3+4/2	394	394	-	-	-	2.1	1.2	-	3.3	29.7	5.5	1.2	6.7
4/4	319	319	-	-	-	1.6	0.6	-	2.2	24.4	4.4	0.6	5.0
5/1	630	630	630	0	0	0.2	1.9	-	2.1	12.2	3.9	1.9	5.8
5/2	629	629	629	0	0	0.2	1.9	-	2.1	12.1	3.8	1.9	5.8
6/1	204	204	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	620	620	-	-	-	0.1	0.0	-	0.1	0.9	9.1	0.0	9.1
7/1	225	225	-	-	-	0.3	0.0	-	0.3	5.5	1.0	0.0	1.0
7/2	341	341	-	-	-	2.0	0.0	-	2.0	20.6	5.3	0.0	5.3
8/2+8/1	746	746	-	-	-	2.0	0.6	-	2.5	12.2	4.0	0.6	4.5
9/1	193	193	-	-	-	0.8	0.2	-	1.0	17.8	2.0	0.2	2.1
9/2	536	536	-	-	-	2.5	1.0	-	3.6	23.9	6.1	1.0	7.1
10/1	381	381	-	-	-	0.6	0.0	-	0.6	5.9	5.1	0.0	5.1
10/2	380	380	-	-	-	0.6	0.0	-	0.6	5.9	5.1	0.0	5.1
11/1	478	478	-	-	-	2.0	0.0	-	2.0	15.3	7.6	0.0	7.6
11/2+11/3	845	845	-	-	-	1.9	0.0	-	1.9	8.1	9.5	0.0	9.5
12/2+12/1	708	708	-	-	-	2.4	3.0	-	5.4	27.5	5.1	3.0	8.1
12/3+12/4	713	713	-	-	-	2.7	2.9	-	5.7	28.6	5.2	2.9	8.1

Full Input Data And Results

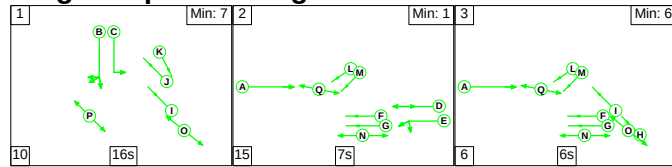
13/1	271	271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	686	686	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	425	425	-	-	-	0.5	0.2	-	0.7	6.2	4.4	0.2	4.6
15/1	606	606	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	721	721	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	761	761	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	489	489	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	672	672	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	869	869	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/1	299	299	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	342	342	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	25	25	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 C2 PRC for Signalled Lanes (%): PRC for Signalled Lanes (%): PRC Over All Lanes (%): 4.4 -4.8 -4.8 Total Delay for Signalled Lanes (pcuHr): Total Delay for Signalled Lanes (pcuHr): Total Delay Over All Lanes(pcuHr): 18.46 40.79 64.61 Cycle Time (s): Cycle Time (s): 60 60													

Full Input Data And Results

Scenario 4: 'PM Base' (FG4: 'PM Base', Plan 1: 'Network Control Plan 1')

C1

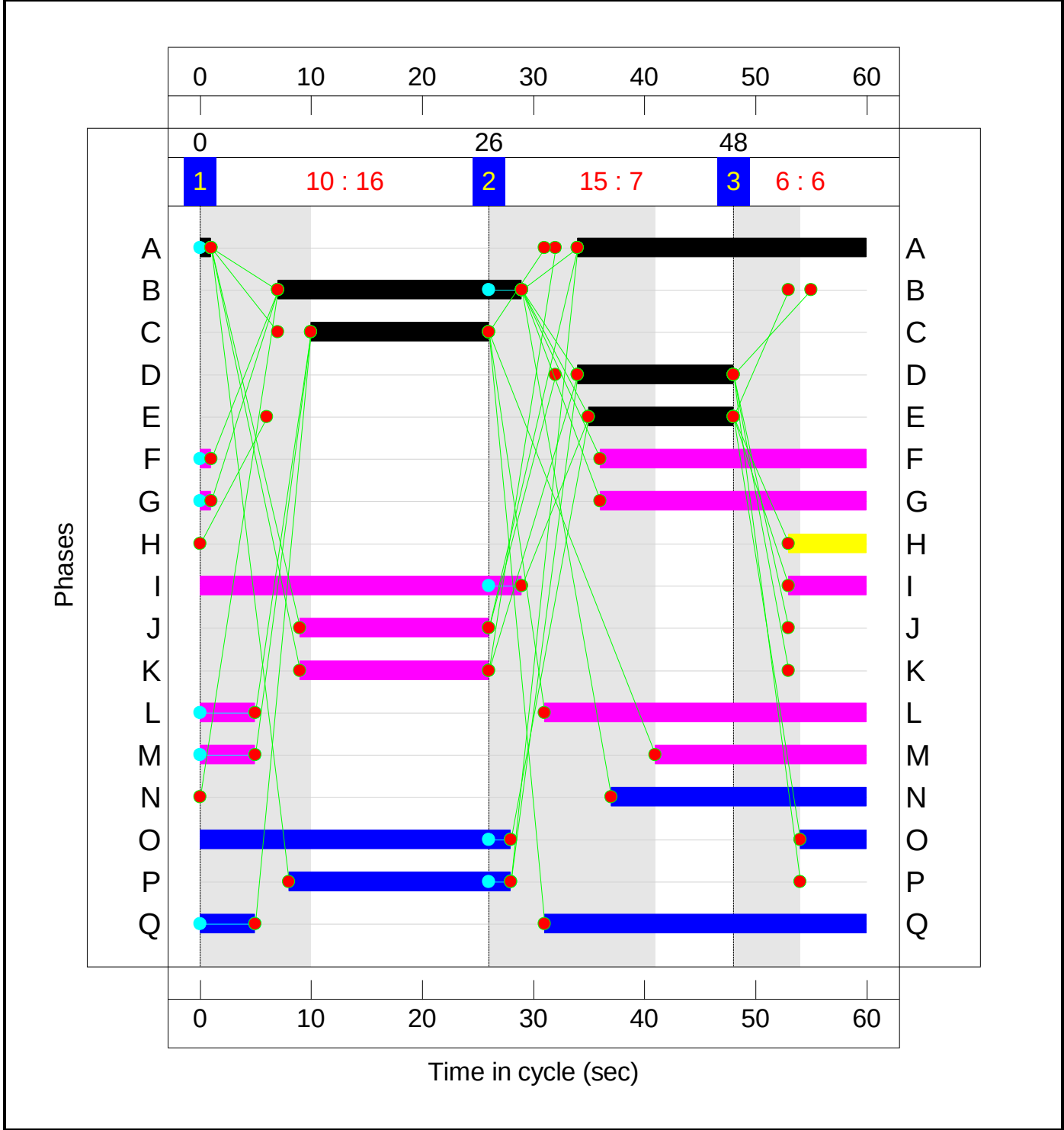
Stage Sequence Diagram



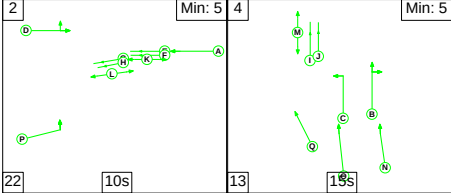
Stage Timings

Stage	1	2	3
Duration	16	7	6
Change Point	0	26	48

Signal Timings Diagram



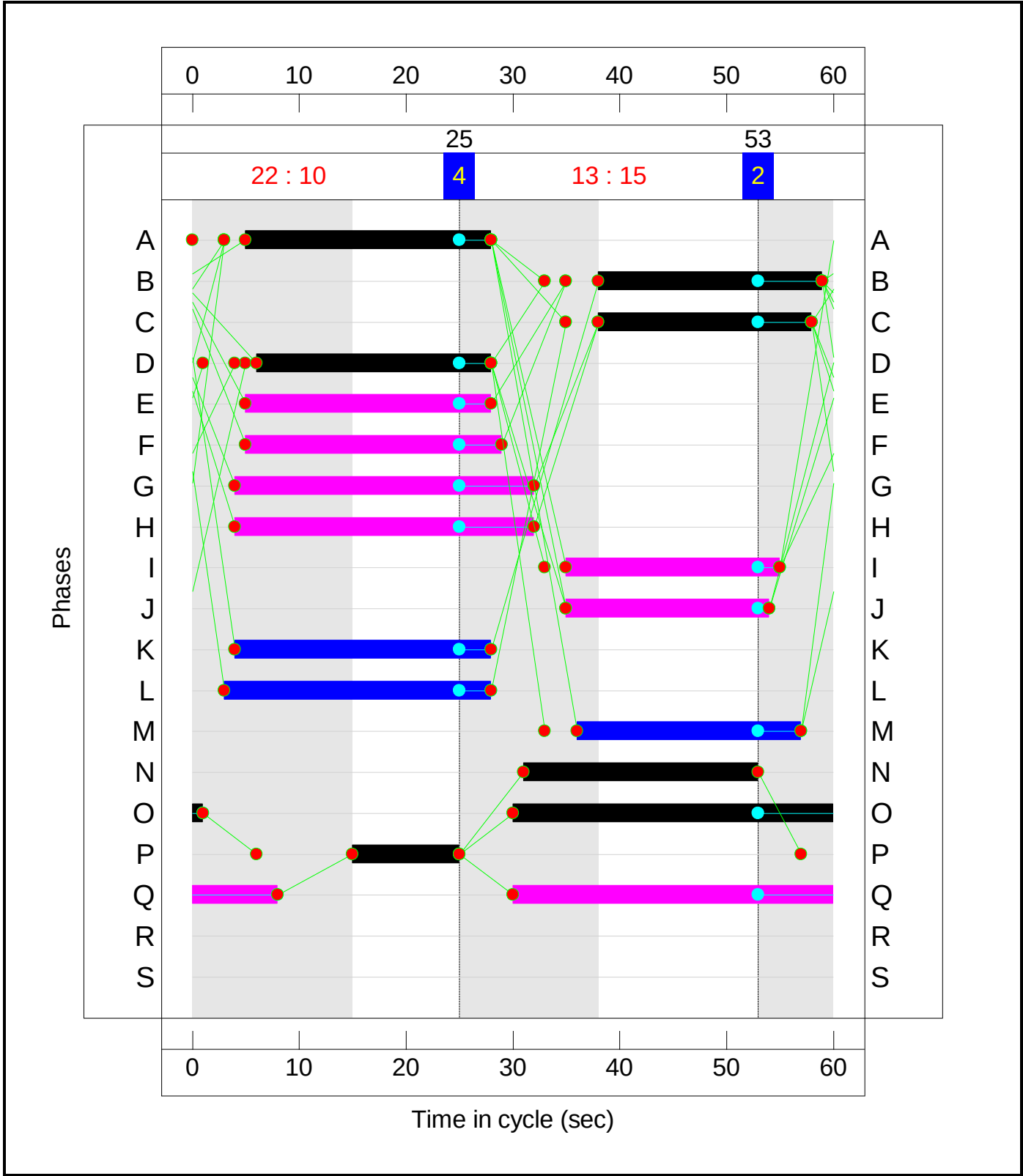
C2
Stage Sequence Diagram



Stage Timings

Stage	2	4
Duration	10	15
Change Point	53	25

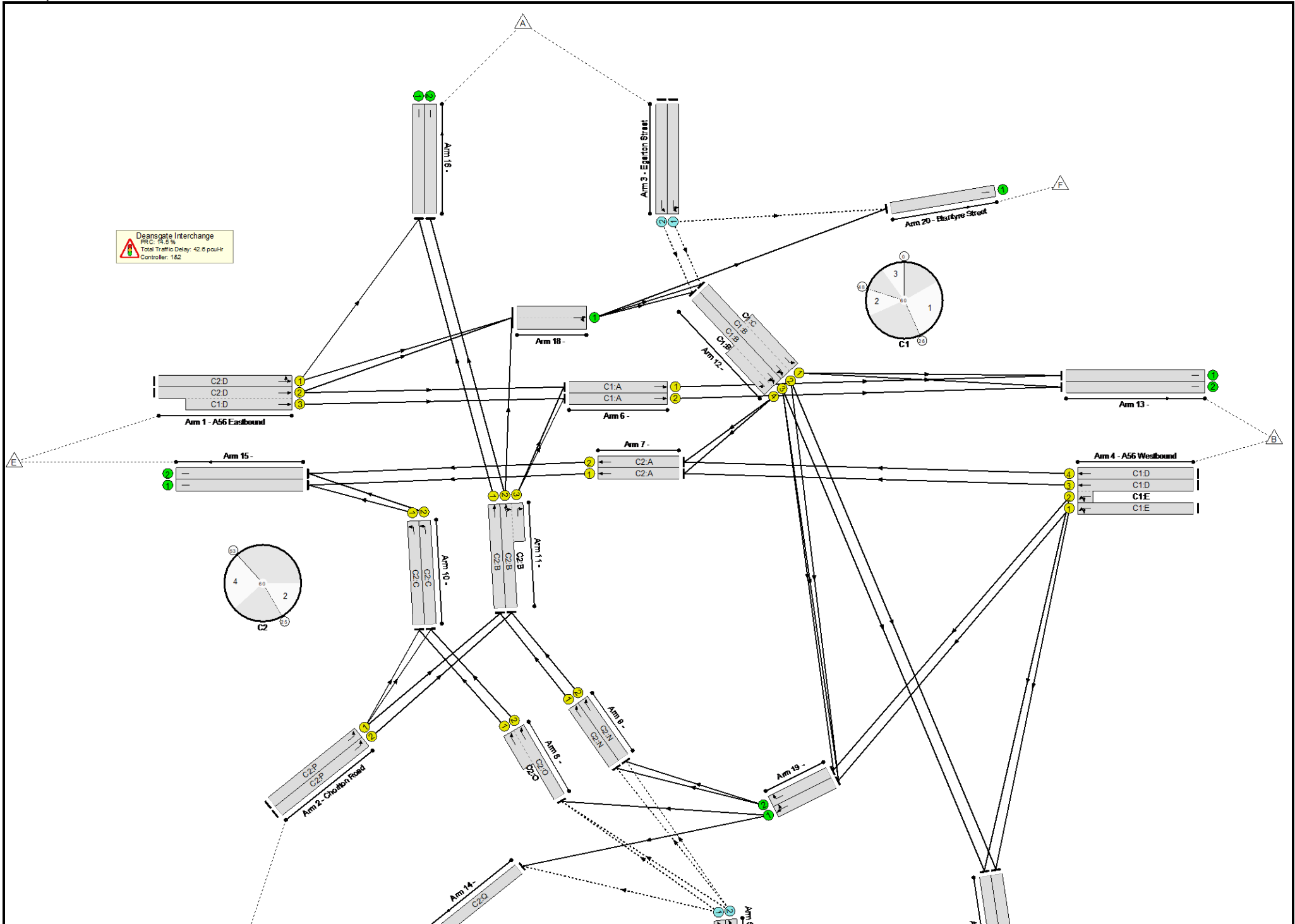
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	78.6%
Deansgate Interchange	-	-	N/A	-	-		-	-	-	-	-	-	78.6%
1/1	A56 Eastbound Left Ahead	U	N/A	N/A	C2:D		1	22	-	427	1915	734	58.2%
1/2+1/3	A56 Eastbound Ahead Ahead2	U	N/A	N/A	C2:D C1:D		1	22:14	-	848	1915:2055	734+514	66.7 : 69.7%
2/1	Chorlton Road Left Left2	U	N/A	N/A	C2:P		1	10	-	235	1965	360	65.2%
2/2	Chorlton Road Left	U	N/A	N/A	C2:P		1	10	-	261	1965	360	72.4%
3/1	Egerton Street Ahead Left	O	N/A	N/A	-		-	-	-	307	1995	707	43.4%
3/2	Egerton Street Ahead	O	N/A	N/A	-		-	-	-	420	1995	737	57.0%
4/1	A56 Westbound Left Ahead	U	N/A	N/A	C1:E		1	13	-	260	1945	454	57.3%
4/3+4/2	A56 Westbound Ahead Left Ahead2	U	N/A	N/A	C1:D C1:E		1	14:13	-	329	1945:1945	116+366	68.2 : 68.2%
4/4	A56 Westbound Ahead	U	N/A	N/A	C1:D		1	14	-	262	1945	486	53.9%
5/1	Mancunian Way WB Slip Road Ahead Left	O	N/A	N/A	-		-	-	-	449	1985	812	55.3%
5/2	Mancunian Way WB Slip Road Ahead Ahead2	O	N/A	N/A	-		-	-	-	450	1985	812	55.4%
6/1	Ahead	U	N/A	N/A	C1:A		1	27	-	119	1965	917	13.0%
6/2	Ahead	U	N/A	N/A	C1:A		1	27	-	417	1965	917	45.5%
7/1	Ahead	U	N/A	N/A	C2:A		1	23	-	295	1965	786	37.5%
7/2	Ahead	U	N/A	N/A	C2:A		1	23	-	298	1965	786	37.9%
8/2+8/1	Ahead	U	N/A	N/A	C2:O		1	31	-	480	2005:2005	684+684	35.1 : 35.1%

Full Input Data And Results

9/1	Ahead	U	N/A	N/A	C2:N		1	22	-	145	1995	765	19.0%
9/2	Ahead	U	N/A	N/A	C2:N		1	22	-	397	1995	765	51.9%
10/1	Left	U	N/A	N/A	C2:C		1	20	-	251	1995	698	35.9%
10/2	Left	U	N/A	N/A	C2:C		1	20	-	250	1995	698	35.8%
11/1	Ahead	U	N/A	N/A	C2:B		1	21	-	359	1419	520	69.0%
11/2+11/3	Right Ahead Right2	U	N/A	N/A	C2:B		1	21	-	658	1965:1965	611+226	78.6 : 78.6%
12/2+12/1	Left Ahead Right	U	N/A	N/A	C1:B C1:C		1	22:16	-	742	2005:2005	732+241	76.2 : 76.2%
12/3+12/4	Right Ahead Right2	U	N/A	N/A	C1:B		1	22	-	755	2005:2005	656+328	76.7 : 76.7%
13/1		U	N/A	N/A	-		-	-	-	211	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	509	Inf	Inf	0.0%
14/1		U	N/A	N/A	C2:Q		1	38	-	446	1945	1264	35.3%
15/1		U	N/A	N/A	-		-	-	-	546	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	548	Inf	Inf	0.0%
16/1		U	N/A	N/A	-		-	-	-	543	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	418	Inf	Inf	0.0%
17/1		U	N/A	N/A	-		-	-	-	631	Inf	Inf	0.0%
17/2		U	N/A	N/A	-		-	-	-	371	Inf	Inf	0.0%
18/1	Right Ahead	U	N/A	N/A	-		-	-	-	795	Inf	Inf	0.0%
19/1	Right Ahead	U	N/A	N/A	-		-	-	-	319	Inf	Inf	0.0%
19/2	Right	U	N/A	N/A	-		-	-	-	250	Inf	Inf	0.0%
20/1	Blantyre Street	U	N/A	N/A	-		-	-	-	25	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1626	0	0	29.7	12.9	0.0	42.6	-	-	-	-
Deansgate Interchange	-	-	1626	0	0	29.7	12.9	0.0	42.6	-	-	-	-
1/1	427	427	-	-	-	1.7	0.7	-	2.4	20.5	5.6	0.7	6.3
1/2+1/3	848	848	-	-	-	4.1	1.1	-	5.2	22.0	6.7	1.1	7.7
2/1	235	235	-	-	-	1.5	0.9	-	2.4	36.9	3.6	0.9	4.5
2/2	261	261	-	-	-	1.7	1.3	-	3.0	40.8	4.1	1.3	5.3
3/1	307	307	307	0	0	0.2	0.4	-	0.6	7.1	1.9	0.4	2.3
3/2	420	420	420	0	0	0.2	0.7	-	0.9	7.5	2.8	0.7	3.5
4/1	260	260	-	-	-	1.5	0.7	-	2.1	29.6	3.8	0.7	4.5
4/3+4/2	329	329	-	-	-	1.9	1.1	-	2.9	31.9	4.3	1.1	5.4
4/4	262	262	-	-	-	1.4	0.6	-	2.0	27.5	3.8	0.6	4.4
5/1	449	449	449	0	0	0.0	0.6	-	0.6	5.1	1.2	0.6	1.9
5/2	450	450	450	0	0	0.0	0.6	-	0.6	5.1	1.2	0.6	1.9
6/1	119	119	-	-	-	0.0	0.0	-	0.0	0.7	0.0	0.0	0.0
6/2	417	417	-	-	-	0.1	0.0	-	0.1	0.6	4.5	0.0	4.5
7/1	295	295	-	-	-	0.5	0.0	-	0.5	6.4	1.4	0.0	1.4
7/2	298	298	-	-	-	1.8	0.0	-	1.8	22.2	4.5	0.0	4.5
8/2+8/1	480	480	-	-	-	1.0	0.3	-	1.3	9.4	2.1	0.3	2.3
9/1	145	145	-	-	-	0.3	0.1	-	0.5	11.3	0.8	0.1	0.9
9/2	397	397	-	-	-	1.3	0.5	-	1.8	16.4	3.5	0.5	4.0
10/1	251	251	-	-	-	0.6	0.0	-	0.6	8.6	3.2	0.0	3.2
10/2	250	250	-	-	-	0.6	0.0	-	0.6	8.5	3.2	0.0	3.2
11/1	359	359	-	-	-	1.3	0.0	-	1.3	13.1	4.6	0.0	4.6
11/2+11/3	658	658	-	-	-	1.5	0.0	-	1.5	8.0	5.9	0.0	5.9
12/2+12/1	742	742	-	-	-	2.7	1.6	-	4.2	20.6	3.6	1.6	5.2
12/3+12/4	755	755	-	-	-	2.8	1.6	-	4.5	21.2	3.8	1.6	5.4

Full Input Data And Results

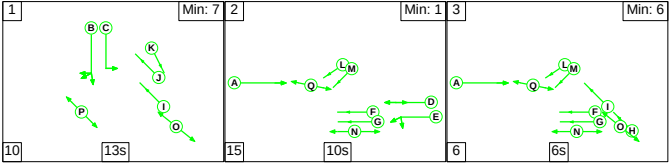
13/1	211	211	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	509	509	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	446	446	-	-	-	0.9	0.3	-	1.2	9.6	4.8	0.3	5.1
15/1	546	546	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	548	548	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	543	543	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	418	418	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	631	631	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	371	371	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	795	795	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/1	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	250	250	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	25	25	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
C1 C2 PRC for Signalled Lanes (%): 17.3 PRC for Signalled Lanes (%): 14.5 PRC Over All Lanes (%): 14.5 Total Delay for Signalled Lanes (pcuHr): 15.84 Total Delay for Signalled Lanes (pcuHr): 24.00 Total Delay Over All Lanes(pcuHr): 42.61 Cycle Time (s): 60 Cycle Time (s): 60													

Full Input Data And Results

Scenario 5: 'AM Base+Dev' (FG5: 'AM Base + Dev', Plan 1: 'Network Control Plan 1')

C1

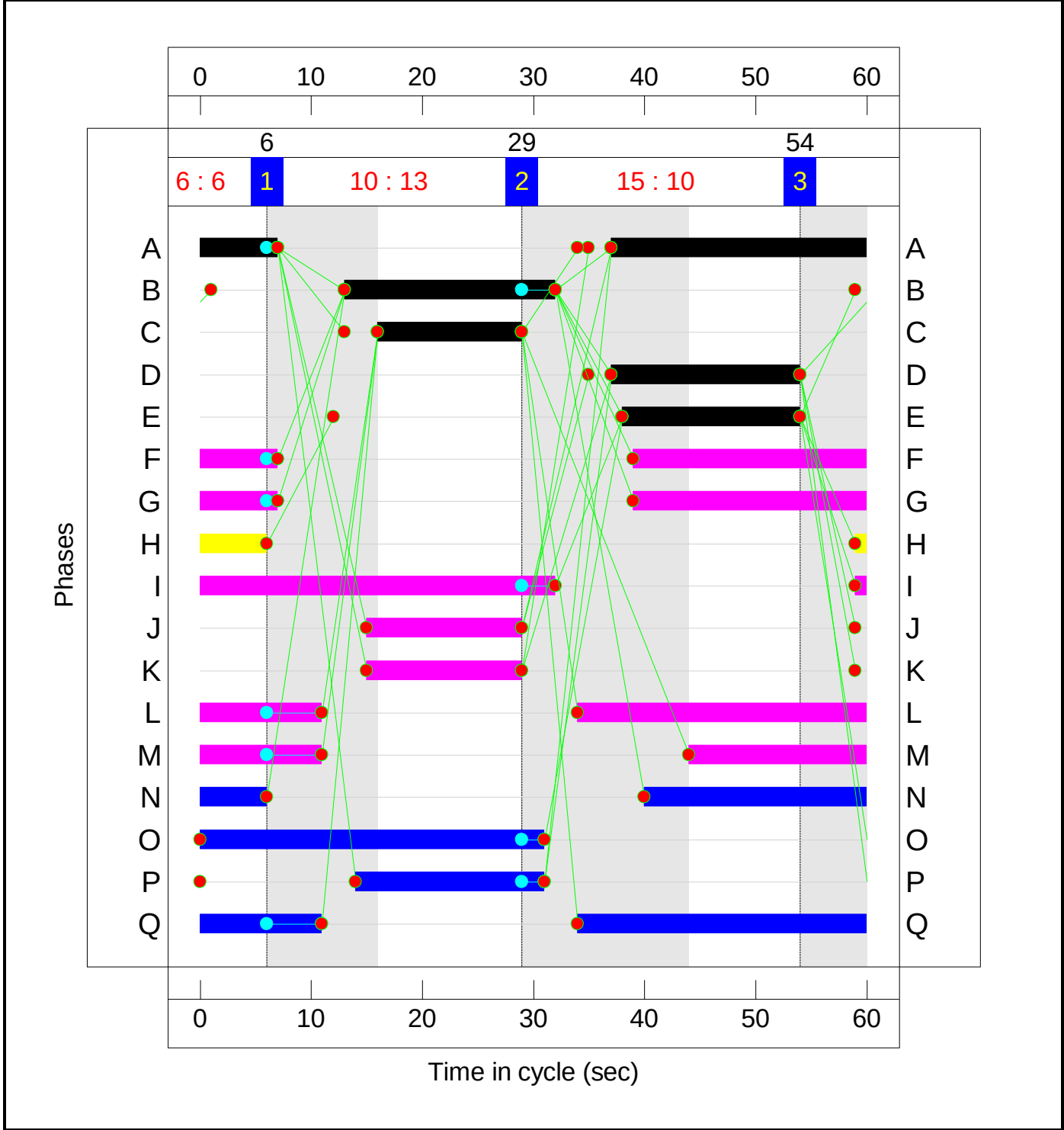
Stage Sequence Diagram



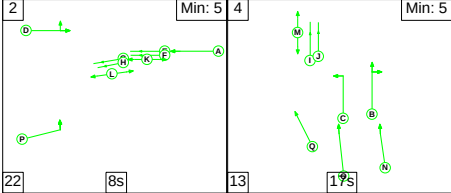
Stage Timings

Stage	1	2	3
Duration	13	10	6
Change Point	6	29	54

Signal Timings Diagram



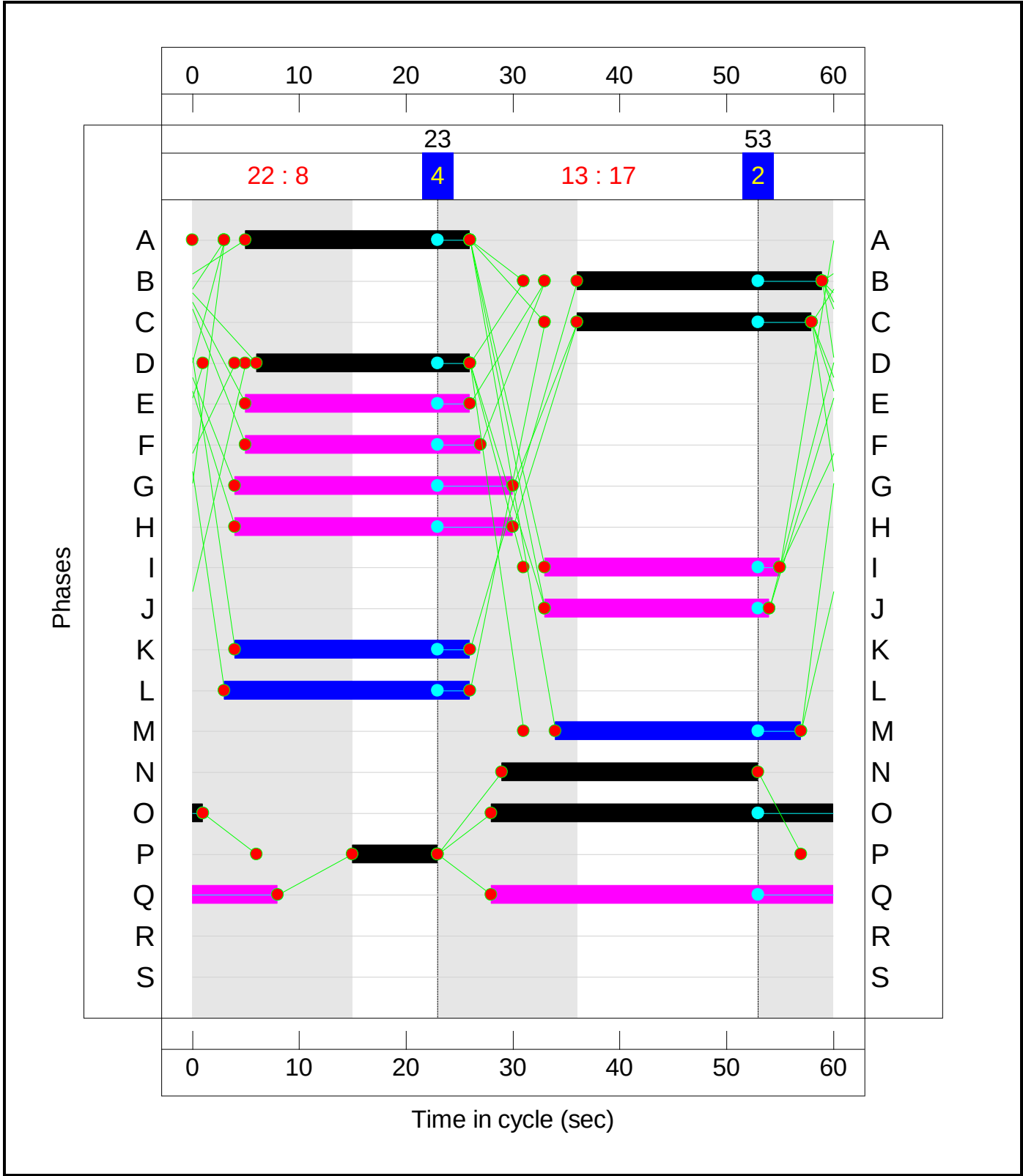
C2
Stage Sequence Diagram



Stage Timings

Stage	2	4
Duration	8	17
Change Point	53	23

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	103.5%
Deansgate Interchange	-	-	N/A	-	-		-	-	-	-	-	-	103.5%
1/1	A56 Eastbound Left Ahead	U	N/A	N/A	C2:D		1	20	-	522	1915	670	77.9%
1/2+1/3	A56 Eastbound Ahead Ahead2	U	N/A	N/A	C2:D C1:D		1	20:17	-	1105	1915:2055	670+617	82.4 : 89.7%
2/1	Chorlton Road Left Left2	U	N/A	N/A	C2:P		1	8	-	305	1965	295	103.5%
2/2	Chorlton Road Left	U	N/A	N/A	C2:P		1	8	-	305	1965	295	103.5%
3/1	Egerton Street Ahead Left	O	N/A	N/A	-		-	-	-	238	1995	661	36.0%
3/2	Egerton Street Ahead	O	N/A	N/A	-		-	-	-	357	1995	711	50.2%
4/1	A56 Westbound Left Ahead	U	N/A	N/A	C1:E		1	16	-	302	1945	551	54.8%
4/3+4/2	A56 Westbound Ahead Left Ahead2	U	N/A	N/A	C1:D C1:E		1	17:16	-	460	1945:1945	0+541	0.0 : 85.0%
4/4	A56 Westbound Ahead	U	N/A	N/A	C1:D		1	17	-	409	1945	583	70.1%
5/1	Mancunian Way WB Slip Road Ahead Left	O	N/A	N/A	-		-	-	-	630	1985	749	84.2%
5/2	Mancunian Way WB Slip Road Ahead Ahead2	O	N/A	N/A	-		-	-	-	631	1985	749	84.3%
6/1	Ahead	U	N/A	N/A	C1:A		1	30	-	201	1965	1015	19.5%
6/2	Ahead	U	N/A	N/A	C1:A		1	30	-	624	1965	1015	61.3%
7/1	Ahead	U	N/A	N/A	C2:A		1	21	-	185	1965	721	25.7%
7/2	Ahead	U	N/A	N/A	C2:A		1	21	-	419	1965	721	58.2%
8/2+8/1	Ahead	U	N/A	N/A	C2:O		1	33	-	746	2005:2005	718+718	52.0 : 52.0%

Full Input Data And Results

9/1	Ahead	U	N/A	N/A	C2:N		1	24	-	248	1995	831	29.8%
9/2	Ahead	U	N/A	N/A	C2:N		1	24	-	601	1995	831	72.3%
10/1	Left	U	N/A	N/A	C2:C		1	22	-	381	1995	765	49.8%
10/2	Left	U	N/A	N/A	C2:C		1	22	-	380	1995	765	49.7%
11/1	Ahead	U	N/A	N/A	C2:B		1	23	-	538	1419	568	93.1%
11/2+11/3	Right Ahead Right2	U	N/A	N/A	C2:B		1	23	-	906	1965:1965	644+276	97.7 : 96.7%
12/2+12/1	Left Ahead Right	U	N/A	N/A	C1:B C1:C		1	19:13	-	720	2005:2005	667+155	87.4 : 87.6%
12/3+12/4	Right Ahead Right2	U	N/A	N/A	C1:B		1	19	-	728	2005:2005	603+221	88.2 : 88.3%
13/1		U	N/A	N/A	-		-	-	-	269	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	692	Inf	Inf	0.0%
14/1		U	N/A	N/A	C2:Q		1	40	-	427	1945	1329	32.1%
15/1		U	N/A	N/A	-		-	-	-	566	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	799	Inf	Inf	0.0%
16/1		U	N/A	N/A	-		-	-	-	821	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	547	Inf	Inf	0.0%
17/1		U	N/A	N/A	-		-	-	-	712	Inf	Inf	0.0%
17/2		U	N/A	N/A	-		-	-	-	406	Inf	Inf	0.0%
18/1	Right Ahead	U	N/A	N/A	-		-	-	-	878	Inf	Inf	0.0%
19/1	Right Ahead	U	N/A	N/A	-		-	-	-	301	Inf	Inf	0.0%
19/2	Right	U	N/A	N/A	-		-	-	-	460	Inf	Inf	0.0%
20/1	Blantyre Street	U	N/A	N/A	-		-	-	-	25	Inf	Inf	0.0%

Full Input Data And Results

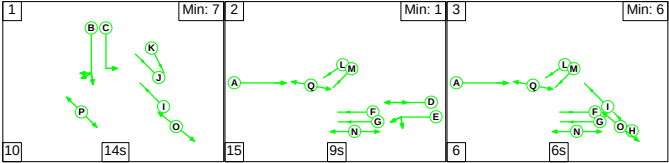
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1856	0	0	40.2	47.3	0.0	87.6	-	-	-	-
Deansgate Interchange	-	-	1856	0	0	40.2	47.3	0.0	87.6	-	-	-	-
1/1	522	522	-	-	-	2.5	1.7	-	4.2	29.3	7.7	1.7	9.4
1/2+1/3	1105	1105	-	-	-	5.8	2.9	-	8.8	28.6	8.8	2.9	11.7
2/1	305	295	-	-	-	2.4	11.7	-	14.1	166.5	5.3	11.7	16.9
2/2	305	295	-	-	-	2.4	11.7	-	14.1	166.5	5.3	11.7	16.9
3/1	238	238	238	0	0	0.2	0.3	-	0.5	7.8	1.6	0.3	1.9
3/2	357	357	357	0	0	0.2	0.5	-	0.7	6.9	2.2	0.5	2.7
4/1	302	302	-	-	-	1.5	0.6	-	2.1	25.4	4.2	0.6	4.8
4/3+4/2	460	460	-	-	-	2.6	2.7	-	5.3	41.2	7.2	2.7	9.8
4/4	409	409	-	-	-	2.1	1.2	-	3.3	28.8	6.0	1.2	7.2
5/1	630	630	630	0	0	0.3	2.5	-	2.9	16.5	4.9	2.5	7.4
5/2	631	631	631	0	0	0.3	2.6	-	2.9	16.7	4.9	2.6	7.5
6/1	198	198	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	622	622	-	-	-	0.1	0.0	-	0.1	0.7	9.5	0.0	9.5
7/1	185	185	-	-	-	0.1	0.0	-	0.1	2.5	0.2	0.0	0.2
7/2	419	419	-	-	-	2.5	0.0	-	2.5	21.8	6.8	0.0	6.8
8/2+8/1	746	746	-	-	-	1.9	0.5	-	2.4	11.6	4.0	0.5	4.6
9/1	248	248	-	-	-	1.1	0.2	-	1.3	19.2	2.7	0.2	2.9
9/2	601	601	-	-	-	3.1	1.3	-	4.4	26.6	7.3	1.3	8.6
10/1	381	381	-	-	-	0.5	0.0	-	0.5	4.6	5.0	0.0	5.0
10/2	380	380	-	-	-	0.5	0.0	-	0.5	4.5	5.0	0.0	5.0
11/1	528	528	-	-	-	2.1	0.0	-	2.1	14.6	8.5	0.0	8.5
11/2+11/3	896	896	-	-	-	1.9	0.0	-	1.9	7.6	11.1	0.0	11.1
12/2+12/1	719	719	-	-	-	2.5	3.3	-	5.8	28.9	5.6	3.3	8.9
12/3+12/4	727	727	-	-	-	2.7	3.5	-	6.2	30.9	5.6	3.5	9.1

Full Input Data And Results

13/1	266	266	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	690	690	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	427	427	-	-	-	0.5	0.2	-	0.7	5.9	4.4	0.2	4.7
15/1	566	566	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	799	799	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	811	811	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	544	544	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	711	711	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	405	405	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	875	875	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/1	301	301	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	460	460	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	25	25	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
			C1	PRC for Signalled Lanes (%):		1.9	Total Delay for Signalled Lanes (pcuHr):		22.79	Cycle Time (s):		60	
			C2	PRC for Signalled Lanes (%):		-15.0	Total Delay for Signalled Lanes (pcuHr):		57.75	Cycle Time (s):		60	
				PRC Over All Lanes (%):		-15.0	Total Delay Over All Lanes(pcuHr):		87.56				

Full Input Data And Results
Scenario 6: 'PM Base+Dev' (FG6: 'PM Base + Dev', Plan 1: 'Network Control Plan 1')
C1

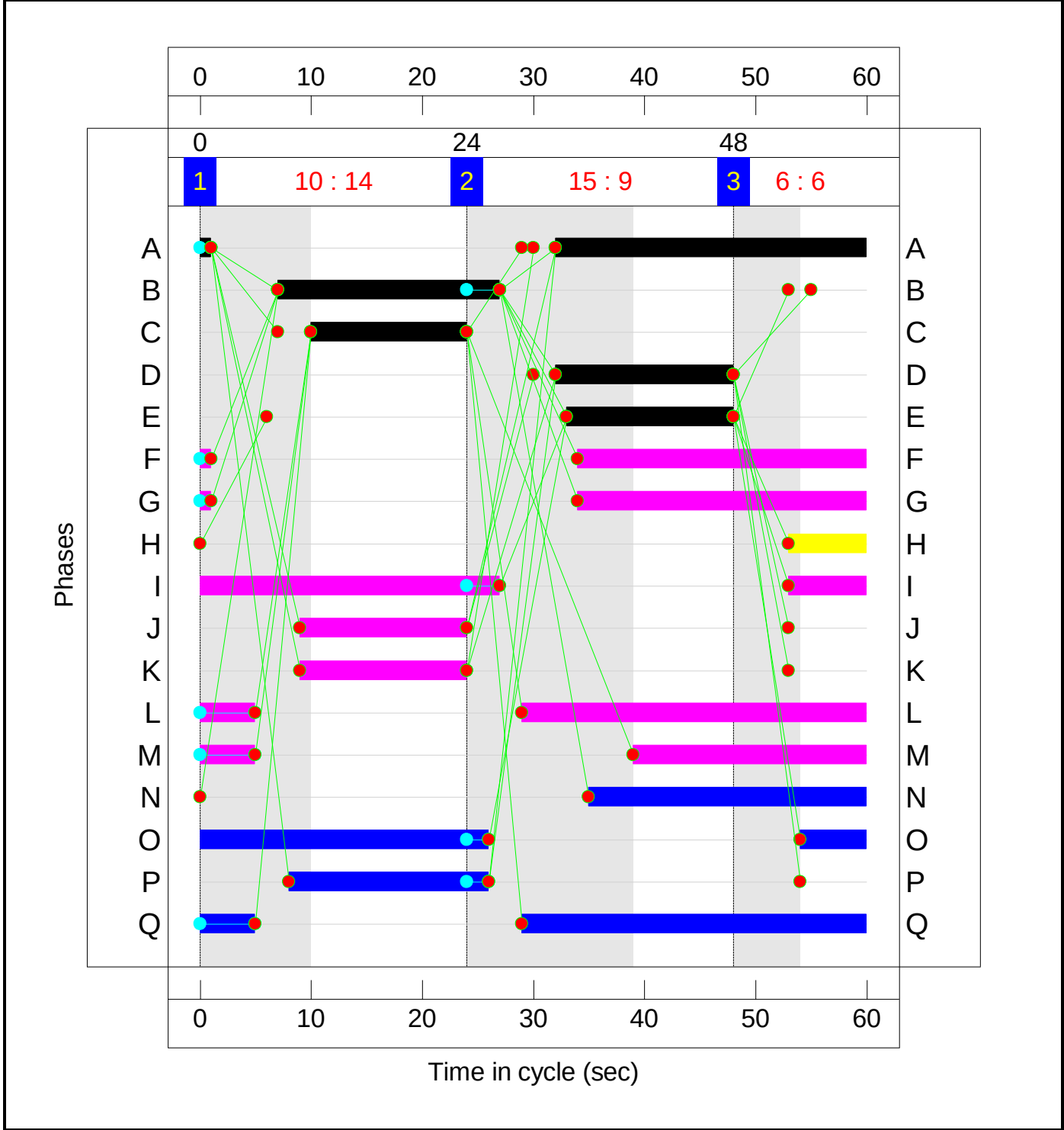
Stage Sequence Diagram



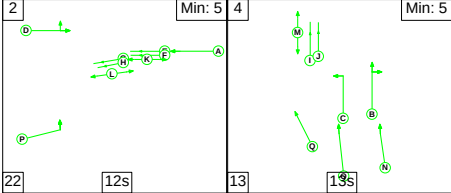
Stage Timings

Stage	1	2	3
Duration	14	9	6
Change Point	0	24	48

Signal Timings Diagram



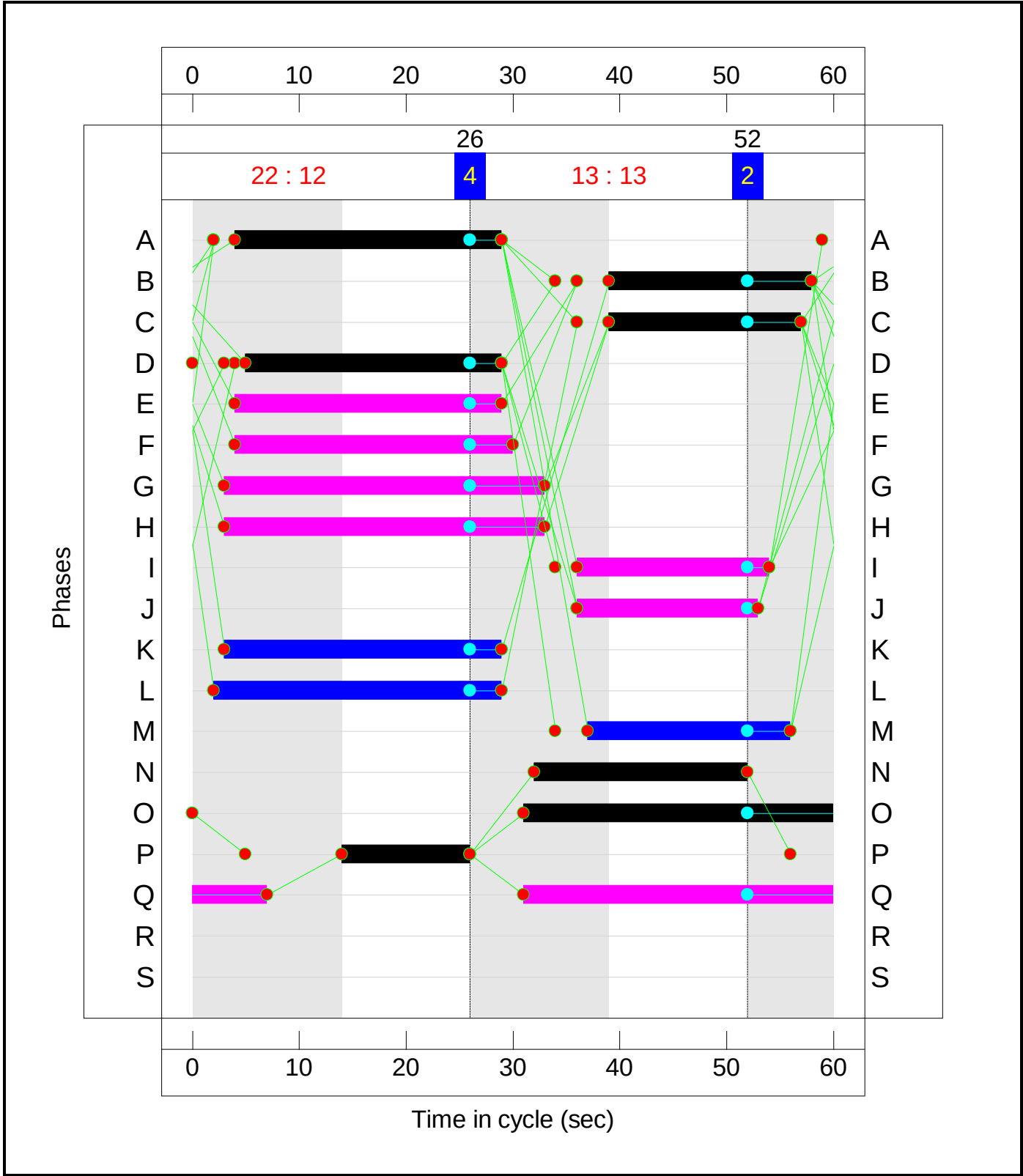
C2
Stage Sequence Diagram



Stage Timings

Stage	2	4
Duration	12	13
Change Point	52	26

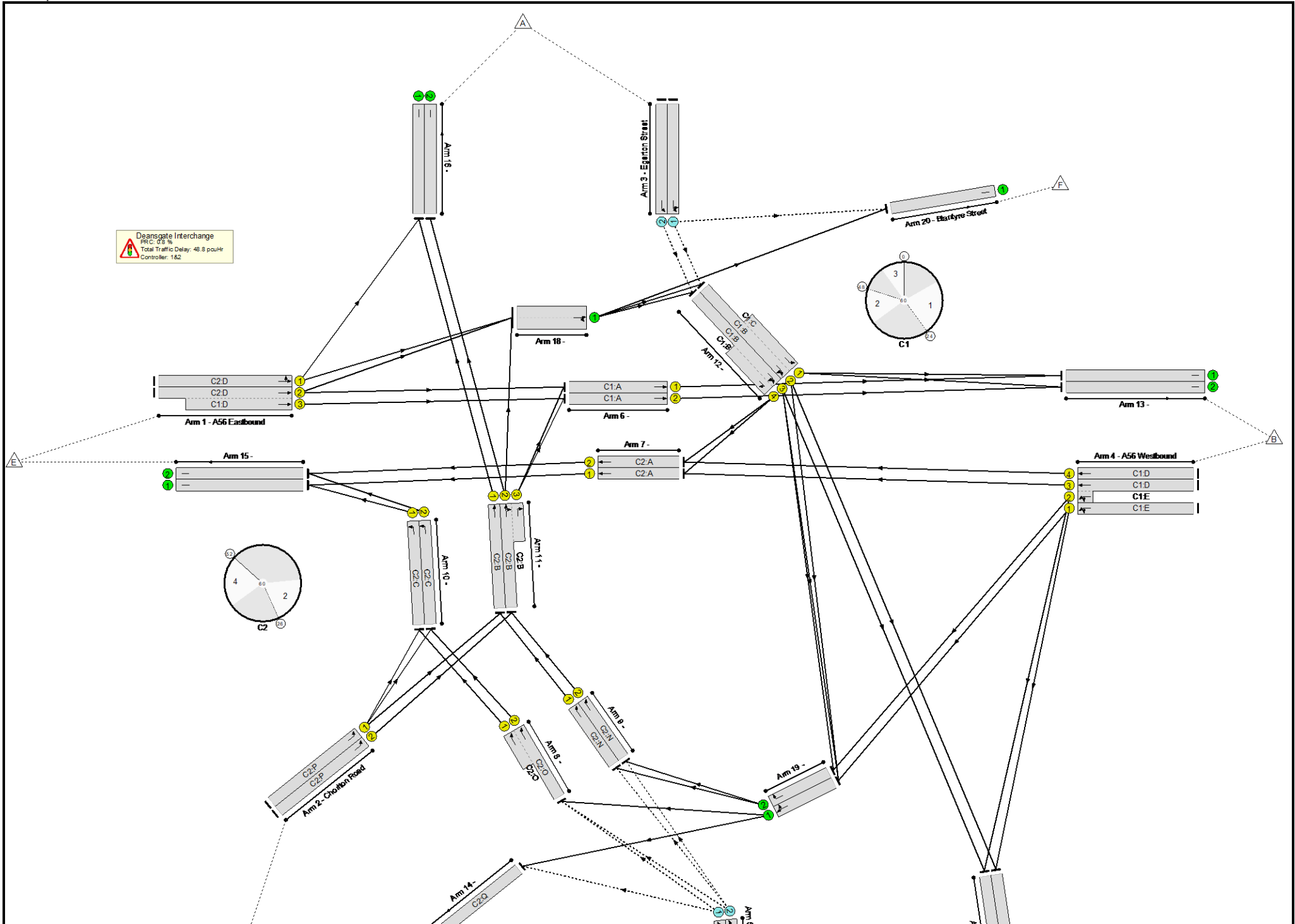
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	N/A	-	-		-	-	-	-	-	-	89.3%
Deansgate Interchange	-	-	N/A	-	-		-	-	-	-	-	-	89.3%
1/1	A56 Eastbound Left Ahead	U	N/A	N/A	C2:D		1	24	-	441	1915	798	55.3%
1/2+1/3	A56 Eastbound Ahead Ahead2	U	N/A	N/A	C2:D C1:D		1	24:16	-	857	1915:2055	798+582	62.0 : 62.2%
2/1	Chorlton Road Left Left2	U	N/A	N/A	C2:P		1	12	-	231	1965	426	54.3%
2/2	Chorlton Road Left	U	N/A	N/A	C2:P		1	12	-	267	1965	426	62.7%
3/1	Egerton Street Ahead Left	O	N/A	N/A	-		-	-	-	373	1995	693	53.8%
3/2	Egerton Street Ahead	O	N/A	N/A	-		-	-	-	429	1995	725	59.2%
4/1	A56 Westbound Left Ahead	U	N/A	N/A	C1:E		1	15	-	285	1945	519	54.9%
4/3+4/2	A56 Westbound Ahead Left Ahead2	U	N/A	N/A	C1:D C1:E		1	16:15	-	365	1945:1945	92+442	68.3 : 68.3%
4/4	A56 Westbound Ahead	U	N/A	N/A	C1:D		1	16	-	295	1945	551	53.5%
5/1	Mancunian Way WB Slip Road Ahead Left	O	N/A	N/A	-		-	-	-	457	1985	794	57.5%
5/2	Mancunian Way WB Slip Road Ahead Ahead2	O	N/A	N/A	-		-	-	-	458	1985	794	57.7%
6/1	Ahead	U	N/A	N/A	C1:A		1	29	-	123	1965	982	12.5%
6/2	Ahead	U	N/A	N/A	C1:A		1	29	-	417	1965	982	42.4%
7/1	Ahead	U	N/A	N/A	C2:A		1	25	-	261	1965	852	30.7%
7/2	Ahead	U	N/A	N/A	C2:A		1	25	-	349	1965	852	41.0%
8/2+8/1	Ahead	U	N/A	N/A	C2:O		1	29	-	480	2005:2005	651+651	36.9 : 36.9%

Full Input Data And Results

9/1	Ahead	U	N/A	N/A	C2:N		1	20	-	197	1995	698	28.2%
9/2	Ahead	U	N/A	N/A	C2:N		1	20	-	413	1995	698	59.1%
10/1	Left	U	N/A	N/A	C2:C		1	18	-	251	1995	632	39.7%
10/2	Left	U	N/A	N/A	C2:C		1	18	-	250	1995	632	39.6%
11/1	Ahead	U	N/A	N/A	C2:B		1	19	-	407	1419	473	86.0%
11/2+11/3	Right Ahead Right2	U	N/A	N/A	C2:B		1	19	-	680	1965:1965	566+201	88.7 : 88.7%
12/2+12/1	Left Ahead Right	U	N/A	N/A	C1:B C1:C		1	20:14	-	807	2005:2005	682+222	89.2 : 89.2%
12/3+12/4	Right Ahead Right2	U	N/A	N/A	C1:B		1	20	-	802	2005:2005	616+282	89.3 : 89.3%
13/1		U	N/A	N/A	-		-	-	-	222	Inf	Inf	0.0%
13/2		U	N/A	N/A	-		-	-	-	516	Inf	Inf	0.0%
14/1		U	N/A	N/A	C2:Q		1	36	-	448	1945	1199	37.4%
15/1		U	N/A	N/A	-		-	-	-	512	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	599	Inf	Inf	0.0%
16/1		U	N/A	N/A	-		-	-	-	591	Inf	Inf	0.0%
16/2		U	N/A	N/A	-		-	-	-	422	Inf	Inf	0.0%
17/1		U	N/A	N/A	-		-	-	-	686	Inf	Inf	0.0%
17/2		U	N/A	N/A	-		-	-	-	437	Inf	Inf	0.0%
18/1	Right Ahead	U	N/A	N/A	-		-	-	-	832	Inf	Inf	0.0%
19/1	Right Ahead	U	N/A	N/A	-		-	-	-	321	Inf	Inf	0.0%
19/2	Right	U	N/A	N/A	-		-	-	-	302	Inf	Inf	0.0%
20/1	Blantyre Street	U	N/A	N/A	-		-	-	-	25	Inf	Inf	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	1717	0	0	31.9	17.0	0.0	48.8	-	-	-	-
Deansgate Interchange	-	-	1717	0	0	31.9	17.0	0.0	48.8	-	-	-	-
1/1	441	441	-	-	-	1.6	0.6	-	2.2	18.3	5.5	0.6	6.1
1/2+1/3	857	857	-	-	-	3.8	0.8	-	4.6	19.3	6.5	0.8	7.3
2/1	231	231	-	-	-	1.3	0.6	-	1.9	30.1	3.4	0.6	4.0
2/2	267	267	-	-	-	1.6	0.8	-	2.4	32.5	4.0	0.8	4.8
3/1	373	373	373	0	0	0.3	0.6	-	0.9	8.6	2.7	0.6	3.3
3/2	429	429	429	0	0	0.2	0.7	-	1.0	8.0	3.0	0.7	3.7
4/1	285	285	-	-	-	1.5	0.6	-	2.1	26.6	4.0	0.6	4.6
4/3+4/2	365	365	-	-	-	2.0	1.1	-	3.0	29.8	5.0	1.1	6.0
4/4	295	295	-	-	-	1.5	0.6	-	2.1	25.2	4.1	0.6	4.7
5/1	457	457	457	0	0	0.0	0.7	-	0.7	5.6	1.5	0.7	2.2
5/2	458	458	458	0	0	0.0	0.7	-	0.7	5.6	1.5	0.7	2.2
6/1	123	123	-	-	-	0.0	0.0	-	0.0	0.4	0.0	0.0	0.0
6/2	417	417	-	-	-	0.0	0.0	-	0.0	0.2	3.3	0.0	3.3
7/1	261	261	-	-	-	0.4	0.0	-	0.4	5.4	1.1	0.0	1.1
7/2	349	349	-	-	-	2.1	0.0	-	2.1	22.0	5.0	0.0	5.0
8/2+8/1	480	480	-	-	-	1.1	0.3	-	1.4	10.7	2.3	0.3	2.6
9/1	197	197	-	-	-	0.5	0.2	-	0.7	13.5	1.3	0.2	1.5
9/2	413	413	-	-	-	1.4	0.7	-	2.2	18.9	3.7	0.7	4.4
10/1	251	251	-	-	-	0.7	0.0	-	0.7	9.4	3.4	0.0	3.4
10/2	250	250	-	-	-	0.7	0.0	-	0.7	9.4	3.4	0.0	3.4
11/1	407	407	-	-	-	1.5	0.0	-	1.5	13.6	6.1	0.0	6.1
11/2+11/3	680	680	-	-	-	1.7	0.0	-	1.7	8.9	7.3	0.0	7.3
12/2+12/1	807	807	-	-	-	3.5	3.8	-	7.3	32.7	5.6	3.8	9.5
12/3+12/4	802	802	-	-	-	3.3	3.9	-	7.2	32.3	4.6	3.9	8.5

Full Input Data And Results

13/1	222	222	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	516	516	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	448	448	-	-	-	1.0	0.3	-	1.3	10.2	4.9	0.3	5.2
15/1	512	512	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	599	599	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	591	591	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/2	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/1	686	686	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
17/2	437	437	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
18/1	832	832	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/1	321	321	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
19/2	302	302	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
20/1	25	25	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
			C1	PRC for Signalled Lanes (%):		0.8	Total Delay for Signalled Lanes (pcuHr):		21.75	Cycle Time (s):		60	
			C2	PRC for Signalled Lanes (%):		1.5	Total Delay for Signalled Lanes (pcuHr):		23.83	Cycle Time (s):		60	
				PRC Over All Lanes (%):		0.8	Total Delay Over All Lanes(pcuHr):		48.84				

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