

Transport Statement
November 2022



Reliance Street EV Charging Station

Reliance Street, Manchester, M40 3AG

Be.EV

Document History

JOB NUMBER: 3815/2022
DOCUMENT REF: Transport Assessment
REVISIONS: A

Revision	Comments	By	Checked	Authorised	Date
A	Team Draft	CG	JM	PE	29/11/2022

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1 Introduction

- 1.1 This Transport Assessment (hereinafter referred to as 'TA') has been prepared by EAS Transport Planning on behalf of Be.EV (hereinafter, the 'client') in support of a planning application for the development of an Electric Vehicle Charging Station, set at the corner of Reliance Street and Oldham Road, in Manchester.
- 1.2 The full address of the site is Reliance Street, Manchester, M40 3AG (the 'site'). The site is therefore located within the administrative boundaries of Manchester City Council ('MCC'). Transport for Greater Manchester ('TfGM') act as a consultee on planning applications in Manchester, being responsible for managing the local transport services.
- 1.3 Be.EV is the largest EV charging network provider across Greater Manchester, and are expanding at pace across the north of England. The client is therefore currently working on the development of EV charging hub schemes (and supporting commercial elements) in various cities in the north of England, including Manchester, Liverpool, Leeds, Carlisle, and elsewhere.
- 1.4 The client is also the framework provider for Manchester City Council's on street Electric Vehicle charging network, and has worked locally in Manchester for a number of years.
- 1.5 A map showing the location of the site is contained at **Appendix A**.

The Electric Vehicle Charging Station

- 1.6 It is worth noting that an Electric Vehicle Charging Station is a novel type of development, with only a handful of examples throughout the country, and the design and requirements for such facilities are still in their emerging phase, with visitor requirements and demands being unclear at this stage.
- 1.7 Having said so, it is worth pointing out that the concept of an Electric Vehicle Charging Station is becoming an ever increasingly important element of Highway Infrastructure, with continued significant growth in the number of Electric Vehicles ('EV') entering the UK market and subsequent public use, following the development of national and local policy to transition from the traditional Internal Combustion Unit ('ICU') powered vehicles, towards EVs.
- 1.8 The widespread development of EV charging infrastructure is therefore becoming a critical element to support this transition.

The Proposals on Site

- 1.9 The site itself comprises an area of land on the corner of the junction with Oldham Road and Reliance Street, approximately 1,337sqm in size. The development includes 16 fast-charging electric vehicle spaces including 2 charging spaces being designed to disabled standard and 2 EV charging spaces designed to enable use for larger LGV standards.
- 1.10 All parking spaces would therefore allow for the charging of EVs. Non-EVs, such as ICU vehicles will not be permitted to park within the site (unless they are on site for some other reason, such as servicing), and would be directed to leave the site.

- 1.11 Associated with the proposed charging station is a commercial unit of 175sqm in floor area. The commercial space will have a similar set up to a regular petrol station commercial unit where customers and visitors will be able to buy general snacks and coffees as well as use toilet facilities.
- 1.12 Whilst the concept is similar to a petrol filling station, the way the commercial space will be utilised is slightly different, since visitors will stay for longer durations more like a rest area, whilst the vehicle charges up. This is different to a petrol station where the commercial space is where customers enter after filling up to pay and which have a significantly higher turnover of customers compared to this proposal.
- 1.13 Included in the proposal will be a new access direct from Reliance Street. Whilst there is an existing access into the site from Reliance Street this will be closed and a new access designed at the centre of the site frontage to suit the proposed internal layout.
- 1.14 The existing access into the site from Oldham Road will also be closed as part of these proposals.
- 1.15 A proposed Masterplan for the scheme has been prepared and is contained at **Appendix B**.

Planning History of the Site

- 1.16 The site is not currently in use, but historical commercial use would still lawfully apply.
- 1.17 No recent planning applications have been submitted on this site, but various commercial use applications have been submitted on nearby sites on Reliance Street. In contrast, the land to the south of the site, immediately across Oldham Road is proposed to be developed into a residential-led mixed-use scheme of over 100 dwellings.
- 1.18 Historically the site was used as a petrol filling station, but this land-use has since elapsed.
- 1.19 A Highways Pre-application process has taken place with MCC and TfGM, discussing different arrangements for this proposal, and scoping the requirements for this TA report.
- 1.20 The notes resulting from these Highways Pre-app discussions are contained at **Appendix C**.

Structure of this Report

- 1.21 The Transport Assessment has been prepared in line with National Planning Policy Guidance including 'Travel Plans, Transport and Statements' published in 2014 by the Ministry of Housing, Communities and Local Government.
- 1.22 The contents of each section of this document are as follows:
- Section 2 – details the national and local policy context;
 - Section 3 – describes the existing site and baseline conditions;
 - Section 4 – describes the development proposals and access arrangements;
 - Section 5 – sets out the likely trip generation characteristics and describes the Highways Pre-app discussions;
 - Section 6 – provides a summary and the conclusions of the report.

2 Policy Background

Introduction

2.1 The policy documents reviewed include:

- National Planning Policy Framework
- Manchester City Core Strategy

National Planning Policy Framework

2.2 The revised National Planning Policy Framework ('NPPF') was published in July 2021 and sets out the government's planning policies for England and how these are expected to be applied.

2.3 Planning law requires that applications for planning permission be determined in accordance with the development plan unless material considerations indicate otherwise. The National Planning Policy Framework must be taken into account in preparing the development plan and it is a material consideration in planning decisions. Planning policies and decisions must also reflect relevant international obligations and statutory requirements.

2.4 The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs.

2.5 In respect of that, Paragraph 10 of the NPPF states:

*"So that sustainable development is pursued in a positive way, at the heart of the Framework is a **presumption in favour of sustainable development** (original emphasis)."*

2.6 Section 9 of the NPPF is focused on Promoting Sustainable Transport, and states in paragraphs 104 and 105:

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

- a) the potential impacts of development on transport networks can be addressed;*
- b) opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;*
- c) opportunities to promote walking, cycling and public transport use are identified and pursued;*
- d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and*
- e) patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.*

105. The planning system should actively manage patterns of growth in support of these objectives. 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. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."

- 2.7 Paragraphs 110 and 111 state that in assessing applications for development it should be ensured that:

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

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

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

- 2.8 Furthermore, paragraphs 112 and 113 continue:

"112. Within this context, applications for development should:

- a) 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;*
- b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
- c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
- d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
- e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.*

113. All developments that will generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a Transport Statement or Transport Assessment so that the likely impacts of the proposal can be assessed."

Manchester City Core Strategy

2.9 The MCC Core Strategy was adopted in July 2012.

2.10 Policy T1 'Sustainable Transport' states:

"To deliver a sustainable, high quality, integrated transport system to encourage modal shift away from car travel to public transport, cycling and walking, to support the needs of residents and businesses and to prepare for carbon free modes of transport, the Council will support proposals that:

- *Improve choice by developing alternatives to the car.*
- *Promote regeneration and economic vitality by relieving traffic congestion and improving access to jobs and services, particularly for those most in need and for those without a car.*
- *Improve access to transport services and facilities in order to enable disabled people and people with mobility impairments to participate fully in public life.*
- *Improve pedestrian routes and the pedestrian environment.*
- *Improve and develop further Manchester's cycle network (for example the Manchester Cycleway and the Trans Pennine Trail).*
- *Contribute to improvements to the extent and reliability of the public transport network through safe and attractive waiting and interchange facilities, better priority, improved services and information provision.*
- *Improve and develop appropriate road, rail and water freight transport routes and associated intermodal freight transport facilities in order to assist in the sustainable and efficient movement of goods.*
- *Facilitate modes of transport that reduce carbon emissions e.g by incorporating charging points for electric vehicles, subject to their appropriate design and location.*
- *Would reduce the negative impacts of road traffic, for example, congestion, air pollution and road accident casualties.*
- *Take account of the needs of road users according to a broad hierarchy consisting of, in order of priority:*
 1. *Pedestrian and disabled people*
 2. *Cyclists, public transport*
 3. *Commercial access*
 4. *General off peak traffic*
 5. *General peak time traffic"*

2.11 With mind to the above, it is relevant to note that the requirements for the incorporation of EV charging facilities within new development is considered essential. It is therefore only logical that EV charging facilities for the whole highway network will also be required to support EV transition, for drivers making longer trips as well as for network users making trips without having access to such charging infrastructure at either end (say at older developments, or at sites too small to support on-site parking).

2.12 Policy T2 'Accessible areas of opportunity and need' states that new development needs to follow certain parameters:

“The Council will actively manage the pattern of development to ensure that new development: -

- *Is located to ensure good access to the City's main economic drivers, including the Regional Centre, the Oxford Road Universities and Hospitals and the Airport and to ensure good national and international connections*
- *Is easily accessible by walking, cycling and public transport; connecting residents to jobs, centres, health, leisure, open space and educational opportunities. Particular priority will be given to providing all residents access to strategic employment sites including:-*
 - *Links between North Manchester residents and key employment locations, including the City Centre, Central Park, Salford Quays and Chadderton Industrial Estate and Trafford Park.*
 - *Links within East Manchester to employment locations, Central Park and Eastlands in particular.*
 - *Links within Central Area between residents and employment, the Corridor in particular and east/west connectivity for residents in Central Area to employment areas in Trafford and East Manchester.*
 - *Maintaining strong links between residential areas in the South and the Regional Centre and improving connectivity with the Airport.*
 - *Ensuring good links between Wythenshawe residents and the Airport and further employment opportunities in Stockport, Trafford and the Regional Centre.*
- *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. Elsewhere, all new development should provide appropriate car parking facilities, taking account of the guidance in appendix B, which reflects policy in the Regional Strategy (RS). In all parts of the City proposals should have regard to the need for disabled and cycle parking, in line with appendix B. If the RS is revoked the Council will continue to use these standards when applying this policy. Standards are set for two different area types:*
 - *District Centres*
 - *Areas not within the City Centre or District Centres*

The car parking standards are maximums and the cycle and disabled car parking standards are minimums. However the Council will take the circumstances of each proposal into account to establish what level of parking is appropriate.

- *Includes proportionate Traffic Impact Assessments and Travel Plans for all major applications and for any proposals where there are likely to be access or transport issues.”*

2.13 It is worth noting that the proposed scheme will actively support the local main economic drivers, through the provision of EV charging infrastructure in this part of the city, as well as being a rest area for drivers accessing the City Centre.

2.14 Policy DM1 'Development Management' states:

"All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:

- *Appropriate siting, layout, scale, form, massing, materials and detail.*
- *Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development. Development should have regard to the character of the surrounding area.*
- *Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.*
- *Accessibility: buildings and neighbourhoods fully accessible to disabled people, access to new development by sustainable transport modes.*
- *Community safety and crime prevention.*
- *Design for health.*
- *Adequacy of internal accommodation and external amenity space.*
- *Refuse storage and collection.*
- *Vehicular access and car parking.*
- *Effects relating to biodiversity, landscape, archaeological or built heritage.*
- *Green Infrastructure including open space, both public and private.*
- *The use of alternatives to peat-based products in landscaping/gardens within development schemes.*
- *Flood risk and drainage.*
- *Existing or proposed hazardous installations.*
- *Subject to scheme viability, developers will be required to demonstrate that new development incorporates sustainable construction techniques as follows (In terms of energy targets this policy should be read alongside policy EN6 and the higher target will apply):*

b) For new commercial developments to demonstrate best practice which will include the application of the BREEAM (Building Research Establishment Environmental Assessment Method) standards. By 2019 provisions similar to the Code for Sustainable Homes will also apply to all new non-domestic buildings."

3 Existing Site Conditions

Existing Site Function and location

- 3.1 The site is currently formed of a hard standing surface bordered by Oldham Road (A62) to the south and Reliance Street to the east. There is a residential apartment block immediately to the west of the site with Pound Stretcher/The Pet Hut commercial units' car park to the North. The site is currently fenced around the perimeter with gated access in the north eastern corner onto Reliance Street greenfield agricultural site. The south of the site is bound by Oldham Road, with a new residential-led mixed-use scheme under development across the road.
- 3.2 The site was a former petrol station. In 2013 permission was granted for the subdivision of an existing retail warehouse unit into two separate units. The site became vacant and has been so for a number of years.
- 3.3 In terms of the wider location, the site is within Manchester's M60 Boundary, to the northeast of Manchester City Centre. The area is predominantly retail and industrial, with Oldham Road being a key link from Oldham to Manchester City Centre. Whilst the area is mainly retail and commercial, to the west of the site are residential apartment blocks and properties.

Local Highway Network

- 3.4 Reliance Street, which borders and provides access at the site's eastern boundary, is a cul-de-sac, approximately 300m in length, which links to Oldham Road at the southern-most point. Reliance Street provides connection to a selection of facilities and businesses including the Pound Stretcher/Pet Hut outlets and a selection of small business office areas and industrial units along with a Recycling Waste Centre set at its northern end, to the north of the tram line, which Reliance Street bridges over. Reliance Street is subject to 30mph with footways on either side of the carriageway throughout.
- 3.5 Oldham Road, which borders the southern boundary of the site and provides access to Reliance street is a four-lane single carriageway key arterial road in north-east Manchester, linking the centres of Manchester and Oldham. Locally, Oldham Road is subject to a 30mph speed limit and provides connections from the M60 Junction 22 to the north east.
- 3.6 Existing stopping and loading restrictions apply on Oldham Road (A62), including a double yellow line along the section of site frontage incorporating single yellow kerb markings.
- 3.7 To the south-west, Oldham Road links into Manchester City centre reaching near Manchester Piccadilly and Manchester Victoria Railway Stations. Oldham Road connects to the City Centre ring road at Great Ancoats Street/Swan Street (A665), partially as the A57(M), which surrounds Manchester City Centre.
- 3.8 The site is in a key location in terms of transport links, it is approximately 3.5km from junctions 22 and 21 of the M60 which serves as an orbital route around Manchester and provides links to other key transport networks.

Local Facilities

- 3.9 With the site being situated in a predominantly commercial and industrial area, there are a range of facilities within walking distance. Table 3.1 below highlights the facilities and their walking times from the site.

	Distance (meters)	Time walking (mins)	Cycling time
Bus Stop	30m	<1 minute	< 1 Minute
Pound Stretcher	60m	1 Minute	< 1 Minute
Lidl Supermarket	120m	1 minute	< 1 Minute
Farmfoods, Frozen Food Store	200m	2 minutes	1 Minute
Health Centre	210m	5 minutes	1 Minute
McDonald's	230m	3 minutes	1 Minute
Public House	350m	4 minutes	1 Minute
Tram Stop (Newton Heath & Moston)	450m	5 minutes	2 Minutes
Old Church Street Shop Parade (incl. Cafes, Bank, Takeaways, news agent)	500m	6 minutes	2 Minutes

Table 3.1 – Local facilities within walking distance of the site based on a walking speed of 80m per minute.

- 3.10 As can be seen from the table there are a variety of facilities as well as sustainable means of transport close to the site. Whilst the proposed scheme is unlikely to generate many trips via public transport, staff and maintenance personnel could use these services, and customers would also be able to make use of the facilities around the site when visiting.

Public Transport Facilities

- 3.11 In terms of sustainable transport links near to the site, there is presently a Tram Stop approximately 400m (5-minute walk) from the site, known as Newton Heath & Moston, and a variety of bus stops along Oldham Road, including one opposite the junction of Reliance Street and Oldham Road.
- 3.12 Newton Heath & Moston metro station is approximately 450m from the site (5-minute walk). The station forms part of the Pink Line which provides Trams every 6 minutes to Shaw and Crompton and Rochdale Town Centre. The station provides key connections into Manchester City Centre being 3 stops from Manchester Victoria, a major train station in Manchester.
- 3.13 The Pink line provides connections to all other Tram lines across Manchester as well as East Didsbury, Chorlton, Deansgate-Castlefield, Victoria, Westwood, Oldham and Rochdale.
- 3.14 A map highlighting the Tram Line route has been contained at **Appendix D**.
- 3.15 The nearest bus stop to the site is Oldham Road (G) which is across the road from the junction of Reliance Street and Oldham Road. These pair of bus stops provide access to services 83, 84, and 709. Newton Heath and Moston Metrolink bus stop can be accessed next to the Tram Line station and this stop provides further services including, 52 Orbits, 181, 182, 688, 704, 708, 709, 711, 724 and 726. A summary of the nearest services is explained below:

- Bus route 83 provides a regular service into Oldham from Piccadilly Gardens in the centre of Manchester. It provides a bus service approximately every 15 minutes during peak hours, and runs between the hours of 04:30 and 00:00 every day;
- Bus route 84 provides a regular service between Piccadilly Gardens, Hollinwood, Oldham, Lees and Uppermill. It provides a bus approximately every 10 minutes during peak hours, and runs between the hours of 05:00 and 00:00 every day; and
- Bus route 709 provides a limited service once a day at 07:00 between Moston, Failsworth, Newton Heath and New Islington.

3.16 With the selection of bus routes within walking distance the site is considered to be located sustainably.

Road Safety

3.17 A review of local personal injury road traffic accidents in the last five years, between 2017 and 2021 (inclusive), has been undertaken using the data contained in Crashmap. The Crashmap portal contains records of personal injury accidents including the location and appropriate accident factors. These are then classified as slight, serious or fatal. All information is transposed from official local government accident records.

3.18 Figure 3.1 below shows the location of recorded collisions locally:

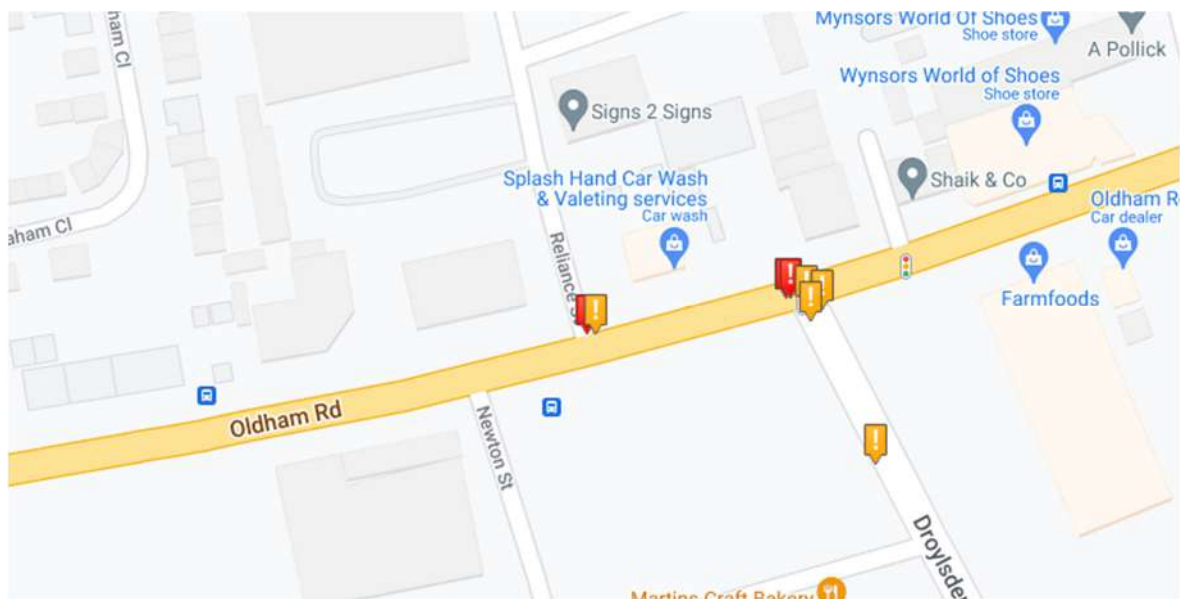


Figure 3.1: Crashmap - Location of personal injury and traffic accidents

- 3.19 The Crashmap record highlights 2 accidents at the junction with Reliance Street and Oldham Road. A further 5 occurred at the signal junction with Droylsden Road and Oldham Road.
- 3.20 One accident which occurred at the junction of Oldham Road with Reliance Street was classified as a serious injury. This accident occurred during February 2018 at approximately 10:00am. The accident involved one elderly driver turning right and colliding with a vehicle travelling forward along Oldham Road.

- 3.21 The second accident at this junction was classed as a slight injury and also occurred in February 2018 at approximately 1pm. The accident again involved one vehicle waiting to turn right (across two-lanes) and colliding with another vehicle travelling along Oldham Road.
- 3.22 Of the five accidents that occurred on the signal junction of Oldham Road and Droylsden Road, two generated injuries which classified as serious. The first serious accident occurred in October 2019 at approximately 7pm. The accident involved a vehicle in the act of turning right colliding with a cyclist.
- 3.23 The second serious accident occurred in September 2021 at approximately 6pm. The accident involved a motorcycle and a car traveling in a straight line however held up in traffic. It is unclear from the report who is at fault for this accident.
- 3.24 For the three slight accidents, the first accident occurred in December 2017 at approximately 3pm. The accident involved two vehicles colliding whilst one was in the act of turning right and the other was driving in a straight line.
- 3.25 The second slight accident occurred in August 2018 at approximately noon. The accident involved two vehicles traveling in a straight direction and colliding with each other.
- 3.26 The final slight accident occurred in September 2020 at approximately 9pm. This accident involved two vehicles in the act of turning right who collided with each other.
- 3.27 Full CrashMap data reports have been contained at **Appendix E**.
- 3.28 Due to the nature of the accidents it should be considered that the junction with Reliance Street and Oldham Road is safe, having only 2 accidents occurring over the last 5-year period.

4 The Proposed Development

Site Location and Context

- 4.1 The site comprises an area of land on the corner to the junction with Oldham Road and Reliance Street, approximately 1,337sqm in size.
- 4.2 The development itself proposes a 16-space Fast-charge Electric Vehicle Charging Station, including 2 spaces being designed to disabled standard and 2 spaces designed to cater for larger LGV standards.
- 4.3 Associated with the proposed charging station is a commercial unit of 175sqm in floor area. The commercial space will have a similar set up to a regular petrol station where customers and visitors will be able to buy general snacks and coffees as well as use toilet facilities. A bin store and other ancillary service areas are also proposed as part of this unit.
- 4.4 Included in the proposal will be a new (replacement) access direct from Reliance Street. The existing access into the site from Reliance Street this will be closed and moved to the centre of the site to suit the proposed internal layout.
- 4.5 A second existing access into the site off Oldham Road is also proposed to be closed and blocked as part of the proposals.
- 4.6 The proposed masterplan is contained at **Appendix B**.

Vehicular Access

- 4.7 A new vehicle access is proposed as part of the development adjacent to the existing access on Reliance Street. The existing access will be closed to traffic and converted to standard full-height footway.
- 4.8 The new access has been designed with a 6m wide carriageway, and includes 1.5m kerb radii.
- 4.9 The internal design of the site forms a roundabout island with a proposed clockwise one-way system preventing any conflict with passing traffic. The circulatory aisle width is set at 5 metres.
- 4.10 Site access and internal swept path analysis demonstrating the above has been contained at **Appendix F**.
- 4.11 Full 2.4m x 43m visibility splays can be achieved to the north, whilst full visibility up to the junction of Oldham Road and Reliance Street is achieved to the south. Visibility of 43m is required in accordance with Manual for Streets for a design speed of 30mph.
- 4.12 A visibility splay drawing has been contained at **Appendix G**.
- 4.13 In order to limit the site access being blocked by traffic build up on Reliance Street, it is proposed to install 'Keep Clear' road markings on the carriageway outside of the access. It was noted by one local councillor during pre-submission consultation meetings that on very rare occasions, there has been traffic build up along the full length of Reliance Street, when the main access of the Recycling facility is temporarily closed off for a long time (during

normal hours). This proposed road marking would avoid vehicles from being held up at the site access itself.

Pedestrian and Cycle Access

- 4.14 Improvements to the pedestrian access and local routes will automatically result due to the amendments being proposed. Full dropped kerb and tactile paving will be included across the site frontage. A circulatory pedestrian route adjacent to the vehicle route approximately 1m in width within the site is also available allowing pedestrians to walk off the carriageway and aisle towards the facilities.
- 4.15 A further pedestrian route surrounding the parking spaces circa 1.5m in width is also available allowing customers to walk around the vehicle rather than nearer the aisle.
- 4.16 The closure of the existing access off Reliance Street will be replaced with a full height footway.
- 4.17 Finally a pedestrian access directly off Oldham Road, to the side of the commercial units is also proposed. This will allow pedestrians and cyclist approaching from the west to access the site whilst avoiding the need to walk or cycle near to the vehicle charging area.
- 4.18 Cycle parking for 10 bicycles using 5 Sheffield stands, and an electric cycle charging facility, will be provided in this location.

Servicing and Deliveries

- 4.19 All servicing will take place from the road side as present with most lots of properties along Reliance Street and Oldham Road. Servicing will be undertaken at night when neighbouring units are closed to the public meaning neighbouring customers would not be affected.
- 4.20 Drivers of scheduled deliveries, such as waste collection and regular deliveries will be made aware of the existing stopping and servicing restrictions on Oldham Road.
- 4.21 A Bin store has been highlighted on the masterplan. Bins will be moved to a collection point to the north of the main site access on collection day and moved back into the bin store following collection.
- 4.22 Delivery vehicles, such as those used by courier or parcel services are much smaller than the refuse vehicle and therefore would have no issue serving the site and arriving and departing in a forward gear. Smaller delivery vehicles will be able to make use of the circulatory route within the site. Larger deliveries will be made from the site frontage with waiting on Reliance Street available.
- 4.23 A barrier will be present at the site frontage highlighting the height restriction within the site due to the canopy structure covering the charging points. The initial scheme proposes a roof clearance of 3.0m.

Summary

- 4.24 It is proposed to develop the site into an EV Charging Station, including 16 spaces, 2 spaces of which are proposed to be allocated for disabled visitors (including the access zone to design standards), and two spaces designed for larger vehicles.

- 4.25 It is proposed to amend the existing access points into the site, and install a new vehicle access. The new access is proposed to be placed centrally along the site frontage on Reliance Street. The existing accesses will be closed and blocked off. Swept path analysis and junction visibility has been demonstrated to meet required standards.
- 4.26 Pedestrian and cyclist access will also be available from a separate access via Oldham Road, where cycle parking with electric charging will be provided.
- 4.27 Refuse collection will take place from Reliance Street, where bins will be moved to a holding point on collection day.
- 4.28 Other servicing by smaller vehicles would be from within the site.

5 Transport Impact

Introduction

- 5.1 This section reviews the trip generation for the proposed development.

Forecast Development Trip Generation

- 5.2 As the site has no current use there are no trips related to the existing land use.
- 5.3 Due to this being a relatively new land use and novel type of development there are not yet any similar sites within the TRICS database from which to assess trip rates. A discussion regarding this has been undertaken through Pre-application Advice, with MCC and with TfGM regarding the appropriate trip generation figures to be used in this instance.
- 5.4 Whilst the proposals are somewhat similar to a Petrol Filling Station ('PFS'), the EV charging site will operate in a slightly different manner. In this regard, the main difference of an EV Charging Station from a PFS is actually the increase in the amount of time required to charge up a vehicle. This naturally results in a lower trip generation to and from the site.
- 5.5 In this regard, whilst at a PFS, one can arrive, fill up the car, pay and leave within less than five minutes, it is expected that typical EV charging durations will be of circa 15 to 20 minutes based upon the client's past experience at smaller sites.
- 5.6 It is also anticipated by the client that if more than a third of the EV charging spaces are in use at any one point in time, it is likely that charging speed for vehicles will be lower than the maximum fast-charging capacity of the site, as the power demand from the local network would likely outstrip supply, and cars would take longer to charge to the desired levels overall. This would naturally slow down the number of spaces coming back available, and thereby the trips generated to and from the site.
- 5.7 Finally, whilst 16 spaces are being provided on site, the future demand for EV charger sites is clearly unknown. It is clear, from initial market use, that most EV drivers would charge their vehicles at home, at night time when cars are generally not being used. It is anticipated by the client that at this early stage, usage of each bay will be quite low, and the total of 16 spaces are being provided both to market the availability of such facilities for non-EV owners, and to allow for future changes in parking capacity (which is not yet known).
- 5.8 In this regard, a thorough discussion on suitable trip rates has been undertaken with the local highways authority through the Pre-app process, who suggested that a survey of a similar facility would provide a better understanding of such a trip rate. A similar facility was identified and surveyed in this regard, and the surveyed trip rate has been discussed through further Pre-app discussions.

Surveyed Trip Generation

- 5.9 A survey of another (smaller) EV Charging Facility was undertaken in May 2022, to assess the potential demand for a similar site.
- 5.10 The Pre-app discussion notes are contained at **Appendix C**.

- 5.11 It was concluded that a trip rate of 1.813 in one hour would be generated by each charger unit. A global trip rate was agreed more reasonable to minimise the variation in arrivals and departures, which would be expected to be somewhat consistent over each hour.
- 5.12 Based upon this trip rate, it would be expected that the site would generate 29 trips to or from the site per hour.
- 5.13 It is noted that during the above survey, the spaces within that site were found to be occupied just over 30% of the time during the surveyed hours, and occupancy varied over time.
- 5.14 It has also been noted by the client that 30% occupancy is the highest usage levels whereby the fast chargers adopted on site would be able to provide their full power output. Whilst there is some potential for an increase to the above number in the future, it would be expected that any increase is significantly limited due to the limited additional power which would be available for charging beyond this level of occupancy, and if more vehicles than this would turn up at one go, charging times will get longer, with spaces becoming available less frequently.
- 5.15 It is therefore concluded that as a baseline, we can assume that the scheme would generate in the order of 30 trips, or one trip every two minutes, arriving or leaving the site during each of network peak hours.

Pass-by and Diverted Trips

- 5.16 It should also be noted that quick stopover commercial sites set on busy roads, such as Services sites (which typically include a PFS), or in this case, an EV charging station, would typically attract a significant number of pass by trips or diversion trips. These trips are part of the total number of trips surveyed at other similar sites, and discussed above.
- 5.17 In summary, pass-by and diverted trips, which can be defined as non-primary trips, are defined within TRICS Research Report 95/2.
- 5.18 Pass by trips are already on the local junctions and passing the site on their way to other destinations. From a traffic assessment point of view, these should typically be taken off the existing network as they are already 'existing trips'.
- 5.19 Diverted trips are slightly different as they are trips not travelling directly past the site, but within the vicinity and therefore only impacting the immediate traffic network and not the wider network.
- 5.20 The TRICS report concludes, within paragraph 4.3, that:
"The proportion of trips generally accepted to be non-primary is 30%. Most of the non-primary trips tend to be home-work-site-home and hence values are generally lower than this at weekend when there is less home commuting but could be higher on a Friday evening but not exceeding 40%."
- 5.21 It is traditionally very difficult to predict the split of pass by and diverted trips for individual commercial sites, as these will vary significantly from one location to another. It is even harder to judge in this instance due to this being the first major EV charging hub in the north-east region of Manchester. It is possible that it will attract EV traffic from within the surrounding areas, who do not have the facility to charge at home or at work, and therefore

need to use the site for day to day charging but being local do not strictly use the A62 to visit the site.

- 5.22 To retain a robust argument, we have assumed only 30% of trips would be diverted off the A62, with the remaining 70% of visits being new (additional) trips to the network.

Further Analysis

- 5.23 On the basis that the site will generate circa 30 trips, of which at least 30% would be pass-by or diverted trips, it was agreed with MCC and TfGM that junction modelling would not be needed.
- 5.24 In any case, junction modelling of the junction of Reliance Street with Oldham Road was undertaken on a preliminary version of the scheme, to inform the initial Pre-app discussion. The modelling undertaken partially utilised PFS data with much higher trip rates. Even in this instance the junction remained well below theoretical capacity thresholds.
- 5.25 It is therefore concluded that the impact to the local highway by the said scheme will be negligible.

Summary

- 5.26 A review of the impacts generated by the scheme has been undertaken, and due to being a novel type of development, a discussion has been undertaken through Pre-application Advice, with MCC and with TfGM regarding the appropriate trip generation figures to be assumed.
- 5.27 A survey of a smaller but similar site was recommended, located to the south-west of Manchester City Centre. From the results it was agreed that it is likely that the site would generate less than one new trip every two minutes.
- 5.28 Furthermore, a significant percentage of trips are likely to be pass-by or diverted trips, and so it can be concluded that the impact by the said development is negligible in the context of the overall local traffic demand, and well within the daily variations of traffic using the nearby highway.

6 Summary and Conclusions

- 6.1 This Transport Assessment has been prepared by EAS Transport Planning on behalf of Be.EV in support of a planning application for the development of an Electric Vehicle Charging Station, set at the corner of Reliance Street and Oldham Road, Manchester, M40 3AG.

Summary

- 6.2 It is proposed to redevelop a former commercial site of approximately 1,337sqm in size into An EV Charging Station, includes 16 electric vehicle charging spaces including 2 charging spaces being designed to disabled standard and 2 EV charging spaces designed to larger LGV standards. An ancillary commercial unit of 175sqm, similar in set up to a regular petrol station commercial unit where customers and visitors will be able to buy general snacks and coffees as well as use toilet facilities.
- 6.3 Unlike petrol filling stations, the commercial space will be used more as a rest area, whilst the vehicle charges up, allowing customers to sit in and wait.
- 6.4 In this regard, whilst at a PFS, one can arrive, fill up the car, pay and leave within less than five minutes, it would be expected that typical EV charging durations to be of circa 15 to 20 minutes from the client's past experience at smaller sites.
- 6.5 It is also anticipated by the client that if more than a third of the EV charging spaces are in use at any one point in time, it is likely that charging speed for vehicles will be lower than the maximum fast-charging capacity of the site, as the power demand from the local network would likely outstrip supply, and cars would take longer to charge to the desired levels overall. This would naturally slow down the number of spaces coming back available, and thereby the trips generated to and from the site.
- 6.6 The proposal includes a new access directly from Reliance Street. The existing access into the site from Reliance Street this will be closed and a new access designed to the centre of the site to suit the proposed internal layout. The existing access into the site from Oldham Road will also be closed as part of these proposals.
- 6.7 The new site access has been designed with a 6m wide carriageway, and includes 1.5m kerb radii. The internal design of the site is set up around a roundabout island with a clockwise one-way system meaning there will be no conflict with passing traffic on the site, and when a vehicle is charging within a bay there will be enough room for passing by other circulating vehicles.
- 6.8 Full 2.4m x 43m visibility splay can be achieved to the north (in line with guidance), whilst full visibility up to the junction of Oldham Road and Reliance Street to the south.
- 6.9 Improvements to the pedestrian access will be made with the construction of the new vehicular access, including a full dropped kerb and tactile paving across the site frontage, a circulatory pedestrian route adjacent to the vehicle route within the site, a further pedestrian route surrounding the parking spaces, and a pedestrian access directly off Oldham Road, to the side of the commercial unit is also proposed from the west. Cycle parking and an electric cycle charging facility will be provided in this latter location.

- 6.10 Servicing is proposed to be undertaken via Reliance Street, where bins will be moved to a holding point on collection day.
- 6.11 A Highways Pre-application process on the proposals have taken place with MCC and TfGM, discussing different arrangements for this proposal, and scoping the requirements for this TA report.
- 6.12 The proposed scheme is in line with national and local policy, in supporting the rollout of EV on the local highway network, through providing the supporting infrastructure for such vehicles to charge on longer trips or where this is not possible at the trip start location or end destinations.
- 6.13 The site is set within a sustainable location, with access to nearby bus and tram services, which will allow staff to travel to and from the site using a sustainable mode of travel. Various residential areas are present around the site.
- 6.14 The A62 is an important local arterial route, linking Oldham and the M60 J22, to Manchester City Centre via the north-east of the city. It is therefore concluded that the site is ideally placed to support vehicular traffic.
- 6.15 A thorough discussion on suitable trip rates has been undertaken with the local highways authority through the Pre-app process, who suggested that a survey of a similar facility would provide a better understanding of such a trip rate.
- 6.16 It was then concluded that a trip rate of 1.813 trips to or from the site were generated by each charger unit. Based upon this trip rate, it would be expected that the site would generate 29 trips to or from the site per hour. This is based upon c. 30% occupancy noted within the survey.
- 6.17 It was also noted by the client that 30% occupancy is the highest usage levels whereby the fast chargers adopted on site would be able to provide their full power output. It is also anticipated by the client that if more than a third of the EV charging spaces are in use at any one point in time, it is likely that charging speed for vehicles will be lower than the maximum fast-charging capacity of the site, as the power demand from the local network would likely outstrip supply, and cars would take longer to charge to the desired levels overall. This would naturally slow down the number of spaces coming back available, and thereby the trips generated to and from the site.
- 6.18 It is therefore concluded that as a baseline, we can assume that the scheme would generate in the order of 30 trips, or one trip every two minutes, arriving or leaving the site during each of network peak hours.
- 6.19 It should also be noted that quick stopover commercial sites set on busy roads, such as PFS sites, or in this case, an EV charging station, would typically attract a significant number of pass by trips or diversion trips.
- 6.20 On the basis that less than the site will generate circa 30 trips, of which 30% (or at least, a very significant portion) would be pass-by or diverted trips, it was agreed with MCC and TfGM that junction modelling would not be needed.
- 6.21 It can therefore be concluded that the impact by the said development is completely negligible in the overall local traffic demand, and well within the daily variations of traffic using the nearby highway.

Conclusion

- 6.22 The proposed development has been designed to provide an essential infrastructural highway element to support the transition to the use of EVs.
- 6.23 The site is located within close proximity to residential areas and there are a range of facilities nearby that can provide access to the site through sustainable modes of travel. The site is therefore located within a sustainable location.
- 6.24 The proposal meets the relevant regional and local transport policy requirements and therefore should be acceptable in these terms.

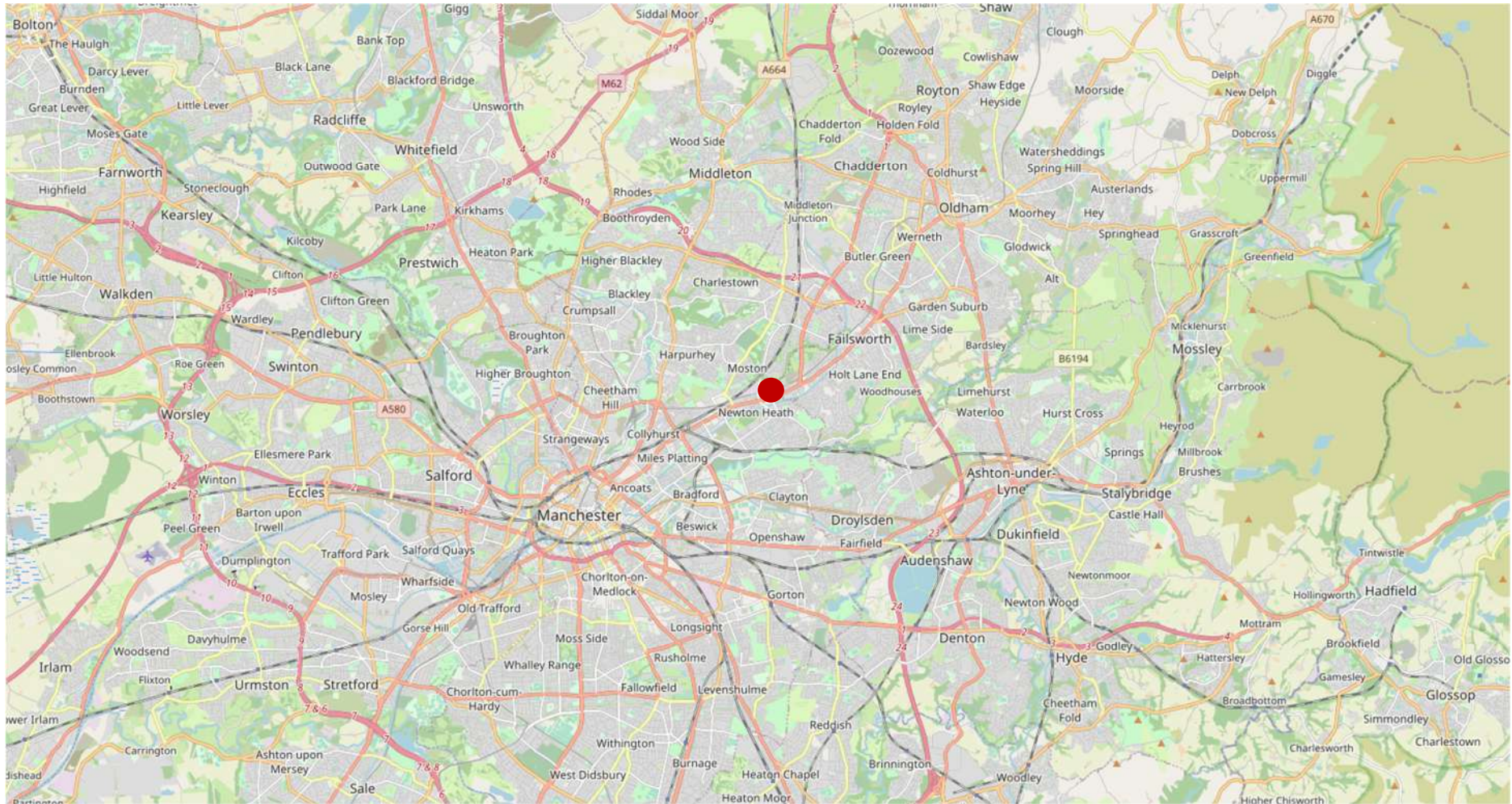
Appendices

Appendix: A – Location Plan
Appendix: B – Proposed Development
Appendix: C – Pre-app Discussions
Appendix: D – Metrolink Map
Appendix: E – Crashmap Data
Appendix: F – Swept Path Analysis
Appendix: G – Visibility Splay Drawings

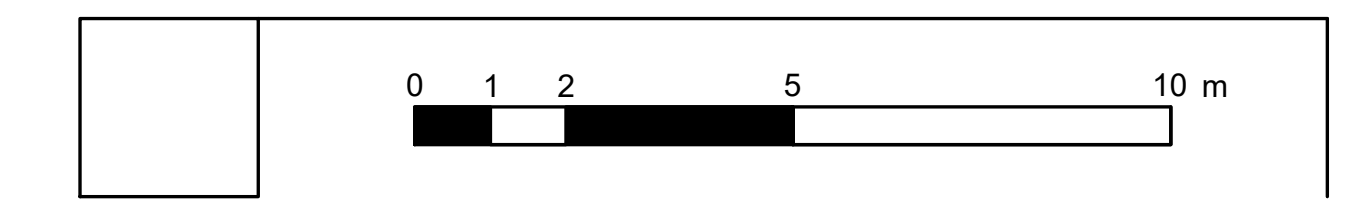
Appendix: A – Location Plan

Site Location Plan

● - Site Location Plan



Appendix: B – Proposed Development



— · — Canopy Overhead

Slot Drain

Charging Spaces

 Air Handling Unit

Awaiting information on separation distances

[illegible]

Appendix: C – Pre-app Discussions

Manchester City Council
PO Box 532
Town Hall
Manchester
M60 2LA



By Email: jennifer.atkinson@manchester.gov.uk

16th March 2022

Unit 23 The Maltings
Stanstead Abbots
Hertfordshire SG12 8HG

Tel 01920 871 777
e: contact@eastp.co.uk
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Dear Sir or Madam,

Pre-application Advice for Proposed Electric Vehicle Charging Station at Reliance Street, Manchester

EAS Transport Planning have been appointed by Iduna to request Highways advice in conjunction with the Pre-application advice from Manchester City Council (MCC) for the proposed development of an Electric Vehicle charging station at the site set at corner of Reliance Street and Oldham Road, Manchester M40 3AG. Corresponding drawings have been contained within this document.

Site Location

The site in question is a former petrol station which has been demolished and is currently an empty hardstanding surface bordered by Oldham Road (A62) to the South and Reliance Street to the East. There is a residential apartment block to the west of the site with Pound Stretcher / The Pet Hut commercial's car park to the north. The site is currently fenced around the perimeter with gated access in the north eastern corner onto Reliance Street.

A location plan has been contained within **Appendix A**.

In 2013 permission was granted for the subdivision of an existing retail warehouse unit into two separate units however this never came into fruition, and the site has been vacant for a number of years.

The site is located within Manchester M60 boundary, to the northeast of Manchester city centre. The area is a predominantly retail and industrial zone, with Oldham Road being a key link from Oldham to Manchester City Centre. Whilst the area is mainly retail and commercial in use, to the west of the site there are residential apartment blocks and properties.

The site is in a key location in terms of transport links, it is approximately 3.5km from junctions 22 and 21 of the M60 which serves as an orbital route around Manchester, and provides links to other key transport networks. Oldham Road continues west into the centre of Manchester finally ending at the junction with Great Ancoats Street. The large town of Oldham can also be accessed just north of junction 22 with the site being situated between this town and the city centre of Manchester.

In terms of sustainable transport links near to the site, there is presently a Tram Stop approximately 400m (5-minute walk) from the site, known as Newton Heath & Moston, and a variety of bus stops along Oldham Road, including one opposite the junction of Reliance Street and Oldham Road.

Newton Heath & Moston Tram Stop is served by the Pink Line service providing links between Rochdale Town Centre, Oldham Centre, Victoria Station, Exchange Square and East Disbury as well as providing connections to the alternative Tram Lines across Manchester.

A map highlighting the Tram Line Route has been contained at **Appendix B**.

The nearest bus stop to the site is Oldham Road (G) which is opposite the junction of Reliance Street and Oldham Road. This stop provides an 83, 84, 709 and X84. Newton Heath and Moston Metrolink bus stop

can be access next to the Tram Line station and this stop provides further services including, 52 Orbits, 181, 182, 688, 704, 708, 709, 711, 724 and 726. A summary of the nearest services is explained below:

- Bus route 83 provides a regular service into Oldham from Piccadilly Gardens in the centre of Manchester. It provides a bus services approximately every 15 minutes during peak hours, and runs between the hours of 04:30 and 00:00 every day;
- Bus route 84 provides a regular service between Piccadilly Gardens, Hollinwood, Oldham, Lees and Uppermill. It provides a bus approximately every 10 minutes during peak hours, and runs between the hours or 05:00 and 00:00 every day;
- Bus X84 provides a limited services between Carrcote, Uppermill, Lees and Manchester twice a day at 08:00 and 17:33 Monday – Friday; and
- Bus route 709 provides a Limited service once a day at 07:00 between Moston, Failsworth, Newton Heath and New Islington.

With the site being situated in a predominantly commercial and industrial area, there are a range of facilities within walking distance. Below is a table highlighting the facilities and their walking time from the site.

Facility	Distance	Walk Time	Cycle time
Bus Stop	30m	< 1 minute	< 1 minute
Pound Stretcher	60m	1 minute	< 1 minute
Lidl Supermarket	120m	1 minute	< 1 minute
Farmfoods, Frozen Food Store	200m	2 minutes	1 minute
Health Centre	210m	5 minutes	1 minute
McDonalds	230m	3 minutes	1 minute
Public House	350m	4 minutes	1 minute
Tram Stop	450m	5 minutes	2 minutes
Old Church Street Shop Parade (incl. Cafes, Bank, takeaway, news, news agent)	500m	6 minutes	2 minutes

Table 1 Local Facilities

As can be seen from the table there are a variety of facilities as well as sustainable means of transport for the site. Whilst the proposed scheme is unlikely to generate many trips via public transport, staff and maintenance personnel could use these services, and customers would also be able to make use of the facilities around the site when visiting. Further information on the proposals have been discussed in later sections of this note.

Both Oldham Road and Reliance Street are subject to 30mph with footway facilities on both sides of the carriageway. Oldham Road has double yellow lines on either side along the local stretch of road whilst Reliance Street includes no parking restrictions beyond its junction with Oldham Road.

Proposed Development

The proposal includes the development of an electric vehicle charging station, with connected commercial space the site includes a total of 14 parking spaces with 12 of which public charging stations and 2 staff parking spaces. The site is proposed to include 8 Ultra Rapid charging stations, 2 van compliant stations, 1 charging with water and air facilities, 1 accessible charging station and 2 staff parking one of which being accessible. A dedicated area for charging of electric cycles is also proposed, at the north-eastern corner of the site. An electric sub-station is also proposed to be installed on the site, and will share a servicing area with the staff.

The commercial space is proposed to be 118sqm in size and will be a similar set up to petrol stations where customers and visitors will be able to buy general snacks and coffees and use toilet facilities. Whilst this set up is quite similar to a regular petrol station with a retail element, it will be used in a slightly different manner. As a regular petrol station operates in the sense of filling up the vehicle then entering the store and paying. With electric vehicles these will be plugged in, and customers will then enter the store and wait for charging to finish. The commercial space will therefore be used as a waiting room, with customers being able to purchase a refreshment, whilst their vehicles are charging.

Access to the site is to be taken directly off Reliance Street. This arrangement is similar to the existing set up, however the proposed access is being moved slightly to the south of the existing access. The site layout itself will be set up similar arrangement to a roundabout, with parking spaces and commercial facilities on the outside and the middle being landscaping allowing vehicles to move around clockwise. Having the site set up like this allows all spaces to be easily accessed and turning on site available allowing all vehicles to enter and exit the site in forward gear.

Proposed Masterplan has been contained at **Appendix C**.

Proposed Highway Arrangement

A new vehicle access is therefore proposed to be installed along Reliance Street adjacent to the existing access, which would be taken up. The access has been designed with a 6m wide carriageway, and includes 1.5m radii onto Reliance Street. As the design of the internal is set up as a roundabout with a clockwise one way system this means there will be no conflict with passing traffic on the site. The circulatory aisle width is also 6 metres in internal kerb radius, meaning should a vehicle be waiting for a bay there will be enough room for passing.

Swept path analysis of the access and circulatory route have been contained within **Appendix D**.

Full 2.4m x 43m visibility splay has been illustrated in accordance with Manual for Street and a design speed of 30mph. To the north along Reliance Street there is full 43m from 2.4m behind the carriageway edge, visibility and to the south there is full visibility up to the junction with Oldham Road, spanning 15.6m from 2.4m behind the carriageway edge. As traffic turning into Reliance Street will be traveling slowly this should be deemed acceptable.

The Visibility Splay drawing has been contained at **Appendix E**.

Trip Generation – Petrol Filling Station

As the site has no current use there are no trips related to the existing land use. Whilst the proposals are similar to Petrol Filling Stations, the EV charging site will operate in a slightly different manner with an increase in the amount of time required to charge up a vehicle. Because of this, the TRICS analysis has been interrogated for petrol filling stations with some factorisation to account for the time and availability of charging points.

For comparison, a breakdown of the TRICS analysis for a Petrol filling station of comparable scale has also been shown below.

The following filters were applied to TRICS in order to find the most suitable sites to form a comparison.

- Petrol Filling Stations with Retail
- all location excluding Scotland and Wales
- Sub Urban Areas

Through these database filters, 2 sites were selected. The first site was an Esso filling station with a Co-op retail unit in Knaresborough, and the second site was a Texaco again with a Co-op unit in Birmingham. Both sites were analysed further on Google Maps, to confirm the location was similar to the Manchester site.

The following trip rates were obtained from the TRICS results.

	AM Peak hour (8-9am)			PM Peak hour (5-6pm)			Day (6am-10pm)		
	In	Out	Total	In	Out	Total	In	Out	Total
Petrol Filling Station Trip rate (/unit)	10.500	10.250	20.750	9.250	9.313	18.562	126.063	126.188	252.251
12 Electric Vehicle Charging bays	126	123	249	111	112	223	1513	1514	3027

Table 2 Petrol Filling Station TRICS Data

As can be seen from the results a petrol station would generate a significantly higher level of traffic with 249 movements in the AM peak and 223 movements in the PM peak. A total daily flow of 3027 trips would be assumed from a similarly sized petrol filling station.

Full TRICS data can be found contained at **Appendix F**.

Trip Generation – Electric Vehicle Charging Station

As the Electric Vehicle charging station is a very new market there is still a level of assumption and extrapolation when it comes to predicting trips. The Client who has now worked within the Electric Vehicle charging stations for a number of years, and have existing sites in Manchester. They have therefore provided an insight into their expected typical traffic movements to the site.

After discussion with the clients, they have informed of the typical usage of charging stations. It is anticipated that for an Ultra Rapid charging station the usage time of a customer will be of approximately 10-20 minutes, or an average of 15 minutes. This includes time spent in the shop and using on site facilities. Also due to the demand the utilisation of all electric chargers, these are anticipated to be in use for up to 25% of the time, meaning they can be operated for 6 hours per day. This is due to the current demand for EV charging stations.

A worst-case scenario has also been calculated to cover the whole day to determine the maximum potential number of trips; however, it is anticipated that demand to be much lower than shown. In terms of traffic analysis, it will therefore be assumed that the absolute worst case for usage of EV chargers on the site is operating for 50% of the day. Data from other similar sites has shown the EV charging points are mostly in use between the 14-hour period of 07:00-21:00, after which most customers would charge their vehicles using slow chargers at home (overnight). Whilst the charging station would still be available for public use overnight, the commercial and ancillary facilities would be closed, and demand would be expected to be very low.

The above assumptions consider a number of factors, such as that by the time when this level of demand is met, there would likely be improvements to charging times and also battery sizes, and vehicles would be taking longer to charge using the Ultra Rapid charging station (which is limited to a particular power).

With a trip lasting 15 minutes per charger, and with each charger being used for around half the time, this level of trips totals to 2 trips per hour per charger. For 12 EV charging bays this equates to 48 trips over the hour. Multiplying this by 14 hours, will give an absolute possible worst-case scenario for daily trips, equalling 672 trips.

In addition to the visitor charging bays, the site will generate approximately 2 staff trips and 2 delivery trips throughout the day, and a maximum of 1 staff and 1 delivery trip in each peak hour. With the staff and delivery trips there are a total of 676 trips with 50 in each hour.

The following trip rates were obtained from a first-principles calculation of the above client (25%) and worst case (50% usage) scenarios:

	AM Peak hour (8-9am)			PM Peak hour (5-6pm)			Day (7am-9pm)		
	In	Out	Total	In	Out	Total	In	Out	Total
Client's expected trip rate (/unit)	1	1	2	1	1	2	14	14	28
12 Electric Vehicle Charging bays	12	12	24	12	12	24	168	168	336

Table 3 Client's expected trip demand

	AM Peak hour (8-9am)			PM Peak hour (5-6pm)			Day (7am-9pm)		
	In	Out	Total	In	Out	Total	In	Out	Total
Client's expected trip rate (/unit)	2	2	4	2	2	4	28	28	56
12 Electric Vehicle Charging bays	24	24	48	24	24	48	336	336	672

Table 4 Worst case trip demand

As can be seen from the above results, the EV charging site would be expected to generate a worst-case scenario of circa 48 movements in each peak hour. A total daily flow of 672 trips would be assumed from this EV charging station.

In comparison to the TRICS data, it can be seen the traffic impact from an EV charging station is significantly lower than a filling station.

It should also be noted that whilst both the petrol filling station and EV charging station generate traffic to the sites a significant amount of the trips are often pass by trips or diversion trips. With pass by trips these are trips already on the local junctions and passing the site on their way to other destinations. These can be taken off the existing network as they are already existing trips. Diverted trips are slightly different as they are trips not travelling directly past the site but within the vicinity and therefore only impacting the immediate traffic network and not the local network. It is very difficult to predict the number of pass by and diverted trips, because of this for robustness we have assumed all trips are additional to the network however as mentioned this is very unlikely to be the case.

Traffic Modelling

Due to the increase in traffic from the proposed development and the location to a key junction with Oldham Road and Reliance Street, Junctions 9 PICADY software has been used to analyse the traffic impact on the junction.

A traffic count survey was undertaken by PCC Traffic Information Consultancy on the Tuesday 1st March 2022 on the junction with Oldham Road and Reliance Street. With this information we are able to model the base year junction and form a comparison of the junction with the proposed development. The raw turning count data can be found contained at **Appendix G**.

With the information providing in the Trip generation section of this document an estimate of the proposed traffic flows to and from the site have been applied to the traffic count as well as a 5-year growth rate from 2022 to 2027. This data is contained at **Appendix H** in the form of traffic flow diagrams as well as the distribution used at the site access calculated from the turning count.

The following scenarios were modelled:

- 2022 Base AM & PM
- 2027 Growth AM & PM (with Temporo AM and PM Peak hour applied)
- 2027 Growth + Development AM & PM

The results have been tabulated and compared in Table 3 below.

	AM			PM		
2022 Counted	Queue	Delay	RFC	Queue	Delay	RFC
B – C	0.1	7.21	0.07	0.2	10.53	0.17
B – A	0.1	16.66	0.08	0.2	21.83	0.18
C – AB	0.1	5.96	0.09	0.1	7.74	0.09
2027 Growth	Queue	Delay	RFC	Queue	Delay	RFC
B – C	0.1	7.39	0.07	0.3	11.39	0.20
B – A	0.1	18.18	0.09	0.3	25.22	0.22
C – AB	0.2	5.95	0.10	0.2	7.83	0.10
2027 Growth + development	Queue	Delay	RFC	Queue	Delay	RFC
B – C	0.1	7.76	0.11	0.4	12.42	0.24
B – A	0.2	19.37	0.13	0.4	27.74	0.27
C – AB	0.2	5.90	0.13	0.2	7.77	0.13

Table 5 Reliance Street / Oldham Road Junction model

As can be seen from the results in Table 3 the junction is well within capacity thresholds with the highest RFC being in the PM from arm B-A (Reliance Street right turn onto Oldham Road) at 0.27. The AM is performing significantly better with the highest RFC being 0.13 on the B-A and C-AB movements. With Growth being modelled as well it is clear to see the direct impact from the proposal on the junction. The biggest increase comes in both the AM and PM peaks with an increase of 0.03 RFC on almost all the arms.

Considering that the existing junction operates with a low RFC, this level of increase is would be negligible and most likely go without notice from current road users, and the junction will remain operating smoothly.

The minimal level of increase is highlighted in the delay with the increase only around 2 seconds in both the AM and PM peak. An increase of 2 second is again negligible and unlikely to cause any negative impact on the local road network.

Full Junction results are contained within **Appendix I**.

Summary and Conclusion

EAS Transport Planning have been commissioned by Iduna to provide Highways Advice in conjunction with Pre-Application Advice from MCC regarding the proposed Electric Vehicle Charging Station at Reliance Street, Manchester. The site is located in a sustainable location, with good access to nearby facilities and public transport infrastructure.

The scheme proposes the development of a 12-Electric Vehicle Charging Station, 2 additional staff parking bays, and retail facilities, as well as ancillary electric bicycle charging point and a sub-station unit. It is proposed that a new site access is introduced as part of the scheme, in line with the general arrangements of the site.

In terms of trip generation, the scheme is expected to generate circa 50 trips during each peak hour, which is significantly lower than a comparable petrol filling station. A junction modelling exercise of the site access has also shown that the existing junction of Reliance Street with Oldham Road includes low levels of traffic stress, and it would not be expected that the development would make a significant change to this.

We would therefore be very interested to hear to any pre-application advice which the highways team can provide in regard to this upcoming planning application.

If you have any queries about the above, please do not hesitate to contact me on email at chris.green@eastp.co.uk or call at 01920 871777.

Sincerely,



Chris Green
Senior Technician

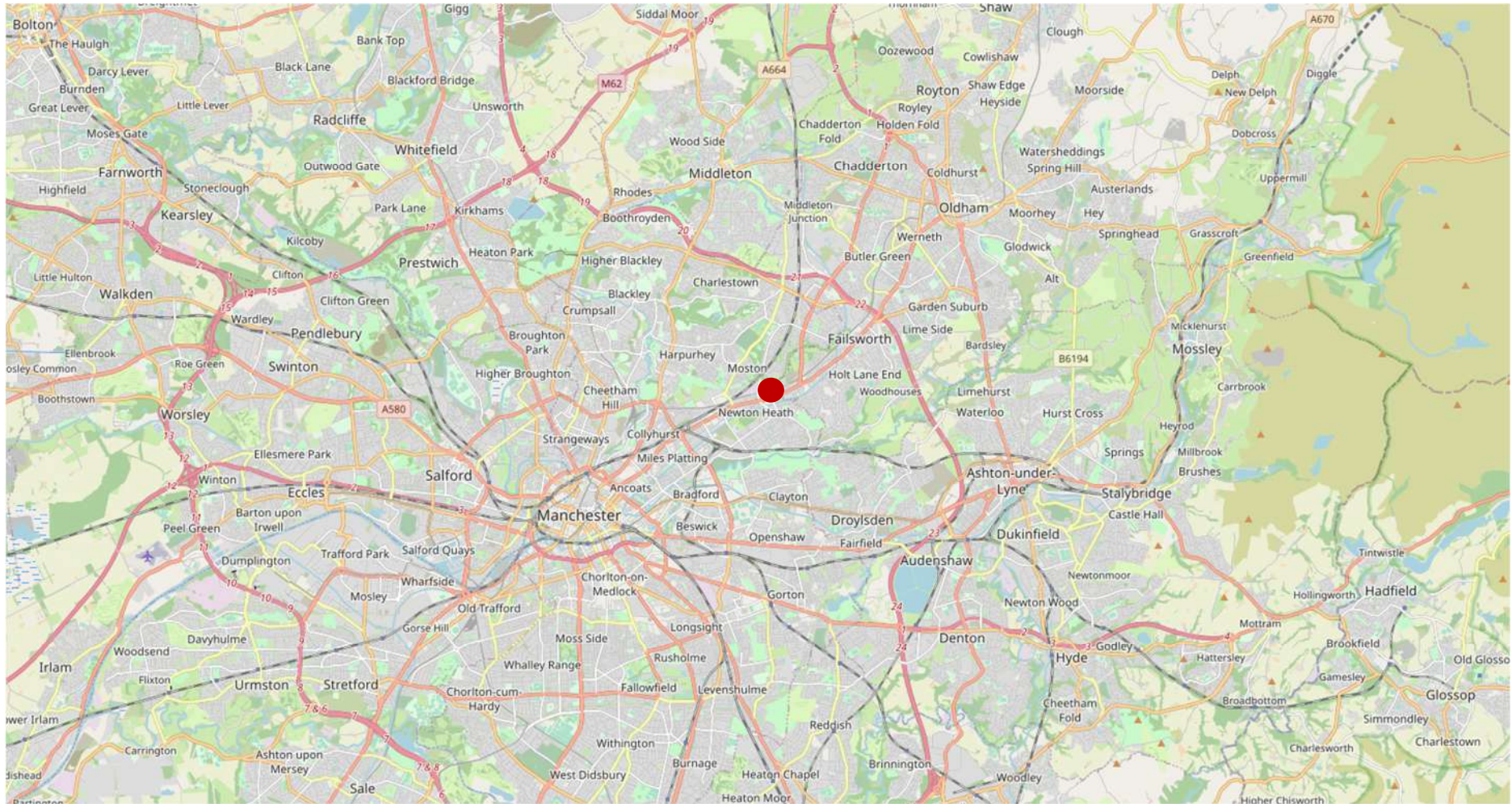
Appendices:

- Appendix A: Site Location Plan*
- Appendix B: Local Tram Line Map*
- Appendix C: Masterplan*
- Appendix D: Swept Path Analysis*
- Appendix E: Visibility Splay*
- Appendix F: TRICS Data*
- Appendix G: Traffic Flow Diagram*
- Appendix H: Traffic Count Data*
- Appendix I: Junction 9 Results*

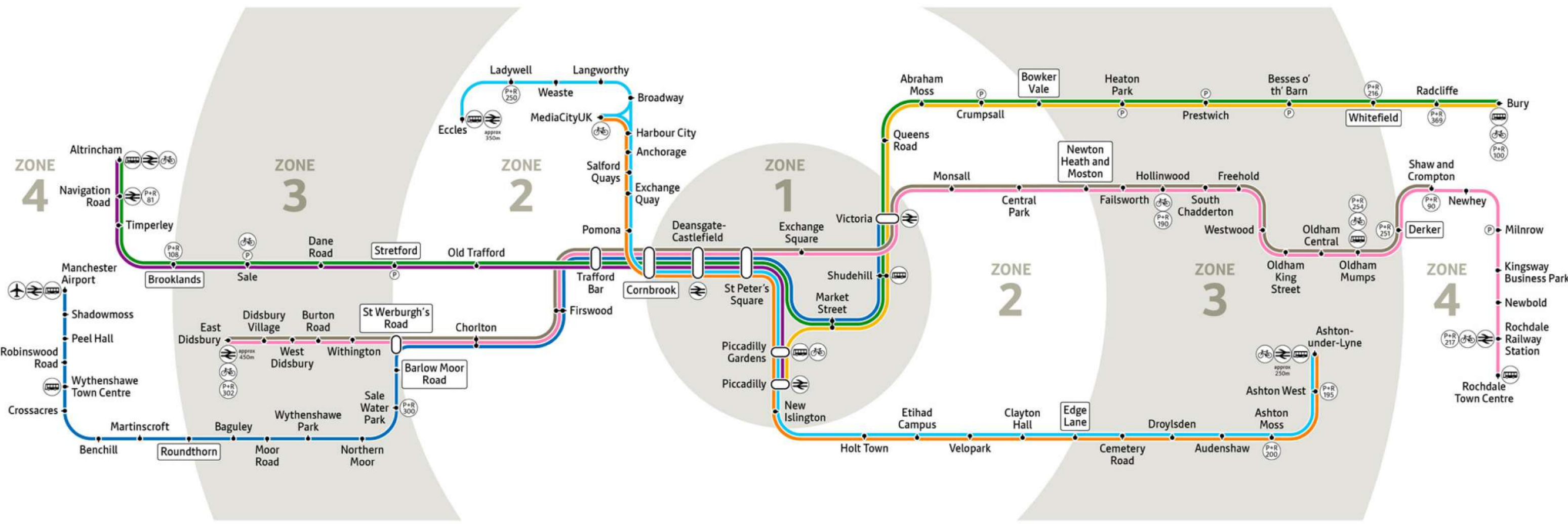
Appendix A: Site Location Plan

Site Location Plan

● - Site Location Plan



Appendix B: Local Tram Line Map



Key

- Metrolink stop
- Change with other services
- Direct trams from MediaCityUK to Ashton-under-Lyne from 28 January 2019



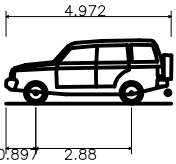
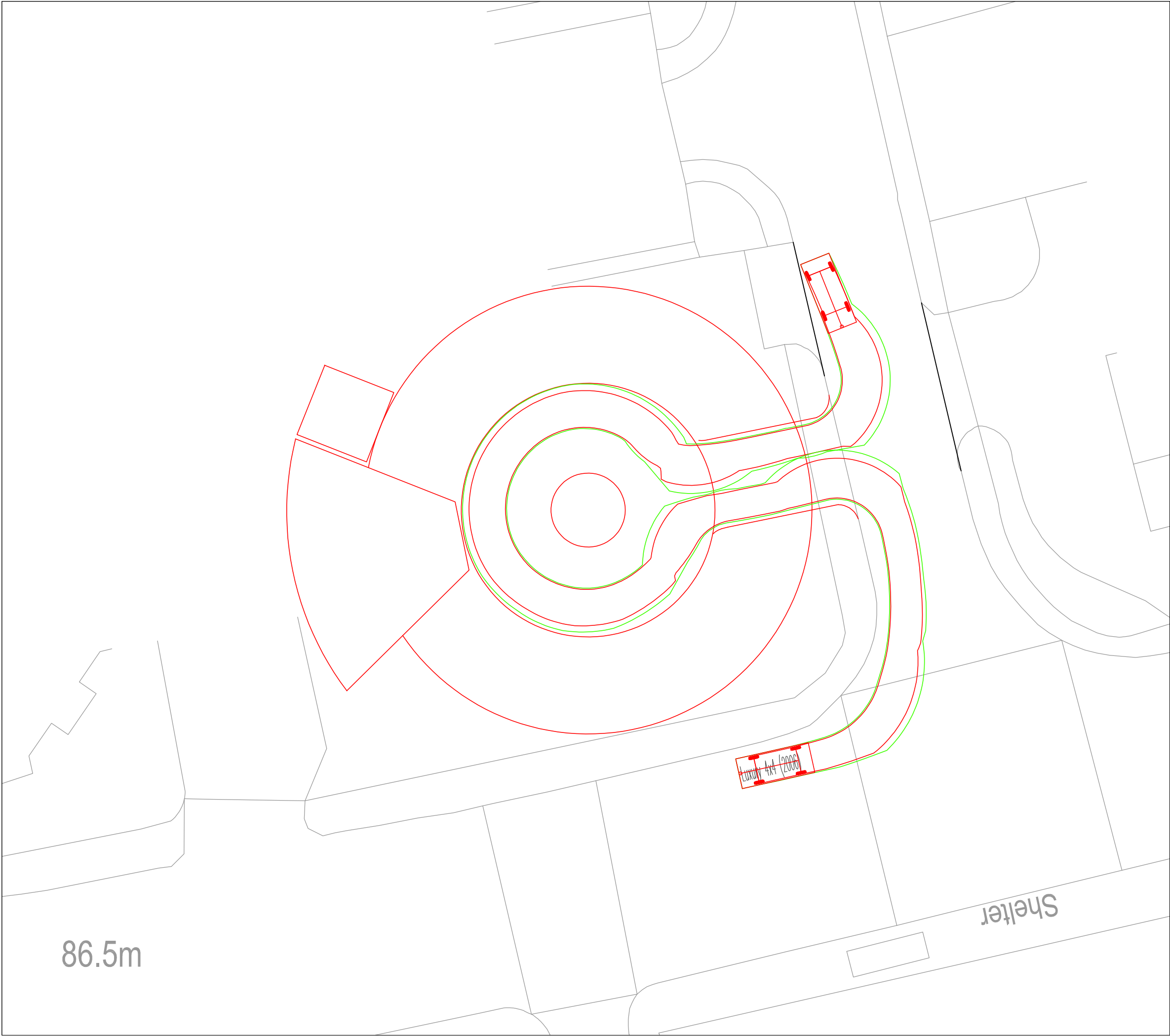
- Bus interchange
- Rail interchange

- Park + Ride with number of spaces
- Car park fewer than 50 spaces

- Cycle Hub Membership required

Appendix C: Masterplan

Appendix D: Swept Path Analysis



Luxury 4x4 (2006)	
Overall Length	4.972m
Overall Width	2.034m
Overall Body Height	1.905m
Min Body Ground Clearance	0.279m
Max Track Width	1.884m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	5.800m

REV	DATE	BY	DESCRIPTION	CHK	APD
-----	------	----	-------------	-----	-----

DRAWING STATUS:

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Unit 23, The Maltings, Stanstead Abbots, Hertfordshire, SG12 8HG
Tel: 01920 871777
www.eastp.co.uk

CLIENT:

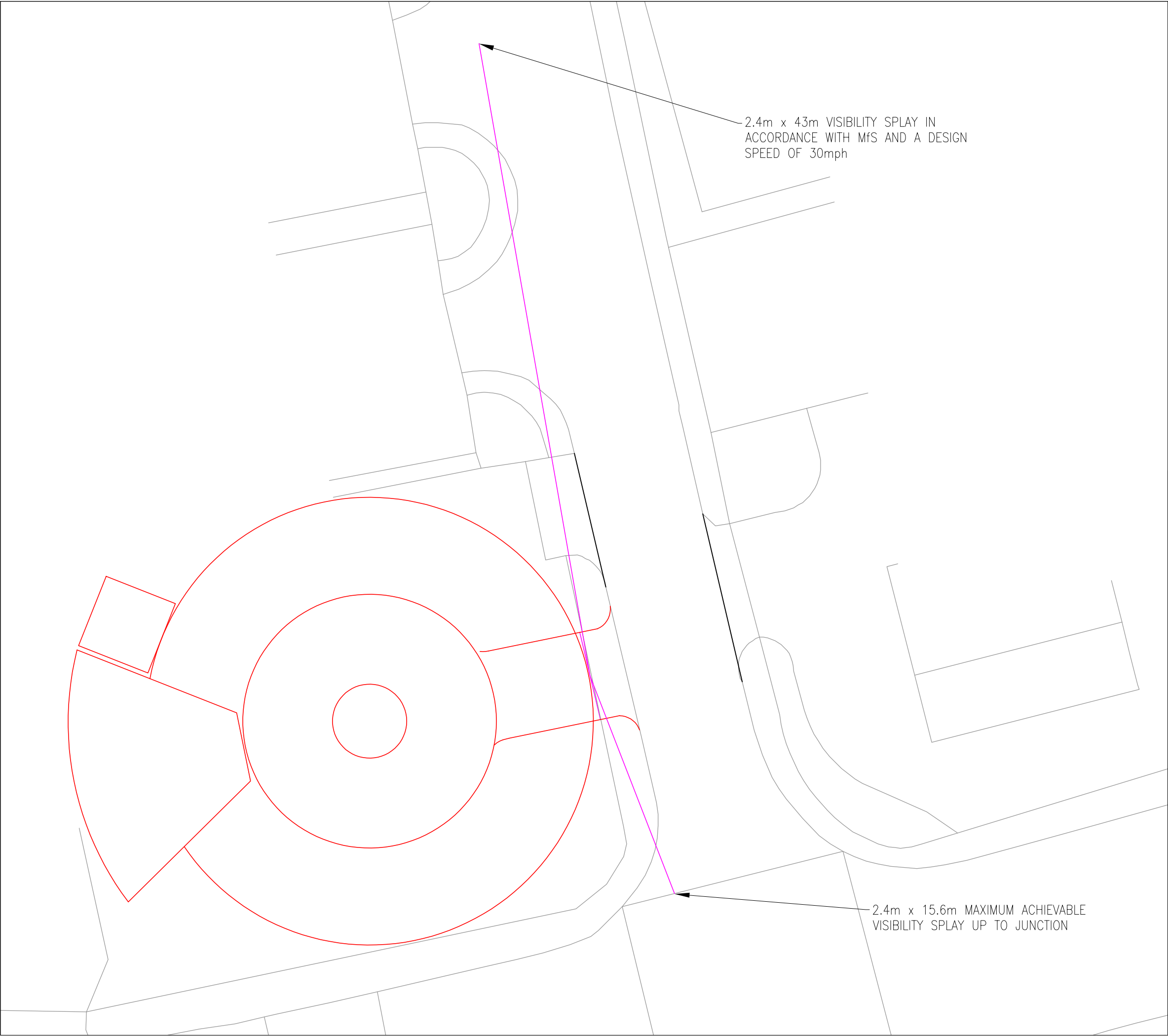
ARCHITECT:

PROJECT:
**MANCHESTER, RELIANCE STREET
EV CHARGING STATION**

TITLE:
ACCESS SWEPT PATH ANALYSIS

SCALE © A3: 1:250	DESIGN—DRAWN: CG	DATE: 15/03/2022
PROJECT No: 3815	DRAWING No: SK02	

Appendix E: Visibility Splay



REV	DATE	BY	DESCRIPTION	CHK	APD
DRAWING STATUS:					
Ordnance Survey (c) Crown Copyright 2018. All rights reserved. Licence number 100022432					
 Unit 23, The Maltings, Stanstead Abbots, Hertfordshire, SG12 8HG Tel: 01920 871777 www.eastp.co.uk					
CLIENT:					
ARCHITECT:					
PROJECT: MANCHESTER, RELIANCE STREET EV CHARGING STATION					
TITLE: ACCESS VISIBILITY SPLAY					
SCALE © A3: 1:250			DESIGN—DRAWN: CG		DATE: 15/03/2022
PROJECT No: 3815			DRAWING No: SK01		

Appendix F: TRICS Data

Calculation Reference: AUDIT-743101-220314-0344

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 13 - PETROL FILLING STATIONS
Category : B - PFS - WITH RETAIL
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	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: Filling bays
Actual Range: 8 to 8 (units:)
Range Selected by User: 6 to 12 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 30/09/16

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
Friday	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:

Suburban Area (PPS6 Out of 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:

Industrial Zone	1
High Street	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.

Secondary Filtering selection:

Use Class:

Sui Generis	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

Secondary Filtering selection (Cont.):

Population within 1 mile:

10,001 to 15,000	1 days
25,001 to 50,000	1 days

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

Population within 5 miles:

50,001 to 75,000	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:

No	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	NY-13-B-03	ESSO & CO-OP	NORTH YORKSHIRE
	WETHERBY ROAD NORTH		
	KNARESBOROUGH		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Filling bays:	8	
	Survey date: FRIDAY	30/09/16	Survey Type: MANUAL
2	WM-13-B-05	TEXACO & CO-OPERATIVE	WEST MIDLANDS
	HIGH STREET		
	BIRMINGHAM		
	HARBORNE		
	Suburban Area (PPS6 Out of Centre)		
	High Street		
	Total Filling bays:	8	
	Survey date: TUESDAY	22/10/13	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 13 - PETROL FILLING STATIONS/B - PFS - WITH RETAIL
MULTI-MODAL TOTAL VEHICLES

Calculation factor: 1 BAYS

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.64

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	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	2	8	2.938	2	8	2.688	2	8	5.626
07:00 - 08:00	2	8	7.250	2	8	7.063	2	8	14.312
08:00 - 09:00	2	8	10.500	2	8	10.250	2	8	20.750
09:00 - 10:00	2	8	9.438	2	8	9.438	2	8	18.876
10:00 - 11:00	2	8	7.813	2	8	8.000	2	8	15.812
11:00 - 12:00	2	8	6.000	2	8	6.438	2	8	12.438
12:00 - 13:00	2	8	8.750	2	8	8.688	2	8	17.438
13:00 - 14:00	2	8	9.125	2	8	9.000	2	8	18.125
14:00 - 15:00	2	8	8.250	2	8	8.188	2	8	16.438
15:00 - 16:00	2	8	11.938	2	8	12.125	2	8	24.063
16:00 - 17:00	2	8	9.313	2	8	9.313	2	8	18.624
17:00 - 18:00	2	8	9.250	2	8	9.313	2	8	18.562
18:00 - 19:00	2	8	9.063	2	8	9.000	2	8	18.062
19:00 - 20:00	2	8	8.188	2	8	8.375	2	8	16.563
20:00 - 21:00	2	8	4.813	2	8	4.813	2	8	9.624
21:00 - 22:00	2	8	3.438	2	8	3.500	2	8	6.938
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			126.063			126.188			252.251

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: 8 - 8 (units:)
Survey date range: 01/01/13 - 30/09/16
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: 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 13 - PETROL FILLING STATIONS/B - PFS - WITH RETAIL
MULTI-MODAL OGVS
Calculation factor: 1 BAYS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	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	2	8	0.125	2	8	0.125	2	8	0.250
07:00 - 08:00	2	8	0.250	2	8	0.188	2	8	0.438
08:00 - 09:00	2	8	0.188	2	8	0.188	2	8	0.376
09:00 - 10:00	2	8	0.125	2	8	0.188	2	8	0.313
10:00 - 11:00	2	8	0.000	2	8	0.000	2	8	0.000
11:00 - 12:00	2	8	0.063	2	8	0.063	2	8	0.124
12:00 - 13:00	2	8	0.125	2	8	0.125	2	8	0.250
13:00 - 14:00	2	8	0.063	2	8	0.063	2	8	0.124
14:00 - 15:00	2	8	0.063	2	8	0.063	2	8	0.124
15:00 - 16:00	2	8	0.000	2	8	0.000	2	8	0.000
16:00 - 17:00	2	8	0.000	2	8	0.000	2	8	0.000
17:00 - 18:00	2	8	0.000	2	8	0.000	2	8	0.000
18:00 - 19:00	2	8	0.000	2	8	0.000	2	8	0.000
19:00 - 20:00	2	8	0.125	2	8	0.125	2	8	0.250
20:00 - 21:00	2	8	0.000	2	8	0.000	2	8	0.000
21:00 - 22:00	2	8	0.000	2	8	0.000	2	8	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.124			1.125			2.249

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.

TRIP RATE for Land Use 13 - PETROL FILLING STATIONS/B - PFS - WITH RETAIL
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 BAYS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	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	2	8	3.688	2	8	3.375	2	8	7.063
07:00 - 08:00	2	8	8.438	2	8	8.188	2	8	16.626
08:00 - 09:00	2	8	11.938	2	8	11.438	2	8	23.376
09:00 - 10:00	2	8	10.188	2	8	10.063	2	8	20.250
10:00 - 11:00	2	8	8.875	2	8	9.000	2	8	17.875
11:00 - 12:00	2	8	7.000	2	8	7.688	2	8	14.688
12:00 - 13:00	2	8	10.250	2	8	10.125	2	8	20.375
13:00 - 14:00	2	8	9.688	2	8	9.375	2	8	19.063
14:00 - 15:00	2	8	9.563	2	8	9.563	2	8	19.124
15:00 - 16:00	2	8	13.938	2	8	14.313	2	8	28.250
16:00 - 17:00	2	8	10.438	2	8	10.500	2	8	20.938
17:00 - 18:00	2	8	11.313	2	8	11.438	2	8	22.750
18:00 - 19:00	2	8	10.750	2	8	10.750	2	8	21.500
19:00 - 20:00	2	8	9.125	2	8	9.438	2	8	18.563
20:00 - 21:00	2	8	5.750	2	8	5.688	2	8	11.438
21:00 - 22:00	2	8	3.500	2	8	3.625	2	8	7.125
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			144.440			144.564			289.004

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.

TRIP RATE for Land Use 13 - PETROL FILLING STATIONS/B - PFS - WITH RETAIL
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 BAYS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	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	2	8	1.188	2	8	1.000	2	8	2.188
07:00 - 08:00	2	8	2.625	2	8	2.250	2	8	4.875
08:00 - 09:00	2	8	6.688	2	8	6.875	2	8	13.563
09:00 - 10:00	2	8	3.750	2	8	3.688	2	8	7.438
10:00 - 11:00	2	8	2.500	2	8	2.313	2	8	4.812
11:00 - 12:00	2	8	3.063	2	8	3.375	2	8	6.437
12:00 - 13:00	2	8	4.250	2	8	3.938	2	8	8.188
13:00 - 14:00	2	8	4.188	2	8	3.813	2	8	8.000
14:00 - 15:00	2	8	3.813	2	8	3.125	2	8	6.937
15:00 - 16:00	2	8	11.875	2	8	13.250	2	8	25.125
16:00 - 17:00	2	8	2.875	2	8	2.500	2	8	5.375
17:00 - 18:00	2	8	5.625	2	8	5.375	2	8	11.000
18:00 - 19:00	2	8	3.625	2	8	3.563	2	8	7.187
19:00 - 20:00	2	8	1.938	2	8	2.375	2	8	4.313
20:00 - 21:00	2	8	1.125	2	8	1.563	2	8	2.687
21:00 - 22:00	2	8	1.813	2	8	1.938	2	8	3.750
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			60.938			60.937			121.875

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.

TRIP RATE for Land Use 13 - PETROL FILLING STATIONS/B - PFS - WITH RETAIL
MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 BAYS

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.64

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	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	2	8	4.938	2	8	4.438	2	8	9.376
07:00 - 08:00	2	8	11.250	2	8	10.625	2	8	21.875
08:00 - 09:00	2	8	18.688	2	8	18.313	2	8	37.000
09:00 - 10:00	2	8	13.938	2	8	13.750	2	8	27.688
10:00 - 11:00	2	8	11.438	2	8	11.313	2	8	22.750
11:00 - 12:00	2	8	10.063	2	8	11.063	2	8	21.124
12:00 - 13:00	2	8	14.500	2	8	14.063	2	8	28.562
13:00 - 14:00	2	8	13.875	2	8	13.313	2	8	27.187
14:00 - 15:00	2	8	13.500	2	8	12.750	2	8	26.250
15:00 - 16:00	2	8	25.813	2	8	27.625	2	8	53.437
16:00 - 17:00	2	8	13.438	2	8	13.125	2	8	26.563
17:00 - 18:00	2	8	16.938	2	8	16.813	2	8	33.750
18:00 - 19:00	2	8	14.563	2	8	14.625	2	8	29.187
19:00 - 20:00	2	8	11.125	2	8	11.813	2	8	22.937
20:00 - 21:00	2	8	6.875	2	8	7.250	2	8	14.125
21:00 - 22:00	2	8	5.313	2	8	5.563	2	8	10.874
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			206.251			206.434			412.685

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.

TRIP RATE for Land Use 13 - PETROL FILLING STATIONS/B - PFS - WITH RETAIL
MULTI-MODAL CARS
Calculation factor: 1 BAYS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	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	2	8	2.313	2	8	2.250	2	8	4.562
07:00 - 08:00	2	8	6.188	2	8	6.125	2	8	12.313
08:00 - 09:00	2	8	9.188	2	8	9.000	2	8	18.188
09:00 - 10:00	2	8	7.875	2	8	7.750	2	8	15.625
10:00 - 11:00	2	8	6.813	2	8	7.063	2	8	13.874
11:00 - 12:00	2	8	4.938	2	8	5.375	2	8	10.313
12:00 - 13:00	2	8	7.375	2	8	7.313	2	8	14.687
13:00 - 14:00	2	8	7.563	2	8	7.313	2	8	14.874
14:00 - 15:00	2	8	7.188	2	8	7.250	2	8	14.438
15:00 - 16:00	2	8	11.125	2	8	11.313	2	8	22.437
16:00 - 17:00	2	8	8.000	2	8	8.000	2	8	16.000
17:00 - 18:00	2	8	8.875	2	8	8.875	2	8	17.750
18:00 - 19:00	2	8	8.625	2	8	8.438	2	8	17.063
19:00 - 20:00	2	8	7.500	2	8	7.688	2	8	15.188
20:00 - 21:00	2	8	4.188	2	8	4.188	2	8	8.376
21:00 - 22:00	2	8	3.313	2	8	3.250	2	8	6.562
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			111.063			111.187			222.250

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.

TRIP RATE for Land Use 13 - PETROL FILLING STATIONS/B - PFS - WITH RETAIL
MULTI-MODAL LGVS
Calculation factor: 1 BAYS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	Trip Rate	No. Days	Ave. BAYS	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	2	8	0.250	2	8	0.063	2	8	0.312
07:00 - 08:00	2	8	0.750	2	8	0.688	2	8	1.438
08:00 - 09:00	2	8	0.938	2	8	0.875	2	8	1.813
09:00 - 10:00	2	8	1.063	2	8	1.125	2	8	2.187
10:00 - 11:00	2	8	0.750	2	8	0.688	2	8	1.438
11:00 - 12:00	2	8	0.750	2	8	0.750	2	8	1.500
12:00 - 13:00	2	8	0.938	2	8	0.938	2	8	1.876
13:00 - 14:00	2	8	1.313	2	8	1.438	2	8	2.750
14:00 - 15:00	2	8	0.938	2	8	0.813	2	8	1.750
15:00 - 16:00	2	8	0.563	2	8	0.563	2	8	1.124
16:00 - 17:00	2	8	1.250	2	8	1.250	2	8	2.500
17:00 - 18:00	2	8	0.188	2	8	0.250	2	8	0.438
18:00 - 19:00	2	8	0.250	2	8	0.375	2	8	0.625
19:00 - 20:00	2	8	0.438	2	8	0.438	2	8	0.876
20:00 - 21:00	2	8	0.500	2	8	0.500	2	8	1.000
21:00 - 22:00	2	8	0.000	2	8	0.125	2	8	0.125
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			10.876			10.876			21.752

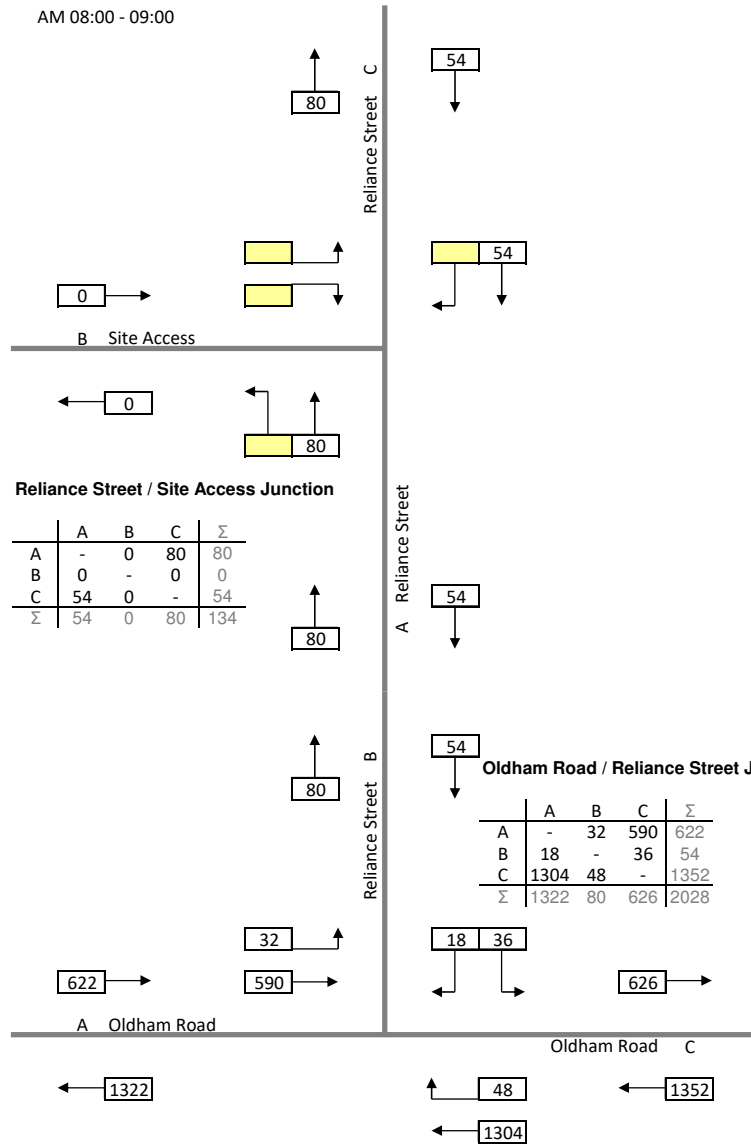
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.

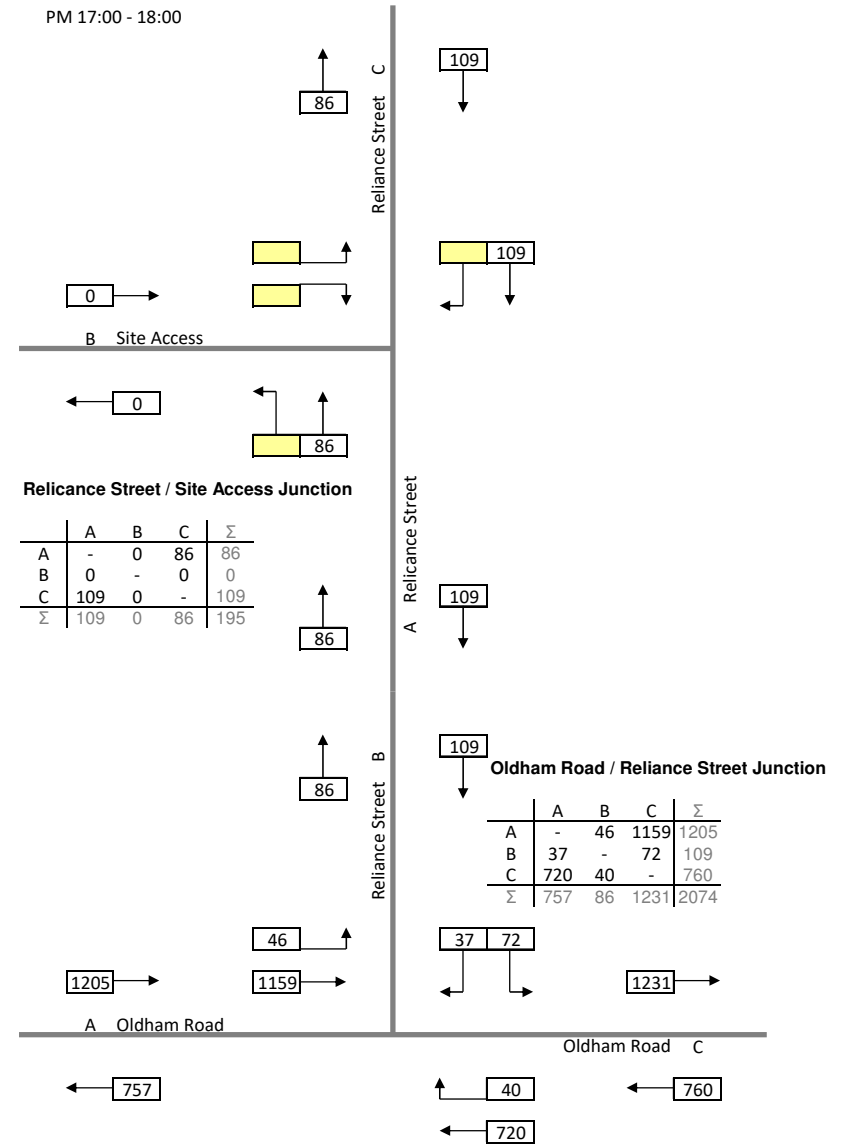
Appendix G: Traffic Flow Diagram

2022 Surveyed Data

AM 08:00 - 09:00

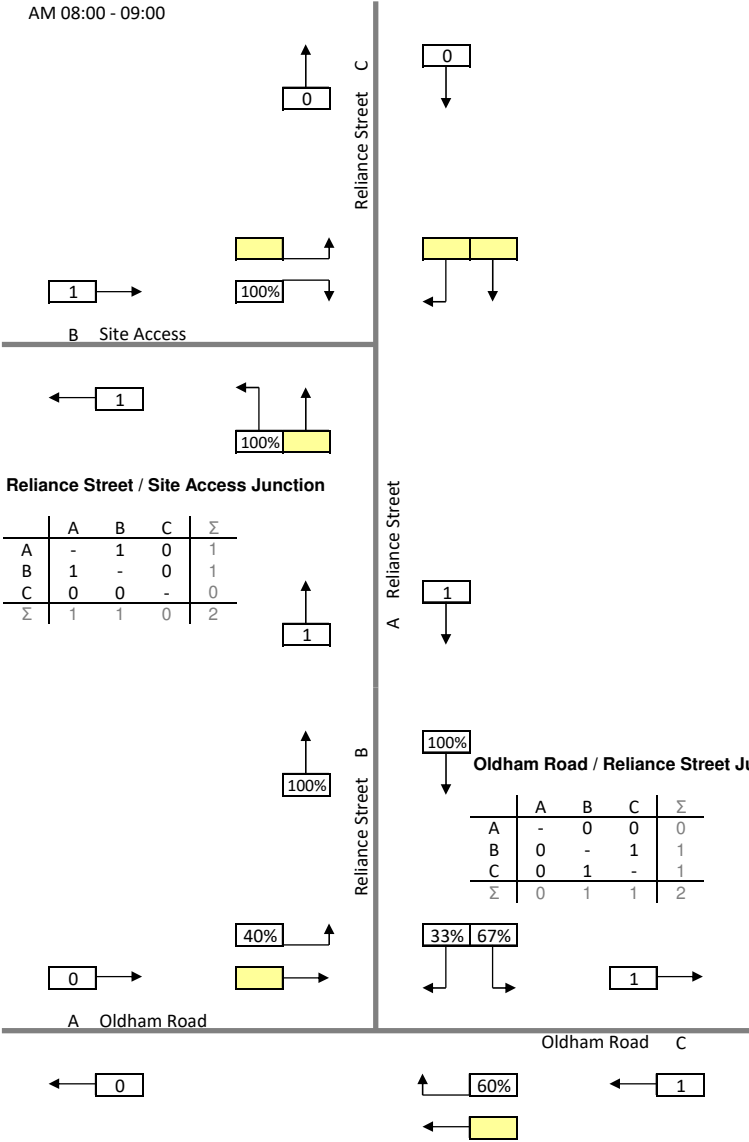


PM 17:00 - 18:00

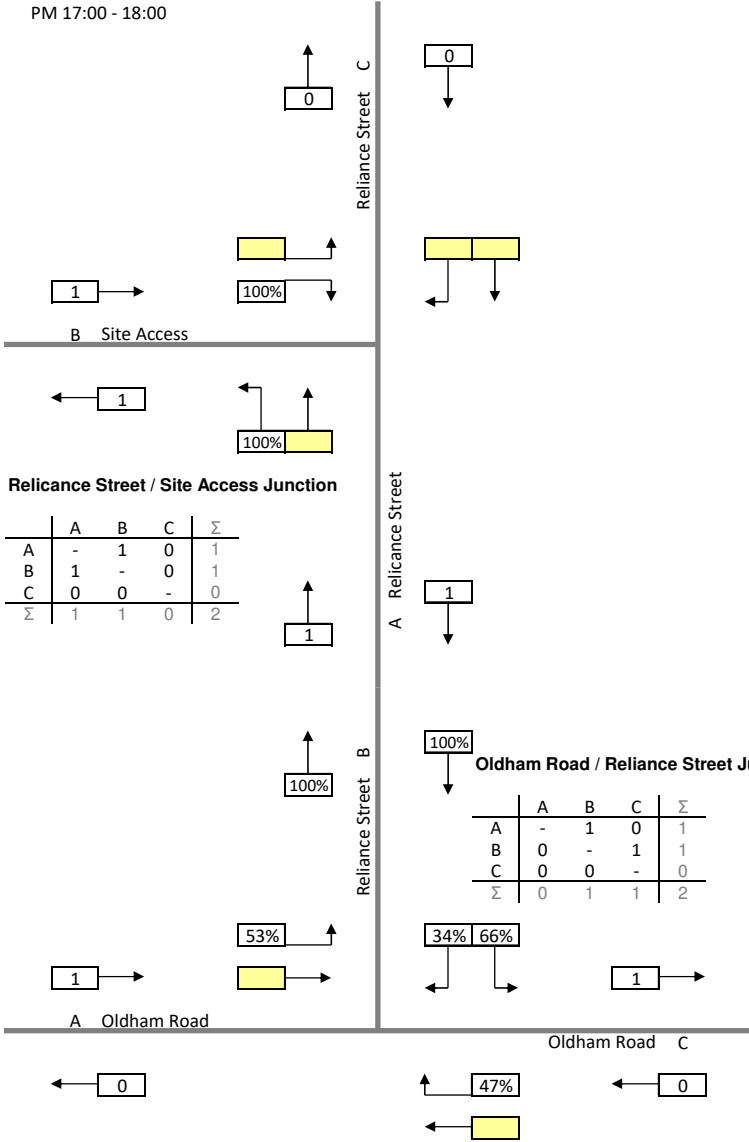


Development Distribution

AM 08:00 - 09:00

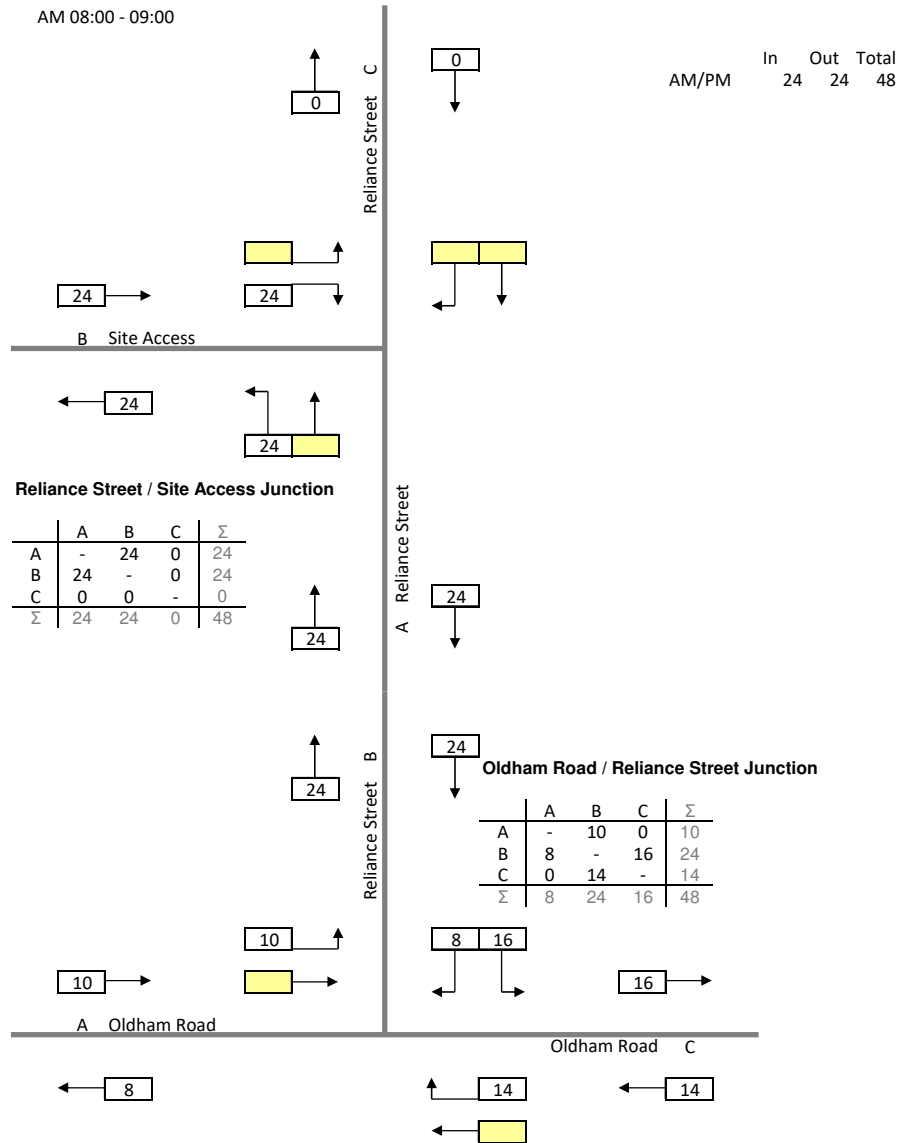


PM 17:00 - 18:00

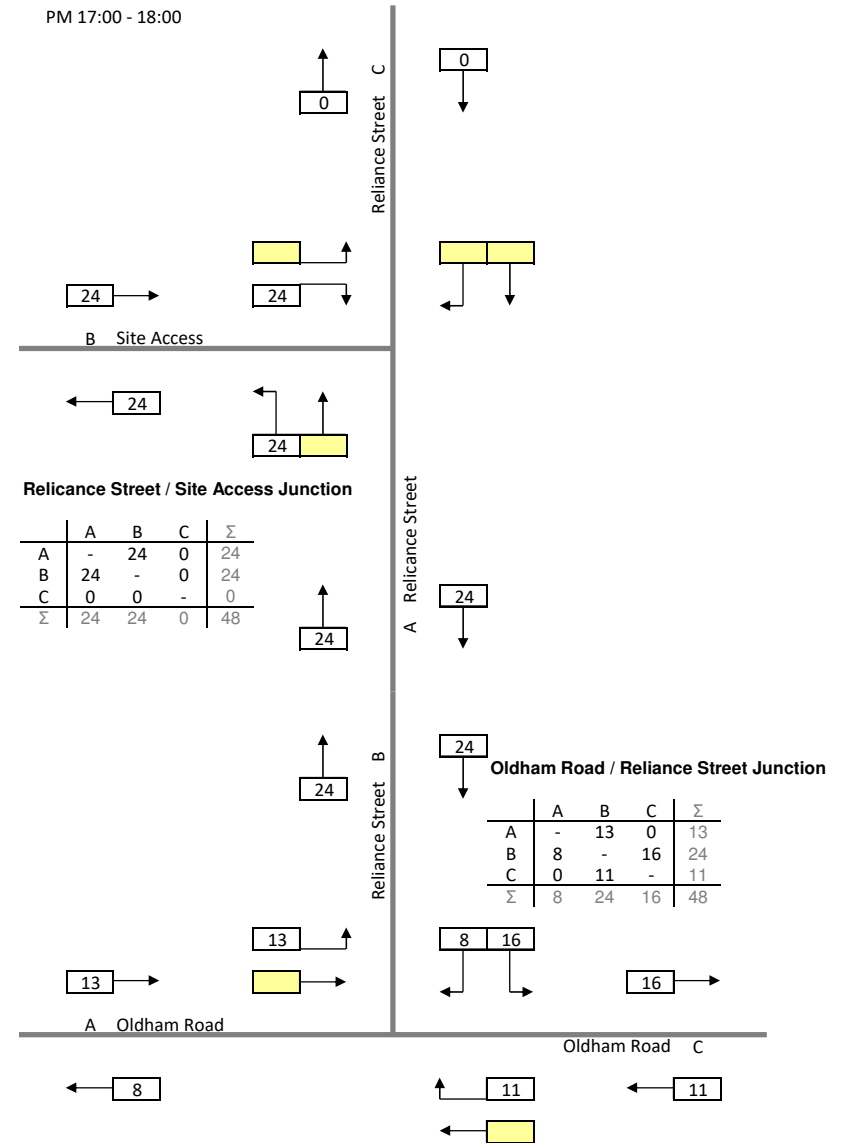


Development Flows

AM 08:00 - 09:00

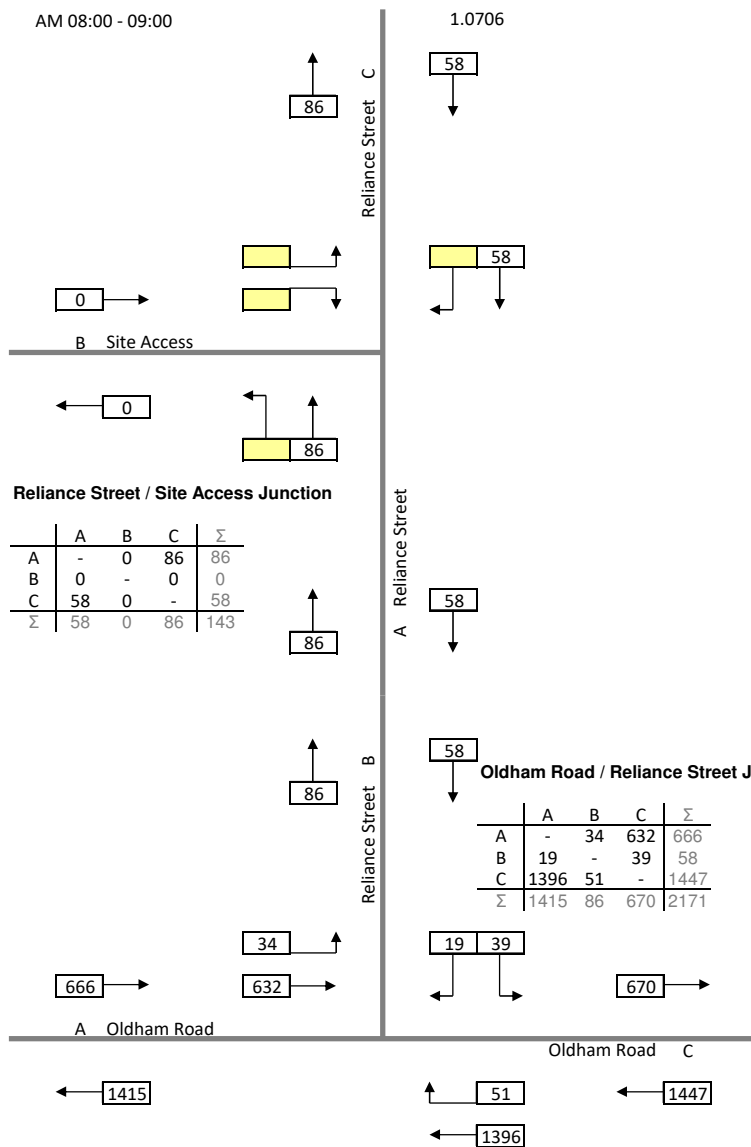


PM 17:00 - 18:00

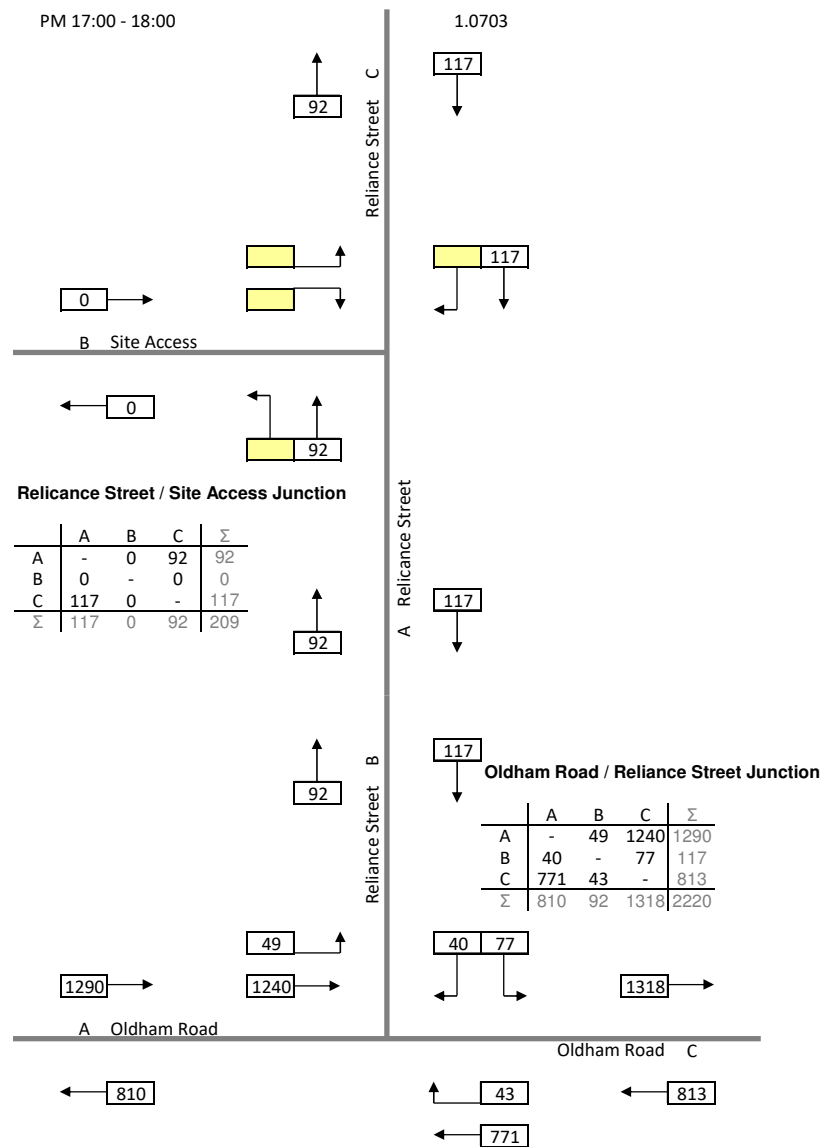


2027 Growth AM / PM

AM 08:00 - 09:00

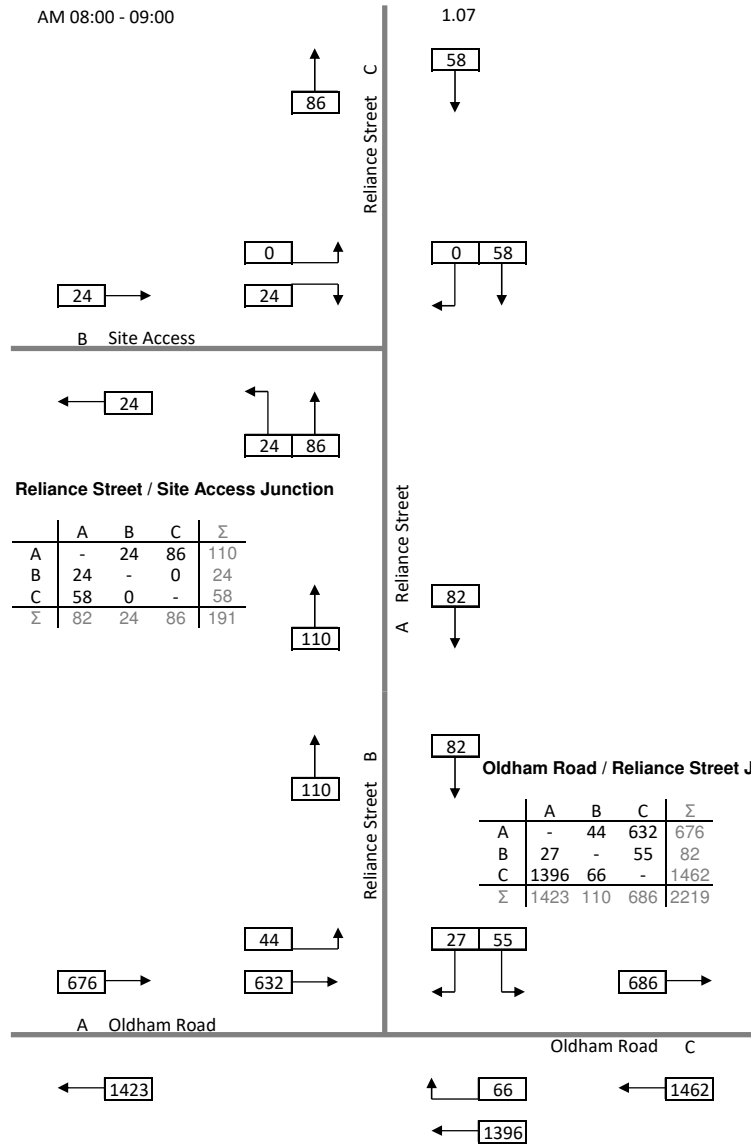


PM 17:00 - 18:00

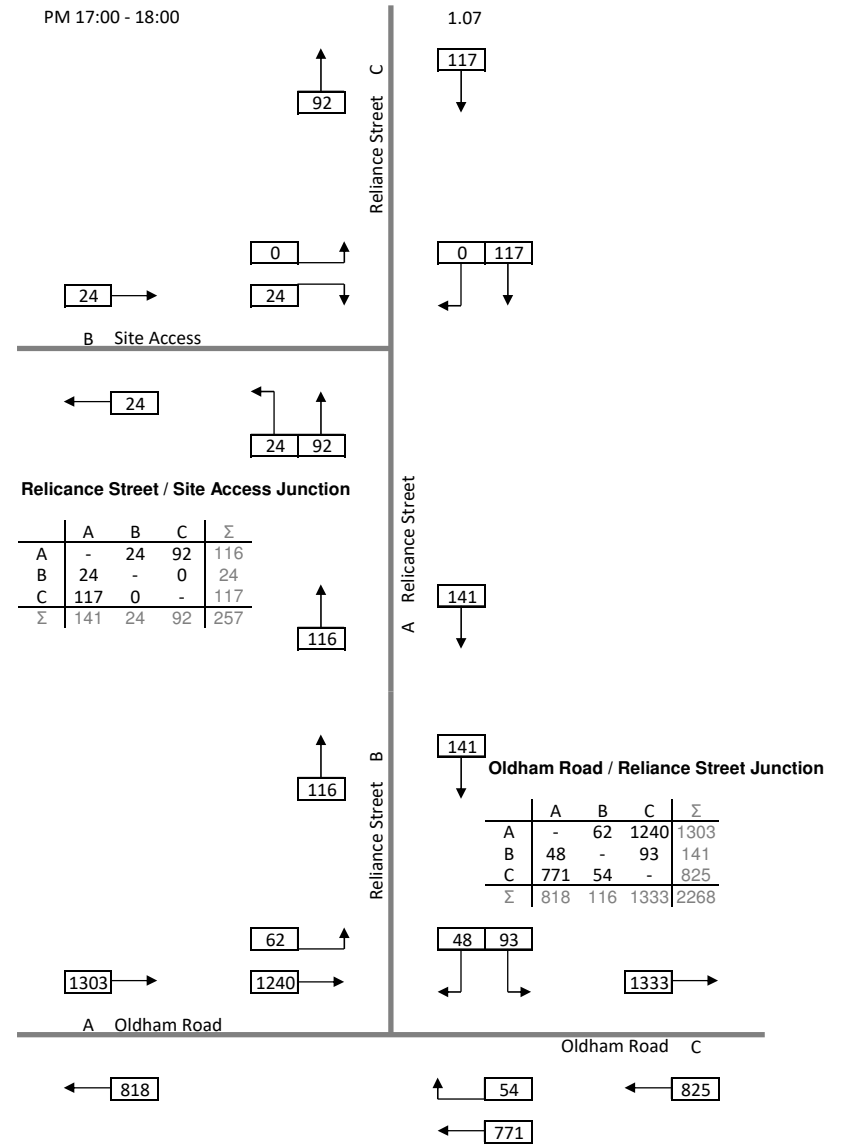


2027 Growth + Development AM / PM

AM 08:00 - 09:00



PM 17:00 - 18:00



Appendix H: Traffic Count Data

Junction: 1

Approach: Reliance Street

TIME	To A62 Oldham Road (E)								To A62 Oldham Road (W)							
	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
07:15 - 07:30	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0
07:30 - 07:45	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
07:45 - 08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	0	2	1	0	0	0	3	0	0	1	0	0	0	0	1
08:00 - 08:15	0	0	7	2	0	0	0	9	0	0	8	0	1	0	0	9
08:15 - 08:30	0	0	6	1	0	0	0	7	0	0	2	0	0	0	0	2
08:30 - 08:45	0	0	12	0	0	0	0	12	0	0	4	1	0	0	0	5
08:45 - 09:00	0	0	6	1	0	1	0	8	0	0	1	0	1	0	0	2
Hourly Total	0	0	31	4	0	1	0	36	0	0	15	1	2	0	0	18
09:00 - 09:15	0	0	7	2	0	0	0	9	0	0	6	0	0	0	0	6
09:15 - 09:30	0	0	9	3	0	0	0	12	0	0	16	0	0	0	0	16
09:30 - 09:45	0	0	14	2	0	0	0	16	0	0	9	2	0	0	0	11
09:45 - 10:00	0	0	5	2	0	1	0	8	0	0	6	2	2	0	0	10
Hourly Total	0	0	35	9	0	1	0	45	0	0	37	4	2	0	0	43
TOTAL	0	0	68	14	0	2	0	84	0	0	53	5	4	0	0	62
15:00 - 15:15	0	0	8	0	0	0	0	8	0	0	11	2	0	0	0	13
15:15 - 15:30	0	0	17	5	0	1	0	23	0	0	12	0	0	0	0	12
15:30 - 15:45	0	0	9	4	0	0	0	13	0	0	7	1	0	0	0	8
15:45 - 16:00	0	0	11	2	0	0	0	13	0	0	14	1	0	0	0	15
Hourly Total	0	0	45	11	0	1	0	57	0	0	44	4	0	0	0	48
16:00 - 16:15	1	0	14	1	1	0	0	17	0	0	9	0	0	0	0	9
16:15 - 16:30	0	2	12	3	0	0	0	17	0	0	7	2	0	0	0	9
16:30 - 16:45	0	0	17	2	0	1	0	20	0	0	9	0	0	0	0	9
16:45 - 17:00	0	0	16	1	0	1	0	18	0	0	9	1	0	0	0	10
Hourly Total	1	2	59	7	1	2	0	72	0	0	34	3	0	0	0	37
17:00 - 17:15	0	0	13	0	0	0	0	13	0	0	7	0	0	0	0	7
17:15 - 17:30	0	0	10	0	0	1	0	11	0	0	6	1	1	0	0	8
17:30 - 17:45	0	0	14	0	0	0	0	14	0	0	8	0	0	0	0	8
17:45 - 18:00	0	0	7	0	0	0	0	7	0	0	9	1	0	0	0	10
Hourly Total	0	0	44	0	0	1	0	45	0	0	30	2	1	0	0	33
18:00 - 18:15	0	0	7	3	0	0	0	10	0	0	8	0	0	0	0	8
18:15 - 18:30	0	0	5	0	0	0	0	5	0	0	4	0	0	0	0	4
18:30 - 18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45 - 19:00	0	0	5	0	0	0	0	5	0	0	1	0	0	0	0	1
Hourly Total	0	0	17	3	0	0	0	20	0	0	13	0	0	0	0	13
TOTAL	1	2	165	21	1	4	0	194	0	0	121	9	1	0	0	131

Junction: 1

Approach: A62 Oldham Road East

	To A62 Oldham Road (W)								To Reliance Street								U-Turn							
TIME	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	4	242	53	3	6	3	311	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 - 07:30	3	0	303	45	5	5	3	364	0	0	2	2	0	0	0	4	0	0	0	0	0	0	0	0
07:30 - 07:45	0	3	326	60	5	6	5	405	0	0	4	2	0	0	0	6	0	0	0	0	0	0	0	0
07:45 - 08:00	3	1	317	54	7	7	6	395	0	0	10	1	0	0	0	11	0	0	0	0	0	0	0	0
Hourly Total	6	8	1188	212	20	24	17	1475	0	0	16	5	0	0	0	21	0	0	0	0	0	0	0	0
08:00 - 08:15	5	0	266	36	4	4	4	319	0	0	7	0	0	0	0	7	0	0	0	0	0	0	0	0
08:15 - 08:30	2	0	287	34	3	5	0	331	0	0	8	1	0	1	0	10	0	0	0	0	0	0	0	0
08:30 - 08:45	2	1	295	26	7	4	3	338	0	0	15	1	0	0	0	16	0	0	0	0	0	0	0	0
08:45 - 09:00	0	1	255	39	10	7	4	316	0	0	13	2	0	0	0	15	0	0	0	0	0	0	0	0
Hourly Total	9	2	1103	135	24	20	11	1304	0	0	43	4	0	1	0	48	0	0	0	0	0	0	0	0
09:00 - 09:15	1	0	252	41	6	10	3	313	0	0	14	3	0	0	0	17	0	0	0	0	0	0	0	0
09:15 - 09:30	0	1	254	27	10	12	1	305	0	0	16	2	0	0	0	18	0	0	0	0	0	0	0	0
09:30 - 09:45	1	1	237	60	6	7	5	317	0	0	10	2	0	1	0	13	0	0	1	0	0	0	0	1
09:45 - 10:00	1	0	156	32	9	9	5	212	0	0	7	3	0	1	0	11	0	0	0	0	0	0	0	0
Hourly Total	3	2	899	160	31	38	14	1147	0	0	47	10	0	2	0	59	0	0	1	0	0	0	0	1
TOTAL	18	12	3190	507	75	82	42	3926	0	0	106	19	0	3	0	128	0	0	1	0	0	0	0	1
15:00 - 15:15	1	0	142	20	4	2	5	174	0	0	7	1	0	0	0	8	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	152	26	4	1	2	185	0	0	8	4	0	0	0	12	0	0	0	0	0	0	0	0
15:30 - 15:45	1	0	135	26	4	6	4	176	0	0	7	1	0	1	0	9	0	0	0	0	0	0	0	0
15:45 - 16:00	1	0	140	22	5	5	3	176	0	0	8	3	1	0	0	12	0	0	0	0	0	0	0	0
Hourly Total	3	0	569	94	17	14	14	711	0	0	30	9	1	1	0	41	0	0	0	0	0	0	0	0
16:00 - 16:15	0	0	129	17	2	3	1	152	0	0	6	2	0	0	0	8	0	0	1	0	0	0	0	1
16:15 - 16:30	0	0	144	23	1	2	5	175	0	0	12	1	0	0	0	13	0	0	0	0	0	0	0	0
16:30 - 16:45	1	0	163	20	2	1	4	191	0	0	9	0	1	0	0	10	0	0	0	0	0	0	0	0
16:45 - 17:00	4	0	176	18	3	1	0	202	0	0	8	1	0	0	0	9	0	0	0	0	0	0	0	0
Hourly Total	5	0	612	78	8	7	10	720	0	0	35	4	1	0	0	40	0	0	1	0	0	0	0	1
17:00 - 17:15	1	0	146	14	4	1	5	171	0	0	11	0	0	1	0	12	0	0	0	0	0	0	0	0
17:15 - 17:30	1	0	171	13	2	2	5	194	0	0	6	1	0	0	0	7	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	180	17	3	3	3	206	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0
17:45 - 18:00	1	2	173	18	1	2	3	200	0	0	5	1	0	0	0	6	0	0	0	0	0	0	0	0
Hourly Total	3	2	670	62	10	8	16	771	0	0	27	2	0	1	0	30	0	0	0	0	0	0	0	0
18:00 - 18:15	2	0	190	17	2	1	2	214	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15 - 18:30	0	0	169	10	3	0	4	186	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
18:30 - 18:45	3	2	196	10	1	1	1	214	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45 - 19:00	0	0	131	9	1	0	3	144	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
Hourly Total	5	2	686	46	7	2	10	758	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0
TOTAL	16	4	2537	280	42	31	50	2960	0	0	94	15	2	2	0	113	0	0	1	0	0	0	0	1

Junction: 1

Approach: A62 Oldham Road West

TIME	To Reliance Street								To A62 Oldham Road (E)							
	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	CYCLE	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	0	0	0	1	0	0	1	0	0	94	15	4	0	3	116
07:15 - 07:30	0	0	1	2	0	0	0	3	5	1	80	15	6	0	4	111
07:30 - 07:45	0	0	4	2	0	0	0	6	1	0	92	18	4	0	3	118
07:45 - 08:00	0	0	3	0	0	0	0	3	1	0	120	23	6	5	2	157
Hourly Total	0	0	8	4	1	0	0	13	7	1	386	71	20	5	12	502
08:00 - 08:15	0	0	6	0	0	0	0	6	0	0	116	20	4	5	2	147
08:15 - 08:30	0	0	7	0	0	0	0	7	1	0	149	19	3	4	3	179
08:30 - 08:45	0	0	8	0	0	0	0	8	1	1	102	24	1	4	4	137
08:45 - 09:00	0	0	9	1	1	0	0	11	1	1	90	24	6	3	2	127
Hourly Total	0	0	30	1	1	0	0	32	3	2	457	87	14	16	11	590
09:00 - 09:15	0	0	11	0	0	0	0	11	0	0	105	25	3	3	5	141
09:15 - 09:30	0	0	13	3	0	0	0	16	0	0	89	21	5	10	4	129
09:30 - 09:45	0	0	9	2	2	1	0	14	0	0	105	20	4	4	6	139
09:45 - 10:00	0	0	9	1	4	0	0	14	1	0	99	31	8	8	7	154
Hourly Total	0	0	42	6	6	1	0	55	1	0	398	97	20	25	22	563

TOTAL	0	0	80	11	8	1	0	100	11	3	1241	255	54	46	45	1655
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15:00 - 15:15	0	0	13	2	0	0	0	15	0	0	215	36	3	6	2	262
15:15 - 15:30	0	0	9	2	0	0	0	11	1	0	232	46	6	3	5	293
15:30 - 15:45	0	0	11	1	0	0	0	12	0	0	212	55	11	4	2	284
15:45 - 16:00	0	0	12	0	0	0	0	12	0	1	238	50	2	5	7	303
Hourly Total	0	0	45	5	0	0	0	50	1	1	897	187	22	18	16	1142
16:00 - 16:15	0	0	8	1	0	0	0	9	2	4	250	42	3	3	3	307
16:15 - 16:30	0	0	12	2	0	0	0	14	3	0	262	38	6	2	5	316
16:30 - 16:45	0	0	15	0	0	1	0	16	4	3	255	23	1	5	1	292
16:45 - 17:00	0	0	6	1	0	0	0	7	2	1	216	21	0	1	3	244
Hourly Total	0	0	41	4	0	1	0	46	11	8	983	124	10	11	12	1159
17:00 - 17:15	0	0	7	0	0	0	0	7	4	0	303	34	2	2	3	348
17:15 - 17:30	0	0	6	0	0	0	0	6	1	1	266	22	1	1	1	293
17:30 - 17:45	0	0	10	0	0	0	0	10	2	0	276	26	2	2	6	314
17:45 - 18:00	0	0	6	1	0	0	0	7	3	1	284	12	3	1	2	306
Hourly Total	0	0	29	1	0	0	0	30	10	2	1129	94	8	6	12	1261
18:00 - 18:15	0	0	2	0	0	0	0	2	1	0	249	14	1	2	5	272
18:15 - 18:30	0	0	3	0	0	0	0	3	0	3	225	14	1	0	2	245
18:30 - 18:45	0	0	1	0	0	0	0	1	1	2	227	9	1	1	3	244
18:45 - 19:00	0	0	2	0	0	0	0	2	0	0	187	16	2	1	4	210
Hourly Total	0	0	8	0	0	0	0	8	2	5	888	53	5	4	14	971

TOTAL	0	0	123	10	0	1	0	134	24	16	3897	458	45	39	54	4533
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Appendix I: Junction 9 Results

Junctions 9										
PICADY 9 - Priority Intersection Module										
Version: 9.5.1.7462										
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Filename: Reliance Street _ Oldham Road.j9

Path: \\192.168.1.3\Company\EAS\Current Projects 2021\Manchester CC, Reliance Street, Manchester 3815\Analysis\PICADY

Report generation date: 16/03/2022 10:11:57

- »2022, AM
- »2022, PM
- »2027 Growth, AM
- »2027 Growth, PM
- »2027 Growth + Dev, AM
- »2027 Growth + Dev, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2022									
Stream B-C	D1	0.1	7.21	0.07	A	D2	0.2	10.53	0.17	B
Stream B-A		0.1	16.66	0.08	C		0.2	21.83	0.18	C
Stream C-AB		0.1	5.96	0.09	A		0.1	7.74	0.09	A
	2027 Growth									
Stream B-C	D3	0.1	7.39	0.07	A	D4	0.3	11.39	0.20	B
Stream B-A		0.1	18.18	0.09	C		0.3	25.22	0.22	D
Stream C-AB		0.2	5.95	0.10	A		0.2	7.83	0.10	A
	2027 Growth + Dev									
Stream B-C	D5	0.1	7.76	0.11	A	D6	0.4	12.42	0.24	B
Stream B-A		0.2	19.37	0.13	C		0.4	27.74	0.27	D
Stream C-AB		0.2	5.90	0.13	A		0.2	7.77	0.13	A

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

File summary

File Description

Title	
Location	
Site number	
Date	14/03/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CHRISEASIEAS
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

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		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)
D1	2022	AM	ONE HOUR	07:45	09:15	15
D2	2022	PM	ONE HOUR	16:45	18:15	15
D3	2027 Growth	AM	ONE HOUR	07:45	09:15	15
D4	2027 Growth	PM	ONE HOUR	16:45	18:15	15
D5	2027 Growth + Dev	AM	ONE HOUR	07:45	09:15	15
D6	2027 Growth + Dev	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2022, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.44	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Oldham Road (W)		Major
B	Reliance Street		Minor
C	Oldham Road (E)		Major

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)
C	13.70			250.0	✓	1.00

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	One lane plus flare	10.00	5.40	3.90	3.70	3.70	✓	1.00	21	28

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	518	0.063	0.159	0.100	0.227
B-C	725	0.074	0.187	-	-
C-B	719	0.185	0.185	-	-

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)
D1	2022	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	622	100.000
B		✓	54	100.000
C		✓	1352	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	32	590
	B	18	0	36
	C	1304	48	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	10	10
	B	10	0	10
	C	10	10	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.07	7.21	0.1	A
B-A	0.08	16.66	0.1	C
C-AB	0.09	5.96	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	634	0.043	27	0.0	6.525	A
B-A	14	340	0.040	13	0.0	12.122	B
C-AB	40	705	0.057	40	0.1	5.952	A
C-A	978			978			
A-B	24			24			
A-C	444			444			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	32	615	0.053	32	0.1	6.796	A
B-A	16	305	0.053	16	0.1	13.690	B
C-AB	50	720	0.070	50	0.1	5.915	A
C-A	1165			1165			
A-B	29			29			
A-C	530			530			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	40	589	0.067	40	0.1	7.212	A
B-A	20	257	0.077	20	0.1	16.648	C
C-AB	67	752	0.089	67	0.1	5.784	A
C-A	1421			1421			
A-B	35			35			
A-C	650			650			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	40	588	0.067	40	0.1	7.215	A
B-A	20	257	0.077	20	0.1	16.662	C
C-AB	67	752	0.089	67	0.1	5.786	A
C-A	1421			1421			
A-B	35			35			
A-C	650			650			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	32	615	0.053	32	0.1	6.802	A
B-A	16	305	0.053	16	0.1	13.705	B
C-AB	50	720	0.070	51	0.1	5.918	A
C-A	1165			1165			
A-B	29			29			
A-C	530			530			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	27	633	0.043	27	0.0	6.536	A
B-A	14	340	0.040	14	0.0	12.135	B
C-AB	40	705	0.057	40	0.1	5.962	A
C-A	978			978			
A-B	24			24			
A-C	444			444			

2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.92	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2022	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1205	100.000
B		✓	109	100.000
C		✓	760	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	46	1159
	B	37	0	72
	C	720	40	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	10	10
	B	10	0	10
	C	10	10	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.17	10.53	0.2	B
B-A	0.18	21.83	0.2	C
C-AB	0.09	7.74	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	54	546	0.099	54	0.1	8.044	A
B-A	28	317	0.088	27	0.1	13.674	B
C-AB	32	589	0.055	32	0.1	7.101	A
C-A	540			540			
A-B	35			35			
A-C	873			873			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	65	509	0.127	65	0.2	8.908	A
B-A	33	277	0.120	33	0.1	16.216	C
C-AB	40	575	0.069	40	0.1	7.394	A
C-A	643			643			
A-B	41			41			
A-C	1042			1042			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	79	456	0.174	79	0.2	10.502	B
B-A	41	222	0.183	40	0.2	21.746	C
C-AB	53	565	0.093	52	0.1	7.731	A
C-A	784			784			
A-B	51			51			
A-C	1276			1276			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	79	455	0.174	79	0.2	10.529	B
B-A	41	222	0.183	41	0.2	21.830	C
C-AB	53	565	0.093	53	0.1	7.737	A
C-A	784			784			
A-B	51			51			
A-C	1276			1276			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	65	508	0.127	65	0.2	8.936	A
B-A	33	277	0.120	34	0.2	16.281	C
C-AB	40	575	0.069	40	0.1	7.400	A
C-A	643			643			
A-B	41			41			
A-C	1042			1042			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	54	545	0.099	54	0.1	8.074	A
B-A	28	317	0.088	28	0.1	13.728	B
C-AB	32	589	0.055	32	0.1	7.112	A
C-A	540			540			
A-B	35			35			
A-C	873			873			

2027 Growth, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2027 Growth	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	666	100.000
B		✓	58	100.000
C		✓	1447	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	34	632
	B	19	0	39
	C	1396	51	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	10	10
	B	10	0	10
	C	10	10	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.07	7.39	0.1	A
B-A	0.09	18.18	0.1	C
C-AB	0.10	5.95	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	29	628	0.047	29	0.1	6.613	A
B-A	14	327	0.044	14	0.0	12.654	B
C-AB	43	709	0.061	43	0.1	5.945	A
C-A	1046			1046			
A-B	26			26			
A-C	476			476			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	35	608	0.058	35	0.1	6.914	A
B-A	17	290	0.059	17	0.1	14.509	B
C-AB	55	728	0.075	55	0.1	5.885	A
C-A	1246			1246			
A-B	31			31			
A-C	568			568			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	43	579	0.074	43	0.1	7.386	A
B-A	21	239	0.088	21	0.1	18.158	C
C-AB	74	766	0.096	74	0.2	5.719	A
C-A	1519			1519			
A-B	37			37			
A-C	696			696			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	43	579	0.074	43	0.1	7.389	A
B-A	21	239	0.088	21	0.1	18.178	C
C-AB	74	766	0.096	74	0.2	5.723	A
C-A	1519			1519			
A-B	37			37			
A-C	696			696			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	35	607	0.058	35	0.1	6.923	A
B-A	17	290	0.059	17	0.1	14.527	B
C-AB	55	728	0.075	55	0.1	5.890	A
C-A	1246			1246			
A-B	31			31			
A-C	568			568			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	29	627	0.047	29	0.1	6.622	A
B-A	14	327	0.044	14	0.1	12.671	B
C-AB	43	709	0.061	44	0.1	5.952	A
C-A	1046			1046			
A-B	26			26			
A-C	476			476			

2027 Growth, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.03	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2027 Growth	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1289	100.000
B		✓	117	100.000
C		✓	814	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	49	1240
	B	40	0	77
	C	771	43	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	10	10
	B	10	0	10
	C	10	10	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.20	11.39	0.3	B
B-A	0.22	25.22	0.3	D
C-AB	0.10	7.83	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	58	532	0.109	57	0.1	8.331	A
B-A	30	303	0.100	30	0.1	14.487	B
C-AB	35	584	0.060	35	0.1	7.206	A
C-A	578			578			
A-B	37			37			
A-C	934			934			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	69	492	0.141	69	0.2	9.350	A
B-A	36	260	0.138	36	0.2	17.634	C
C-AB	44	571	0.077	44	0.1	7.506	A
C-A	688			688			
A-B	44			44			
A-C	1115			1115			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	85	433	0.196	84	0.3	11.343	B
B-A	44	201	0.219	44	0.3	25.075	D
C-AB	59	564	0.104	58	0.2	7.827	A
C-A	838			838			
A-B	54			54			
A-C	1365			1365			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	85	433	0.196	85	0.3	11.386	B
B-A	44	201	0.219	44	0.3	25.224	D
C-AB	59	564	0.104	59	0.2	7.834	A
C-A	838			838			
A-B	54			54			
A-C	1365			1365			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	69	492	0.141	70	0.2	9.391	A
B-A	36	260	0.138	36	0.2	17.734	C
C-AB	44	571	0.077	44	0.1	7.516	A
C-A	688			688			
A-B	44			44			
A-C	1115			1115			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	58	532	0.109	58	0.1	8.369	A
B-A	30	303	0.100	30	0.1	14.555	B
C-AB	35	584	0.060	35	0.1	7.216	A
C-A	578			578			
A-B	37			37			
A-C	934			934			

2027 Growth + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.65	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2027 Growth + Dev	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	676	100.000
B		✓	82	100.000
C		✓	1462	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	44	632
	B	27	0	55
	C	1396	66	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	10	10
	B	10	0	10
	C	10	10	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.11	7.76	0.1	A
B-A	0.13	19.37	0.2	C
C-AB	0.13	5.90	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	624	0.066	41	0.1	6.792	A
B-A	20	324	0.063	20	0.1	13.022	B
C-AB	58	730	0.080	58	0.1	5.890	A
C-A	1043			1043			
A-B	33			33			
A-C	476			476			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	602	0.082	49	0.1	7.160	A
B-A	24	286	0.085	24	0.1	15.104	C
C-AB	74	758	0.098	74	0.1	5.791	A
C-A	1240			1240			
A-B	40			40			
A-C	568			568			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	571	0.106	60	0.1	7.754	A
B-A	30	234	0.127	30	0.2	19.336	C
C-AB	102	813	0.125	101	0.2	5.565	A
C-A	1508			1508			
A-B	48			48			
A-C	696			696			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	571	0.106	61	0.1	7.762	A
B-A	30	234	0.127	30	0.2	19.374	C
C-AB	102	813	0.125	102	0.2	5.571	A
C-A	1508			1508			
A-B	48			48			
A-C	696			696			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	602	0.082	50	0.1	7.170	A
B-A	24	286	0.085	24	0.1	15.139	C
C-AB	74	758	0.098	74	0.2	5.799	A
C-A	1240			1240			
A-B	40			40			
A-C	568			568			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	623	0.066	41	0.1	6.805	A
B-A	20	324	0.063	20	0.1	13.054	B
C-AB	58	730	0.080	58	0.1	5.901	A
C-A	1043			1043			
A-B	33			33			
A-C	476			476			

2027 Growth + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.32	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2027 Growth + Dev	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	1302	100.000
B		✓	141	100.000
C		✓	825	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
From	A	0	62	1240
	B	48	0	93
	C	771	54	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
From	A	0	10	10
	B	10	0	10
	C	10	10	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.24	12.42	0.4	B
B-A	0.27	27.74	0.4	D
C-AB	0.13	7.77	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	70	528	0.133	69	0.2	8.617	A
B-A	36	300	0.121	36	0.1	14.969	B
C-AB	45	593	0.076	44	0.1	7.218	A
C-A	576			576			
A-B	47			47			
A-C	934			934			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	84	486	0.172	83	0.2	9.817	A
B-A	43	256	0.168	43	0.2	18.532	C
C-AB	57	585	0.097	56	0.1	7.494	A
C-A	685			685			
A-B	56			56			
A-C	1115			1115			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	102	422	0.243	102	0.3	12.352	B
B-A	53	196	0.270	52	0.4	27.485	D
C-AB	77	587	0.131	77	0.2	7.758	A
C-A	831			831			
A-B	68			68			
A-C	1365			1365			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	102	421	0.243	102	0.4	12.425	B
B-A	53	195	0.270	53	0.4	27.740	D
C-AB	77	587	0.131	77	0.2	7.767	A
C-A	831			831			
A-B	68			68			
A-C	1365			1365			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	84	485	0.172	84	0.2	9.877	A
B-A	43	256	0.168	44	0.2	18.696	C
C-AB	57	585	0.097	57	0.1	7.505	A
C-A	685			685			
A-B	56			56			
A-C	1115			1115			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	70	527	0.133	70	0.2	8.666	A
B-A	36	300	0.121	36	0.2	15.065	C
C-AB	45	593	0.076	45	0.1	7.234	A
C-A	576			576			
A-B	47			47			
A-C	934			934			

Pre-Plan 313 – Reliance Street EV Charge Station

Proposals:

14 on-site parking electric vehicle (EV) charging spaces are provided of which 12 will be for customers and two for staff. Of these, eight will be ultra-rapid charging points, with two van charge points, one charge point (with water and air), and one disabled charging space. An indicative area is shown for electric cycle charging.

118 sqm of commercial space is provided with a waiting room which offers snacks and drinks.

Initial highway comments:

Given the proposal for commercial space we would query whether sufficient on-site parking provision has been made for non-vehicle charging customers and have concerns that as a consequence there may be a parking overspill onto adjacent local streets.

In terms of pedestrian access to the commercial facility, it is not currently clear how customers, other than those using the charging points will access the commercial space on foot and clarification is sought.

Whilst indicative vehicle tracking is shown around the internal circulatory facility, we would anticipate that further swept path drawings would be provided if a planning proposal is submitted. We would require swept path movements to/from individual bays to be provided as well as at the junction access.

The junction access may require a larger corner-radii than 1.5m, and this would be determined through swept path submission. Tactile paving for pedestrian crossing movements would be required at the revised vehicle access.

The vehicle access is proposed off Reliance Street but to the south of the existing access point. In this regard we have concerns in relation to vehicles potentially queuing upon entry and impacting on the adjacent key route network, in addition to the reduced amount of available space on Reliance Street when turning right out of the facility.

It is not currently clear to us whether the existing adjacent vehicle access off Oldham Road is in the ownership of the developer, and in this regard, clarification is sought. If it is within the ownership of the developer, then we would require that this access point is converted back to full kerb upstand footway through S278 agreement.

With regard to waste management, we would require full details of waste storage, transportation and collection proposals should a planning submission be made.

In relation to the trip analysis/traffic modelling provided, we have received the following comments from Transport for Greater Manchester (TfGM):

As the existing use has been demolished and cannot be used as a valid fallback position, this should not be used in any trip generation assessments.

The proposed trip rates have been provided from the consultant's client, however, there is no data presented in the form of survey / records. As such TfGM are unable to confirm the acceptability of the trip generation assessment work.

TfGM have also provided a general guidance note (attached) to assist the developer should the proposal be taken forward.

Manchester City Council
P O Box 532
Town Hall
Manchester
M60 2LA

Our ref TRA/22/117

Your ref:

21st April 2022

Dear Sir / Madam

Location: **Land at Reliance Street, Manchester, M40 1EZ**

Proposal: **Proposed Electric Vehicle Charging Station**

Thank you for consulting Transport for Greater Manchester (TfGM) on the above scoping proposals. The following comments are offered as advice on transport issues for you to balance against other factors and are made in the context of TfGM's role in the planning process, as set out in the footnote below.¹

TfGM scoping advice has been requested by Manchester City Council in respect of a proposed electric vehicle charging station development at Reliance Street in Manchester.

Please find below a general overview of the assessment work that should be contained within a TA:

1. General Comments

Traffic Impact and Transport Modelling Requirements (to be included within a TA)

- I. A description of current baseline traffic conditions in the area.

¹TfGM does not have any planning powers and is not a statutory consultee in the planning process. The purpose of the advice offered is to suggest the best way to improve land use / transport integration through the development proposals. Advice is based on the information provided by the applicant, and it is not TfGM's role to undertake detailed verification unless specifically commissioned to do so. ²TfGM control and manage the traffic signals in Greater Manchester, as such any schemes that alter signalised junctions need to be agreed with TfGM. Additionally, where developments impact on signalised junctions, TfGM have a duty of care to ensure that these impacts are satisfactorily mitigated as part of the planning process.

- II. An analysis of injury accidents during a recent five-year period, commenting on whether there are any underlying patterns of injury accidents that might be affected by the development.
- III. Traffic surveys and queue surveys (weekdays) - scope to be agreed with the Local Highway Authority (LHA), TfGM UTC and HFAS. TfGM UTC can be contacted in respect of the availability of any traffic counts in the area that could be used for the assessment.
- IV. A clear estimate of the level of new traffic likely to be associated with the development, based on an inspection of similar (and similarly-located) developments across the UK (excluding London) via the TRICS (or similar) database. The assessment work should be undertaken using a person-trip approach and applying the appropriate modal share percentages from local Census data. Other methodologies to determine trip rates are acceptable but these should be fully explained in the TA.
- V. A clearly defined methodology for determining the distribution / assignment of development trips onto the network i.e. understanding of where such new traffic is likely to distribute to/from, based on data sources such as Census Journey-to-Work statistics and/or vehicle turning proportions at nearby junctions.
- VI. An assessment of traffic levels and impacts at the specified year of opening of the development, and at a future year at least five years later, with due regard for traffic growth (if any).
- VII. An understanding of the likely impacts of the proposed development considered alongside any other nearby committed developments.
- VIII. In the relevant TA, clear diagrams should be provided illustrating the following elements, each individually:
 - Base Flows
 - Committed Development Flows
 - Proposed Flows
 - Proposed Distribution
 - Base plus Committed plus proposed development
 - Future plus Committed plus proposed development
- IX. TfGM HFAS recommends an increase of about 30vehs/hr at a junction as an appropriate threshold for considering the necessity of a traffic impact

assessment; this is in preference to a percentage-increase threshold, which tends to favour development in already heavily-trafficked areas.

- X. The scope of the junctions to be assessed by detailed modelling should be agreed with TfGM (UTC) and the LHA in advance and will depend upon the outcome of the trip assessment and distribution exercise. For this reason, TfGM would advise that a trip generation and distribution exercise should be issued before submission of the planning application. Once this is undertaken it will be possible to finalise TfGM requirements in terms of the TA. This will largely depend on the amount of trip generation.
- XI. Clear details of proposed vehicular access arrangements including general servicing arrangements. An engineering drawing should be supplied showing the changes to the road network to fully understand the impact of the proposed development.
- XII. A swept path analysis should be provided for any vehicular access.
- XIII. A review of Traffic Regulation Orders on the surrounding streets in the vicinity of the development.
- XIV. An assessment of the likely environmental/traffic impacts of HGVs during the construction process.

2. Site Accessibility by Sustainable Modes

Walking and cycling should form the natural mode choice for shorter trips, and also provide a viable option to facilitate longer trips through providing easy access to public transport. New developments should connect with, and enhance, existing walking and cycling networks in their vicinity, and also provide high quality facilities and networks for walking and cycling within development sites.

The TA should include a comprehensive review of the existing provision in the vicinity of the site for all pedestrians including those with disabilities. In addition to walking distances and pedestrian desire lines, pedestrian environment (including footway condition and widths) and pedestrian safety and security should be considered.

An audit of the footways in the vicinity of the development should be undertaken and improvements identified.

A comprehensive review of the cycling infrastructure in the vicinity of the proposed development should also be undertaken. This should include an assessment of the connectivity of the site with existing cycle routes. The quality and condition of existing infrastructure, cyclist safety and security should also be considered.

The catchment area for cycling, walking and public transport should be captured in maps. The quality of the routes for pedestrians and cyclists should be described and this should include a description of any signing for cycle routes as appropriate.

The TA should provide a review of existing public transport services (including service frequency and location of nearest stations/stops), with a view to supporting improvements to existing public transport services as required, in particular, assess the quality of the surrounding bus infrastructure i.e. upgrade to shelters etc.

The TA should include a plan clearly showing details of the proposed pedestrian and cycle access points serving the site and linkages into the surrounding area. Connectivity with local public transport networks should be highlighted. The developer should consider measures to encourage access by sustainable modes. Possible measures include but are not limited to the provision of pedestrian crossings, cycleways, cycle parking, new/improved footway ensuring that there are linkages into existing cycle and pedestrian facilities, as well as upgrades to existing bus stops (where appropriate).

TfGM would suggest that a pedestrian survey is carried out in the vicinity of the site, as per guidance <https://www.livingstreets.org.uk/media/1434/street-review-guidance-for-web.pdf> and included as part of the TA

Details of cycle parking facilities for the proposed development (e.g. number of spaces, location and type) should be provided and shown on plan.

3. Mitigation Measures

Impacts of the development should be identified through the above assessment work. The developer should identify appropriate mitigation to accommodate any increases in traffic generation and increased pedestrian and cyclist movements. Any appropriate mitigation should be identified in conjunction with TfGM UTC and the LHA who will be happy to work with the developer to agree an approach.

The TA should consider the impact of the development on the existing public transport networks in terms of extension of bus services, additional person trips. Mitigation measures should be considered where appropriate.

4. Travel Plan

A Framework Travel Plan for the development should accompany any future planning application.

5. Other

If there are any changes planned for bus infrastructure, for example relocation of existing bus stops or the creation of new bus parking areas, TfGM would request that the developer liaise directly with TfGM's bus infrastructure which can be contacted at Shelters@tfgm.com

6. Suggested Useful Guidance

In relation to walking, the importance of providing and maintaining good quality footways, free from obstruction and wide enough for when they are at their busiest, is critical to encourage and maximise walking levels associated with new developments. Useful guidance on street layouts which encourage walking is provided in Manual for Streets (Department for Transport, 2007). MfS provides guidance on lightly trafficked residential streets, and Manual for Streets 2 (CIHT, 2010) further develops the principles of the first Manual for Streets for application in wider circumstances on busier streets, including town and district centres.

In relation to cycling, infrastructure should be designed in accordance with current Greater Manchester Cycling Design Standards, the latest version of which is available from the TfGM website or by emailing cycling@tfgm.com. In particular, connections to/from and within developments should be designed in accordance with the Key Design Criteria of Safety, Coherence, Directness, Attractiveness and Comfort. A general principle is that infrastructure should be designed to be attractive to those who do not currently cycle, in order to drive the increase in cycling's mode share.

The Bee Network will be the largest joined-up system of walking and cycling routes in the UK and has been developed with all 10 Greater Manchester local authorities. More information on this is available on <https://www.tfgm.com> and TfGM would encourage the applicant to review the map online to determine whether there is an opportunity for this development to connect into the proposed Bee Network.

I hope you find these comments useful in the scoping process. Should you wish to discuss any matter further please do not hesitate to contact me.

Yours faithfully

Claire Smallman
Infrastructure Development Officer
Direct Line 0161 244 1733
Email claire.smallman@tfgm.com

Andy Connell, Traffic Engineer
Highways Service, Neighbourhoods Directorate
5th Floor, Bridgewater House
Whitworth Street
Manchester
M1 6LT



By email: andy.connell@manchester.gov.uk

31st May 2022

CC: Neil Bayliss-Rowe, Manchester City Council
Claire Smallman, Transport for Greater Manchester

Unit 23 The Maltings
Stanstead Abbots
Hertfordshire SG12 8HG

Tel 01920 871 777
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www.eastp.co.uk

Dear Andy,

Further Pre-application Advice for Electric Vehicle Charging Station at Reliance Street, Manchester

EAS Transport Planning has previously prepared a cover letter requesting Highways Pre-application Advice, regarding the potential development of an Electric Vehicle Charging Hub, at Reliance Street, at the corner with Oldham Road (A62), in Manchester (hereinafter referred to as the 'site'). A map showing the location of the site is included within **Appendix A**.

Manchester City Council (hereinafter 'MCC') and Transport for Greater Manchester ('TfGM') have therefore been consulted, and a response has been returned to EAS on the 15th of April 2022, via Andy Connell at MCC, who has returned both MCC's and TfGM's Pre-application advice, which is hereby included within **Appendix B**.

Revised Scheme

The original scheme proposed the development of an Electric Vehicle ('EV') charging station, including the provision of 14 EV car charging spaces, of which 2 were designated for staff parking and 12 were designed for public use. The site also proposed an ancillary retail element, electric cycle parking, as well as an electric sub-station.

Further to the previous Pre-application Advice request from March, the scheme design has continued to evolve, in line with the ongoing Planning Pre-application discussions with Manchester City Council, which are moving forward in parallel to this Highways Pre-application discussion, as well as this latter consultation process.

The most recent scheme submitted to MCC's Planning team is proposed to include 16 car parking spaces, including 13 EV charging spaces (split between 9 standard sized spaces, 2 van-sized spaces, and 2 blue-badge spaces) as well as 3 standard non-EV spaces, which are designed to be used by Internal Combustion Engine ('ICE') cars. The retail element has also been made smaller than previously submitted, at circa 101sqm, and divided into two small units, being aimed at as a small Food Outlet and a small Coffee Shop (i.e., both being designated as Class E units).

The revised site layout and further details of the scheme, as submitted for further Planning Pre-application comment is contained within **Appendix C**.

MCC Comments

In general, the comments provided by MCC are accepted, and have been integrated within the revised scheme.

Three car parking spaces for non-EV visiting the site have been introduced within the revised scheme, allowing for these users to use the retail element on the site without parking on the public highway or through blocking an EV space.

The circle-shaped vehicular parking area is now also circulated by a pedestrian walkway, enabling customers to walk between the respective parking space and the retail units.

It is also agreed that the Transport Assessment being prepared to be submitted with the full planning application will require a full swept path analysis exercise, including at the site access crossover arrangement, which is to include tactile paving. Details on waste collection and storage will also be included therewith.

It is also agreed that any amendments to the public highway will be undertaken via a Section 278 Agreement, including the provision of the amended access and the taking up of the existing site access. The existing crossover onto Oldham Road is located outside the red-line site boundary as far as we are aware, but this will also be confirmed with the client.

TfGM Comments

Therefore, the Pre-app also includes Pre-app comments from TfGM. It is noted that TfGM comment that the trip generation analysis should not take into consideration the former Petrol Filling Station ('PFS'), which used to occupy the site. This use was taken up and was therefore not included within the initial discussions on trip generation by the proposed scheme.

It is however not agreed in principle that the site, under its current lawful use, does not have some potential to generate such trips. Whilst these former PFS trips were not taken into consideration in this analysis, the site was previously permitted for such lawful uses, and may therefore be able to operate as such in the future. To allow for a more robust argument however, this consideration was not used within the below trip rate discussions.

Furthermore, TfGM question the formulation of the trip rate which was presented within the initial Pre-application request letter. This future site's potential trip rate/trip generation figure has over the past few weeks been thoroughly discussed with the client, who at the time of the first submission, had advised EAS that they would expect EV chargers to be every used up to 25% of the time. This figure is quoted within this letter, but was doubled (to 50%) as a worst-case potential trip rate, within the Pre-app request letter, as the worst-case possible scenario, in the lack of evidence from other similar sites.

A snippet of these discussions with the client on the expected trip rate are included within **Appendix D**.

The client has also advised that as the framework supplier for TfGM's EV charging network, they operate a wide variety of EV charging bays within the city. Within this framework agreement, the existing EV chargers are currently used for a small percentage of the time, and it is not expected that EV bays would be used at a very high percentage in the future either, even after the expected widespread growth in EV ownership and use. Current usage of this existing EV charging network is particularly quite low, even when including EV bays which do not form part of TfGM's network, with current usage rates of stand-alone bays/small groups of EV spaces, being of circa 6% of the time only.

This level of EV charging unit usage is in line with national estimates drawn up by the Department for Transport ('DfT') and other economic consultants upon which the clients have built their business model. The clients do not operate larger sites yet, this scheme being their initial venture in this emerging market.

It is also worth noting that, due to the types of chargers being proposed, there is a natural limit to the number of visits. The power on the site for chargers is shared between the chargers in use at any one time. Therefore, if more cars are charging on site, the power is split across more vehicles and each car gets a lower amount of power, resulting in a longer charge time. This means that, when there are more vehicles on site, charging takes longer, and so limits the potential trips per hour. When the site is less busy, vehicles get a higher rate of charge, enabling shorter trip lengths.

Therefore, whilst we can safely assume that at peak charging an EV would typically take 15-20 minutes to charge up if the station is not busy, we can safely state that each EV bay will be used by circa one vehicle an hour, i.e., for two trips, one in and one out of the site, as otherwise the EVs would not charge fully.

It is therefore concluded that the originally presented trip rate should stand, with the worst-case scenario presented within the initial Pre-app request being considered way above actual DfT estimates, and other leading analysis in this sector.

Survey of Similar Sites

Further to the Pre-application feedback received from TfGM, the client has also considered the option of surveying similar elsewhere in the country. Whilst there are not many similar EV charging hub sites to choose from, with each having its own characteristics and arrangements, it was concluded that the most similar site in terms of location and arrangement would be the Motor Fuel Group ('MFG') site at the corner of Chester Street (A56) with Bridgewater Street, in Stretford, on the other side of Manchester. This site includes 8 EV charging bays and a car wash, as well as a retail outlet (a Greggs Bakery). As no non-EV car parking spaces are provided on this site, it was noted that visits by ICE car drivers to the retail outlet on the site, make use the uncontrolled parking areas, mainly on Bridgewater Street.

A survey of the site access was therefore undertaken on Thursday the 19th of May 2022, during the peak periods of the day, being between 7am to 10am and 4pm and 7pm. It was noted that almost all the trips visiting the were related to using the EV charging bays, with only a handful of visits not using these bays over the course of the day. These are not being excluded from the analysis for a more robust argument.

Tables 1 and 2, presented below and overleaf show the findings of the survey during the AM and PM peak periods split over 15-minute arrivals and departures from the site:

Time	Trips				Parking Accumulation	
	Inbound	Outbound	Total Trips	Trips/bay/hr	Total	%age full
Parked at the Start					1	12.5%
07:00 - 07:15	4	3	7	3.500	2	25.0%
07:15 - 07:30	6	4	10	5.000	4	50.0%
07:30 - 07:45	2	4	6	3.000	2	25.0%
07:45 - 08:00	3	1	4	2.000	4	50.0%
08:00 - 08:15	2	2	4	2.000	2	25.0%
08:15 - 08:30	1	3	4	2.000	0	0.0%
08:30 - 08:45	1	0	1	0.500	1	12.5%
08:45 - 09:00	0	0	0	0.000	1	12.5%
09:00 - 09:15	4	1	5	2.500	5	62.5%
09:15 - 09:30	3	5	8	4.000	3	37.5%
09:30 - 09:45	2	2	4	2.000	3	37.5%
09:45 - 10:00	3	3	6	3.000	3	37.5%
Parked at the End					3	37.5%
Peak Hour Total	4	5	9	1.125	1.0	12.5%
Peak Period Total	31	28	59	2.458	2.5	31.3%

Table 1 - Survey findings during AM peak period

Table 1 shows that during the AM peak period, an overall bay occupancy of around 31.3% was noted on the site, whereas over the AM peak hour, this was quite low at just 12.5% of spaces being occupied. Similarly, an average trip rate of 1.125 trips per EV charging bay were recorded during the peak hour.

Over the whole AM peak period, between 7am and 10am, a total of 59 trips were recorded at the site access, including 31 vehicles driving in and 28 leaving the site, with an average trip rate of 2.458 trips per hour for each bay being recorded in this peak period.

Time	Trips				Parking Accumulation	
	Inbound	Outbound	Total Trips	Trips/bay/hr	Total	%age full
Parked at the Start					4	
16:00 - 16:15	0	3	3	1.500	1	12.5%
16:15 - 16:30	2	0	2	1.000	3	37.5%
16:30 - 16:45	1	3	4	2.000	1	12.5%
16:45 - 17:00	1	1	2	1.000	1	12.5%
17:00 - 17:15	2	0	2	1.000	3	37.5%
17:15 - 17:30	1	1	2	1.000	3	37.5%
17:30 - 17:45	3	1	4	2.000	5	62.5%
17:45 - 18:00	1	1	2	1.000	5	62.5%
18:00 - 18:15	1	2	3	1.500	2	25.0%
18:15 - 18:30	1	0	1	0.500	3	37.5%
18:30 - 18:45	1	1	2	1.000	3	37.5%
18:45 - 19:00	0	1	1	0.500	2	25.0%
Parked at the End					2	
Peak Hour Total	7	3	10	1.250	4.0	50.0%
Peak Period Total	14	14	28	1.167	2.667	33.3%

Table 2 - Survey findings during PM peak period

Table 2 shows that during the PM peak period, an overall bay occupancy of around 33.3% was noted on the site, whereas over the peak hour, bay occupancy was higher, with 50% of spaces being occupied. However, in line with the AM peak hour, an average trip rate of 1.250 trips per EV charging bay were recorded during the peak hour.

Over the whole PM peak period, between 4pm and 7pm, just 28 trips were recorded at the site access, including 14 vehicles driving in and another 14 leaving the site, with an average trip rate of 1.167 trips per hour for each bay being recorded in this peak period.

The peak EV space occupancy of the site was therefore noted at 62.5% during between 5.30pm and 6pm, but on average, this was significantly lower overall, at circa 32.3%. The peak hours, do vary a bit more, with the AM peak being occupied at a lower average at 12.5%, whereas the PM peak hour was found to be higher at 50%. On this basis, we note that the 32% bay occupancy rate is quite close to the 25-30% typical charger usage time previously discussed as the expected number in the longer term, which is what was presented as the base assumption numbers in the Pre-application letter.

It is relevant to add that the above surveyed parked EV numbers would include the cars are parked within bays, but not charging (which is a slightly different parameter to the client's anticipated charging time), either as the car has just arrived and is not yet connected, or if the EV is already charged, but car is yet to leave the site.

It is also noted that being a new type of development, the MFG site currently attracts visitors who would drive out of their way to check out this new EV charging concept. Although this figure is not captured within the above, it is assumed that as early technology adopters would be keen to test emerging offerings within this market, and would drive out of their way to test this. In the long-run such visitors would not be captured within such trip rates, and therefore a further element of robustness is captured within this dataset.

In terms of peak hour trips (8-9am and 5-6pm), the surveys show that trip generation were low, with 9 trips in the AM peak hour and 10 trips in the PM peak hour. Overall, within the peak period, 59 trips were noted in the AM peak period (7-10am) and 28 trips in the PM peak period (4-7pm), i.e., at circa 2.5 trips/hour per bay in the AM peak period and 1.2 trips in the PM peak period. Over the course of the two peak periods, the average trip rate per EV charging point is therefore of 1.813.

Therefore, whilst there are clear peaks for both trips to and from the site, as well as parking accumulation on the site, the two parameters do not strictly replicate each other. It is therefore quite complicated to mathematically link the charging time or bay occupancy with an actual trip rate, but it is clear that EV charging hubs are also very likely to rarely be full, with demand varying significantly through the course of the day.

For this reason, as well as the limited data that is available on similar sites, it is recommended to use the factored overall number trips, achieved at the site access over the two peak periods, average into an hourly total (at 1.813), rather than the respective peak hour to calculate the trip rate (1.125 trips in the AM peak hour and 1.25 trips in the PM peak hour).

Additional and Revised Trip Generation

Following the introduction of the amended scheme, discussed above, it is noted that the scheme now includes 3 non-EV, or standard ICE vehicle spaces. These spaces were introduced following comments by MCC Highways and Planning teams, probably emerging from on-street parking noted occurring near the MFG site.

Whilst the provision level/actual number of non-EV spaces is not based on a direct viability assessment per se, but mostly on an agreed number with MCC Planning, obviously no evidence of non-EV parking space demand within EV charging forecourts, is available within the UK market, and an educated assumption was therefore made.

It is assumed that over time, the visitors to the site using non-EV spaces would balance out, and if demand exceeds supply, visitors in ICE cars would learn to use alternative retail outlets available locally. It is relevant to add that there is a wide variety of local retail outlets which allow parking by ICE vehicles, and drivers wouldn't stick around or visit again, if parking is an issue on this site, but not on other sites nearby.

Therefore, in order to assess the potential trip rate by ICE vehicles stopping at the site a review of the TRICS database was again undertaken. In the absence of EV forecourts in this database, the most similar land-use category within this database was considered to be a Motorway Services (Category 06/F), which offers the same type of service for ICE vehicle users.

In this regard, a query of the TRICS database, v7.9.1 was undertaken for this land-use, on sites located within England and Wales, but set outside the Greater London area. Two weekday surveys were returned within this query, being located near Maidstone (Kent) and in Grantham (Lincolnshire). Weekend surveys were excluded due to the different travel patterns on weekends.

This TRICS query returned the following results as shown overleaf in Table 3:

	Trip Rate		Trips		
	Arrivals	Departures	Arrivals	Departures	Total Trips
AM Peak Hour (8-9am)	0.951	0.869	3	3	6
PM Peak Hour (5-6pm)	0.773	0.746	2	2	4
Daily trips (6am-10pm)	12.239	12.238	37	37	74

Table 3 – Expected trip generation by ICE vehicle spaces

Based on the above, it is expected that the three ICE spaces would generate 6 trips (3 in/3 out) in the AM peak hour and 4 trips (2 in/2 out) in the PM peak hour.

The full TRICS report is contained within **Appendix F**.

Therefore, following the above discussion equating the trip generation by EV charging bays at circa 1.813 trips per hour per bay, we would expect circa 24 trips per hour to and from the 13 EV bays.

Summarising the above, for the combined amended scheme, including the 13 EV spaces and 3 non-EV (ICU) spaces, we would be expected to generate circa 30 trips in the AM peak hour and 28 trips in the PM peak hour.

If we focus the analysis to include peak hour flows, as surveyed within the MFG site (for the EV spaces) as well as through TRICS (ICE vehicle spaces), the following level trips would be expected during peak hours:

	Trip Rate		Trips		
	Arrivals	Departures	Arrivals	Departures	Total Trips
<i>EV spaces (based on surveyed peak hour flows)</i>					
AM Peak Hour (8-9am)	0.500	0.625	4	5	9
PM Peak Hour (5-6pm)	0.375	0.875	3	7	10
<i>ICE vehicle spaces (based on TRICS data)</i>					
AM Peak Hour (8-9am)	0.951	0.869	3	3	6
PM Peak Hour (5-6pm)	0.773	0.746	2	2	4
<i>Total Trip Generation</i>					
AM Peak Hour (8-9am)			7	8	15
PM Peak Hour (5-6pm)			5	9	14

Table 4 – Expected trips expected by the revised scheme

It is therefore concluded that the revised scheme will not generate more than 30 trips. Whilst the previously submitted trip generation showed an absolute worst-case scenario of 50% average charging time usage, it is clear from the surveys of the MFG site, that this level of use is highly unlikely to be ever met, and therefore a revised trip generation is being presented, in line with discussions with the client, and based upon DfT and industry-leading guidance, which has formed the EV charging hub business model.

Summary

Further to the Pre-application advice discussion on the proposed Electric Vehicle Charging Hub, proposed at Reliance Street, corner with Oldham Road in Manchester, we have gone through various discussions with the clients on both a revised scheme, as emerging through the Planning Pre-application process, as well as the discussions undertaken within the same Highways Pre-app process. The scheme has therefore been revised to include 13 EV charging spaces as well as three non-EV parking spaces.

Comments from MCC Transport are being accepted in general, and the full planning application will include details for pedestrian facilities as well as swept path analysis of the site access and parking spaces. Three non-EV spaces are also being introduced, as recommended within this advice.

Following comments from TfGM on trip rates, a technical discussion has been undertaken with the client. It is worth noting that, due to the types of chargers being proposed, there is a natural limit to the number of visits. The power on the site for chargers is shared between the chargers in use at any one time. Therefore, if more cars are charging on site, the power is split across more vehicles and each car gets a lower amount of power, resulting in a longer charge time. Evidence from national guidance and industry research was therefore reviewed, which backs up this data, and similar EV bay usage levels are also currently recorded on the TfGM's framework EV charging network, also run by the clients.

To support this argument, traffic surveys of the site access of a similar scheme in Manchester was also undertaken at the MFG site in Stretford. This site includes 8 EV spaces, a car wash facility, and a retail outlet. As no non-EV parking is included with this facility, these visitors were not recorded, since they park on the local highway. This survey showed a trip rate of circa 1.2 trips per charging bay during each peak hour, and of around 1.8 trips per charging bay over the survey period. Over the 13 charging bays, this would equate to a trip generation of around 24 trips per hour.

Furthermore, due to the introduction of the three non-EV spaces, an additional trip rate for these spaces is queried from TRICS, which shows that we should expect that these three spaces would generate six and four trips within the AM and PM peak hours respectively. Therefore, it would be expected that the scheme would not attract more than 30 trips overall to the junction of Reliance Street with Oldham Road, with traffic splitting into different directions beyond this point.

It is therefore concluded that no junction modelling should be presented within the Transport Assessment, being presented with the scheme to support this planning application.

If you have any questions, please do not hesitate to contact me on joseph.mercieca@eastp.co.uk or by phone on 01920 871 777.

Yours sincerely



Joseph Mercieca | CIHT ARB MSc (Transport) BE&A (Hons)

Principal Engineer, for and on behalf of EAS Transport Planning

Appendices:

Appendix: A – Location Plan

Appendix: B – Previous Highways Pre-app Advice

Appendix: C – Revised Proposals as submitted Planning Pre-app

Appendix: D – Discussions with Client on Trip Rate

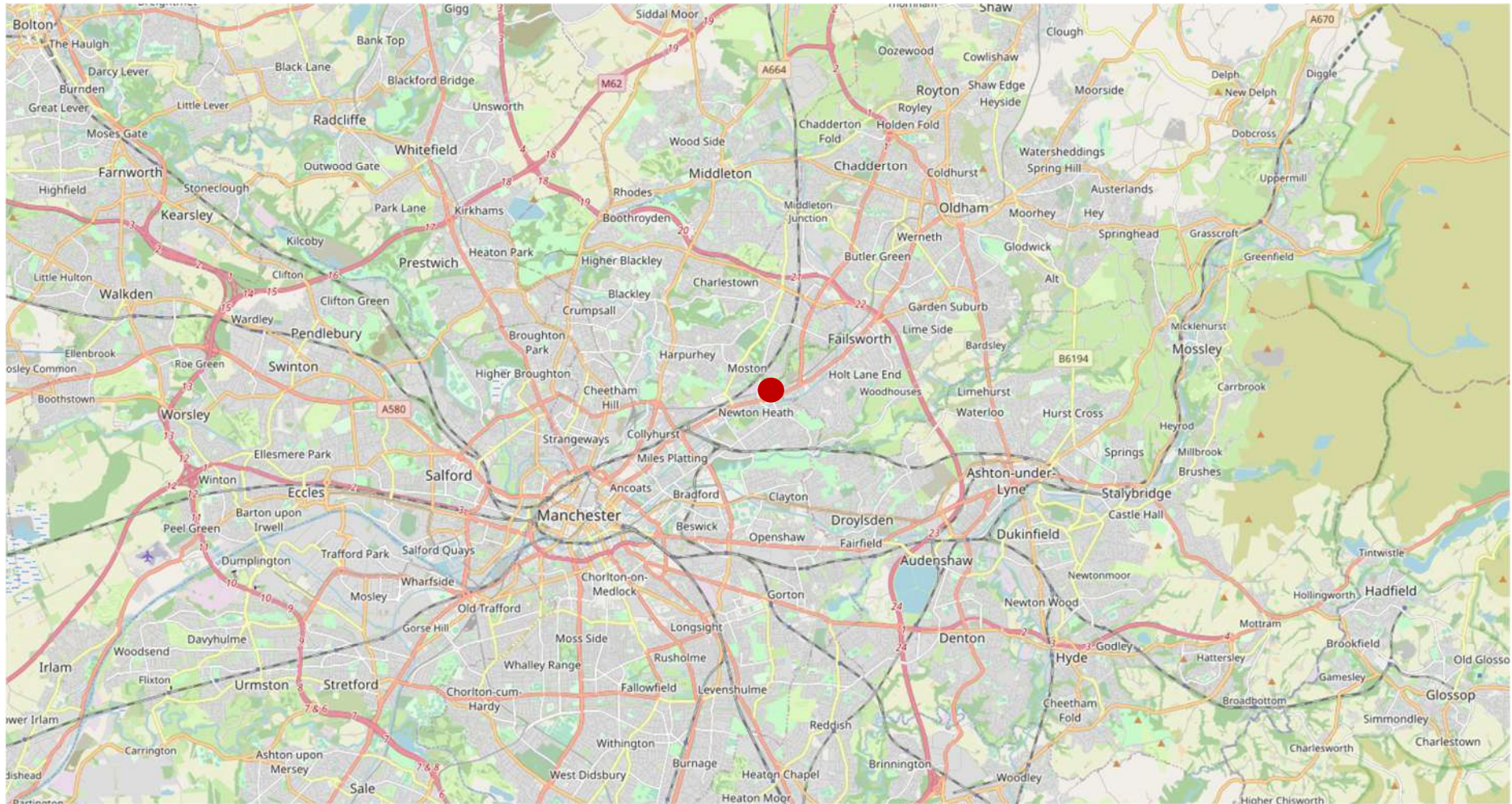
Appendix: E – MFG Site Survey

Appendix: F – TRICS Report for non-EV Spaces

Appendix: A – Location Plan

Site Location Plan

● - Site Location Plan



Appendix: B – Previous Highways Pre-app Advice

Pre-Plan 313 – Reliance Street EV Charge Station

Proposals:

14 on-site parking electric vehicle (EV) charging spaces are provided of which 12 will be for customers and two for staff. Of these, eight will be ultra-rapid charging points, with two van charge points, one charge point (with water and air), and one disabled charging space. An indicative area is shown for electric cycle charging.

118 sqm of commercial space is provided with a waiting room which offers snacks and drinks.

Initial highway comments:

Given the proposal for commercial space we would query whether sufficient on-site parking provision has been made for non-vehicle charging customers and have concerns that as a consequence there may be a parking overspill onto adjacent local streets.

In terms of pedestrian access to the commercial facility, it is not currently clear how customers, other than those using the charging points will access the commercial space on foot and clarification is sought.

Whilst indicative vehicle tracking is shown around the internal circulatory facility, we would anticipate that further swept path drawings would be provided if a planning proposal is submitted. We would require swept path movements to/from individual bays to be provided as well as at the junction access.

The junction access may require a larger corner-radii than 1.5m, and this would be determined through swept path submission. Tactile paving for pedestrian crossing movements would be required at the revised vehicle access.

The vehicle access is proposed off Reliance Street but to the south of the existing access point. In this regard we have concerns in relation to vehicles potentially queuing upon entry and impacting on the adjacent key route network, in addition to the reduced amount of available space on Reliance Street when turning right out of the facility.

It is not currently clear to us whether the existing adjacent vehicle access off Oldham Road is in the ownership of the developer, and in this regard, clarification is sought. If it is within the ownership of the developer, then we would require that this access point is converted back to full kerb upstand footway through S278 agreement.

With regard to waste management, we would require full details of waste storage, transportation and collection proposals should a planning submission be made.

In relation to the trip analysis/traffic modelling provided, we have received the following comments from Transport for Greater Manchester (TfGM):

As the existing use has been demolished and cannot be used as a valid fallback position, this should not be used in any trip generation assessments.

The proposed trip rates have been provided from the consultant's client, however, there is no data presented in the form of survey / records. As such TfGM are unable to confirm the acceptability of the trip generation assessment work.

TfGM have also provided a general guidance note (attached) to assist the developer should the proposal be taken forward.

Manchester City Council
P O Box 532
Town Hall
Manchester
M60 2LA

Our ref TRA/22/117

Your ref:

21st April 2022

Dear Sir / Madam

Location: **Land at Reliance Street, Manchester, M40 1EZ**

Proposal: **Proposed Electric Vehicle Charging Station**

Thank you for consulting Transport for Greater Manchester (TfGM) on the above scoping proposals. The following comments are offered as advice on transport issues for you to balance against other factors and are made in the context of TfGM's role in the planning process, as set out in the footnote below.¹

TfGM scoping advice has been requested by Manchester City Council in respect of a proposed electric vehicle charging station development at Reliance Street in Manchester.

Please find below a general overview of the assessment work that should be contained within a TA:

1. General Comments

Traffic Impact and Transport Modelling Requirements (to be included within a TA)

- I. A description of current baseline traffic conditions in the area.

¹TfGM does not have any planning powers and is not a statutory consultee in the planning process. The purpose of the advice offered is to suggest the best way to improve land use / transport integration through the development proposals. Advice is based on the information provided by the applicant, and it is not TfGM's role to undertake detailed verification unless specifically commissioned to do so. ²TfGM control and manage the traffic signals in Greater Manchester, as such any schemes that alter signalised junctions need to be agreed with TfGM. Additionally, where developments impact on signalised junctions, TfGM have a duty of care to ensure that these impacts are satisfactorily mitigated as part of the planning process.

- II. An analysis of injury accidents during a recent five-year period, commenting on whether there are any underlying patterns of injury accidents that might be affected by the development.
- III. Traffic surveys and queue surveys (weekdays) - scope to be agreed with the Local Highway Authority (LHA), TfGM UTC and HFAS. TfGM UTC can be contacted in respect of the availability of any traffic counts in the area that could be used for the assessment.
- IV. A clear estimate of the level of new traffic likely to be associated with the development, based on an inspection of similar (and similarly-located) developments across the UK (excluding London) via the TRICS (or similar) database. The assessment work should be undertaken using a person-trip approach and applying the appropriate modal share percentages from local Census data. Other methodologies to determine trip rates are acceptable but these should be fully explained in the TA.
- V. A clearly defined methodology for determining the distribution / assignment of development trips onto the network i.e. understanding of where such new traffic is likely to distribute to/from, based on data sources such as Census Journey-to-Work statistics and/or vehicle turning proportions at nearby junctions.
- VI. An assessment of traffic levels and impacts at the specified year of opening of the development, and at a future year at least five years later, with due regard for traffic growth (if any).
- VII. An understanding of the likely impacts of the proposed development considered alongside any other nearby committed developments.
- VIII. In the relevant TA, clear diagrams should be provided illustrating the following elements, each individually:
 - Base Flows
 - Committed Development Flows
 - Proposed Flows
 - Proposed Distribution
 - Base plus Committed plus proposed development
 - Future plus Committed plus proposed development
- IX. TfGM HFAS recommends an increase of about 30vehs/hr at a junction as an appropriate threshold for considering the necessity of a traffic impact

assessment; this is in preference to a percentage-increase threshold, which tends to favour development in already heavily-trafficked areas.

- X. The scope of the junctions to be assessed by detailed modelling should be agreed with TfGM (UTC) and the LHA in advance and will depend upon the outcome of the trip assessment and distribution exercise. For this reason, TfGM would advise that a trip generation and distribution exercise should be issued before submission of the planning application. Once this is undertaken it will be possible to finalise TfGM requirements in terms of the TA. This will largely depend on the amount of trip generation.
- XI. Clear details of proposed vehicular access arrangements including general servicing arrangements. An engineering drawing should be supplied showing the changes to the road network to fully understand the impact of the proposed development.
- XII. A swept path analysis should be provided for any vehicular access.
- XIII. A review of Traffic Regulation Orders on the surrounding streets in the vicinity of the development.
- XIV. An assessment of the likely environmental/traffic impacts of HGVs during the construction process.

2. Site Accessibility by Sustainable Modes

Walking and cycling should form the natural mode choice for shorter trips, and also provide a viable option to facilitate longer trips through providing easy access to public transport. New developments should connect with, and enhance, existing walking and cycling networks in their vicinity, and also provide high quality facilities and networks for walking and cycling within development sites.

The TA should include a comprehensive review of the existing provision in the vicinity of the site for all pedestrians including those with disabilities. In addition to walking distances and pedestrian desire lines, pedestrian environment (including footway condition and widths) and pedestrian safety and security should be considered.

An audit of the footways in the vicinity of the development should be undertaken and improvements identified.

A comprehensive review of the cycling infrastructure in the vicinity of the proposed development should also be undertaken. This should include an assessment of the connectivity of the site with existing cycle routes. The quality and condition of existing infrastructure, cyclist safety and security should also be considered.

The catchment area for cycling, walking and public transport should be captured in maps. The quality of the routes for pedestrians and cyclists should be described and this should include a description of any signing for cycle routes as appropriate.

The TA should provide a review of existing public transport services (including service frequency and location of nearest stations/stops), with a view to supporting improvements to existing public transport services as required, in particular, assess the quality of the surrounding bus infrastructure i.e. upgrade to shelters etc.

The TA should include a plan clearly showing details of the proposed pedestrian and cycle access points serving the site and linkages into the surrounding area. Connectivity with local public transport networks should be highlighted. The developer should consider measures to encourage access by sustainable modes. Possible measures include but are not limited to the provision of pedestrian crossings, cycleways, cycle parking, new/improved footway ensuring that there are linkages into existing cycle and pedestrian facilities, as well as upgrades to existing bus stops (where appropriate).

TfGM would suggest that a pedestrian survey is carried out in the vicinity of the site, as per guidance <https://www.livingstreets.org.uk/media/1434/street-review-guidance-for-web.pdf> and included as part of the TA

Details of cycle parking facilities for the proposed development (e.g. number of spaces, location and type) should be provided and shown on plan.

3. Mitigation Measures

Impacts of the development should be identified through the above assessment work. The developer should identify appropriate mitigation to accommodate any increases in traffic generation and increased pedestrian and cyclist movements. Any appropriate mitigation should be identified in conjunction with TfGM UTC and the LHA who will be happy to work with the developer to agree an approach.

The TA should consider the impact of the development on the existing public transport networks in terms of extension of bus services, additional person trips. Mitigation measures should be considered where appropriate.

4. Travel Plan

A Framework Travel Plan for the development should accompany any future planning application.

5. Other

If there are any changes planned for bus infrastructure, for example relocation of existing bus stops or the creation of new bus parking areas, TfGM would request that the developer liaise directly with TfGM's bus infrastructure which can be contacted at Shelters@tfgm.com

6. Suggested Useful Guidance

In relation to walking, the importance of providing and maintaining good quality footways, free from obstruction and wide enough for when they are at their busiest, is critical to encourage and maximise walking levels associated with new developments. Useful guidance on street layouts which encourage walking is provided in Manual for Streets (Department for Transport, 2007). MfS provides guidance on lightly trafficked residential streets, and Manual for Streets 2 (CIHT, 2010) further develops the principles of the first Manual for Streets for application in wider circumstances on busier streets, including town and district centres.

In relation to cycling, infrastructure should be designed in accordance with current Greater Manchester Cycling Design Standards, the latest version of which is available from the TfGM website or by emailing cycling@tfgm.com. In particular, connections to/from and within developments should be designed in accordance with the Key Design Criteria of Safety, Coherence, Directness, Attractiveness and Comfort. A general principle is that infrastructure should be designed to be attractive to those who do not currently cycle, in order to drive the increase in cycling's mode share.

The Bee Network will be the largest joined-up system of walking and cycling routes in the UK and has been developed with all 10 Greater Manchester local authorities. More information on this is available on <https://www.tfgm.com> and TfGM would encourage the applicant to review the map online to determine whether there is an opportunity for this development to connect into the proposed Bee Network.

I hope you find these comments useful in the scoping process. Should you wish to discuss any matter further please do not hesitate to contact me.

Yours faithfully

Claire Smallman
Infrastructure Development Officer
Direct Line 0161 244 1733
Email claire.smallman@tfgm.com

Appendix: C – Revised Proposals as submitted Planning Pre-app



Be.EV

Reliance Street Pre-Application Addendum

May 2022

LIPTON PLANT ARCHITECTS

University House, 53-55 East Road, London, N1 6AH +44(0) 20 7288 1333 mail@lparchitects.co.uk www.lparchitects.co.uk

WE MAKE Be.EV

MAY 2022

This document has been produced by:

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REF: 612-OLD-007-RELIANCE STREET PRE-
APPLICATION ADDENDUM

LIPTON PLANT ARCHITECTS

WE MAKE

WE MAKE is our way of saying **WE** work collaboratively with our colleagues, with our consultants and with our clients.

MAKE is our modest way of communicating **WE** aren't only expert designers but we consistently deliver, **WE MAKE** buildings.

DIALOGUE &

WE use the principle of Dialogue at LPA in the most all-encompassing sense. Dialogue represents making connections, relationships, we view Dialogue as the essential ingredient in the evolution of any idea.

VALUES

Values Reflect LPA's attitude, our expectation, the ideals and the goals that LPA are striving for. Values represents ideological and aesthetic value system and aspiration for quality. It represents collaboration between people with similar values. Values represent emotional, aesthetic and financial worth.

WE MAKE

LPA's UNIQUE PROCESS

OUR CREATIVE STRATEGY

A clear brief guarantees greater vision. Our clients will not just be 'gifted' with the result. An actively collaborative approach to clients, secures a greater understanding and respect and will ensure relationships and results of the highest possible quality and value. Evolved through dialogue and by responding and interrogating the site itself, the LPA process offers each project the input of our clients, all the architects in the team and the supervision of the directors.

During LPA's Process DIALOGUE facilitates the interrogation of each of the schemes as collectively,

with our clients WE identify specific characteristics and re-define the requirements of the people and of the spaces.

Usually the minimal original brief, that we call 'the primary requirements', would be the sparse springboard for the architect, thoughts and designs.

The LPA's particular approach requires a second stage brief, beyond the usual 'primary/functional' brief. This second brief is a specific creative brief to be evolved in collaboration with the client. Each individual brief will be as unique as its source of its inspiration is specific. Step by step, the brief

is tightened up and fine-tuned till a Conceptual Framework/Container is created to work within. This is written up and signed off by both the architects and clients/user, before the design process is permitted to begin.

Our responsive, thorough, creative process demands greater collaboration, investigation and dialogue from LPA, from the client and from the space/context. This guarantees LPA's clients a bespoke, site-specific result that is recognizably original, intelligently resolved, aesthetic, enduring and valuable.

WE MAKE Be.EV Reliance Street

1.0 REVISED DESIGN PROPOSAL

Summary of Changes following discussions with Manchester City Council:

SITE LAYOUT CHANGES:

- Adjusted design of commercial space to allow for two additional vehicles on site.
- Introduced three designated combustion spaces to cater for potential combustion engine traffic.
- Accessible spaces to be shared bays for both EV and combustion vehicles.
- 25% of parking on site now caters for combustion vehicles.
- Revised bicycle and e-bike storage/charging zone.

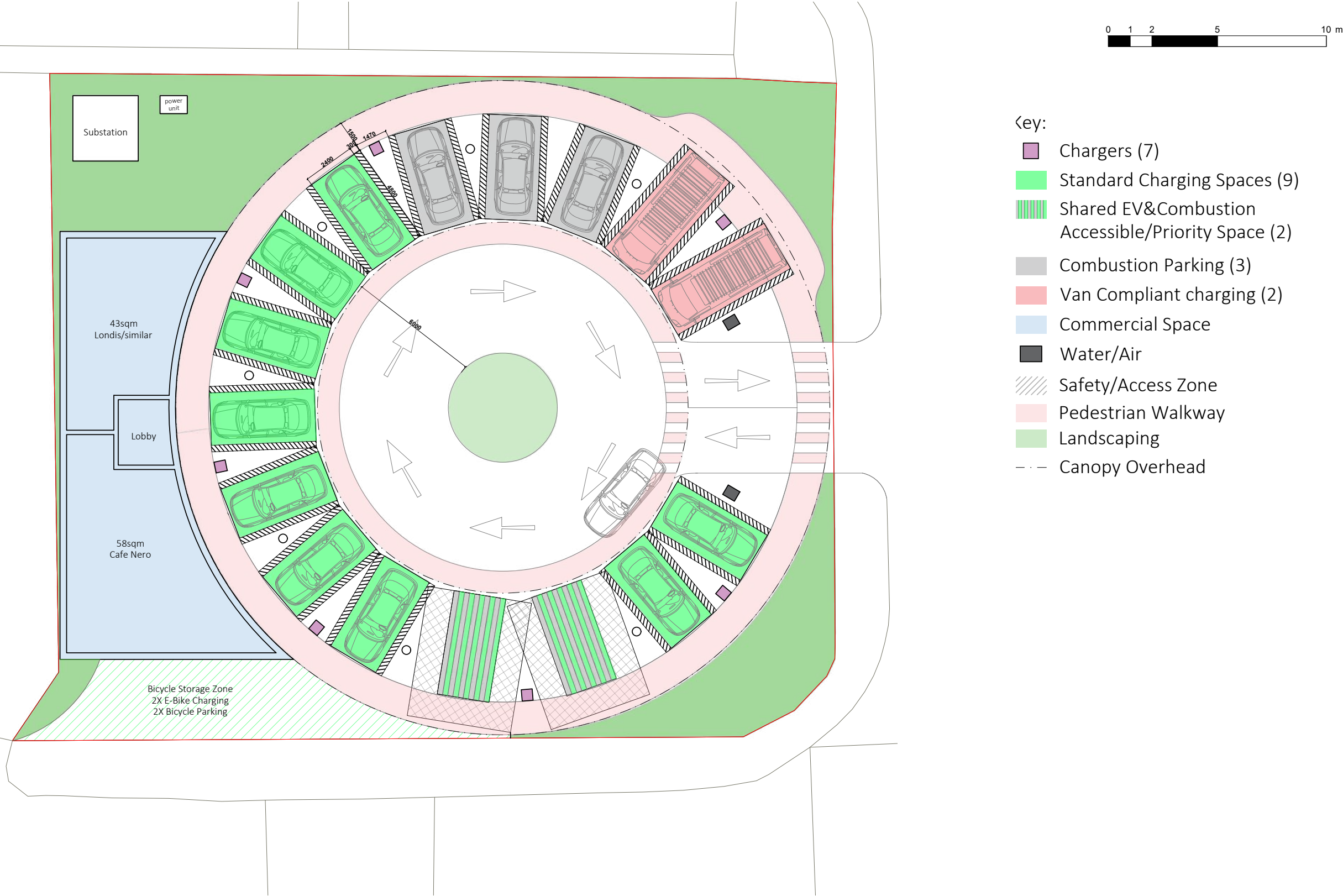
SUSTAINABILITY IN DESIGN:

The design team will work with an Energy and Sustainability Consultant to consider low-carbon and renewable energy measures which we can incorporate into the scheme, aiming to achieve a net carbon zero proposal. The proposed scheme will be designed and constructed to reduce energy demand and carbon dioxide emissions. A detailed energy assessment will be included in the full planning application. Highlighting estimated site-wide regulated CO2 emissions and reductions, and including information demonstrating that the risk of overheating has been mitigated. We will investigate and commit to maximising the installation of renewable technologies and demonstrate how the building's actual energy performance will be monitored post-construction.

WE MAKE Be.EV Reliance Street

2.0 SITE PLAN

Proposed Site Layout

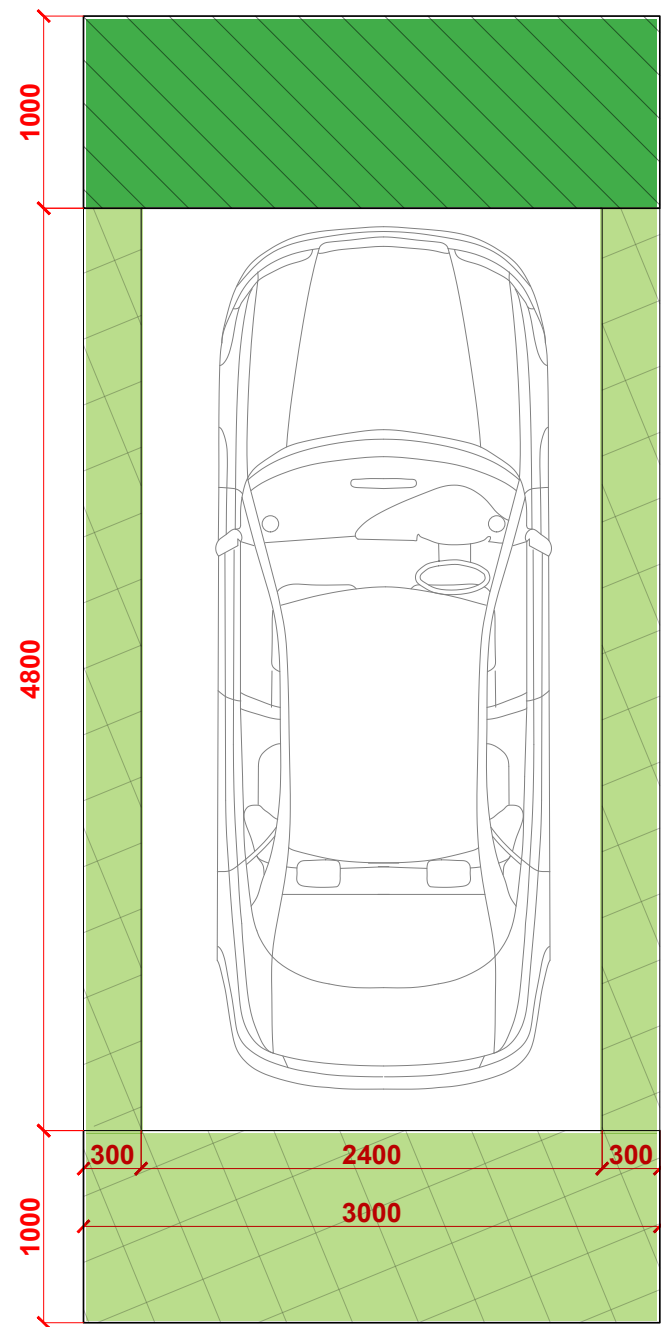


3.0 PARKING SPACE DESIGN

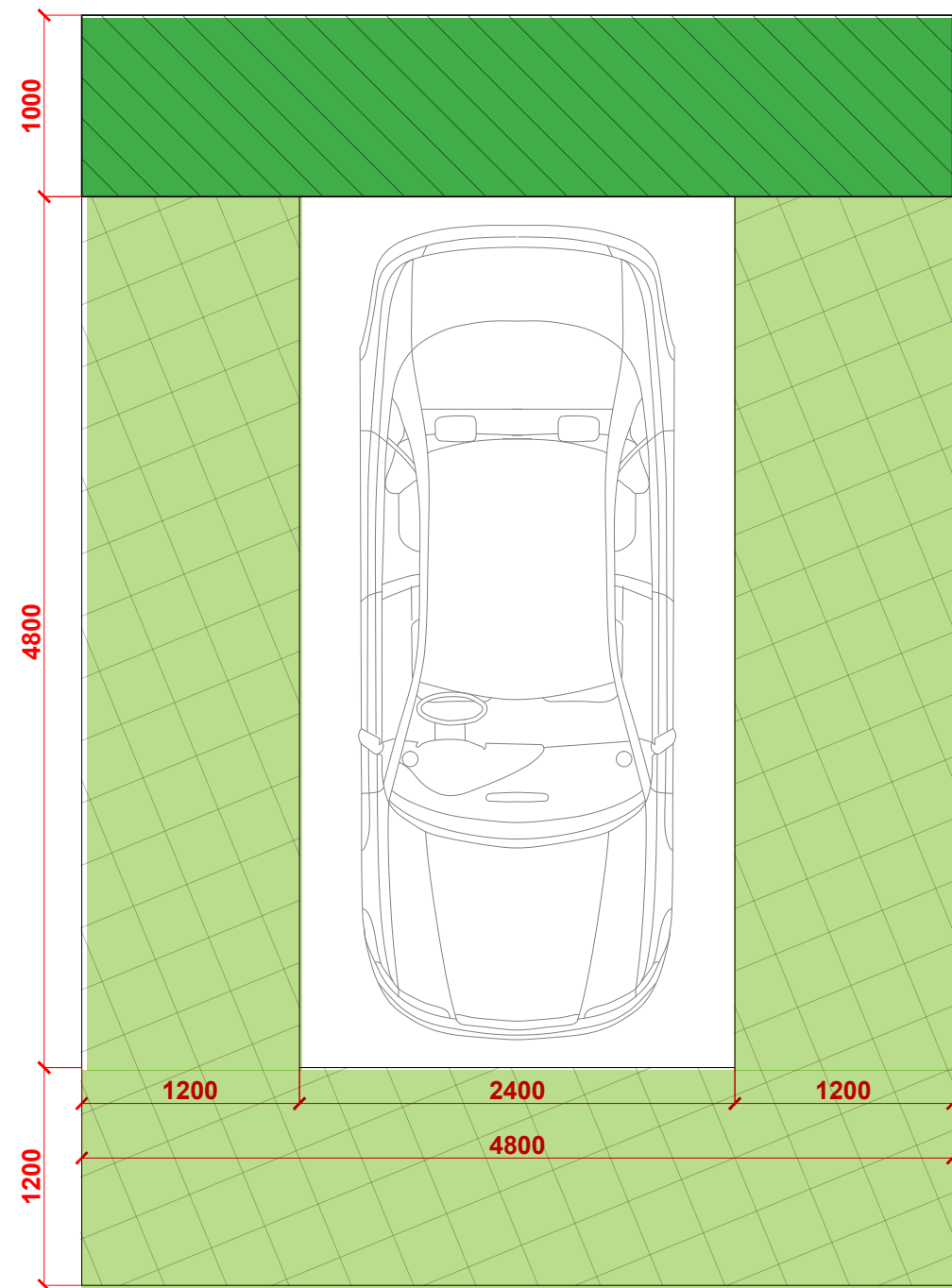
Premium Parking Spaces

Charging Zone (location depends on site layout)

Safety Access Zone



Premium Parking Space used on all spaces which are not designated accessible



Accessible Parking Space

4.0 AREA SCHEDULE

Provision of EV Charging, Combustion Parking and Commercial Space

MIX OF EV CHARGING SPACES	
STANDARD EV CHARGING SPACE	9
VAN COMPLIANT EV CHARGING SPACE	2
ACCESSIBLE SPACE SHARED EV & COMBUSTION	2
COMBUSTION PARKING SPACE	3
TOTAL SPACES	16

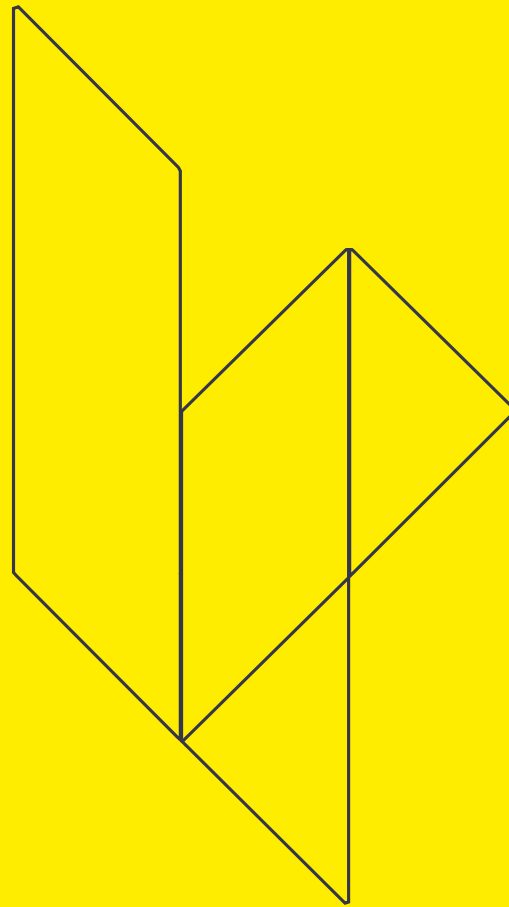
AREA SCHEDULE	
SITE AREA	1082m2
COMMERCIAL GEA	129m2
RETAIL UNIT 1 GIA	58m2
RETAIL UNIT 2 GIA	43m2

WE MAKE Be.EV Reliance Street
4.0 3D VIEW
Entrance View



WE MAKE Be.EV Reliance Street
4.0 3D VIEW
View from Reliance Street





DOCUMENT PRODUCED BY LIPTON PLANT ARCHITECTS

Appendix: D – Discussions with Client on Trip Rate

Joseph Mercieca

From: Adrian Gray <adrian.gray@iduna.co.uk>
Sent: 23 February 2022 23:29
To: Joseph Mercieca; Asif Ghafoor
Cc: Edward Lipton; Chris Green; rachel.may@avisonyoung.com
Subject: RE: 1040_Be.EV Reliance Street

Hi Joe,

We've got various sources of data although being honest, whilst we have good data to start with, it's a growing market and so there's a degree of extrapolation

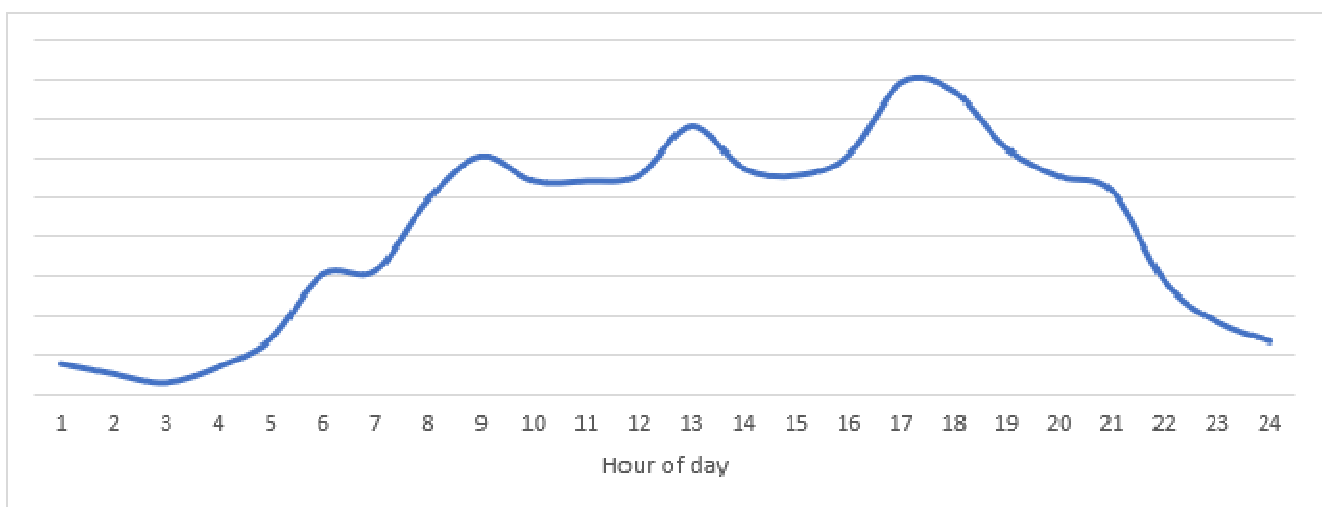
For the Reliance Street, we'll be using ultra rapid chargers and expect an average dwell time of c.10-20 minutes per charge. Initial usage we expect around 1-1.5 hours of usage per charger per day (so around 4-6 visits per charger). This then grows as EV uptake increases. We cap out the model at c.25% usage in a day i.e. 6 hours of utilisation per charger. This will take a number of years to reach and by this time battery size and the average speed that cars can charge will have increased. Therefore looking at growing to somewhere around 20-30 visits per charger per day. Could be more, could be less depending on whether it becomes the destination of the area or if someone else tries to build another down the road!

Guess there will be a bit of staff and deliveries on top but the vast majority of traffic will be for charging.

The usage on our network towards the end of 2021 looked like the below. Would rather not include the actual graph but you could maybe glean some insights to support the submission.

Lastly, it's probably worth having a look at the submission by MFG for their hub in Stretford that opened last year as imagine they needed to submit some traffic info.

Kind regards,
Adrian



From: Joseph Mercieca <Joseph.Mercieca@eastp.co.uk>
Sent: 22 February 2022 16:21
To: Asif Ghafoor <asif.ghafoor@iduna.co.uk>; Adrian Gray <adrian.gray@iduna.co.uk>

Joseph Mercieca

From: Adrian Fielden-Gray <adrian.gray@iduna.co.uk>
Sent: 16 May 2022 22:47
To: Asif Ghafoor; Joseph Mercieca; Edward Lipton
Cc: John MacBrayne
Subject: RE: Reliance St
Attachments: Iduna Demand Model Methodology 20201015.pdf

Hi Joe,

I've written some general thoughts below and happy to chat through any part as I appreciate there are a lot of numbers

As a quick background, within our demand modelling, we are forecasting that usage of the EV chargers grows over time, in line with the continued increase in electric vehicle ownership. In 2023, we only expect the chargers to be in use from 5.3% to 7.4% of the day. This therefore expects charges to be idle for over 90% of the time initially. This usage grows to c.11% by the end of 2024. We cap our anticipated usage at 30% and our model only reaches this cap by the end of 2027.

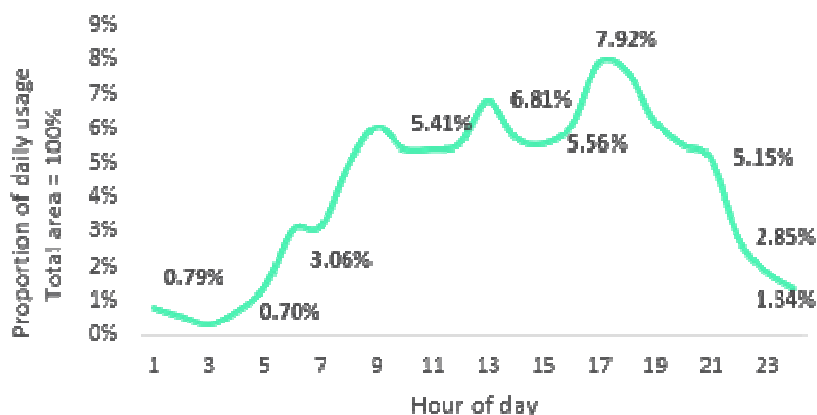
In terms of converting this to number of vehicle visits, we assume an average drawdown of 40kWh per visit. We will be using ultra rapid chargers on this site and so, if considering more recent models of EV, we would expect them to take around 20-24 minutes for this charging event. Some may be quicker, some slower. Therefore, even at max capacity, we would only have 2.5 visits per bay. 12 charging bays gives 30 visits per hour as a max throughput assuming every bay fully occupied every minute for the full hour, which won't happen. In the future, when car batteries get more powerful, we may see charging speeds increase and so reduce the 24 minutes average charge time. However, this will only be possible if additional power is available, which will require other bays to be empty. Therefore, a faster throughput of cars is only possible if we're not at 100% capacity. We give with one, and take with the other so the cap still doesn't get breached.

As mentioned, in 2024, we expect 11% usage. Over a 24 hour period this is 2.64 hours of charging time. assuming 24 minute visits gives 6.6 visits per bay per day. 12 charging bays gives 79.2 visitors over the entire day and so will be well below the 30/hour even if you factor in some ICE visitors popping in to the shop

Go forward to 2027 when we expect to reach our cap of 30% usage. Again, over a 24 hour period, this equates to 7.2 hours of usage on a charger over a 24 hour day, roughly equating to 18 visits per charger per day. Across 12 charging bays, this is 216 visitors over a 24 hour period. On our current charging network, the busiest hour of the day attracts c.7.9% of the daily consumption. Obviously night-time is quieter but the rest of the day is quite balanced with natural highest points being early evening. However, they are not that much higher than rest of the day. For the forecourt, even if we said the peak one hour period saw 10% of the daily usage, it's still only 21.6 visits in that hour. Also couple this with the max throughput calculation above that says 30 cars in an hour is a natural cap. And that is before thinking about overstaying visitors or charging having planned downtime/maintenance.

By the time we reach the cap in 2027, the battery capacity of EVs will be higher and so would expect the average drawdown per charge to be above 40kWh. This will lengthen the time the cars stay at the hub and reduce the expected number of visits per charger. Therefore the 21.6 visits an hour mentioned above, we would expect to decrease rather than increase.

Daily Consumption curve



In terms of how we build up our demand model, the attached notes provide a step by step, which might be useful. It shows there is a method to our modelling and uses various Government statistics and forecasts. We also take a regional approach rather than simply using national stats.

Hope this helps to get this going and happy to review anything or provide more figures from our models as required.

Kind regards,
Adrian

From: Asif Ghafoor <asif.ghafoor@iduna.co.uk>
Sent: 12 May 2022 19:43
To: Joseph Mercieca <Joseph.Mercieca@eastp.co.uk>; Edward Lipton <Edward@lparchitects.co.uk>
Cc: Adrian Fielden-Gray <adrian.gray@iduna.co.uk>; John MacBrayne <john.macbrayne@be-ev.co.uk>
Subject: Reliance St

Adrian and John

I had a meeting with Joe and Ed today at which we discussed the flow of vehicles to Reliance St. We need to be able to prove that we will have less than 30 trips per hour which I believe we will easily have and with some uptake only showing 2-3% of the charger usage growing to 27.5% to 30% then this is easy to show and how it backed off with Government data. We need to help Joe explain this to MCC who are sceptical. I suggested below we share some data and then get Joe to write a report to go to MCC highways and then we can help in the report writing and actual meetings.

Separately I asked Eds team to be PM on this project to planning and they are setting this up.

A

Joe and Ed

Please find below our methodology for the demand modelling we discussed today.

Financial overview

Demand model methodology

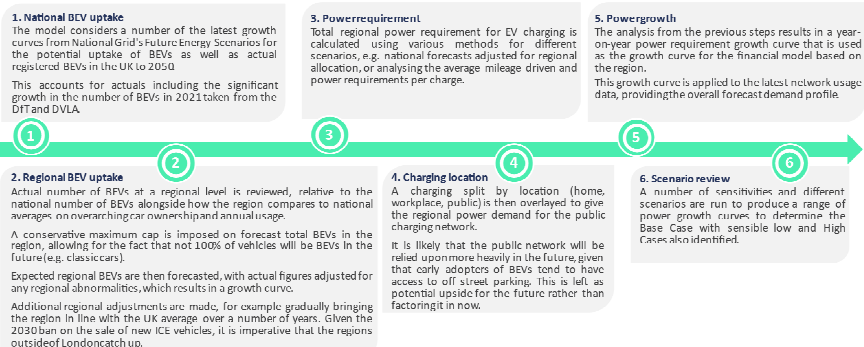


Be.EV have developed a unique, data driven, long term demand model, incorporating multiple data sources and taking local and regional characteristics into consideration to calculate regional power demand for their charging network

Methodology

iduna have developed a detailed, long term demand model to predict how many electric vehicles will be on the roads in the regions that chargers will be located, and from this how many charging events there will be each day. It incorporates multiple data sources from both a national and regional level in relation to electric vehicle uptake, car ownership, average journeys and takes into account local differences compared to national averages. The model is regularly checked against actual data both from the Be.EV network and from national statistics and updated periodically.

For this fundraise, the North West curve has been applied within the model. This is seen as a conservative approach by management as the North West is ahead of other regions that Be.EV are expanding in to, such as the North East, Yorkshire and Humber and North Wales, where existing EV ownership and charger deployment are both further behind national averages and so offer greater growth potential as they catch up with national averages.



Refer to page 73 for chart illustrating the forecast charger utilisation up to an assumed cap

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Page 71 **EY**

I also agreed to share the current usage data which shows we are projecting below the demand curve and below the maximum caps. Adrian I know you are updating this but can you please share this.

Also can you share the average draw per customer – we want to work out how many charges do we get on a charger at peak time. Adrian I will explain.

Can we also share the demand model which supports the above and we can explain this so Joe can write a report. I attach the WSP report for your reference which highlights the caps and time to get to the caps.

Joseph Mercieca

From: Adrian Fielden-Gray <adrian.gray@iduna.co.uk>
Sent: 25 May 2022 11:47
To: Lorna Lovatt; Joseph Mercieca; Asif Ghafoor; Edward Lipton; John MacBrayne
Cc: Chris Green
Subject: RE: 612_Reliance St Site Trips Meeting

Hi Joe,

As mentioned on the call, the average use on the existing TfGM network for the rapid chargers in April was 66kWh/day. The average session was for 20.4 kWh and so that's only 3.26 charging events per charger per day. We expect the ultra rapids in the Reliance Street hub to have more use but there is still a lot of headroom before getting close to the 1-2 trips per hour for each charger.

TfGM have access to this data and do run monthly reports internally so I would expect them to have done these calculations on number of charging events per day

Thanks
Adrian

From: Lorna Lovatt <lornalovatt@lparchitects.co.uk>
Sent: 24 May 2022 17:34
To: Joseph Mercieca <Joseph.Mercieca@eastp.co.uk>; Asif Ghafoor <asif.ghafoor@iduna.co.uk>; Edward Lipton <Edward@lparchitects.co.uk>; John MacBrayne <john.macbrayne@be-ev.co.uk>; Adrian Fielden-Gray <adrian.gray@iduna.co.uk>
Cc: Chris Green <chris.green@eastp.co.uk>
Subject: RE: 612_Reliance St Site Trips Meeting

Hi All,

Please see attached brief minutes following our meeting today, please let me know if you have any comments and I can update accordingly.

Kind Regards,
Lorna



Lorna Lovatt, Architectural Assistant

Lipton Plant Architects
The Hub
University House, 53-55 East Road
London, N1 6AH
T +44 (0)20 7288 1333
DD+44 (0)204 506 2506
W: www.lparchitects.co.uk

Appendix: E – MFG Site Survey

Junction: 1

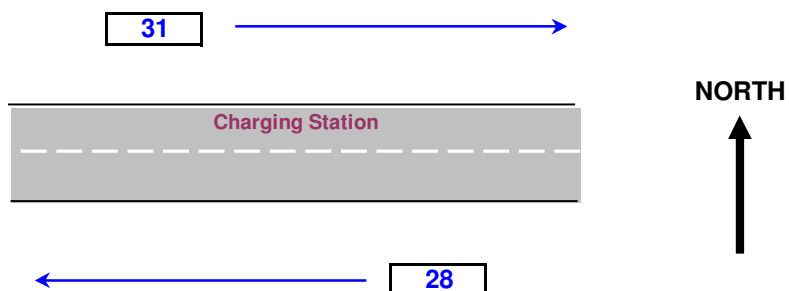
Vehicle Class: All Vehicles ▼

Show Peak Hour: ☐

Start Time: 1) 07:00 ▼

End Time: 1) 10:00 ▼

Show Session 2



Junction: 1

Approach: Charging Station

TIME	Inbound							Outbound						
	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL	M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
07:00 - 07:15	0	2	2	0	0	0	4	0	2	1	0	0	0	3
07:15 - 07:30	0	3	3	0	0	0	6	0	2	2	0	0	0	4
07:30 - 07:45	0	2	0	0	0	0	2	0	3	1	0	0	0	4
07:45 - 08:00	0	1	2	0	0	0	3	0	0	1	0	0	0	1
Hourly Total	0	8	7	0	0	0	15	0	7	5	0	0	0	12
08:00 - 08:15	0	2	0	0	0	0	2	0	2	0	0	0	0	2
08:15 - 08:30	0	1	0	0	0	0	1	0	2	1	0	0	0	3
08:30 - 08:45	0	0	1	0	0	0	1	0	0	0	0	0	0	0
08:45 - 09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	0	3	1	0	0	0	4	0	4	1	0	0	0	5
09:00 - 09:15	0	3	1	0	0	0	4	0	1	0	0	0	0	1
09:15 - 09:30	0	3	0	0	0	0	3	0	4	1	0	0	0	5
09:30 - 09:45	0	1	1	0	0	0	2	0	1	1	0	0	0	2
09:45 - 10:00	0	3	0	0	0	0	3	0	2	1	0	0	0	3
Hourly Total	0	10	2	0	0	0	12	0	8	3	0	0	0	11

TOTAL	0	21	10	0	0	0	31	0	19	9	0	0	0	28
--------------	----------	-----------	-----------	----------	----------	----------	-----------	----------	-----------	----------	----------	----------	----------	-----------

16:00 - 16:15	0	0	0	0	0	0	0	0	3	0	0	0	0	3
16:15 - 16:30	1	1	0	0	0	0	2	0	0	0	0	0	0	0
16:30 - 16:45	0	1	0	0	0	0	1	1	2	0	0	0	0	3
16:45 - 17:00	0	0	1	0	0	0	1	0	1	0	0	0	0	1
Hourly Total	1	2	1	0	0	0	4	1	6	0	0	0	0	7
17:00 - 17:15	0	2	0	0	0	0	2	0	0	0	0	0	0	0
17:15 - 17:30	0	0	1	0	0	0	1	0	1	0	0	0	0	1
17:30 - 17:45	0	3	0	0	0	0	3	0	1	0	0	0	0	1
17:45 - 18:00	0	1	0	0	0	0	1	0	1	0	0	0	0	1
Hourly Total	0	7	1	0	0	0	7	0	3	1	0	0	0	3
18:00 - 18:15	0	1	0	0	0	0	1	0	2	0	0	0	0	2
18:15 - 18:30	0	1	0	0	0	0	1	0	0	0	0	0	0	0
18:30 - 18:45	0	1	0	0	0	0	1	0	1	0	0	0	0	1
18:45 - 19:00	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Hourly Total	0	3	0	0	0	0	3	0	4	0	0	0	0	4

TOTAL	1	12	2	0	0	0	14	1	13	1	0	0	0	14
--------------	----------	-----------	----------	----------	----------	----------	-----------	----------	-----------	----------	----------	----------	----------	-----------

IN AT START						
M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0	1	0	0	0	0	1

ACCUMULATION						
M/CYCLE	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0	1	1	0	0	0	2
0	2	2	0	0	0	4
0	1	1	0	0	0	2
0	2	2	0	0	0	4
0	1	1	0	0	0	2
0	0	0	0	0	0	0
0	0	1	0	0	0	1
0	0	0	0	0	0	0
0	0	1	0	0	0	1
0	3	2	0	0	0	5
0	2	1	0	0	0	3
0	2	1	0	0	0	3
0	3	0	0	0	0	3

0	4	0	0	0	0	4
0	1	0	0	0	0	1
1	2	0	0	0	0	3
0	1	0	0	0	0	1
0	0	1	0	0	0	1

0	3	0	0	0	0	3
0	2	1	0	0	0	3
0	4	1	0	0	0	5
0	4	1	0	0	0	5

0	2	0	0	0	0	2
0	3	0	0	0	0	3
0	3	0	0	0	0	3
0	2	0	0	0	0	2

IN AT END						
0	2	0	0	0	0	2

Appendix: F – TRICS Report for non-EV Spaces

Calculation Reference: AUDIT-743101-220527-0504

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
 Category : F - MOTORWAY SERVICE AREAS (res./PFS/mot)
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	KC KENT	1 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	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: Parking spaces
 Actual Range: 152 to 254 (units:)
 Range Selected by User: 45 to 610 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/14 to 27/10/18

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
Friday	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:

Free Standing (PPS6 Out of Town)	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:

Out of Town	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:

n/a	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

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	2 days
---------------	--------

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

Population within 5 miles:

50,001 to 75,000	1 days
100,001 to 125,000	1 days

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

Car ownership within 5 miles:

0.5 or Less	1 days
1.1 to 1.5	1 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:

No	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	KC-06-F-01	ROADCHEF	KENT
	M20 (JUNCTION 8)		
	NEAR MAIDSTONE		
	EYHORNE STREET		
	Free Standing (PPS6 Out of Town)		
	Out of Town		
	Total Parking spaces:	254	
	Survey date: TUESDAY	22/05/18	Survey Type: MANUAL
2	LN-06-F-01	MOTO	LINCOLNSHIRE
	A1/GREAT NORTH ROAD		
	NEAR GRANTHAM		
	GONERBY MOOR		
	Free Standing (PPS6 Out of Town)		
	Out of Town		
	Total Parking spaces:	152	
	Survey date: FRIDAY	06/10/17	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 06 - HOTEL, FOOD & DRINK/F - MOTORWAY SERVICE AREAS (res./PFS/mot
TOTAL VEHICLES
Calculation factor: 1 PARKING SPACES
 Estimated TRIP rate value per 3 PARKING shown in shaded columns
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated 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	1	152	0.355	1.066	1	152	0.401	1.204	1	152	0.756	2.270
07:00 - 08:00	2	203	0.751	2.254	2	203	0.756	2.268	2	203	1.507	4.522
08:00 - 09:00	2	203	0.951	2.852	2	203	0.869	2.608	2	203	1.820	5.460
09:00 - 10:00	2	203	0.764	2.291	2	203	0.869	2.608	2	203	1.633	4.899
10:00 - 11:00	2	203	0.931	2.793	2	203	0.929	2.786	2	203	1.860	5.579
11:00 - 12:00	2	203	1.054	3.163	2	203	0.901	2.704	2	203	1.955	5.867
12:00 - 13:00	2	203	1.229	3.687	2	203	1.123	3.369	2	203	2.352	7.056
13:00 - 14:00	2	203	0.980	2.941	2	203	1.128	3.384	2	203	2.108	6.325
14:00 - 15:00	2	203	0.803	2.409	2	203	0.929	2.786	2	203	1.732	5.195
15:00 - 16:00	2	203	0.879	2.638	2	203	0.842	2.527	2	203	1.721	5.165
16:00 - 17:00	2	203	0.808	2.424	2	203	0.850	2.549	2	203	1.658	4.973
17:00 - 18:00	2	203	0.773	2.320	2	203	0.746	2.239	2	203	1.519	4.559
18:00 - 19:00	2	203	0.687	2.062	2	203	0.682	2.047	2	203	1.369	4.109
19:00 - 20:00	2	203	0.564	1.692	2	203	0.559	1.677	2	203	1.123	3.369
20:00 - 21:00	2	203	0.411	1.234	2	203	0.355	1.064	2	203	0.766	2.298
21:00 - 22:00	1	254	0.299	0.898	1	254	0.299	0.898	1	254	0.598	1.796
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			12.239	36.724			12.238	36.718			24.477	73.442

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.

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Parameter summary

Trip rate parameter range selected:	152 - 254 (units:)
Survey date range:	01/01/14 - 27/10/18
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:	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 06 - HOTEL, FOOD & DRINK/F - MOTORWAY SERVICE AREAS (res./PFS/mot
TAXIS

Calculation factor: 1 PARKING SPACES

Estimated TRIP rate value per 3 PARKING shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated 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	1	152	0.000	0.000	1	152	0.000	0.000	1	152	0.000	0.000
07:00 - 08:00	2	203	0.000	0.000	2	203	0.002	0.007	2	203	0.002	0.007
08:00 - 09:00	2	203	0.002	0.007	2	203	0.002	0.007	2	203	0.004	0.014
09:00 - 10:00	2	203	0.000	0.000	2	203	0.002	0.007	2	203	0.002	0.007
10:00 - 11:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
11:00 - 12:00	2	203	0.005	0.015	2	203	0.000	0.000	2	203	0.005	0.015
12:00 - 13:00	2	203	0.010	0.030	2	203	0.010	0.030	2	203	0.020	0.060
13:00 - 14:00	2	203	0.002	0.007	2	203	0.005	0.015	2	203	0.007	0.022
14:00 - 15:00	2	203	0.005	0.015	2	203	0.005	0.015	2	203	0.010	0.030
15:00 - 16:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
16:00 - 17:00	2	203	0.005	0.015	2	203	0.005	0.015	2	203	0.010	0.030
17:00 - 18:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
18:00 - 19:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
19:00 - 20:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
20:00 - 21:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
21:00 - 22:00	1	254	0.000	0.000	1	254	0.000	0.000	1	254	0.000	0.000
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.029	0.089			0.031	0.096			0.060	0.185

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.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/F - MOTORWAY SERVICE AREAS (res./PFS/mot
OGVS

Calculation factor: 1 PARKING SPACES

Estimated TRIP rate value per 3 PARKING shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated 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	1	152	0.164	0.493	1	152	0.204	0.612	1	152	0.368	1.105
07:00 - 08:00	2	203	0.150	0.451	2	203	0.172	0.517	2	203	0.322	0.968
08:00 - 09:00	2	203	0.167	0.502	2	203	0.195	0.584	2	203	0.362	1.086
09:00 - 10:00	2	203	0.121	0.362	2	203	0.148	0.443	2	203	0.269	0.805
10:00 - 11:00	2	203	0.202	0.606	2	203	0.197	0.591	2	203	0.399	1.197
11:00 - 12:00	2	203	0.227	0.680	2	203	0.227	0.680	2	203	0.454	1.360
12:00 - 13:00	2	203	0.232	0.695	2	203	0.222	0.665	2	203	0.454	1.360
13:00 - 14:00	2	203	0.187	0.562	2	203	0.190	0.569	2	203	0.377	1.131
14:00 - 15:00	2	203	0.165	0.495	2	203	0.180	0.539	2	203	0.345	1.034
15:00 - 16:00	2	203	0.165	0.495	2	203	0.135	0.406	2	203	0.300	0.901
16:00 - 17:00	2	203	0.150	0.451	2	203	0.148	0.443	2	203	0.298	0.894
17:00 - 18:00	2	203	0.123	0.369	2	203	0.108	0.325	2	203	0.231	0.694
18:00 - 19:00	2	203	0.113	0.340	2	203	0.071	0.214	2	203	0.184	0.554
19:00 - 20:00	2	203	0.116	0.347	2	203	0.103	0.310	2	203	0.219	0.657
20:00 - 21:00	2	203	0.084	0.251	2	203	0.037	0.111	2	203	0.121	0.362
21:00 - 22:00	1	254	0.043	0.130	1	254	0.047	0.142	1	254	0.090	0.272
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			2.409	7.229			2.384	7.151			4.793	14.380

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.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/F - MOTORWAY SERVICE AREAS (res./PFS/mot
PSVS

Calculation factor: 1 PARKING SPACES

Estimated TRIP rate value per 3 PARKING shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated 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	1	152	0.007	0.020	1	152	0.000	0.000	1	152	0.007	0.020
07:00 - 08:00	2	203	0.015	0.044	2	203	0.015	0.044	2	203	0.030	0.088
08:00 - 09:00	2	203	0.012	0.037	2	203	0.010	0.030	2	203	0.022	0.067
09:00 - 10:00	2	203	0.002	0.007	2	203	0.010	0.030	2	203	0.012	0.037
10:00 - 11:00	2	203	0.007	0.022	2	203	0.005	0.015	2	203	0.012	0.037
11:00 - 12:00	2	203	0.007	0.022	2	203	0.007	0.022	2	203	0.014	0.044
12:00 - 13:00	2	203	0.007	0.022	2	203	0.012	0.037	2	203	0.019	0.059
13:00 - 14:00	2	203	0.007	0.022	2	203	0.002	0.007	2	203	0.009	0.029
14:00 - 15:00	2	203	0.002	0.007	2	203	0.005	0.015	2	203	0.007	0.022
15:00 - 16:00	2	203	0.005	0.015	2	203	0.000	0.000	2	203	0.005	0.015
16:00 - 17:00	2	203	0.002	0.007	2	203	0.002	0.007	2	203	0.004	0.014
17:00 - 18:00	2	203	0.012	0.037	2	203	0.010	0.030	2	203	0.022	0.067
18:00 - 19:00	2	203	0.005	0.015	2	203	0.005	0.015	2	203	0.010	0.030
19:00 - 20:00	2	203	0.002	0.007	2	203	0.002	0.007	2	203	0.004	0.014
20:00 - 21:00	2	203	0.005	0.015	2	203	0.002	0.007	2	203	0.007	0.022
21:00 - 22:00	1	254	0.000	0.000	1	254	0.000	0.000	1	254	0.000	0.000
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.097	0.299			0.087	0.266			0.184	0.565

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.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/F - MOTORWAY SERVICE AREAS (res./PFS/mot
CYCLISTS

Calculation factor: 1 PARKING SPACES

Estimated TRIP rate value per 3 PARKING shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated 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	1	152	0.000	0.000	1	152	0.000	0.000	1	152	0.000	0.000
07:00 - 08:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
08:00 - 09:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
09:00 - 10:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
10:00 - 11:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
11:00 - 12:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
12:00 - 13:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
13:00 - 14:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
14:00 - 15:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
15:00 - 16:00	2	203	0.012	0.037	2	203	0.000	0.000	2	203	0.012	0.037
16:00 - 17:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
17:00 - 18:00	2	203	0.000	0.000	2	203	0.012	0.037	2	203	0.012	0.037
18:00 - 19:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
19:00 - 20:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
20:00 - 21:00	2	203	0.000	0.000	2	203	0.000	0.000	2	203	0.000	0.000
21:00 - 22:00	1	254	0.000	0.000	1	254	0.000	0.000	1	254	0.000	0.000
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.012	0.037			0.012	0.037			0.024	0.074

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.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/F - MOTORWAY SERVICE AREAS (res./PFS/mot
CARS

Calculation factor: 1 PARKING SPACES

Estimated TRIP rate value per 3 PARKING shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated 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	1	152	0.145	0.434	1	152	0.151	0.454	1	152	0.296	0.888
07:00 - 08:00	2	203	0.416	1.249	2	203	0.362	1.086	2	203	0.778	2.335
08:00 - 09:00	2	203	0.559	1.677	2	203	0.493	1.478	2	203	1.052	3.155
09:00 - 10:00	2	203	0.485	1.456	2	203	0.544	1.633	2	203	1.029	3.089
10:00 - 11:00	2	203	0.564	1.692	2	203	0.562	1.685	2	203	1.126	3.377
11:00 - 12:00	2	203	0.628	1.884	2	203	0.517	1.552	2	203	1.145	3.436
12:00 - 13:00	2	203	0.751	2.254	2	203	0.697	2.091	2	203	1.448	4.345
13:00 - 14:00	2	203	0.606	1.818	2	203	0.709	2.128	2	203	1.315	3.946
14:00 - 15:00	2	203	0.461	1.382	2	203	0.562	1.685	2	203	1.023	3.067
15:00 - 16:00	2	203	0.522	1.567	2	203	0.478	1.433	2	203	1.000	3.000
16:00 - 17:00	2	203	0.493	1.478	2	203	0.515	1.544	2	203	1.008	3.022
17:00 - 18:00	2	203	0.522	1.567	2	203	0.522	1.567	2	203	1.044	3.134
18:00 - 19:00	2	203	0.438	1.315	2	203	0.485	1.456	2	203	0.923	2.771
19:00 - 20:00	2	203	0.335	1.005	2	203	0.355	1.064	2	203	0.690	2.069
20:00 - 21:00	2	203	0.246	0.739	2	203	0.234	0.702	2	203	0.480	1.441
21:00 - 22:00	1	254	0.169	0.508	1	254	0.197	0.591	1	254	0.366	1.099
22:00 - 23:00												
23:00 - 24:00												
Total Rates:		7.340	22.025			7.383	22.149			14.723	44.174	

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.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/F - MOTORWAY SERVICE AREAS (res./PFS/mot LGVS)

Calculation factor: 1 PARKING SPACES

Estimated TRIP rate value per 3 PARKING shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated 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	1	152	0.039	0.118	1	152	0.046	0.138	1	152	0.085	0.256
07:00 - 08:00	2	203	0.170	0.510	2	203	0.202	0.606	2	203	0.372	1.116
08:00 - 09:00	2	203	0.204	0.613	2	203	0.163	0.488	2	203	0.367	1.101
09:00 - 10:00	2	203	0.150	0.451	2	203	0.155	0.466	2	203	0.305	0.917
10:00 - 11:00	2	203	0.150	0.451	2	203	0.160	0.480	2	203	0.310	0.931
11:00 - 12:00	2	203	0.180	0.539	2	203	0.143	0.429	2	203	0.323	0.968
12:00 - 13:00	2	203	0.224	0.672	2	203	0.177	0.532	2	203	0.401	1.204
13:00 - 14:00	2	203	0.172	0.517	2	203	0.214	0.643	2	203	0.386	1.160
14:00 - 15:00	2	203	0.165	0.495	2	203	0.177	0.532	2	203	0.342	1.027
15:00 - 16:00	2	203	0.177	0.532	2	203	0.219	0.658	2	203	0.396	1.190
16:00 - 17:00	2	203	0.145	0.436	2	203	0.163	0.488	2	203	0.308	0.924
17:00 - 18:00	2	203	0.106	0.318	2	203	0.094	0.281	2	203	0.200	0.599
18:00 - 19:00	2	203	0.123	0.369	2	203	0.113	0.340	2	203	0.236	0.709
19:00 - 20:00	2	203	0.103	0.310	2	203	0.096	0.288	2	203	0.199	0.598
20:00 - 21:00	2	203	0.074	0.222	2	203	0.081	0.244	2	203	0.155	0.466
21:00 - 22:00	1	254	0.083	0.248	1	254	0.055	0.165	1	254	0.138	0.413
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			2.265	6.801			2.258	6.778			4.523	13.579

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.

TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/F - MOTORWAY SERVICE AREAS (res./PFS/mot
MOTOR CYCLES

Calculation factor: 1 PARKING SPACES

Estimated TRIP rate value per 3 PARKING shown in shaded columns

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS				DEPARTURES				TOTALS			
	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated Trip Rate	No. Days	Ave. PARKING	Trip Rate	Estimated 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	1	152	0.000	0.000	1	152	0.000	0.000	1	152	0.000	0.000
07:00 - 08:00	2	203	0.000	0.000	2	203	0.002	0.007	2	203	0.002	0.007
08:00 - 09:00	2	203	0.005	0.015	2	203	0.007	0.022	2	203	0.012	0.037
09:00 - 10:00	2	203	0.005	0.015	2	203	0.010	0.030	2	203	0.015	0.045
10:00 - 11:00	2	203	0.007	0.022	2	203	0.005	0.015	2	203	0.012	0.037
11:00 - 12:00	2	203	0.007	0.022	2	203	0.007	0.022	2	203	0.014	0.044
12:00 - 13:00	2	203	0.005	0.015	2	203	0.005	0.015	2	203	0.010	0.030
13:00 - 14:00	2	203	0.005	0.015	2	203	0.007	0.022	2	203	0.012	0.037
14:00 - 15:00	2	203	0.005	0.015	2	203	0.000	0.000	2	203	0.005	0.015
15:00 - 16:00	2	203	0.010	0.030	2	203	0.010	0.030	2	203	0.020	0.060
16:00 - 17:00	2	203	0.012	0.037	2	203	0.017	0.052	2	203	0.029	0.089
17:00 - 18:00	2	203	0.010	0.030	2	203	0.012	0.037	2	203	0.022	0.067
18:00 - 19:00	2	203	0.007	0.022	2	203	0.007	0.022	2	203	0.014	0.044
19:00 - 20:00	2	203	0.007	0.022	2	203	0.002	0.007	2	203	0.009	0.029
20:00 - 21:00	2	203	0.002	0.007	2	203	0.000	0.000	2	203	0.002	0.007
21:00 - 22:00	1	254	0.004	0.012	1	254	0.000	0.000	1	254	0.004	0.012
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			0.091	0.279			0.091	0.281			0.182	0.560

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.

Pre-Plan 313 – Reliance Street EV Charge Station

Proposals:

14 on-site parking electric vehicle (EV) charging spaces are provided of which 12 will be for customers and two for staff. Of these, eight will be ultra-rapid charging points, with two van charge points, one charge point (with water and air), and one disabled charging space. An indicative area is shown for electric cycle charging.

118 sqm of commercial space is provided with a waiting room which offers snacks and drinks.

Initial highway comments:

Given the proposal for commercial space we would query whether sufficient on-site parking provision has been made for non-vehicle charging customers and have concerns that as a consequence there may be a parking overspill onto adjacent local streets.

In terms of pedestrian access to the commercial facility, it is not currently clear how customers, other than those using the charging points will access the commercial space on foot and clarification is sought.

Whilst indicative vehicle tracking is shown around the internal circulatory facility, we would anticipate that further swept path drawings would be provided if a planning proposal is submitted. We would require swept path movements to/from individual bays to be provided as well as at the junction access.

The junction access may require a larger corner-radii than 1.5m, and this would be determined through swept path submission. Tactile paving for pedestrian crossing movements would be required at the revised vehicle access.

The vehicle access is proposed off Reliance Street but to the south of the existing access point. In this regard we have concerns in relation to vehicles potentially queuing upon entry and impacting on the adjacent key route network, in addition to the reduced amount of available space on Reliance Street when turning right out of the facility.

It is not currently clear to us whether the existing adjacent vehicle access off Oldham Road is in the ownership of the developer, and in this regard, clarification is sought. If it is within the ownership of the developer, then we would require that this access point is converted back to full kerb upstand footway through S278 agreement.

With regard to waste management, we would require full details of waste storage, transportation and collection proposals should a planning submission be made.

In relation to the trip analysis/traffic modelling provided, we have received the following comments from Transport for Greater Manchester (TfGM):

As the existing use has been demolished and cannot be used as a valid fallback position, this should not be used in any trip generation assessments.

The proposed trip rates have been provided from the consultant's client, however, there is no data presented in the form of survey / records. As such TfGM are unable to confirm the acceptability of the trip generation assessment work.

TfGM have also provided a general guidance note (attached) to assist the developer should the proposal be taken forward.

Further highway comments 16/06/2022:

TfGM have provided the following further comments:

- It is acknowledged that further background information to the trip predictions has been provided which is acceptable.
- TfGM HFAS would caution that if any further spaces are introduced at the site between now and planning approval, a trip generation assessment would be required as the site is currently at the threshold (30 vehicles per/hour) for triggering a highway impact assessment.

MCC Highways note that there are now 16 parking spaces, of which 13 are for EV charging and three are now non-EV charging. Of the 13 EV charge spaces, two are for van charging and two are accessible bays.

We note that the retail element has been reduced in size from that previously proposed (to 101 sqm), and now split into a food outlet and coffee shop.

With regard to pedestrian access, it is noted that a 1500mm wide circular pedestrian walkway is now proposed.

It has been confirmed that the site access would include the provision of tactile paving to assist pedestrian movements.

Two cycle parking spaces are now proposed in addition to two spaces for E-Bike charging.

Appendix: D – Metrolink Map

Appendix: E – Crashmap Data



crashmap.co.uk

Validated Data

Crash Date: Wednesday, February 07, 2018 **Time of Crash:** 9:50:00 AM **Crash Reference:** 201806A340493

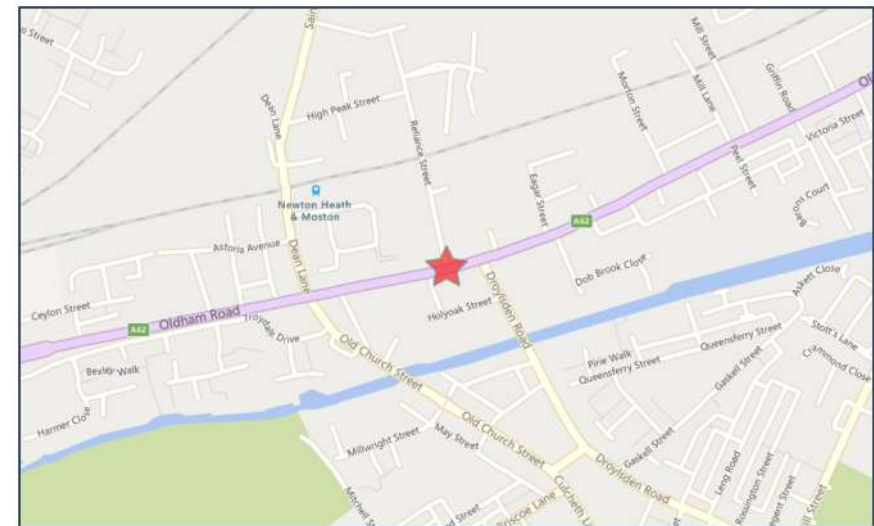
Highest Injury Severity: Serious
Highway Authority: Manchester
Local Authority: Manchester City
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Dual carriageway
Junction Control: Give way or uncontrolled

Road Number: A62

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 388101 400718



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	3	Female	Over 75	Vehicle is in the act of turning right	Front	Unknown	None	None
2	Car (excluding private hire)	12	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Front	Unknown	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Female	Over 75	Unknown or other	Unknown or other

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Validated Data

Crash Date: Friday, February 16, 2018

Time of Crash: 1:15:00 PM

Crash Reference: 201806A340832

Highest Injury Severity: Slight

Road Number: A62

Number of Casualties: 1

Highway Authority: Manchester

Number of Vehicles: 2

Local Authority: Manchester City

OS Grid Reference: 388103 400718

Weather Description: Fine without high winds

Road Surface Description: Dry

Speed Limit: 30

Light Conditions: Daylight: regardless of presence of streetlights

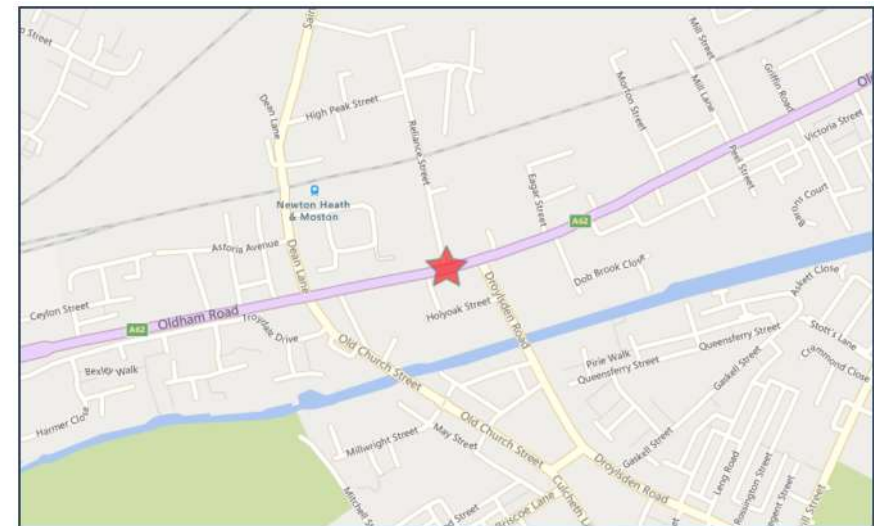
Carriageway Hazards: None

Junction Detail: T or staggered junction

Junction Pedestrian Crossing: Central refuge - no other controls

Road Type: Single carriageway

Junction Control: Give way or uncontrolled



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	7	Female	26 - 35	Vehicle is waiting to turn right	Front	Unknown	None	None
2	Van or goods vehicle 3.5 tonnes mgw and under	3	Male	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Nearside	Journey as part of work	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Slight	Driver or rider	Female	26 - 35	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

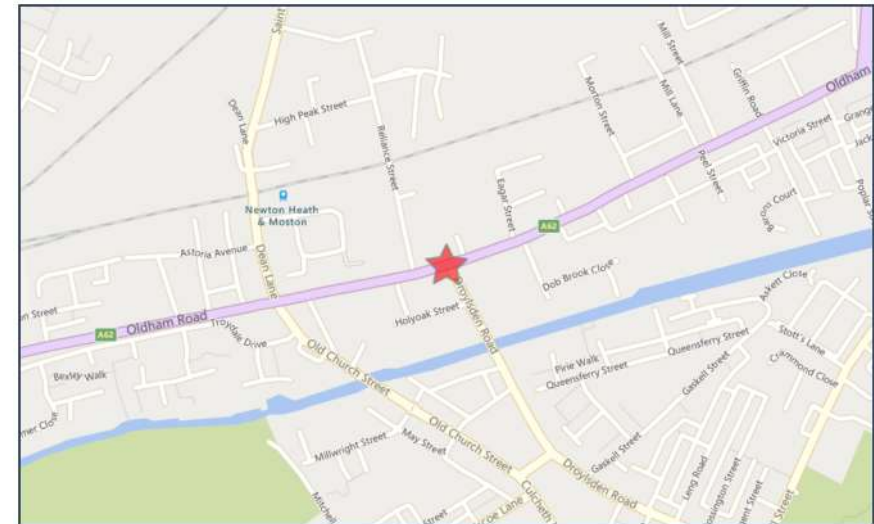
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Validated Data

Crash Date:	Friday, October 18, 2019	Time of Crash:	7:15:00 PM	Crash Reference:	201906A363903
Highest Injury Severity:	Serious	Road Number:	A62	Number of Casualties:	1
Highway Authority:	Manchester			Number of Vehicles:	2
Local Authority:	Manchester City			OS Grid Reference:	388151 400727
Weather Description:	Raining without high winds				
Road Surface Description:	Wet or Damp				
Speed Limit:	30				
Light Conditions:	Darkness: street lights present and lit				
Carriageway Hazards:	None				
Junction Detail:	T or staggered junction				
Junction Pedestrian Crossing:	No physical crossing facility within 50 metres				
Road Type:	Single carriageway				
Junction Control:	Auto traffic signal				



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Pedal cycle	-1	Male	16 - 20	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Unknown	None	None
2	Car (excluding private hire)	16	Male	46 - 55	Vehicle is in the act of turning right	Front	Unknown	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	16 - 20	Unknown or other	Unknown or other

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Validated Data

Crash Date: Saturday, September 04, 2021 **Time of Crash:** 6:25:00 PM **Crash Reference:** 2021061094042

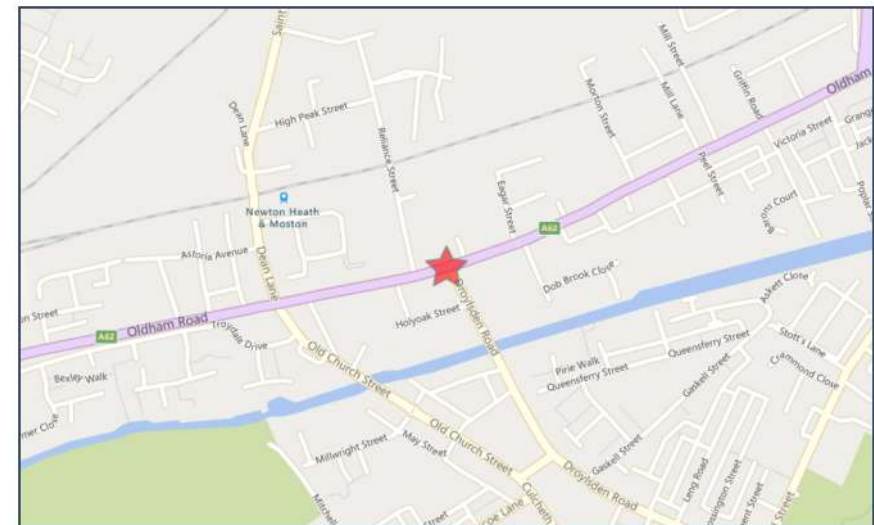
Highest Injury Severity: Serious
Highway Authority: Manchester
Local Authority: Manchester City
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Auto traffic signal

Road Number: A62

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 388150 400727



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Motorcycle over 125cc and up to 500cc	-1	Male	46 - 55	Vehicle proceeding normally along the carriageway, not on a bend	Front	Unknown	None	None
2	Car (excluding private hire)	-1	Male	26 - 35	Vehicle is waiting to proceed normally but is held up	Back	Unknown	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
1	1	Serious	Driver or rider	Male	46 - 55	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Validated Data

Crash Date: Friday, December 29, 2017 **Time of Crash:** 3:35:00 PM **Crash Reference:** 201706A040155

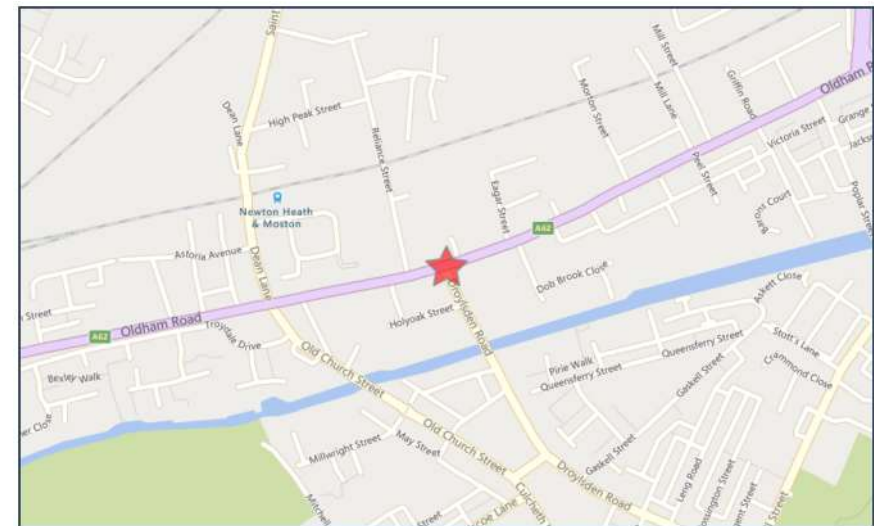
Highest Injury Severity: Slight
Highway Authority: Manchester
Local Authority: Manchester City
Weather Description: Raining without high winds
Road Surface Description: Wet or Damp
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: Central refuge - no other controls
Road Type: Single carriageway
Junction Control: Auto traffic signal

Road Number: A62

Number of Casualties: 3

Number of Vehicles: 2

OS Grid Reference: 388159 400724



For more information about the data please visit: www.crashmap.co.uk/home/Faq
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Validated Data

Vehicles Involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Maneouvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	0	Male	26 - 35	Vehicle is in the act of turning right	Front	Unknown	None	None
2	Car (excluding private hire)	5	Female	26 - 35	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Unknown	Kerb	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Female	26 - 35	Unknown or other	Unknown or other
2	2	Slight	Vehicle or pillion passenger	Female	11 - 15	Unknown or other	Unknown or other
2	3	Slight	Vehicle or pillion passenger	Male	36 - 45	Unknown or other	Unknown or other

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Validated Data

Crash Date: Wednesday, August 01, 2018 **Time of Crash:** 12:05:00 PM **Crash Reference:** 201806A346808

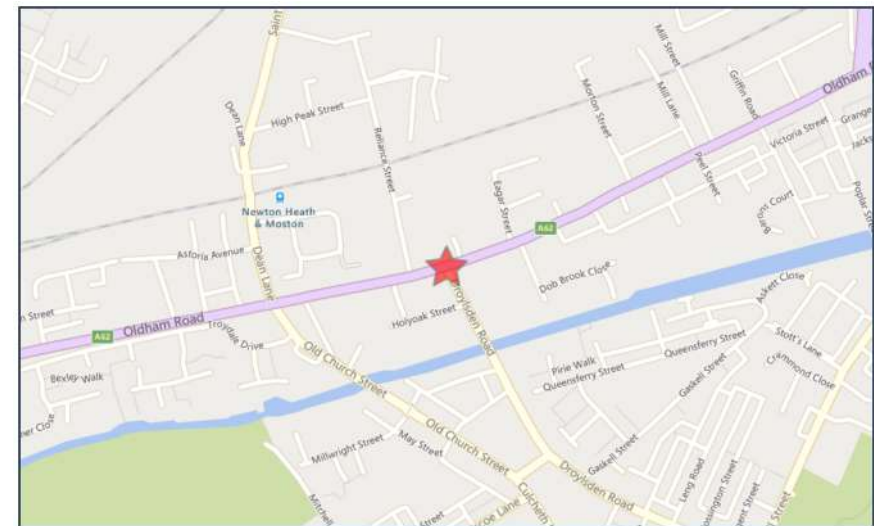
Highest Injury Severity: Slight
Highway Authority: Manchester
Local Authority: Manchester City
Weather Description: Fine without high winds
Road Surface Description: Dry
Speed Limit: 30
Light Conditions: Daylight: regardless of presence of streetlights
Carriageway Hazards: None
Junction Detail: T or staggered junction
Junction Pedestrian Crossing: No physical crossing facility within 50 metres
Road Type: Single carriageway
Junction Control: Auto traffic signal

Road Number: A62

Number of Casualties: 1

Number of Vehicles: 2

OS Grid Reference: 388155 400725



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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	11	Unknown	Unknown	Vehicle proceeding normally along the carriageway, not on a bend	Front	Unknown	None	None
2	Car (excluding private hire)	14	Male	56 - 65	Vehicle proceeding normally along the carriageway, not on a bend	Offside	Unknown	None	None

Casualties

Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	56 - 65	Unknown or other	Unknown or other

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Validated Data

Crash Date: Wednesday, September 30, 2020

Time of Crash: 8:58:00 PM

Crash Reference: 202006A175648

Highest Injury Severity: Slight

Road Number: A62

Number of Casualties: 1

Highway Authority: Manchester

Number of Vehicles: 2

Local Authority: Manchester City

OS Grid Reference: 388156 400721

Weather Description: Raining without high winds

Road Surface Description: Wet or Damp

Speed Limit: 30

Light Conditions: Darkness: street lights present and lit

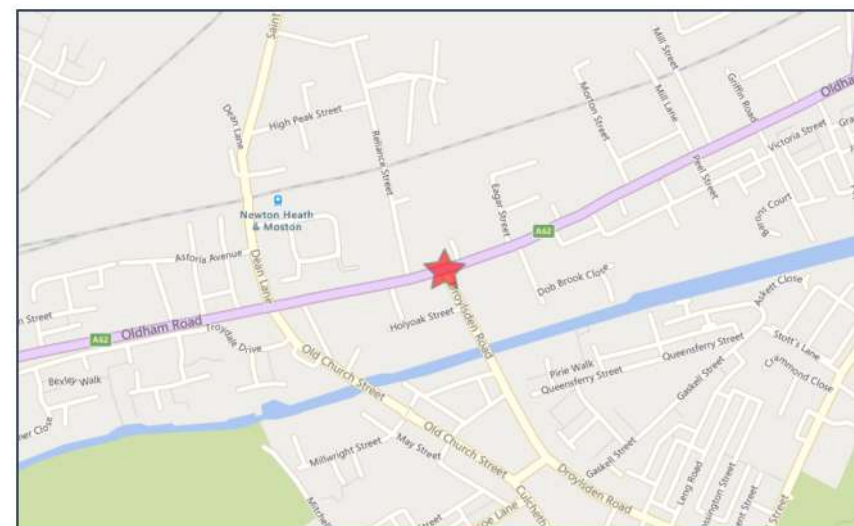
Carriageway Hazards: None

Junction Detail: T or staggered junction

Junction Pedestrian Crossing: No physical crossing facility within 50 metres

Road Type: Single carriageway

Junction Control: Auto traffic signal



For more information about the data please visit: www.crashmap.co.uk/home/Faq

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Validated Data

Vehicles involved

Vehicle Ref	Vehicle Type	Vehicle Age	Driver Gender	Driver Age Band	Vehicle Manoeuvre	First Point of Impact	Journey Purpose	Hit Object - On Carriageway	Hit Object - Off Carriageway
1	Car (excluding private hire)	16	Male	26 - 35	Vehicle is in the act of turning right	Offside	Unknown	None	None
2	Car (excluding private hire)	9	Male	36 - 45	Vehicle is in the act of turning right	Offside	Unknown	None	None

Casualties

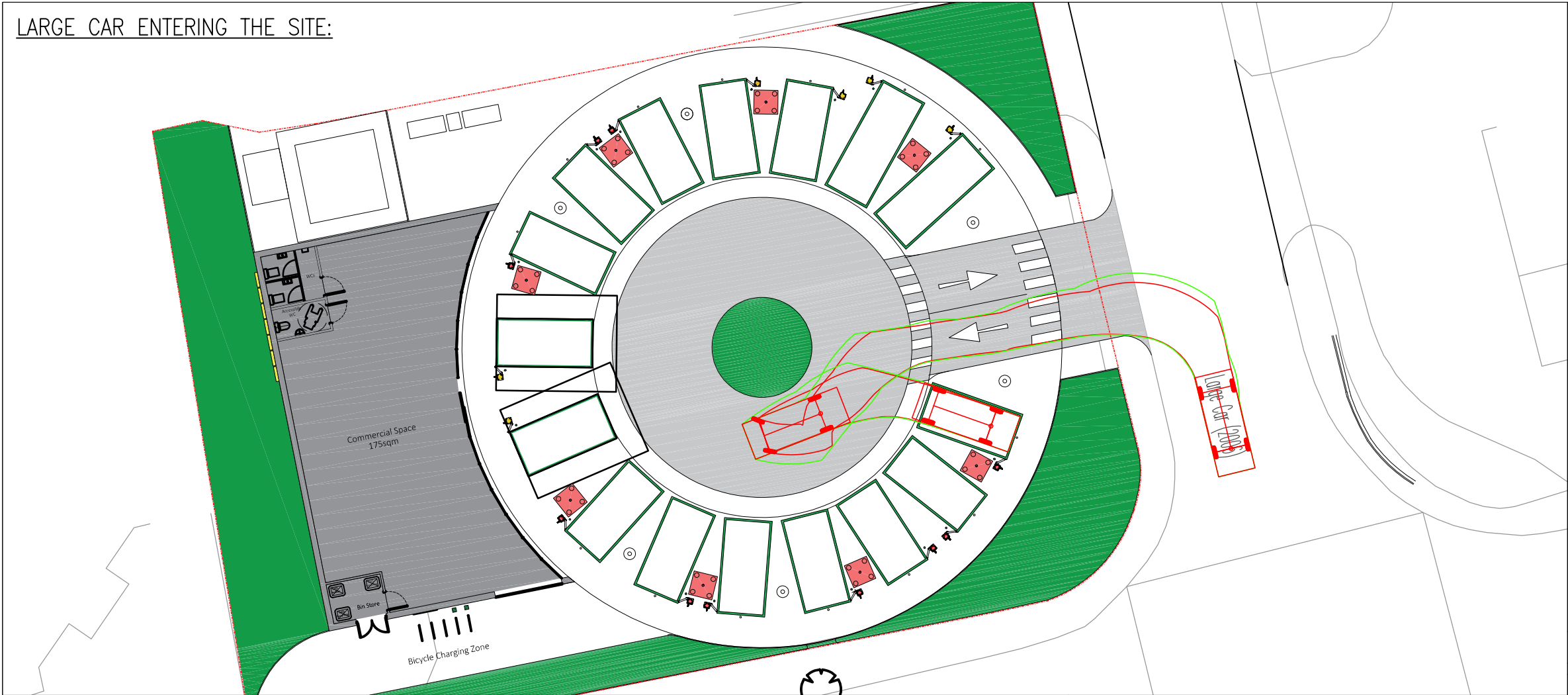
Vehicle Ref	Casualty Ref	Injury Severity	Casualty Class	Gender	Age Band	Pedestrian Location	Pedestrian Movement
2	1	Slight	Driver or rider	Male	36 - 45	Unknown or other	Unknown or other

For more information about the data please visit: www.crashmap.co.uk/home/Faq

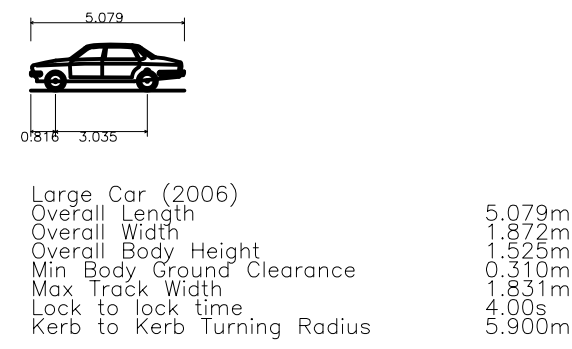
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Appendix: F – Swept Path Analysis

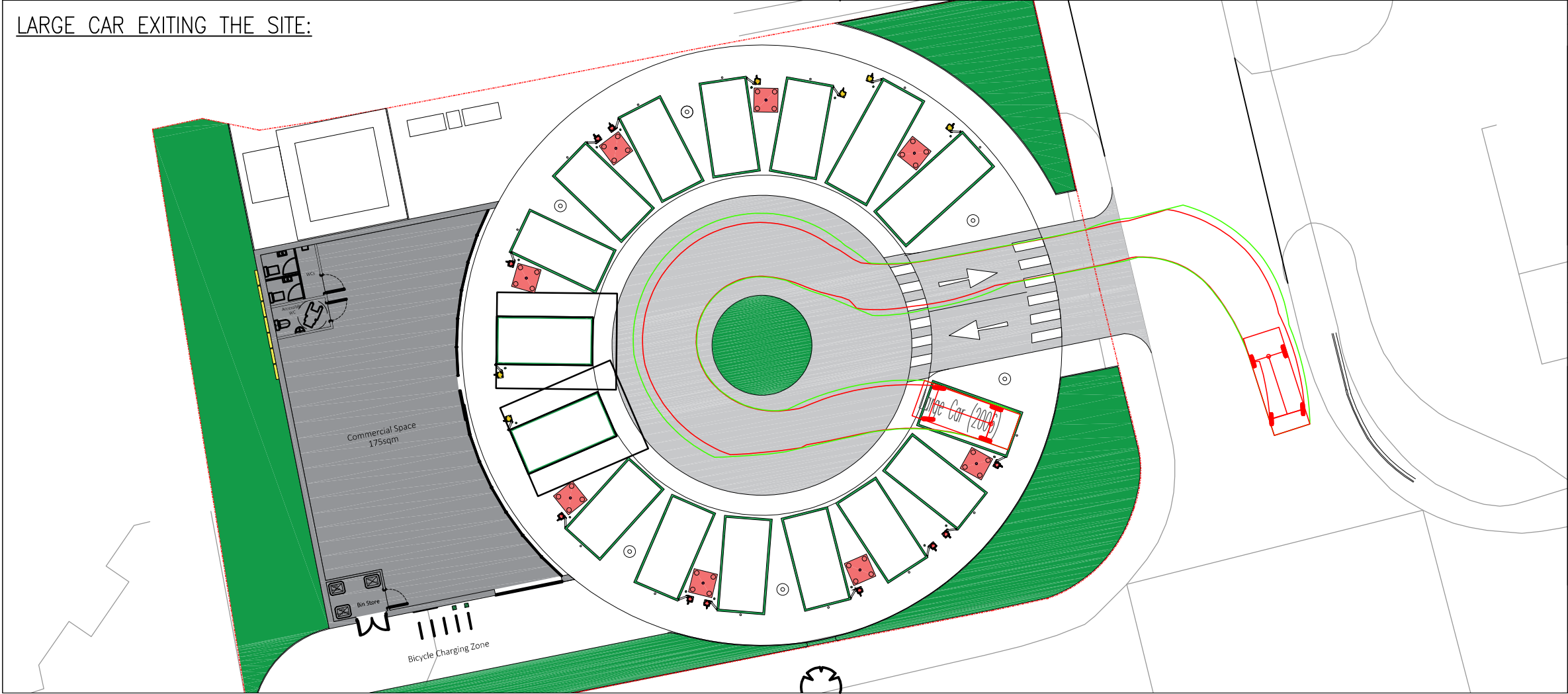
LARGE CAR ENTERING THE SITE:



TRACKING VEHICLE MODEL:

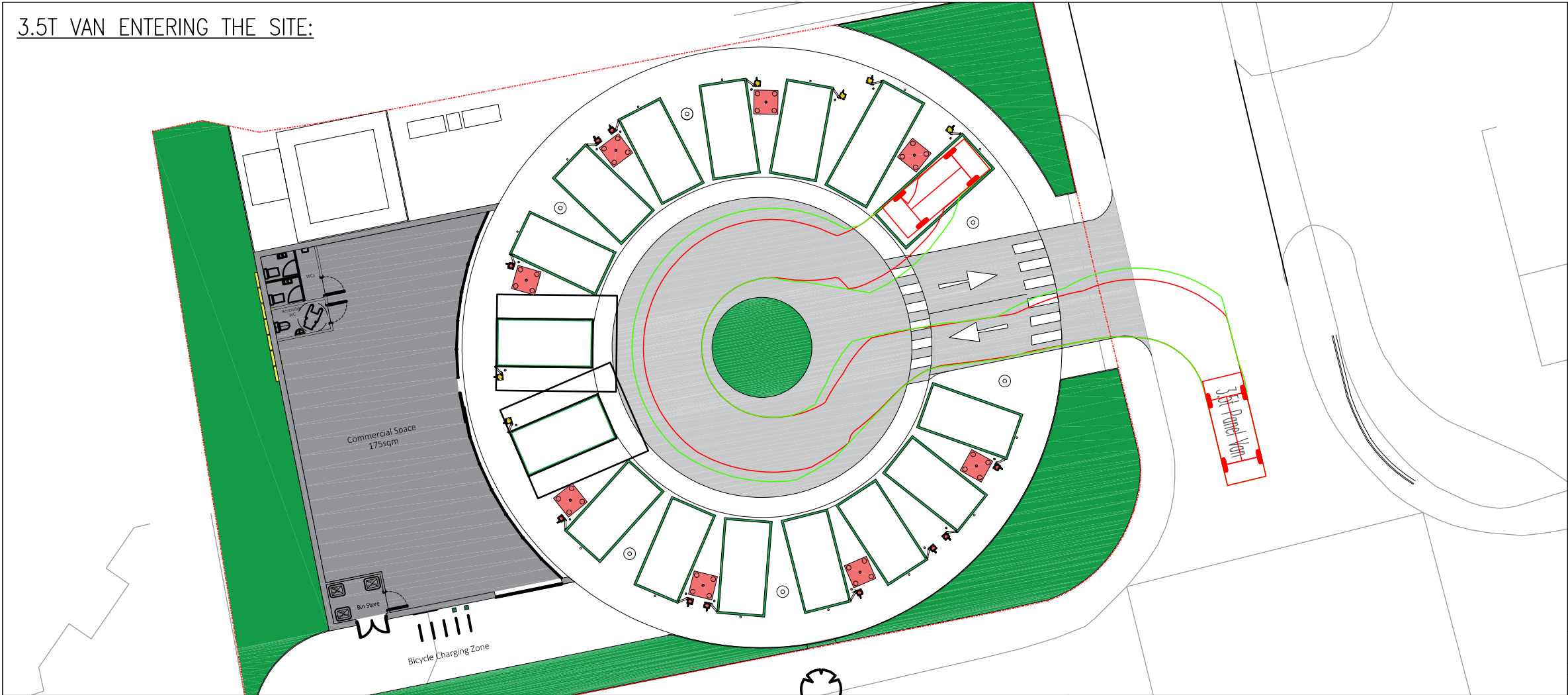


LARGE CAR EXITING THE SITE:

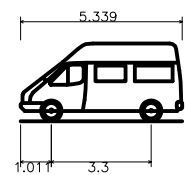


REV	DATE	BY	DESCRIPTION	CHK	APD
DRAWING STATUS:					
FOR PLANNING					
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 Unit 23, The Maltings, Stanstead Abbots, Hertfordshire, SG12 8HG Tel: 01920 871777 www.eastp.co.uk					
CLIENT:			BE-EV		
ARCHITECT:			LIPTON PLANT ARCHITECTS		
PROJECT:			MANCHESTER, RELIANCE STREET EV CHARGING STATION		
TITLE:			ACCESS SWEEP PATH ANALYSIS LARGE CAR		
SCALE @ A3:		DESIGN-DRAWN:		DATE:	
1 : 250		CG		15/03/2022	
PROJECT No:		DRAWING No:			
3815		SK02.1 REV A			

3.5T VAN ENTERING THE SITE:

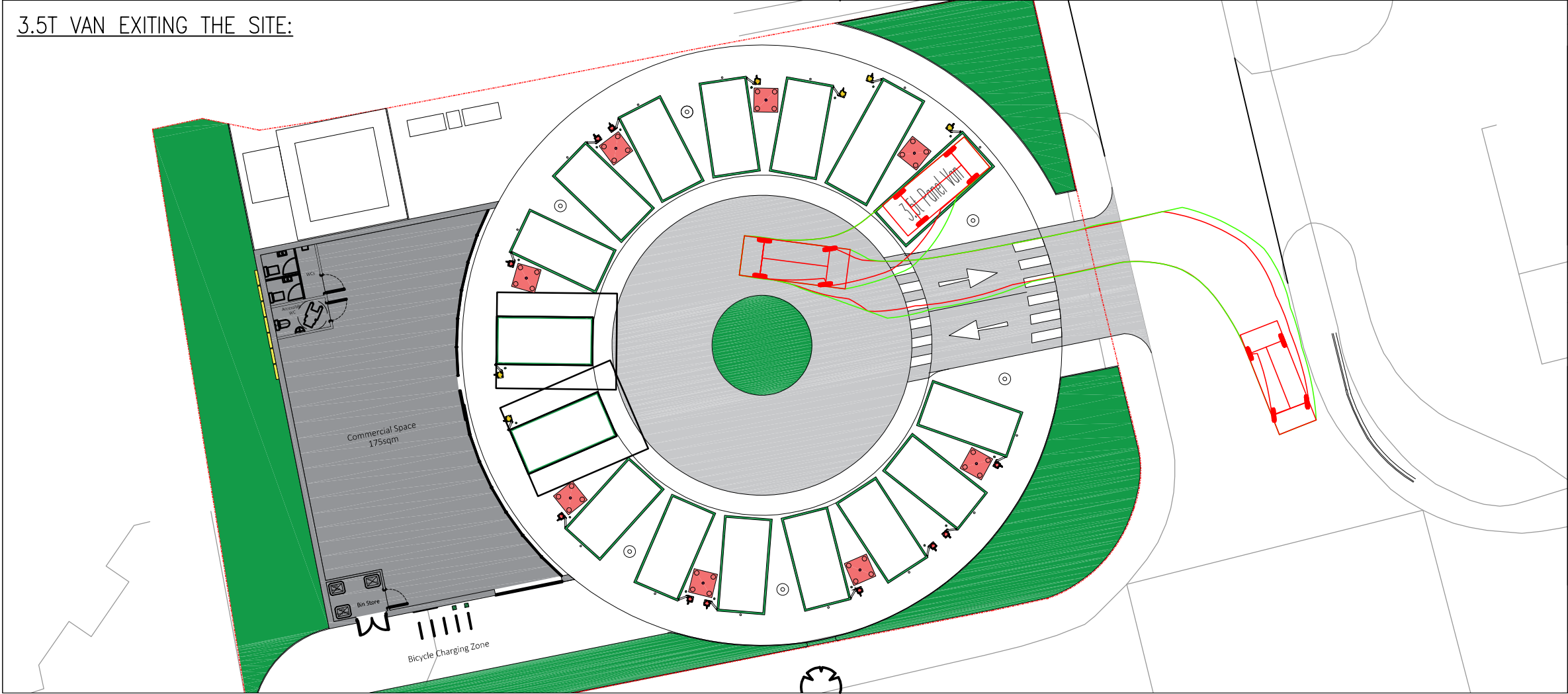


TRACKING VEHICLE MODEL:



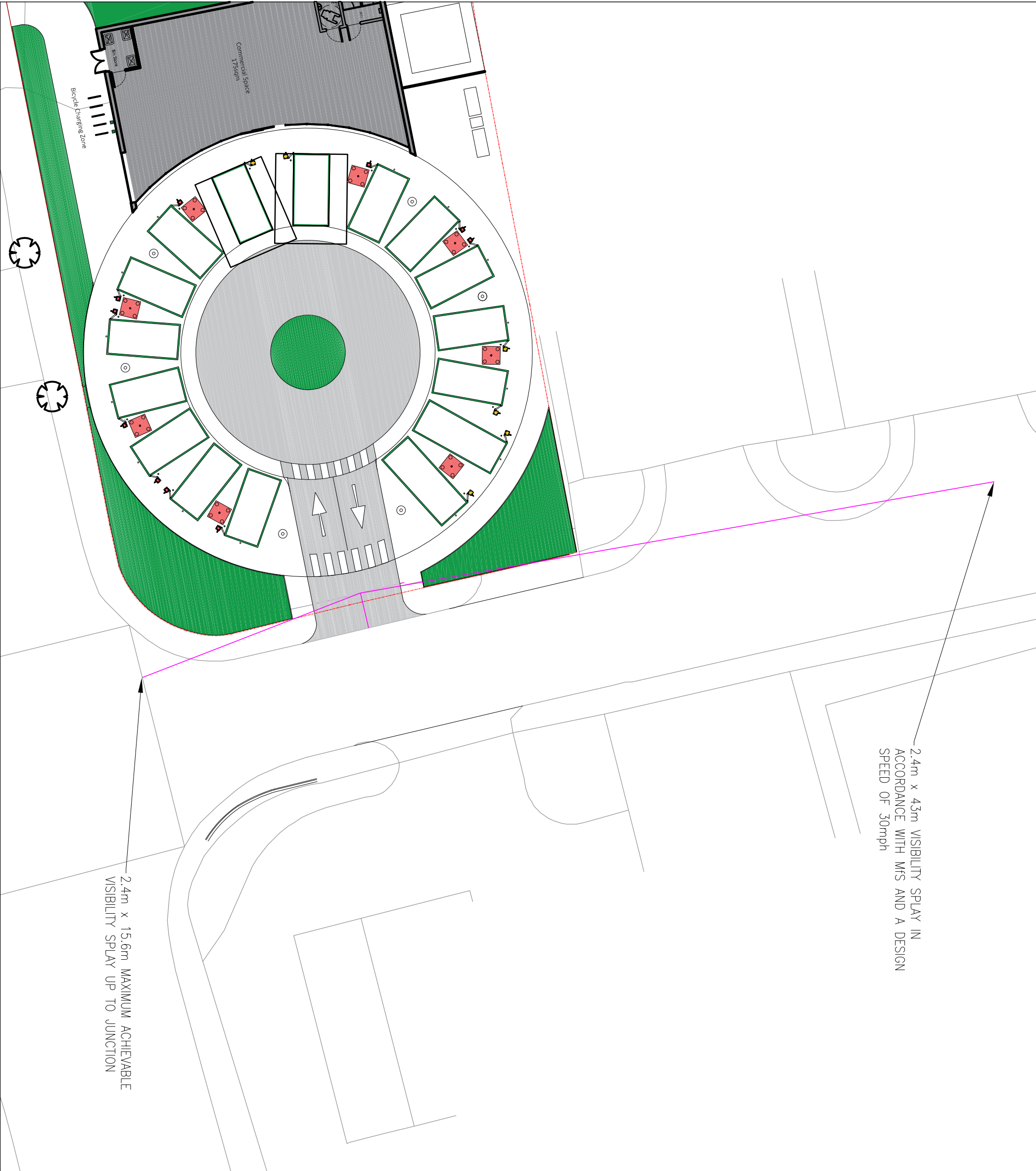
3.5t Panel Van
Overall Length 5.339m
Overall Width 1.986m
Overall Body Height 2.565m
Min Body Ground Clearance 0.338m
Track Width 1.986m
Lock to lock time 4.00s
Kerb to Kerb Turning Radius 6.400m

3.5T VAN EXITING THE SITE:



REV	DATE	BY	DESCRIPTION		CHK	APD
DRAWING STATUS:						
FOR PLANNING						
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EAS Unit 23, The Maltings, Stanstead Abbots, Hertfordshire, SG12 8HG Tel: 01920 871777 www.eastp.co.uk						
CLIENT:						
BE-EV						
ARCHITECT:						
LIPTON PLANT ARCHITECTS						
PROJECT:						
MANCHESTER, RELIANCE STREET EV CHARGING STATION						
TITLE:						
ACCESS SWEEP PATH ANALYSIS 3.5T VAN						
SCALE © A3: 1 : 250			DESIGN-DRAWN: CG		DATE: 15/03/2022	
PROJECT No: 3815			DRAWING No: SK02.2 REV A			

Appendix: G – Visibility Splay Drawings



REV	DATE	BY	DESCRIPTION	CHK	APD
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DRAWING STATUS:

FOR PLANNING

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Tel: 01920 871777
www.easfp.co.uk

CLIENT: BELEV

ARCHITECT: LIPTON PLANT ARCHITECTS

PROJECT: MANCHESTER, RELANCE STREET EV CHARGING STATION

TITLE: ACCESS VISIBILITY SPLAY

SCALE @ A3: 1 : 250	DESIGN-DRAWN: CG	DATE: 15/03/2022
PROJECT NO: 3815	DRAWING NO: SK01 REV A	