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Residential Development

Land off Wilbraham Road,
Manchester

Transport Assessment

Prepared on behalf of:

Anwyl Homes

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1.0 INTRODUCTION

1.1 This Transport Assessment (TA) report has been prepared by Focus Transport Planning Ltd (Focus TP) on behalf of Anwyl Homes to consider highways and transport issues related to proposals for new residential development of up to 65 dwellings at land off Wilbraham Road, Chorlton, Manchester (Grid Ref: E382643 / N394254). The proposals seek full planning application proposing the erection of a residential development (Use Class C3), with associated infrastructure, including landscaping, drainage and car parking, access, ecological mitigation, demolition of a garage to the rear of 354 Wilbraham Road and other associated works.

1.2 This TA report has been prepared to apprise the Local Planning & Highway Authority (LPA & LHA) Manchester City Council (MCC) as to the level of traffic demand anticipated to be generated by the application scheme and to set out the design & nature of the proposed site access arrangements, internal site road layout / car parking and the accessibility of the site by sustainable transport modes.

1.3 The report is to be submitted alongside a detailed planning application for the residential scheme (programmed to be submitted Autumn 2022 and reflects guidance set out in National Planning Policy Guidance (NPPG) “Travel Plans, Transport Assessments and Statements in Decision Taking”. This critical national guidance notes that Travel Plans, Transport Assessments and Statements are all ways of assessing and, where necessary mitigating, the negative transport impacts of development in order to promote sustainable development. Preparation of transport appraisal reports are required for all developments which could be expected to generate significant amounts of trip movements.

1.4 Transport Assessments and Transport Statements primarily focus on evaluating the potential transport impacts of a development proposal and may propose mitigation measures where these are necessary to avoid unacceptable or “severe” impacts. Transport Statements & Transport Assessments can be used to establish whether the residual transport impacts of a proposed development could be “severe”, which is the critical threshold for determining whether a project should be refused

on highways grounds, in accordance with guidance set out in Para 111 to the National Planning Policy Framework (NPPF).

1.5 Traditionally formal highways assessment reports have been required to be prepared for new residential developments of greater than 50 units. Given that the proposed development is to be of a size above this 50-dwelling threshold and would include new site access arrangements direct to a local A-road route (A6010 Wilbraham Road), it is considered that the preparation of a formal Transport Assessment (TA) document to support the planning application is appropriate in this case.

1.6 The scope and nature of matters considered in this TA report reflects the extent of issues that are understood to be of material interest to the LHA, based on the review of local site-specific circumstances and preliminary pre-application discussions with MCC highway officers. These discussions identified the following key matters required for consideration as part of any formal planning submission:

- Provide details of proposed site access arrangements with A6010 Wilbraham Road, demonstrating the potential for two-way vehicle operation, suitable visibility from the access and, where practical, the protection and retention of existing street trees.

- Provide details of the proposed internal highway layout and car parking arrangements and any supporting measures to ensure that the site is delivered to a suitable standard to allow for resident access and servicing and is easily accessible by active travel modes and public transport.

- Consider the extent of vehicle trip demand expected to be generated by the proposals and the assignment of this traffic to the immediate local highway network and any operational or safety implications generated by these additional movements.

1.7 The core structure of the remainder of this TA report is therefore as follows:

- A description of the location of the application site and a review of relevant planning history and existing site use.
- A review of existing local highway network conditions – including a description of the local highway network immediately adjacent to the application site, recorded local traffic volumes and speeds and a review of historical road safety records.
- An audit of sustainable transport opportunities available in the immediate vicinity of the application site, including a review of local walking, cycling and public transport connections, along with an audit of the site's proximity to 'everyday' shops and services.
- A description of the main development elements proposed – including a review of the proposed vehicle and pedestrian / cycle site access arrangements, car parking and large vehicle servicing provision.
- An assessment of the anticipated travel demand associated with the application scheme.
- Operational capacity considerations on the main local adopted highway route serving the application site (A6010 Wilbraham Road).
- Summary and conclusions.

1.8 This TA report should be read alongside the other technical documents submitted in support of the planning application including the Planning Statement prepared by Asteer Planning, Design & Access Statement by APD and Arboricultural Report prepared by Tyler Grange.

2.0 SITE LOCATION, EXISTING SITE USE & RELEVANT PLANNING POLICY

2.1 Site Location

2.1.1 The application site is located to the east of the centre of the local residential area of Chorlton, a suburb of the City of Manchester. A plan illustrating the strategic location of the application site in relation to surrounding built up areas and the key local distributor road routes of A6010 Wilbraham Road, B5217 Barlow Moor Road, St Werburgh's Road and A5103 Princess Parkway is included as **Figure TA1** to this report, with an aerial photo plan of the existing site layout and immediate local streets included as **Figure TA2**. This aerial image shows the site in the context of the immediate local road routes of A6010 Wilbraham Road, Morville Road, Withington Road and Wyverne Road.

2.2 Existing Site Layout and Land Use

Existing Site Land Use

2.2.1 The application site extends to approximately 2.22 hectares (ha) and comprises an irregular shaped parcel of land (Grid Reference – E382643 / N394254) within the administrative boundary of the City of Manchester. The ap The application site comprises two distinct parcels of land, as described below.

- The part of the site identified for the proposed housing development comprises a roughly rectangular shaped parcel of land, which extends to 2 ha. 354 Wilbraham Road and its associated garage are the only existing buildings/structures within the site boundary. Access to the site is obtained from Wilbraham Road. The housing site is privately owned by GMYF and is secured on all boundaries by fencing and gates aside from 354 Wilbraham Road which is an occupied dwelling. The site's last known use was as playing pitches (primarily football). However, this use ceased in 2016 (more than 5 years ago).

- The part of the site identified for ecological enhancement comprises 0.22 ha. The ecological enhancement area is owned by the St Margaret's Centre."

2.2.2 Main vehicle and pedestrian access to the application site is taken via an access track / driveway link from the southern boundary of the site, connecting to a dropped-kerb footway crossover link to A6010 Wilbraham Road (see also **Appendix TA1** to this report for photographs of this access layout). This dropped kerb access connection and track is shared with adjacent land associated with property 338 Wilbraham Road.

2.3 Relevant Planning Policy Framework

2.3.1 The following paragraphs provide a summary of transport related planning policy matters that are considered relevant to the application scheme. This review includes consideration of transport policy guidance set out in both national and local planning and transport policy documentation.

National Planning Policy

2.3.2 July 2021 National Planning Policy Framework (NPPF) seeks to encourage development which accords with the sustainable transport objectives of minimising the need for travel, particularly road journeys, and promoting the efficient delivery of goods and supplies. Key sustainable policy objectives stated in the NPPF are as follows:

> ***"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." (Para 104)

"The planning system should actively manage patterns of growth in support of these objectives (para 104). 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." (para 105)

"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…"(Para 112)

2.3.3 Paragraphs 110 and 113 to NPPF also provides guidance on the nature and detail of transport appraisal to be carried out to support development and those key matters to be considered when determining the suitability of development proposals:

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

- ***appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;***
- ***safe and suitable access to the site can be achieved for all users;***
- ***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

- ***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." (Para 110)***

"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."(Para 113)

2.3.4 Ultimately NPPF concludes the following with respect to the technical consideration of highways and transport related effects:

"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." (Para 111)

2.3.5 Paragraph 111 to the NPPF is considered to be of key importance in the context of the assessment of the operation of the immediate local highway network. The NPPF clearly identifies that development should only be refused in those cases where highways impact would be 'severe' (our underlining) - which is typically understood to mean situations where development is likely to result in a material detrimental 'step change' in circumstances when compared to predicted Baseline 'Do-Nothing' conditions. Should the operational effects as a consequence of development traffic be marginal in nature, then highway authorities are directed not to seek to prohibit development on highways and traffic grounds.

2.3.6 Whilst the NPPF does not seek to define the nature of what is considered to represent a 'severe' impact, thereby allowing for some flexibility to reflect site specific circumstances, it is clear that the guidance has the effect of setting a 'high-bar' for planning & highway authorities in terms of their ability to identify and successfully sustain objections to planning applications on highways grounds. The very nature of the wording of NPPF paragraph 111 inherently suggests that some measure of highways impact must be viewed as being 'acceptable' and that it is only when a 'severe' detrimental highways position is identified, that a refusal of planning permission on such grounds is appropriate.

Local Planning Policy

2.3.7 The adopted development plan for Manchester is the Local Development Framework Core Strategy (April 2012), which covers the period 2012 - 2027. The application site represents unallocated white land within the South Manchester sub area in accordance with the Core Strategy Illustrative Proposals Map.

2.3.8 The key transport related policy in the Core Strategy to the consideration of the application scheme is Policy T1 'Sustainable Transport' which states the following:

"T1 Sustainable Transport

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. ***pedestrians and disabled people***
    2. ***cyclists, public transport,***

3. commercial access,
4. general off-peak traffic,
5. general peak time traffic."

2.3.9 In addition to Policy T1, Core Strategy Policy T2 'Accessible Areas of Opportunity & Need' identifies the need for new development to be supported by appropriate levels of car parking. The relevant section of the policy relating to car parking notes:

> ***"…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."***

2.3.10 It is noted that the MCC's parking standards do not include for specific standards relating to new residential development.

2.3.11 Core Strategy Policy T2 also notes the following regarding the need for the direct transport appraisal of new development.

> ***"…Include 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."***

2.3.12 The application scheme will be therefore prepared to respond to the key transport related design principles set out in the above identified national and local policies, including the provision of appropriate levels of car parking and cycle parking, ensuring good site accessibility and the delivery of improved site access arrangements.

3.0 REVIEW OF EXISTING LOCAL HIGHWAY NETWORK CONDITIONS

3.1 Description of the Local Highway Network to the Application Site

3.1.1 As noted in section 2.2 to this report, the current primary vehicle access to the site is via the access track / dropped kerb link to A6010 Wilbraham Road, to the south of the core application site area. A6010 Wilbraham Road is of district distributor road standard and characterised by virtually continuous residential development to both sides. The route is of generally straight horizontal alignment, operating under a standard 30mph urban speed limit, with associated street lighting.

3.1.2 The route corridor is of circa 10.5m operating carriageway width, marked as 2 * 3.1m lanes, 2m hatched central reservation and 2 * 1.2m advisory cycleways to both sides. In addition, the road corridor offers circa 6m of combined footway / verge to both sides of the road. To the north (site) side of the road, the full 6m width is available for footway use to the front of those properties to the west of the site, with only circa 2.4m available for a footway to the eastern side - with a wide (3.6m) grass verge between the carriageway and the footway in this area. The nature of these wide footway / verge areas generally assists in providing good lateral visibility to approaching traffic for drivers emerging from side streets & residential driveways, however, it is noted that there are a number of mature street trees located close to the main operating carriageway edge, which may impact on some sightlines. Indeed, in the vicinity of the existing access track serving the application site, two large street tree specimens are in-situ, located either side of the dropped kerb track connection (see **Appendix TA1**).

3.1.3 There are no on-carriageway parking restrictions on A6010 Wilbraham Road in the immediate vicinity of the application site, however, site visits have identified only strictly limited levels of on-carriageway parking in this area, which reflects that all local frontage properties offer in-curtilage driveway parking. Notwithstanding this, some ad-hoc street parking was noted to take place within the wide footway / verge areas and also on the private land associated with property 338, immediately adjacent to the application site access track and using this track for

access. Double yellow line parking restrictions were noted to be in place around the left in / left out radii to Wyverne Road at the junction with A6010 Wilbraham Road, to discourage parking congestion in the immediate vicinity of the junction. These yellow lines extend circa 10m back into the Wyverne Road side road. This extent of double yellow line controls are common to all local side road connections to the A6010 Wilbraham Road corridor.

3.1.4 To the west of the application site the A6010 Wilbraham Road provides a direct route to Chorlton district centre & onward links to Stretford and connections to Manchester city centre & West Didsbury (via B5217 Barlow Moor Road). To the east of the site, the A6010 provides onward links towards Fallowfield and connections to Manchester city centre and the M56 motorway (via A5103 Princess Parkway).

3.1.5 The A6010 is accessed by a number of north-south side road routes providing both local residential and distributor road connections to the surrounding residential suburbs of Chorlton, Whalley Range, Alexandra Park and Broughton Park. The nearest of these local connections is Wyverne Road, a local residential side road connection, located approximately 25m to the east of the application site access track. This junction is of simple T-junction character, but includes for a gap within the A6010 Wilbraham Road hatched central reserve to allow eastbound vehicles wishing to turn right into the side road to wait 'off-line' without blocking through movements (see **Appendix TA1**). This central right turn vehicle storage area is offered an element of physical protection from passing through traffic via a local splitter island (lit bollards and 'guardian angel' lighting column) within the central reserve to the west of the junction, between the site access track connection and the Wynne Road side road.

3.1.6 A6010 Wilbraham Road also acts a local bus route (see also section 4.2 to this report), with local bus stop 'cage' carriageway markings at both local stops to the application site. Nearest stops are located 15m to the west of the site access track connection (westbound service direction) and 50m to the east (eastbound services).

3.2 Observed Background Local Highway Network Operating Conditions

3.2.1 Background operating conditions on the frontage section of A6010 Wilbraham Road to the application site, including movements to / from the nearby side road connection of Wyverne Road have been identified via reference to a local weekday traffic survey exercise undertaken on Wednesday 22 June 2022. This survey also included for the recording of traffic speeds passing the application site access point (see **Appendix TA2** for collected traffic data).

3.2.2 Traffic flow data was collected for traditional AM & PM 'rush hour' peak periods over the time periods 07:30 – 09:30 and 15:30 – 18:00). **Figure TA3** to this report illustrates total 'rolling hourly' recorded traffic movements at the junction of A6010 Wilbraham Road / Wyverne Road. Review of this exercise demonstrates that maximum hourly traffic levels took place during the AM peak period 08:00-09:00, with 1341 vehicle movements recorded during this time. Maximum PM peak demand occurred for the hour 17:00-18:00, showing a broadly similar level of traffic demand, i.e. 1327 vehicle movements. HGV / bus traffic levels were noted to be less than 5% of overall traffic during rush hour periods.

3.2.3 Recorded turning movements at the A6010 Wilbraham Road / Wyverne Road junction for the above maximum AM and PM peak hours are illustrated in **Figure TA4** to this report. Review of this information suggests that peak hour demand to / from the Wyverne Road side road is relatively low, being of the order of 165 two-way (in + out) vehicle trips in the AM peak and 125 in the PM peak. This represents a practical demand of circa 2 – 3 side road vehicle movements per minute.

3.2.4 The recorded manual speed survey information for vehicles on A6010 Wilbraham Road approaching the application site track connection is also included in **Appendix TA2**. Review of this information demonstrates the following core off-peak dry-weather speeds:

Recorded Westbound Traffic:
- Average Speed: 28 mph
- 85th Percentile Speed: 32 mph

Recorded Westbound Traffic:

- Average Speed: 28 mph
- 85th Percentile Speed: 31 mph

3.2.5 These speed survey results demonstrate that typical off-peak average operating speeds on the immediate section of the A6010 Wilbraham Road corridor within the vicinity of the site are just below the prevailing 30mph speed limit, with 85th percentile speeds at or around this threshold. There is no evidence of significant volumes of traffic operating substantially above the speed limit.

3.3 Road Safety: Review of Personal Injury Accident Records

3.3.1 An appraisal of the operational safety of the immediate local highway network to the application site has been carried out through a review of historical Personal Injury Accident (PIA) data obtained from the crashmap.co.uk database for the most recently available 5.5-year search period (2016 to Summer 2021 inclusive (Summer 2021 data being preliminary / unvalidated in nature)). This database includes for all accident incidents as recorded by the police & emergency services and therefore represents 'industry standard' data utilised for the calculation of accident rates and the assessment of highway safety. The specification of a minimum five-year search period accords with criteria recommended in NPPG good practice guidance, with the study area including for length of A6010 Wilbraham Road from (and including) the junctions with St Brannocks Road to the west and Withington Road to the east.

3.3.2 Details of the extent of the search area and the number & location of recorded accident events are illustrated in **Figure TA5** to this report.

3.3.3 Review of the recorded accident data demonstrates that no accident events have taken place in the immediate vicinity of the application site track connection or at the adjacent junction of A6010 Wilbraham Road / Wyverne Road. Indeed, just two injury accident events have been recorded within the study area over the 5.5-year study period. Both of these incidents were of 'slight' injury class. Details of these incidents are as follows:

Junction of A6010 Wilbraham Road / St Brannocks Road

Incident 1: 2 vehicles, 1 Casualty

- 23:35 Wednesday 20 December 2017 – Slight Class Incident, Wet / Damp & Fog, Darkness.
  Collision between car turning right and motorcycle travelling straight-on on the main road.

Junction of A6010 Wilbraham Road / Withington Road

Incident 1: 2 vehicles, 1 Casualty

- 21:56 Tuesday 29 October 2019 – Slight Class Incident, Fine / Dry, Darkness.
  Collision between two cars at traffic signal junction.

3.3.4 Both of the identified incidents either took place outside of traditional core weekday daytime periods (both during late evening) and involved right turn traffic to / from side road routes. Neither of the recorded incidents involved pedestrian or cycle road users.

3.3.5 Based on the above review of issues, it is ultimately concluded that there are no clear & substantive prevailing road safety issues that would call into question the proposed development of the application site for residential use or require direct additional highway safety mitigation measures.

4.0 SITE ACCESSIBILTY AUDIT

4.1 Introduction

4.1.1 Development of the application site for residential land use would need to satisfy the key planning and transport related sustainability objectives of:

- Reducing the need to travel, especially by private car;
- Ensuring accessibility to a range of sustainable travel options.

4.1.2 The nature of local sustainable transport connections available within the immediate catchment of the application site are summarised in the paragraphs below.

4.2 Access to Public Transport

Bus Links

4.2.1 The closest bus stops to the application site are located on A6010 Wilbraham Road, within a 200m walk from the centre of the application site and therefore well within desirable maximum walking distances to access local bus services from new development, as identified within IHT guidance document 'Planning for Public Transport in Development'. Local bus stops to the site are typically of a good standard, being characterised by bus cage carriageway markings, flagpost, passenger shelter including map / information board and seat (both travel directions).

4.2.2 The stops on A6010 Wilbraham Road are served by the regular frequency bus routes identified in **Table TA4.1** below. A plan of available bus route connections is also illustrated in **Figure TA6** to this report.

Table TA4.1: Bus Services Available from Local Stops on A6010 Wilbraham Road

Service	Route	Mon-Fri / Sat / Sun Daytime Frequency
85	Chorlton – Alexandra Park – Oxford Road – Piccadilly Gardens	4 per hr / 4 per hr / 3 per hr
85A	Chorltonville - Chorlton – Alexandra Park – Oxford Road – Piccadilly Gardens	1 per hr / 1 per hr / No service
150	Gorton – Longsight – Levenshulme – Chorlton – Stretford – Trafford Centre	2 per hr / 2 per hr / 1 per hr

4.2.3 Review of this bus service information identifies that the stops offer regular frequency connections to Chorlton district centre (7 per hour), Manchester city centre (5 per hour) and other wider connections to Gorton, Stretford and the Trafford Centre (2 per hour).

4.2.4 Additional public transport connections are available from Chorlton Metrolink stop, which is located circa 750m walk to the west of the application site directly off A6010 Wilbraham Road. Chorlton tram station is served by services on the following routes:

- East Didsbury – Rochdale
- East Didsbury – Shaw & Crompton
- Manchester Airport – Victoria.

4.2.5 All routes offer a daytime Mon-Sat service frequency of circa 5 trams per hour in each direction, thereby providing a general combined service frequency to / from Manchester city centre of circa 1 tram every 4 minutes (effectively 'turn-up & go') and 1 tram every 6 minutes to East Didsbury.

4.3 Accessibility to Local Facilities (Walking and Cycling)

4.3.1 In addition to the above identified local public transport connections, the location of the application site also provides the opportunity for easy access to a wide range of local shops and services by foot or cycle. National planning guidance notes that walking is the most important mode of travel at the local scale, offering the greatest potential to replace short distance car trips of under 2km. Guidance produced by CIHT also notes that 800m represents an 'acceptable' walking distance

to community facilities and shops, with 1.2km representing a 'preferred maximum'. 2km has been identified as a suitable walk distance for regular commuting trips and journeys to / from school.

4.3.2 As noted in section 3.1 to this report, local footways on local sections of the A6010 Wilbraham Road are of good quality (generally over 2.5m width) and provide direct links to Chorlton district centre, a Morrisons supermarket and other local bars / restaurants and community facilities approximately 1km – 1.2km to the west of the application site. Formal traffic signal-controlled crossing points of A6010 Wilbraham Road are also available to sections of this route both within, and on the eastern approach to, Chorlton local centre. **Figure TA7(a&b)** to this report illustrates suitable walking catchments from the site and demonstrate that a range of 'everyday' type destinations lie within a convenient and practical walking distance, including:

- Primary and secondary schools;
- Food retail and local shops;
- Chorlton local centre;
- Dentist, medical practices & Pharmacies;
- Veterinary surgery;
- Community Facilities (civic centre / library / churches);
- Leisure facilities & parks.

4.3.3 Alexandra Park, a large formal Council managed leisure park, including playing fields, is located circa 1.5km walk to the north-east of the application site.

4.3.4 National Planning Guidance also notes that cycling has the potential to substitute for short car trips – particularly those journeys of less than 5km or which could form part of a longer journey by public transport. The location of the application site allows for practical cycling access to a range of local areas including Chorlton, Stretford, Fallowfield, Didsbury, Whalley Range, Old Trafford, Hulme and the southern edge of Manchester city centre (**Figure TA8**).

4.3.5 A plan of available local cycle infrastructure to the application site (as identified by TfGM) is illustrated in **Figure TA9**. As noted in section 3.1 to this report, the

immediate section of A6010 Wilbraham Road includes for on-road advisory cycle lane markings in each direction, with a number of local side road routes representing 20mph quiet street routes. Additional cycling corridors link to A6010 Wilbraham Road including a) B5217 Barlow Moor Road (recently up-graded as part of Chorlton bee-line cycle route works) & Alexander Road South, which both provide cycle friendly infrastructure links towards Manchester city centre and, b) signed on-road connections to the south, connecting to the segregated off-road 'Fallowfield Loop Line' walking / cycle route (towards Withington & Fallowfield).

4.4 Accessibility Summary

4.4.1 Overall it is concluded that the application site at Wilbraham Road represents a suitable location for residential development, being located within an established residential area, within a practical walking distance of good frequency public transport services (bus and metrolink) and everyday local shops / services & facilities, and close to high quality cycle infrastructure.

4.4.2 Such locational characteristics will deliver a high potential for residents to utilise sustainable transport for a range of regular journeys and therefore meet core planning objectives of promoting opportunities for the use of alternative travel modes to the private car and managing the overall traffic impact associated with new development.

5.0 REVIEW OF THE DEVELOPMENT PROPOSALS

5.1 Development Proposals

5.1.1 The application scheme represents the development of land at Wilbraham Road for future residential land use. A masterplan illustrating the proposed general arrangements of the application scheme is included as **Appendix TA3** to this report.

5.1.2 The proposals envisage the delivery of 65 new residential dwellings, based on the following schedule of accommodation:

Private Housing
- 16 * 3-bedroom properties.
- 36 * 4-bedroom properties

Affordable Housing
- 4 * 2-bedroom properties.
- 9 * 3-bedroom properties

5.1.3 The masterplan also identifies the layout of proposed internal site vehicle arrangements, car parking areas, cycle parking and ancillary landscaping zones.

5.2 Highway Access Arrangements

5.2.1 Vehicle access to the application scheme is proposed via a new residential standard access road connection direct to A6010 Wilbraham Road. This access point would be delivered in effectively the same location as the existing access track connection serving the former playing fields, but would be comprehensively upgraded to offer a full adoptable standard highway route. Details of the proposed access arrangements are illustrated in **Figures TA10 (a&b)**, which identifies the following key design elements:

- 5.5m internal access road carriageway width;
- 3m left turn entry radius and 4.5m left turn exit radii;

- 2.0m footway connections provided to both sides of the site access junction connection, with these footway links extended into the site.
- Dropped kerb driveway crossover access points, allowing for vehicle access to the side / rear of adjacent properties 338 and 354 Wilbraham Road.
- Space within the hatched central reserve markings to allow for the safe storage of westbound vehicles waiting to turn right into the site.

5.2.2 The above junction layout elements are of suitable dimensions to accommodate two-way light vehicle traffic movements and occasional ad-hoc service vehicle movements associated with typical residential schemes of 50+ units. The identified junction radii have been discussed and agreed with MCC highways officers in order to balance delivering suitable vehicle access whilst seeking to retain those existing mature street trees located within the immediate vicinity of the proposed junction. It is proposed that the site access arrangements would be delivered using best practice tree protection construction methodology, including hand dig techniques, with the final construction specification to be discussed agreed with the Council following review of a comprehensive suite of site investigation surveys, including root radar surveys, trial pits and audit of existing local buried infrastructure provision & highway drainage.

5.2.3 **Figure TA11** to this report illustrates that the layout and position of the proposed new access is capable of delivering the following minimum lateral visibility splays to approaching traffic on the A6010 Wilbraham Road, when measured to the nearside kerb - taking into account the effect of adjacent mature trees and other street furniture, such as lighting columns, signs, etc:

- To the left (leading direction): 2.4m by 50m sightline
- To the right (non-leading direction): 2.4m by 57m sightline

5.2.4 The sightline analysis illustrated in **Figure TA11** demonstrates that the adjacent street trees proposed for retention would not to generate any significant practical restrictions on lateral visibility when measured from the standard ‘x-distance’ of 2.4m back from the carriageway edge. Indeed, the analysis suggests that the trees would only result in the obstruction of less than 4m of the visibility envelope in

both directions. It is not considered that this level of obstruction would represent a material safety concern, reflecting the guidance set out in paragraphs 10.7.1 & 10.7.2 to national guidance document 'Manual for Streets 2' (MfS2), which notes the following:

> ***"Obstacles to Visibility***
>
> ***10.7.1 Parking in visibility splays in built-up areas is quite common, yet it does not appear to create significant problems in practice. Ideally, defined parking bays should be provided outside of the visibility splay. However, in some circumstances, where speeds are low, some encroachment may be acceptable.***
>
> ***10.7.2 The impact of other obstacles, such as street trees and street lighting columns, should be assessed in terms of their impact on the overall envelope of visibility. In general, occasional obstacles to visibility that are not large enough to fully obscure a whole vehicle or pedestrian, including a child or wheelchair user, will not have a significant impact on road safety."***

5.2.5 As set out in MfS2, lateral sightlines in excess of 50m are considered appropriate to deliver safe operation for side road route connections to main roads operating in line with a 30mph speed limit (minimum requirement of 2.4m by 43m for 30mph threshold speed).

5.2.6 Within the proposed development area, the site access road corridor would be maintained at a 5.5m wide carriageway width, with minimum 30m centre-line radius along the connecting access road and 10m centre-line radius for internal bends within the main residential area itself. The nature of this internal site design will encourage low vehicle speed operation (20mph), which will be reinforced by local vertical traffic management features (speed tables) and carriageway surface treatments.

5.2.7 Minimum width 2m width footways would be provided to both sides of both the site access road and internal loop road.

5.2.8 As a consequence of the core looped internal site layout, resident / visitor and delivery / service vehicle movements can be accommodated without the need for turning head features.

5.3 Development Car Parking & Cycle Parking

Car Parking

5.3.1 It is proposed that all bar two properties would be served by driveway parking, allowing off-road / in-curtilage storage for a minimum of two vehicles, see **Table TA5.1** below. The remaining two properties would be served by dedicated parking space provision (two spaces per unit).

Table TA5.1 – Proposed Car Parking Provision By Residential Unit Type

Type	Number	Spaces	Parking	Comments
C3	16	2	Driveway	Plots 15 and 26 have parking spaces
D1	4	2	Driveway	
D2	5	2	Driveway	
D3	9	2	Driveway	
D4	8	3	Driveway + garage	
D5	10	3	Driveway + garage	
B1	4	2	Driveway	
C1	8	2	Driveway	
C2	1	2	Driveway	

5.3.2 A number of the proposed 4-bedroom properties also include for additional single garage storage (providing a total of 3 in-curtilage parking spaces for these dwellings).

Cycle Parking

5.3.3 Dedicated cycle parking would be provided for all residential units across the site and would be delivered via a combination of either in-garage storage (where relevant) or dedicated lockable cycle store features within rear garden areas for those units without in-curtilage garages.

5.4 Site Servicing

5.4.1 The internal looped highway network to the application scheme has been designed to be able to accommodate typical service vehicle movements appropriate to a residential land use. Residential schemes typically generate a relatively low level of HGV demand, with service vehicle access being mainly restricted to waste collection and ad-hoc deliveries of goods to residents. Many of these delivery movements would likely be undertaken by Transit Van / Luton Van style max 7.5t mgw vehicles and would not require a long duration of stay on site.

5.4.2 In recognition of the need to accommodate occasional larger service vehicle movements, the application scheme internal highway layout has been designed to include for a suitable large vehicle turning / manoeuvring area. **Appendix TA4** to this report demonstrates vehicle swept path assessment runs within the site, including the movement of large refuse collection vehicles.

6.0 PREDICTED TRAVEL DEMAND ASSOCIATED WITH THE APPLICATION SCHEME AND LOCAL TRIP ASSIGNMENT

6.1 Predicted Trip Demand Levels Associated with the Application Scheme

6.1.1 This section of the TA report seeks to identify the future level of traffic demand anticipated to be generated by the proposals. These estimates have been undertaken via reference to representative residential sites held within the industry standard TRICS development trip rate database. TRICS is a nationally regarded source of historical trip demand data and contains observed traffic data for a variety of development-type sites and, as such, can be considered to produce reliable base trip rate data.

6.1.2 The reference residential sites chosen from the TRICS database (see **Appendix TA5** to this report for full TRICS output) have been selected for general characteristics similar to the application site and surrounding area, viz:

- Suburban areas and neighbourhood centre sites.
- Development sites of circa 75 to 250 units.
- Not including sites in Greater London or Eire.
- Mixed of housing types.

6.1.3 In order to ensure the most robust assessment of future development traffic demand, core residential trip generation considered in this report has been based on the calculated 85th percentile trip rate value of the ranked sites as identified from the TRICS database. Such 85th percentile estimates provide an indication of a realistic 'maximum' trip generation demand for travel to / from a development site and therefore ensures a robust 'worst case' assessment of operational impact. In practice it is considered that the use of such 85th percentile rates for residential development at the application site could well be overly pessimistic, given the site's good locational sustainability credentials (short walk from a range of public transport services, local shops & services and with good cycle accessibility). Details of the calculated 85th percentile rates are also included in **Table TA6.1** below.

Table TA6.1: Calculated Average and 85th Percentile Residential Trip Rates from TRICS

Time Period	Average Trip Rates (per dwelling)			85th Percentile Trip Rates (per dwelling)		
	Arrive	Depart	Total	Arrive	Depart	Total
AM Peak (08:00-09:00)	0.154	0.376	**0.530**	0.193	0.474	**0.667**
PM Peak (17:00-18:00)	0.337	0.177	**0.514**	0.382	0.248	**0.630**
12h hour (07:00-19:00)	2.105	2.190	**4.295**	2.421	2.408	**4.829**

Trip Rate (Per dwelling)

6.1.4 The above average and 85th percentile trip rates have been applied to the total estimated residential development size proposed at the application site (65 dwellings), with the results set out in **Table TA6.2** below.

Table TA6.2: Predicted Average and 85th Percentile Development Trip Demand (65 Dwellings)

Time Period	Trip Demand (Average Trip Rates)			Trip Demand (85th Percentile Trip Rates)		
	Arrive	Depart	Total	Arrive	Depart	Total
AM Peak (08:00-09:00)	10	24	**34**	13	31	**43**
PM Peak (17:00-18:00)	22	12	**33**	25	16	**41**
12h hour (07:00-19:00)	137	142	**279**	157	157	**314**

Vehicle movements

6.1.5 The above exercise demonstrates that residential development at the application site is not anticipated to generate a substantive level of vehicle trip demand during traditional weekday 'rush hour periods', with maximum two-way (in + out) vehicle demand associated with the proposals predicted to be no more than 43 vehicles per hour (AM peak, 85th percentile rates). Such demand is the equivalent of less than 1 additional development vehicle trip movement every minute and is therefore unlikely to result in a 'severe' impact on prevailing local network operating conditions in accordance with the critical test set out in paragraph 111 of the NPPF.

6.2 Development Trip Assignment

6.2.1 The new traffic movements generated by the proposals identified in section 6.1 to this report has been assigned to the immediate highway network based on observed peak hour directional traffic proportions at the nearby residential side street connection of Wyverne Road to A6010 Wilbraham Road. **Figure TA12** to this report illustrates these calculated turning proportions and **Figure TA13** shows the application of these proportions to the predicted AM & PM hourly development traffic levels identified in section 6.1.

6.2.2 In practice it is unlikely that total development traffic demand of in excess of 1 vehicle per hour would be experienced on any immediate section of the A6010 Wilbraham Road corridor.

7.0 DEVELOPMENT TRAFFIC OPERATIONAL IMPACT EFFECTS

7.1 Key Assessment Parameters

7.1.1 In order to ensure a robust assessment of the traffic impact of the application scheme, this TA report has sought to assess the time periods of likely maximum potential traffic impact of the development proposals. This maximum impact could be expected to occur when the existing background flows on the immediate local network and predicted development flows combine to give rise to the highest overall hourly flows. During such time periods, local network links and junctions could be expected to be operating at maximum demand conditions.

7.1.2 For the purposes of this appraisal, development traffic network impact assessment has been carried out for the following time periods:

- AM Peak Period: 08:00 – 09:00
- PM Peak Period: 17:00 – 18:00

7.1.3 In practice these AM & PM 'rush hour' peak periods are also likely to broadly represent the maximum traffic demand periods associated with traffic demand to / from the application scheme and therefore these time periods have been utilised for the network capacity appraisals set out in the remainder of this TA report.

7.1.4 It is anticipated that the earliest that full completion and occupation of all proposed dwellings at the application site would be end of 2025. An opening year date of 2025 has therefore been utilised for the remainder of this report.

7.1.5 In addition to this opening year analysis a further 'future year' scenario has been considered for the year 2027. This test assumes a 5-year horizon from the anticipated date of planning submission (2022). The use of this 5-year assessment horizon, post submission of the planning application, is in accordance with good practice guidance for the appraisal of development related traffic impact and therefore ensures a robust appraisal of development traffic impact.

7.1.6 Baseline network traffic conditions for the future modelled years has been calculated via the application of locally adjusted National Transport Model (NTM) forecasts. The 2025 and 2027 traffic growth factors associated with NTM figures adjusted for census super output area 'Manchester 033' are set out in **Appendix TA6** and summarised below:

2022 – 2025 Growth Factors	2022 – 2027 Growth Factors
Weekday AM Peak – 1.0408	Weekday AM Peak – 1.0624
Weekday PM Peak – 1.0418	Weekday PM Peak – 1.0638

Predicted 'Do-Nothing' Baseline Traffic Conditions

7.1.7 The application of these local growth factors to the observed background traffic movements recorded during the 2022 traffic survey exercise are set out in **Figure TA14** and **Figure TA15** for 2025 and 2027 future year scenarios respectively.

Predicted 'Do-Something' Baseline + Application Scheme Traffic Conditions

7.1.8 Calculation of the 'Do-Something' Baseline + Application Scheme traffic flow scenarios considered in this assessment are set out as follows:

- **Figure TA16** 2025 Baseline + Development (85th Percentile) - i.e. Baseline Traffic (Figure TA14) + Development (85th Percentile) Traffic (Figure TA13).

- **Figure TA17** 2027 Baseline + Development (85th Percentile) - i.e. Baseline Traffic (Figure TA15) + Development (85th Percentile) Traffic (Figure TA13).

7.2 Link Impact Assessment (Percentage Change)

7.2.1 Traditionally, link flow assessment criteria have been based on those percentage impact thresholds identified in 1994 Institution of Highways and Transportation report 'Guidelines for Traffic Impact Assessment'. This document suggested that more detailed analysis of highway impact and / or capacity improvements was only likely to be required for situations when either:

- Traffic to / from the development exceeds 10% of existing two-way traffic on the adjoining highway; or,
- Where traffic to / from the development exceeds 5% of the existing two-way traffic flow on the adjoining highways at locations where traffic congestion exists within the assessment period or in other sensitive locations.

7.2.2 This position was reviewed and updated in March 2007 DfT document "Guidelines for Transport Assessment", subsequently withdrawn in 2014, which notes:

> ***"If the TA confirms that a development will have material impact on the highway network, the level of impact at all critical locations on the network should be established. A particular example of material impact would be a worsening of congestion. In congested areas, the percentage traffic impact that is considered significant or detrimental to the network may be relatively low (possibly below the average daily variation in flow), and should have been determined in discussions with the relevant highway authorities. For the avoidance of doubt, the 1994 guidance regarding the assessment thresholds of 10 per cent and 5 per cent levels of development traffic relative to background traffic is no longer deemed an acceptable mechanism, since it creates an incentive in favour of locating development where high levels of background traffic already exist."***

7.2.3 Notwithstanding these observations, in the case of the immediate local highway network to the application site, it is considered that the traditional 5% & 10% thresholds still represents a reasonable 'contextual guide' as to the level / extent of proposed development traffic impact on immediate local routes. The use of these assessment thresholds should, of course, be viewed in the context of the predicted total development traffic levels – with section 6 to this report having identified that total (in + out) development traffic demand is likely to be of the order of less than 1 additional vehicle movement minute.

7.2.4 **Table TA7.1** below demonstrates the anticipated changes in 2025 Baseline opening year observed traffic flows associated with the addition of the predicted application scheme traffic estimates:

Table TA7.1: Predicted Changes in Link Flow on Immediate Sections of the A6010 Wilbraham Road Corridor to the Application Site

	2025 AM Peak Period			2025 PM Peak Period		
	Devel	Baseline	% Change	Devel	Baseline	% Change
A6010 Wilbraham Road (West of Site Access)	32	1396	2.3%	29	1382	2.1%
A6010 Wilbraham Road (East of Wyverne Road)	11	1313	0.9%	12	1327	0.9%

Two-way vehicle flow totals

7.2.5 Review of the link flow assessment results demonstrates that the application scheme is only predicted to result in link flow increases of less than 2.5% of 2025 Baseline conditions on A6010 Wilbraham Road. Such increases are well below traditional guideline 'trigger' thresholds for the undertaking of additional impact assessment and reflect the generally low levels of development traffic demand predicted (typically of the order of 1 additional vehicle every 2 minutes on any section of Wilbraham Road).

7.2.6 Given the above review, it is considered that application site development traffic impact could be expected to be of only generally limited scale and would not result in 'severe' network operational effects that would require the provision of specific network capacity improvements over and above the proposed enhanced access arrangements to serve the application scheme.

7.3 Site Access Junction Operational Capacity

7.3.1 Notwithstanding the above conclusions regarding link impact, in order to provide a comprehensive understanding of potential operational issues of the application scheme, this TA report also includes for an appraisal of the future capacity of the proposed site access junction with A6010 Wilbraham Road. Operational capacity of this junction has been assessed using industry standard analysis software for give way junctions (JUNCTIONS – PICADY Module).

7.3.2 The PICADY software considers junction performance with respect to the Ratio of Flow to Capacity (RFC) and associated traffic queuing. RFC values for approach arms between 0.00 and 0.85 are generally considered to represent stable and acceptable operating conditions. Values between 0.85 and unity (1.0) represent variable operation (i.e. possible substantive queues building up at the junction during the period under consideration and increases in vehicular delay moving through the junction). RFC values in excess of unity represent overloaded conditions (i.e. congested conditions).

7.3.3 Historical DfT design guidance states the following with respect to the design of new junction schemes and operating capacity thresholds:

> ***"Due to site to site entry variation, there may be a standard error of prediction of the entry capacity by the formulae of + or – 15% for any site. Thus, queuing should not occur in the various turning movements in the chosen design year peak hour in 5 out 6 peak periods or sites, if a maximum RFC of about 85% (0.85) is used. Similarly, if a maximum RFC of 75% is used, queuing will theoretically be avoided in 39 out of 40 peak hour periods or sites.***
>
> ***The general use of designs with an RFC of about 85% is likely to result in a level of provision which will be economically justified…."***

7.3.4 The above guidance identifies that it is possible for a junction to operate with individual RFC levels of above 0.85 without unacceptable congestion and delay taking place. The 0.85 threshold identifies the optimum position at which operational capacity is maximised when viewed against the likely frequency of queuing and delay events. RFC values of above 0.85 simply demonstrate a greater potential for congestion and delay to occur, which must be viewed in the context

of the extent of future year horizon under assessment and general network wide conditions.

7.3.5 Junction assessment work has been carried out for the future year 2027 for the 'Do-Something' Background + Development (85th percentile) scenario, as this represents the maximum traffic conditions modelled. The results of these 2027 assessment runs are summarised in **Table TA7.2** below, with relevant PICADY model outputs attached as **Appendix TA7**.

Table TA7.2: A6010 Wilbraham Road / Application Site Access Junction PICADY Results: 2027 'Do-Something' Baseline + Application Scheme

85th Percentile Development Traffic

Turning Movement	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Traffic Flow (PCUs)	RFC	Queue (PCU)	Traffic Flow (PCUs)	RFC	Queue (PCU)
Exit from Site to A6010 Wilbraham Road	31	0.14	0.2	16	0.07	0.1
Right Turn into Site from A6010 Wilbraham Road	3	0.01	0.0	7	0.02	0.0

7.3.6 Review of these capacity assessment results demonstrates that the site access connection to the A6010 Wilbraham Road corridor is predicted to operate with significant spare capacity during peak periods for the future year assessment scenario, even including for worst case 85th percentile traffic flow estimates. Maximum RFC is well below the 0.85 capacity thresholds and queuing would be at negligible levels.

7.4 Impact Statement

7.4.1 Operational capacity assessments have been undertaken for key immediate sections of the local highway network to the application site. These results demonstrate that:

Link Flow Impact

- Predicted additional traffic levels associated with the predicted residential development scheme during critical AM & PM peak periods could be expected to be generally low, with maximum development related increases on immediate sections of the A6010 Wilbraham Road corridor predicted to be less than 2.5% of 2025 opening year baseline traffic demand. Maximum link impact could be expected to occur on the section of A6010 Wilbraham Road to the west of the application site junction, but even in this case, development related traffic increases would only be circa 1 vehicle every two minutes during traditional 'rush hour' network peak periods. Such additional development flow levels would not typically be expected to result in a material / severe change in local network operating conditions.

Site Access Junction Performance

- Detailed operational capacity testing of the proposed site access connection to the A6010 Wilbraham Road corridor demonstrates that the proposed T-junction layout could be expected to operate with a substantive level of spare capacity, even including for 2027 future year conditions and 'worst case' 85th percentile development traffic demand estimates. Predicted RFC levels would be well below critical threshold values and maximum queuing be at negligible levels and would not impact on through traffic movements on Wilbraham Road.

7.4.2 Given the above review of issues, it is considered that application site development traffic impact could be expected to only be of generally limited scale and would not result in 'severe' network operational effects that would require the provision of additional network capacity or safety improvements.

8.0 SUMMARY AND CONCLUSIONS

8.1 This Transport Assessment (TA) report has been prepared by Focus Transport Planning Ltd (Focus TP) on behalf of Anwyl Homes to consider highways and transport issues related to proposals for new residential development of up to 65 dwellings at land off Wilbraham Road, Chorlton, Manchester (Grid Ref: E382643 / N394254). The proposals seek full planning application proposing the erection of a residential development (Use Class C3), with associated infrastructure, including landscaping, drainage and car parking, access, ecological mitigation, demolition of a garage to the rear of 354 Wilbraham Road and other associated works. This TA report has been prepared to apprise the Local Planning & Highway Authority (LPA & LHA) Manchester City Council (MCC) as to the level of traffic demand anticipated to be generated by the application scheme and to set out the design & nature of the proposed site access arrangements, internal site road layout / car parking and the accessibility of the site by sustainable transport modes.

Site Location and Existing Land Use

8.2 The application site extends to approximately 2.22 hectares (ha) and comprises an irregular shaped parcel of owned land, made up of two parts – the northern part of the site identified for the proposed housing development and land to the east, identified for ecological enhancement. 354 Wilbraham Road and its associated garage is the only existing building/structure within the site boundary. The northern section of the site is secured on all boundaries by fencing and gates, and is inaccessible to the public. This part of the site's last known use was as playing pitches (primarily football). However, this use ceased in 2016 (more than 5 years ago).

8.3 Main vehicle and pedestrian access to the application site is taken via an access track / driveway link from the southern boundary of the site, connecting to a dropped-kerb footway crossover link to A6010 Wilbraham Road. This dropped kerb access connection and track is shared with adjacent land associated with property 338 Wilbraham Road.

Relevant Planning Policy Framework

8.4 The application site is not specifically identified within the prevailing development plan for Manchester (2012 – 2027 Core Strategy) represents unallocated white land within the South Manchester sub area in accordance with the Core Strategy Illustrative Proposals Map.

8.5 The site is immediately surrounded by mature residential land use. The application scheme will be prepared to respond to the key transport related design principles set out in key Core Strategy transport related policies, including the provision of appropriate levels of car parking and cycle parking, ensuring good site accessibility on foot and public transport and the delivery of improved site access arrangements.

Existing Local Highway Network Conditions

8.6 The application scheme would be served via an improved access to the A6010 Wilbraham Road to the south of the site. A6010 Wilbraham Road is of district distributor road standard and characterised by virtually continuous residential development to both sides. The route is of generally straight horizontal alignment character, operating under a standard 30mph urban speed limit, with associated street lighting. The route corridor is of circa 10.5m operating carriageway width, marked as 2 * 3.1m lanes, 2m hatched central reservation and 2 * 1.2m advisory cycleways to both sides. In addition, the road corridor offers circa 6m of combined footway / verge to both sides.

8.7 To the west of the application site, A6010 Wilbraham Road provides a direct route to Chorlton district centre & onward links to Stretford and connections to Manchester city centre & West Didsbury (via B5217 Barlow Moor Road). To the east of the site, the A6010 provides onward links towards Fallowfield and connections to Manchester city centre and the M56 motorway (via A5103 Princess Parkway).

8.8 June 2022 traffic surveys on A6010 Wilbraham Road at the nearby junction with Wyverne Road identified that the route currently experiences two-way traffic

demand of the order of circa 1341 vehicles during AM & PM rush hour peak periods. Such demand reflects the route's district distributor role. HGV / bus traffic levels were noted to be less than 5% of overall traffic during rush hour periods. Review of the survey information suggests that peak hour demand to / from the Wyverne Road side road is relatively low, being of the order of 165 two-way (in + out) vehicle trips in the AM peak and 125 in the PM peak, or circa 2 – 3 side road vehicle movements per minute.

8.9 Speed survey information, also collected in June 2022, demonstrates that typical off-peak average operating speeds are just below the prevailing 30mph speed limit, with 85th percentile speeds at or around this threshold. There is no evidence of regular vehicle movements operating significantly above the speed limit.

8.10 An appraisal of the operational safety of the immediate local highway network to the application site has been carried out through a review of historical Personal Injury Accident (PIA) data obtained from the crashmap.co.uk database for the most recently available 5.5-year search period (2016 to Summer 2021 inclusive). No accident events have taken place in the immediate vicinity of the application site track connection or at the adjacent junction of A6010 Wilbraham Road / Wyverne Road. Indeed, just two injury accident events have been recorded within the wider study area over the 5.5-year search period, with both of these incidents being of slight injury class and both taking place outside of core weekday traffic periods (late evening). It is ultimately concluded that there are no clear & substantive prevailing road safety issues that would call into question the proposed development of the application site for residential use or require direct additional highway safety mitigation measures.

Site Accessibility

8.10.1 It is considered that the application site at Wilbraham Road represents a suitable location for residential development, being located within an established residential area, within a practical walking distance of good frequency public transport services (bus and metrolink) and everyday local shops / services & facilities, and close to high quality cycle infrastructure. Such locational

characteristics will deliver a high potential for residents to utilise sustainable transport for a range of regular journeys and therefore meet core planning objectives of promoting opportunities for the use of alternative travel modes to the private car and managing the overall traffic impact associated with new development.

Development Proposals & Access Arrangements

8.11 The application scheme represents the development of land off A6010 Wilbraham Road for residential land use. The proposals envisage the delivery of 65 new residential dwellings, based on the following schedule of accommodation:

Private Housing
- 16 * 3-bedroom properties.
- 36 * 4-bedroom properties

Affordable Housing
- 4 * 2-bedroom properties.
- 9 * 3-bedroom properties

8.12 Vehicle access to the application scheme would be taken via a new residential standard access road connection direct to A6010 Wilbraham Road. This access point would be delivered in effectively the same location as the existing access track connection serving the former playing fields, but would be comprehensively upgraded to offer a full adoptable standard highway route. The access junction arrangements would include a 5.5m driveway width, 3m / 4.5m left turn entry / exit radii and 2.0m footway connections provided to both sides of the site access junction connection, with these footway links extended into the site.

8.13 The identified junction radii have been discussed and agreed with MCC highway officers in order to balance delivering suitable vehicle access whilst seeking to retain existing mature street trees located within the immediate vicinity of the proposed junction. It is proposed that final site access arrangements would be delivered using best practice tree protection construction methodology, including hand dig techniques, with the final construction specification to be discussed agreed with the Council following review of a comprehensive suite of site

investigation surveys, including root radar surveys, trial pits and audit of existing local buried infrastructure provision & highway drainage.

8.14 The layout and position of the proposed access is capable of delivering minimum lateral visibility splays to approaching traffic on A6010 Wilbraham Road of at least 2.4m by 50m, when measured to the nearside kerb & taking into account the effect of adjacent mature trees and other street furniture, such as lighting columns, signs. Analysis of the visibility envelope demonstrates that the adjacent street trees proposed for retention will not to generate any significant restrictions on lateral visibility when measured from the standard 'x-distance' of 2.4m back from the carriageway edge. National guidance MfS2 confirms that lateral sightlines in excess of 50m are considered appropriate to deliver safe operation for side road route connections to main roads operating in line with a 30mph speed limit.

8.15 Within the proposed development area, the access road corridor would be maintained at a minimum 5.5m wide carriageway width, with minimum 30m centre-line radius bends on the access road and 10m centre-line radius for internal bends within the core looped section. The nature of this internal site design will encourage low vehicle speed operation (20mph), which will be reinforced by local vertical traffic management features (speed tables) and carriageway surface treatments. The looped nature of the internal site arrangements would allow for the access and turning of both private vehicles and large service vehicles, such as rigid delivery HGV's and refuse collection vehicles.

8.16 All proposed dwellings would be served by a minimum of two parking spaces (either driveway or dedicated parking spaces), with a number of the proposed 4-bedroom units including for an additional garage feature – allowing 3 spaces for these dwellings. Dedicated cycle parking would be provided at all residential units across the site, via a combination of either garage storage (where relevant) or dedicated lockable cycle stores within rear garden areas.

Residential Development Trip Demand & Trip Assignment

8.17 Estimates of likely future travel demand associated with the residential scheme have been undertaken via reference to suitable residential sites held within the industry standard TRICS development trip rate database. This exercise demonstrates that residential development at the application site is not anticipated to generate a substantive level of vehicle trip demand during traditional weekday 'rush hour periods', with maximum two-way (in + out) vehicle demand associated with the proposals predicted to be no more than 43vehicles per hour. Such demand is the equivalent of less than 1 additional development vehicle trip movement every minute.

8.18 Predicted new traffic movements generated by the proposals has been assigned to the immediate highway network based on observed peak hour directional traffic proportions at the nearby residential side street connection of Wyverne Road to A6010 Wilbraham Road. This exercise suggests that it is unlikely that total development traffic demand of in excess of 31 vehicles per hour would be experienced on any immediate section of the A6010 Wilbraham Road corridor.

Anticipated Development Traffic Network Operational Effects

8.19 Operational capacity assessments have been undertaken for key immediate sections of the local highway network to the application site. These results demonstrate that:

Link Flow Impact

- Predicted additional traffic levels associated with the predicted residential development scheme during critical AM & PM peak periods could be expected to be generally low, with maximum development related increases on immediate sections of the A6010 Wilbraham Road corridor predicted to be less than 2.5% of 2025 opening year baseline traffic demand. Maximum link impact could be expected to occur on the section of A6010 Wilbraham Road to the west of the application site junction, but even in this case, development

related traffic increases would only be circa 1 vehicle every 2 minutes during traditional 'rush hour' network peak periods. Such additional development flow levels would not typically be expected to result in a material / severe change in local network operating conditions.

Site Access Junction Performance

- Detailed operational capacity testing of the proposed site access connection to the A6010 Wilbraham Road corridor demonstrates that the proposed T-junction layout could be expected to operate with a substantive level of spare capacity, even including for 2027 future year conditions and 'worst case' 85th percentile development traffic demand estimates. Predicted RFC levels would be well below critical threshold values and maximum queuing be at negligible levels and would not impact on through traffic movements on Wilbraham Road.

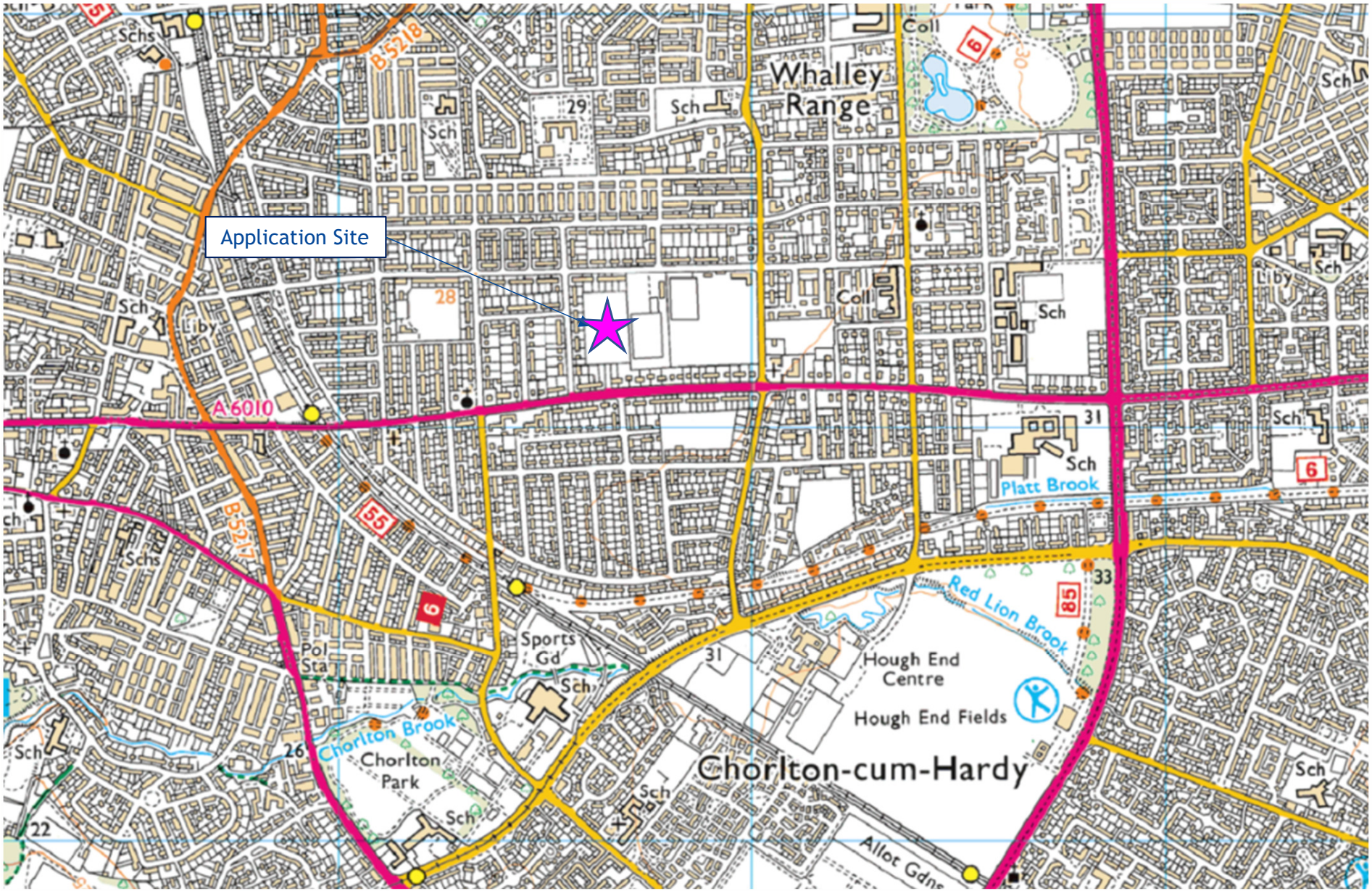
8.20 Given the above review of issues, it is considered that application site development traffic impact could be expected to only be of generally limited scale and would not result in 'severe' network operational effects that would require the provision of additional network capacity or safety improvements, in line with the critical test set out in paragraph 111 of the NPPF.

Conclusions

8.21 Overall, it is concluded that the development of the application site for residential land use would not result in a material impact on the existing and future operation of the immediate local highway network. The proposals are not anticipated to result in a significant increase in development flows on local links, with key immediate local routes capable of accommodating future development traffic volumes without operational or environmental capacity concerns The location of the application site is also considered to offer excellent practical opportunities to encourage the use of alternative travel modes to the private car for a range of 'everyday' journeys, with the proposals considered suitable to meet key transport objectives re: encouraging sustainable development.

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FIGURES



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Figure TA1 **Site Location: Strategic Context**

J000312 Land off Wilbraham Road, Manchester October 2022

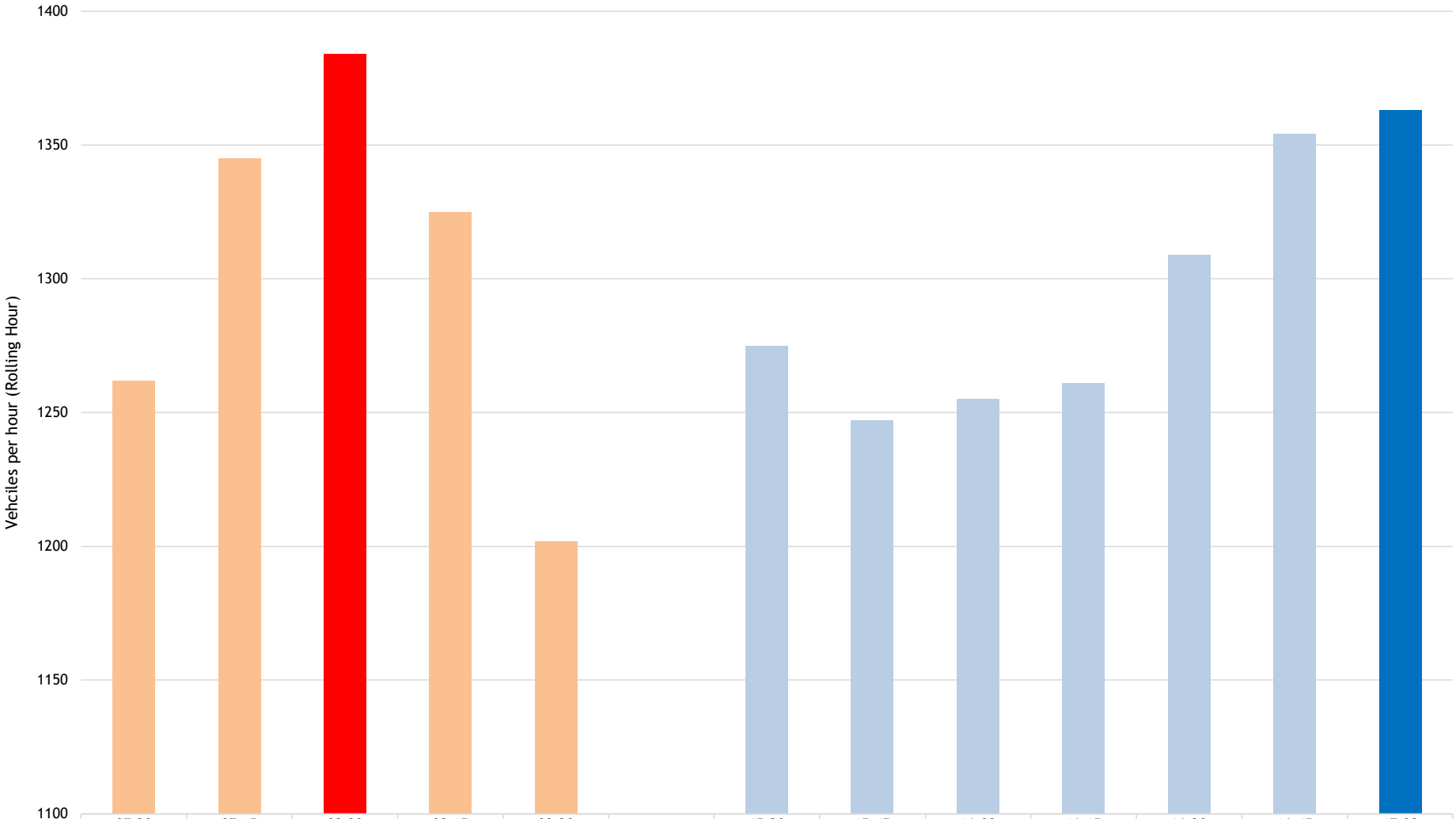


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Figure TA2 **Site Location: Local Context**

J000312 Land off Wilbraham Road, Manchester October 2022

A6010 Wilbraham Road / Wyverne Road Junction
2022 Observed Background Traffic (Rolling Hourly Profile)



	07:30	07:45	08:00	08:15	08:30		15:30	15:45	16:00	16:15	16:30	16:45	17:00
Rolling Hr	1262	1345	1384	1325	1202		1275	1247	1255	1261	1309	1354	1363

Figure TA3

Observed Rolling Hourly Total Traffic Demand Profile at A6010 Wilbraham Road / Wyverne Road Junction

J000312 Land off Wilbraham Road, Manchester October 2022

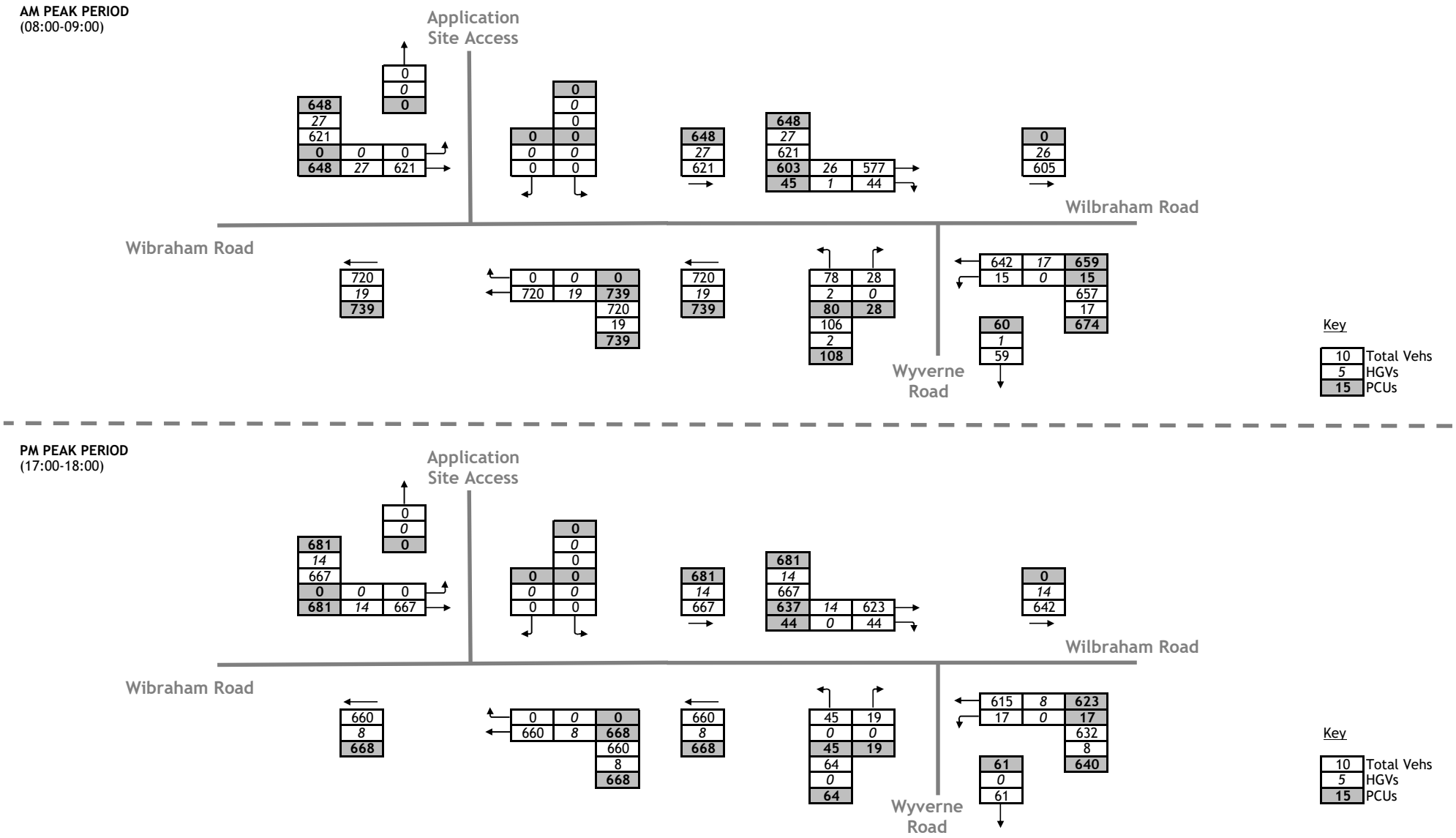


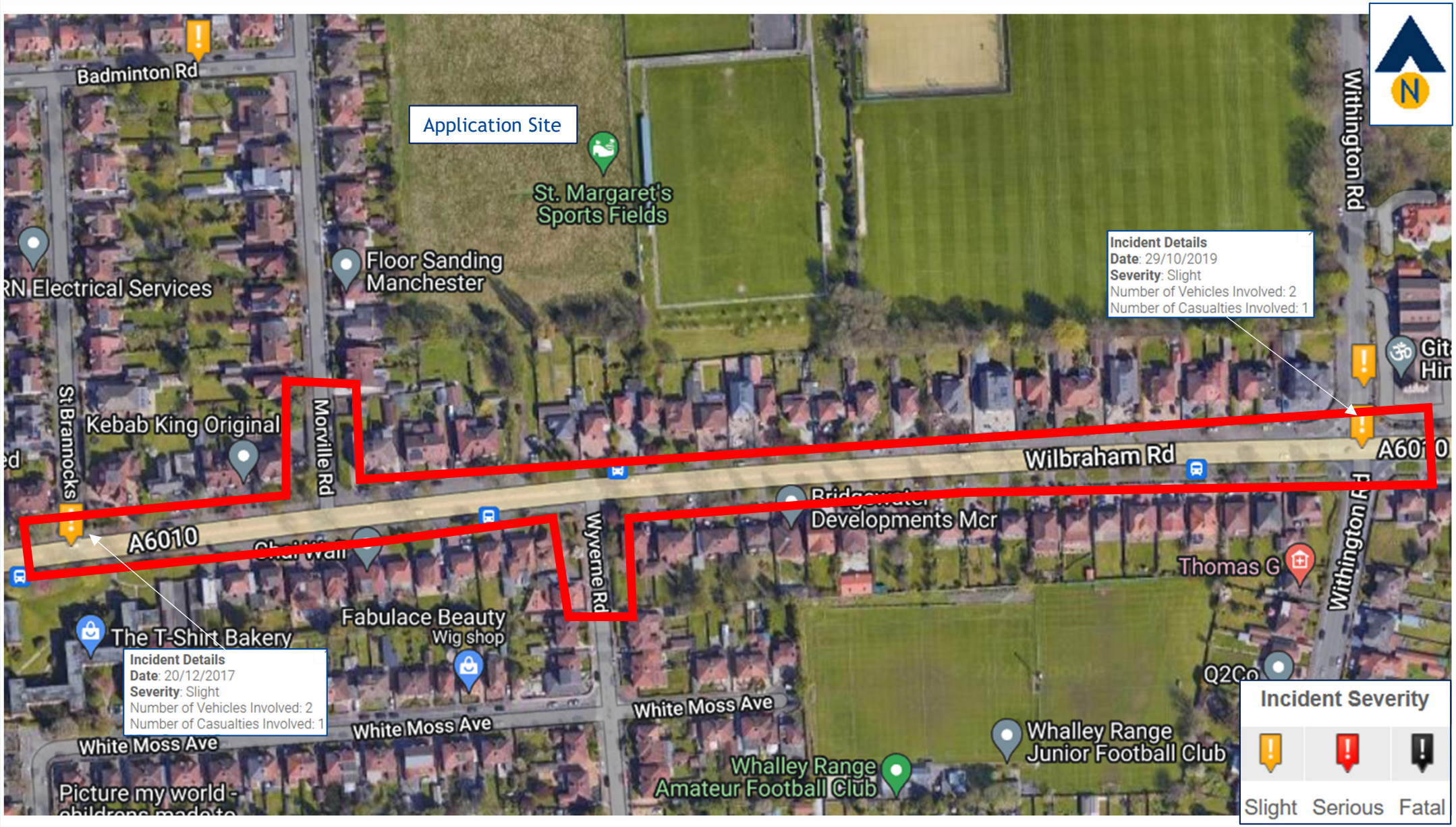
FIGURE TA4

2022 Observed AM & PM Peak Background Traffic Data at A6010 Wilbraham Road / Wyverne Road

J000312

Land at Wilbraham Road, Manchester

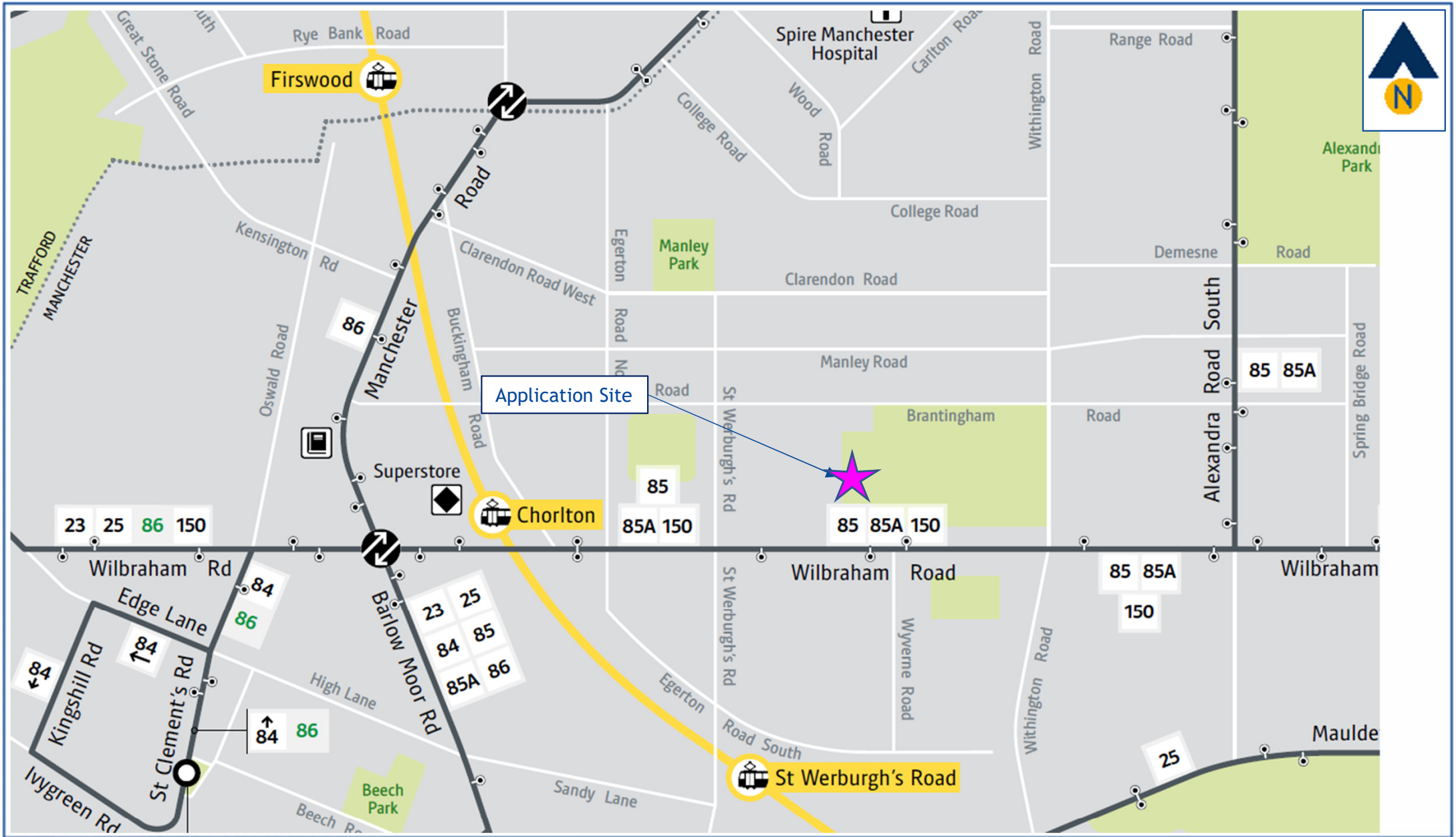
October 2022



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Figure TA5 **Location of Personal Injury Accident Events (Jan 2016 - Jul 2021)**

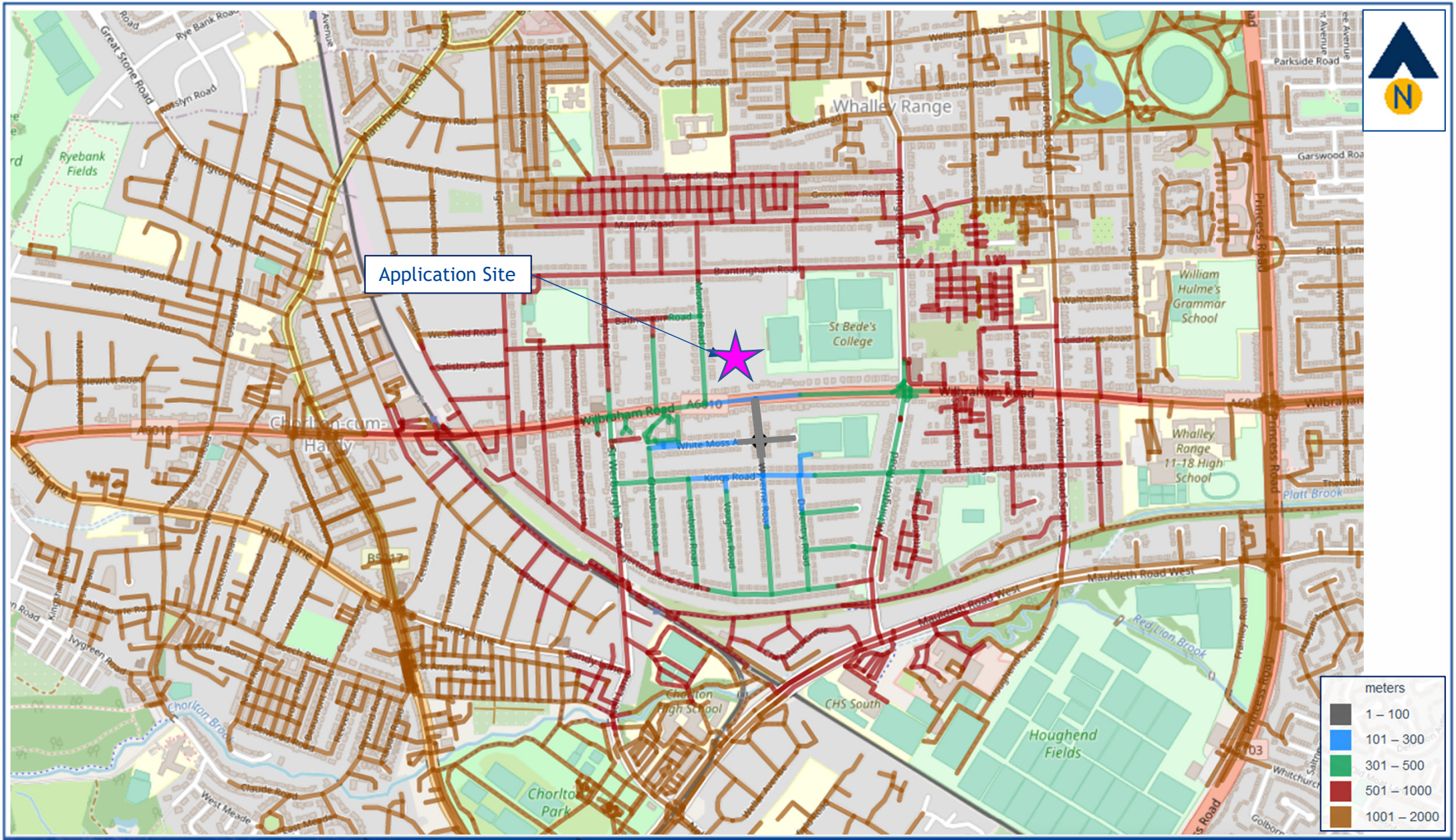
J000312 Land off Wilbraham Road, Manchester October 2022



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Figure TA6 **Available Local Public Transport Connections to the Application Site**

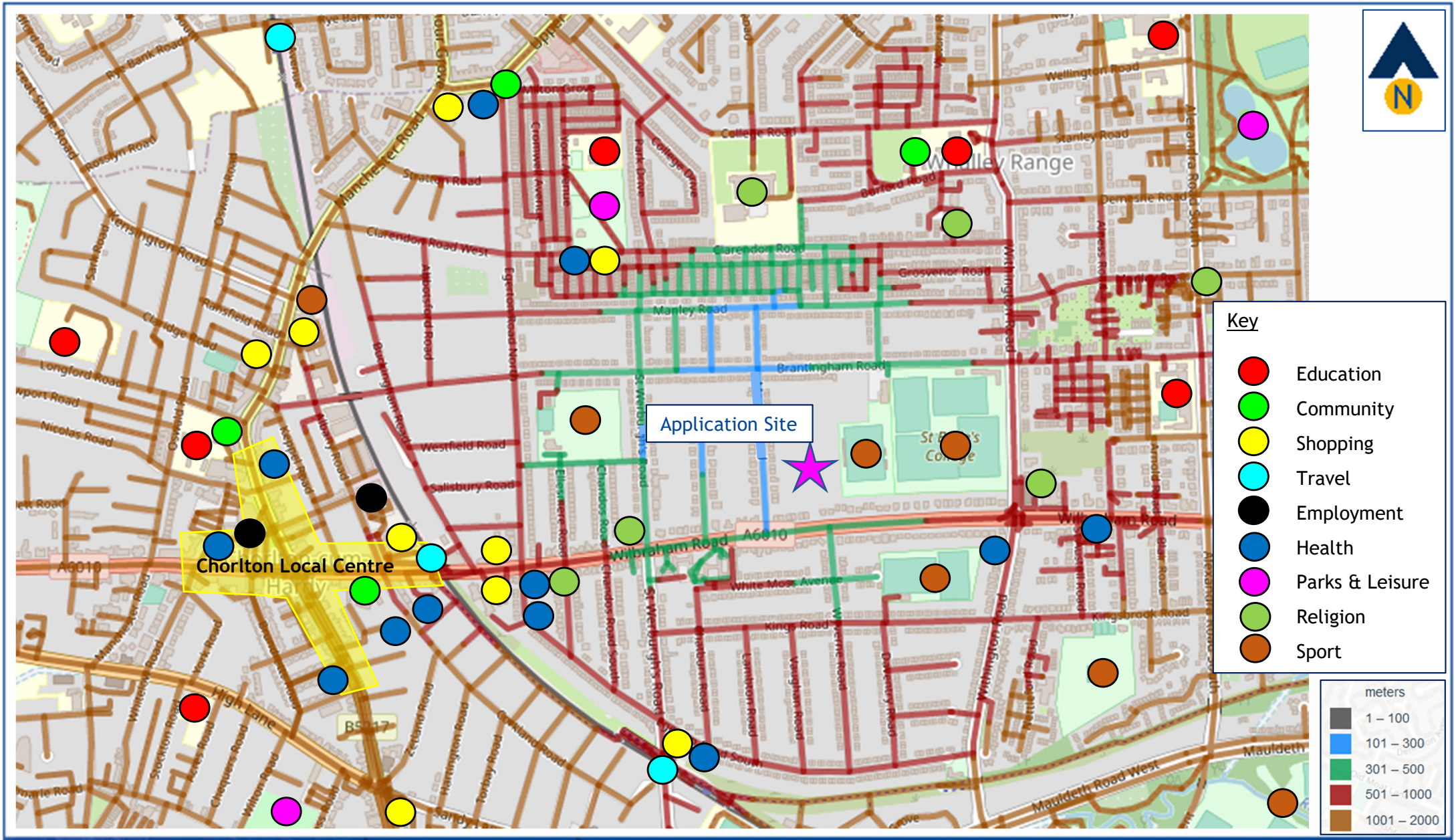
J000312 Land off Wilbraham Road, Manchester October 2022



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Figure TA7a **Illustrative 2km Walk Catchment to / from the Application Site**

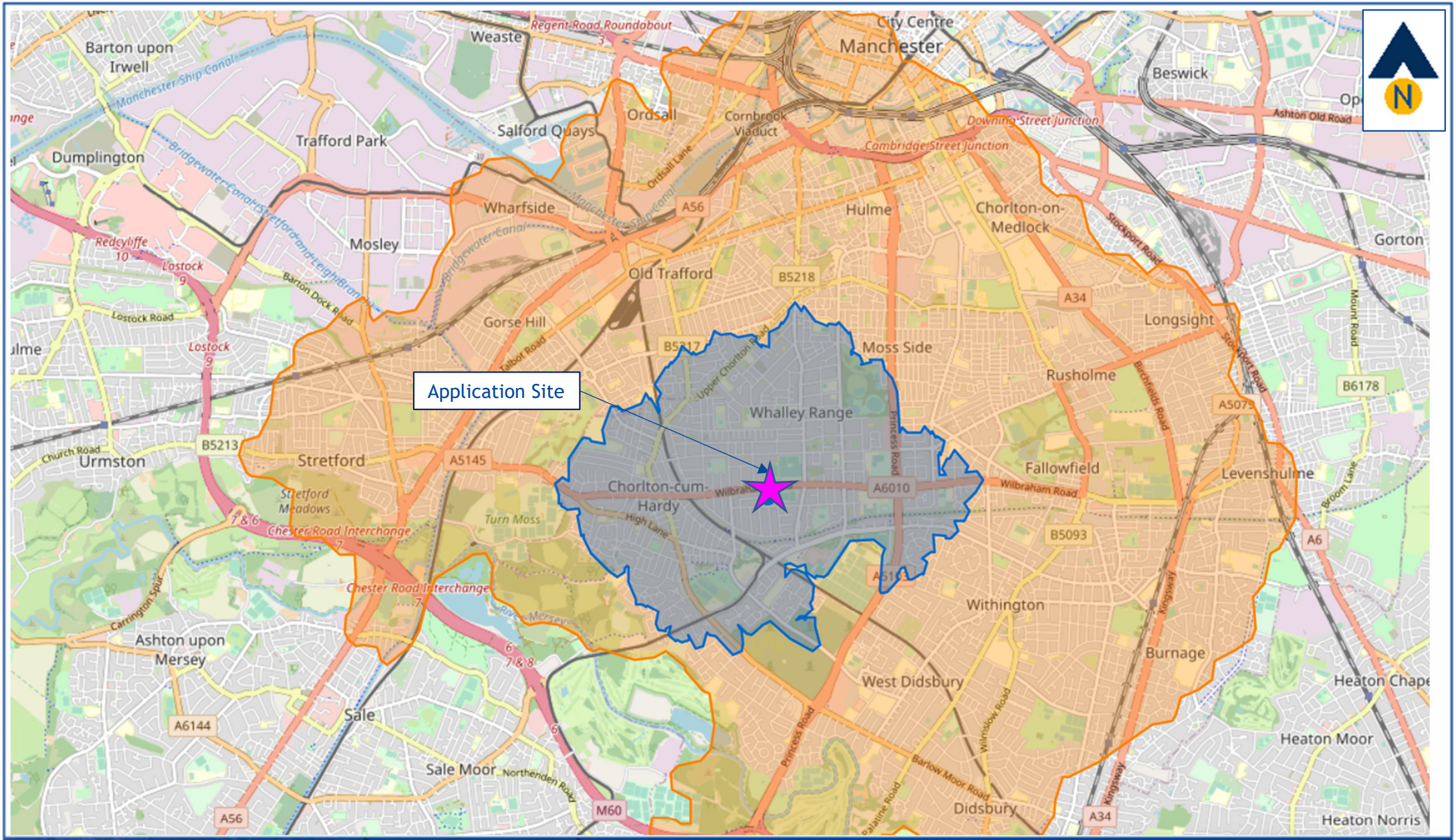
J000312 Land off Wilbraham Road, Manchester October 2022



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Figure TA7b **Local Shops & Services Within Immediate Walk Catchment of the Application Site**

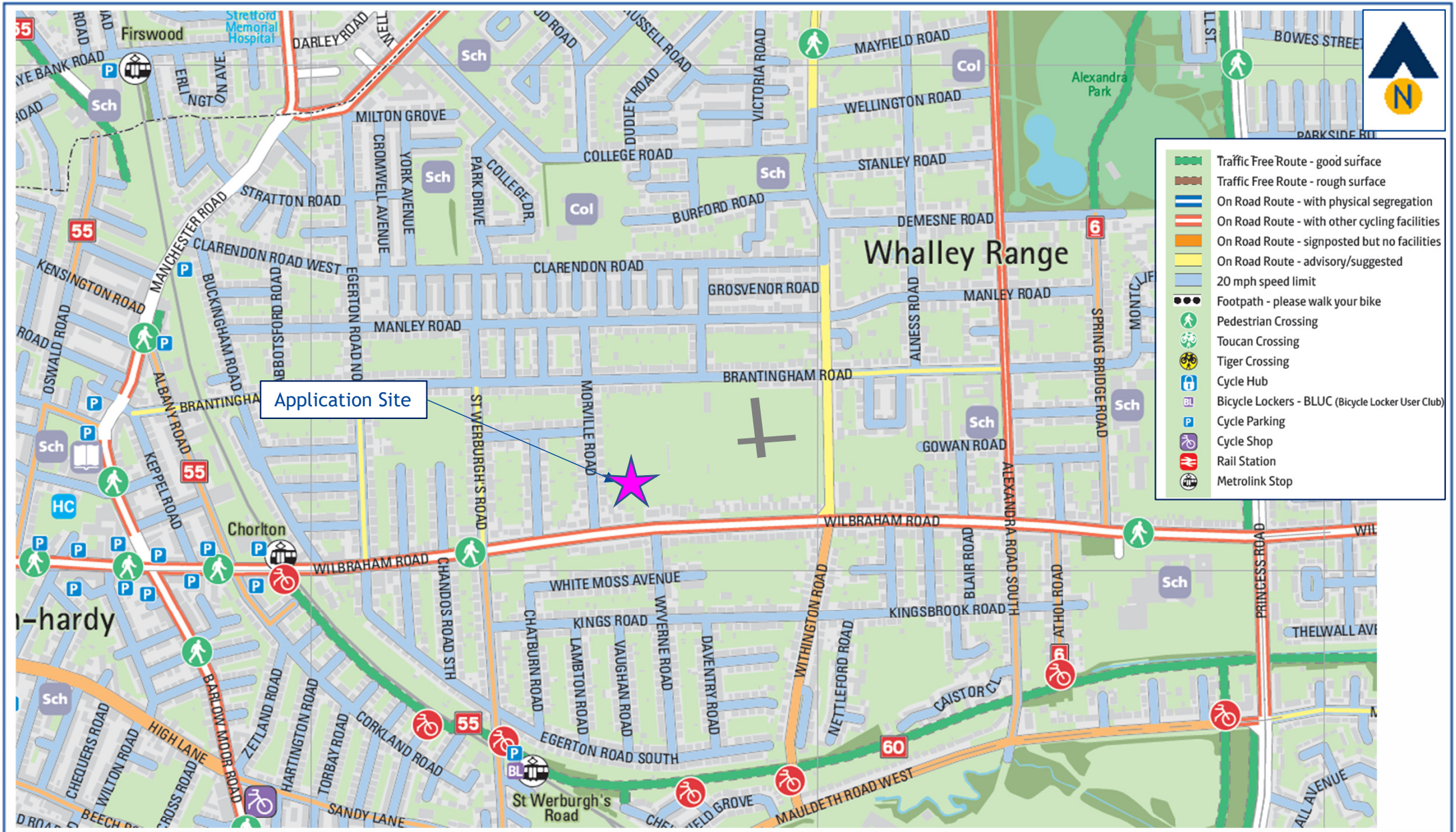
J000312 Land off Wilbraham Road, Manchester October 2022



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Figure TA8 **Illustrative 5km Cycle Catchment to / from the Application Site**

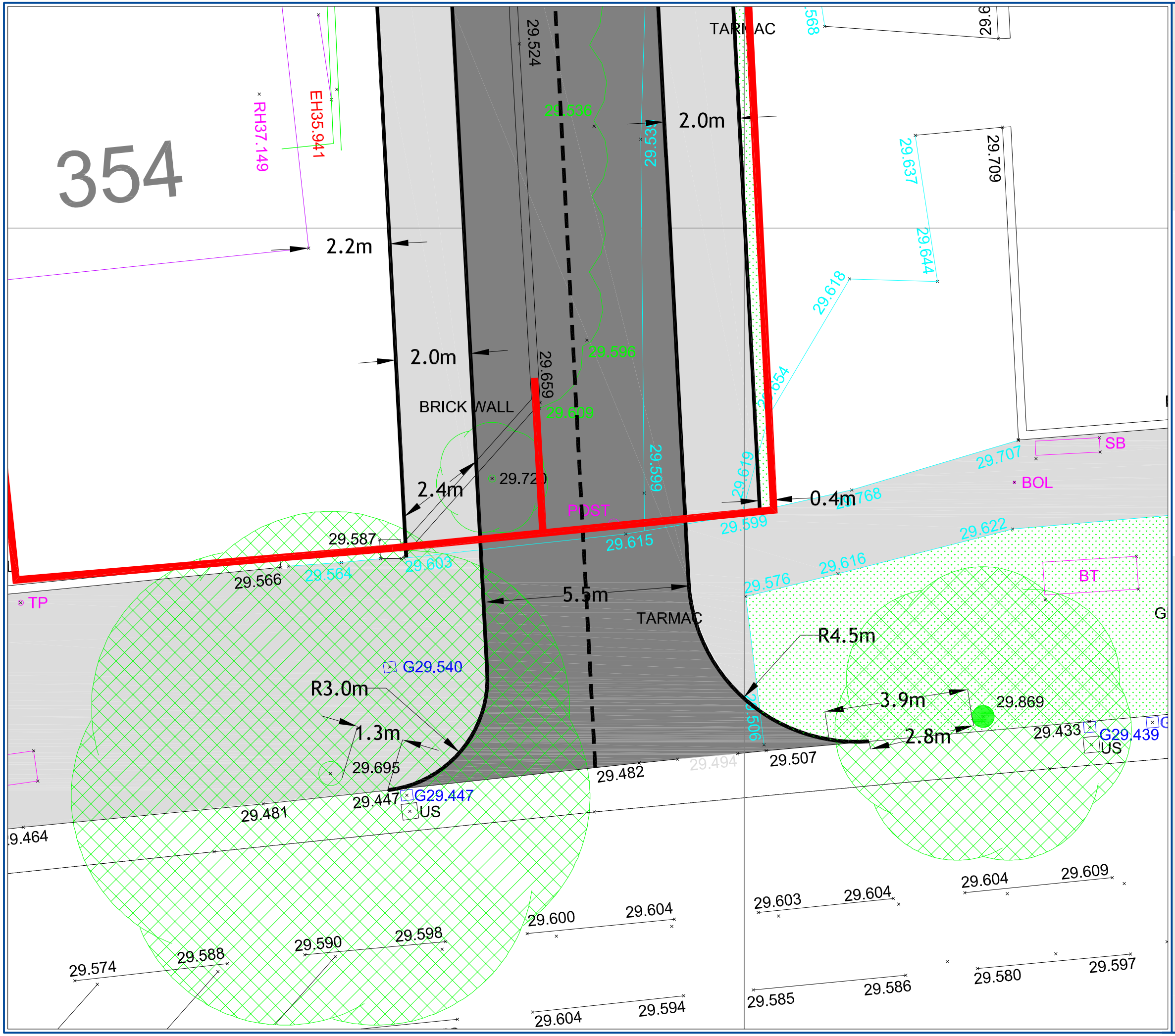
J000312 Land off Wilbraham Road, Manchester October 2022



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Figure TA9 **Available Local Walk / Cycle Infrastructure in the Vicinity of the Application Site**

J000312 Land off Wilbraham Road, Manchester October 2022



Revision:

A Radius of 354 tree adjusted to tree survey dims 11/07/22
B Entry radius to 3m (limit impact on 354 tree) 19/07/22

Client: Anwyl Homes

Project: Harry Dalton Fields, Chorlton

Drawing Title: Proposed Site Access Arrangements To Wilbraham Road General Arrangement

Drawing Number: FIGURE TA10

Revision: B

Date: 08/07/22

Scale: 1:100@A3

Drawn By: APB

Checked By:

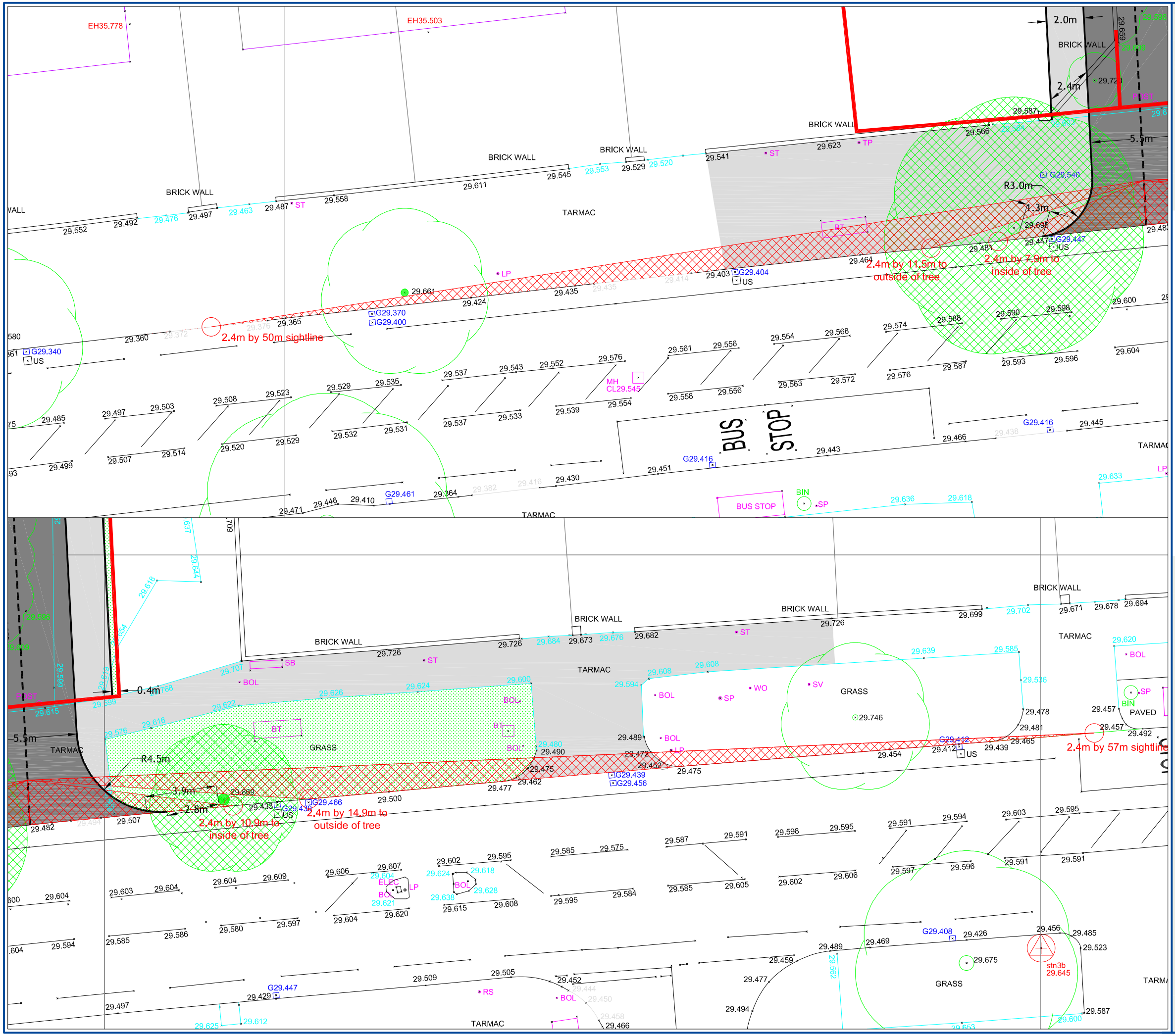
Status: Information

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Revision:

A Radius of 354 tree adjusted to tree survey dims 11/07/22

B Entry radius to 3m (limit impact on 354 tree) 19/07/22

Client: Anwyl Homes

Project: Harry Dalton Fields, Chorlton

Drawing Title: Proposed Site Access Arrangements To Wilbraham Road Available Visibility (Including Tree Retention)

Drawing Number: FIGURE TA11

Revision: B

Date: 06/04/22

Scale: 1:200@A3

Drawn By: APB

Checked By:

Status: Information

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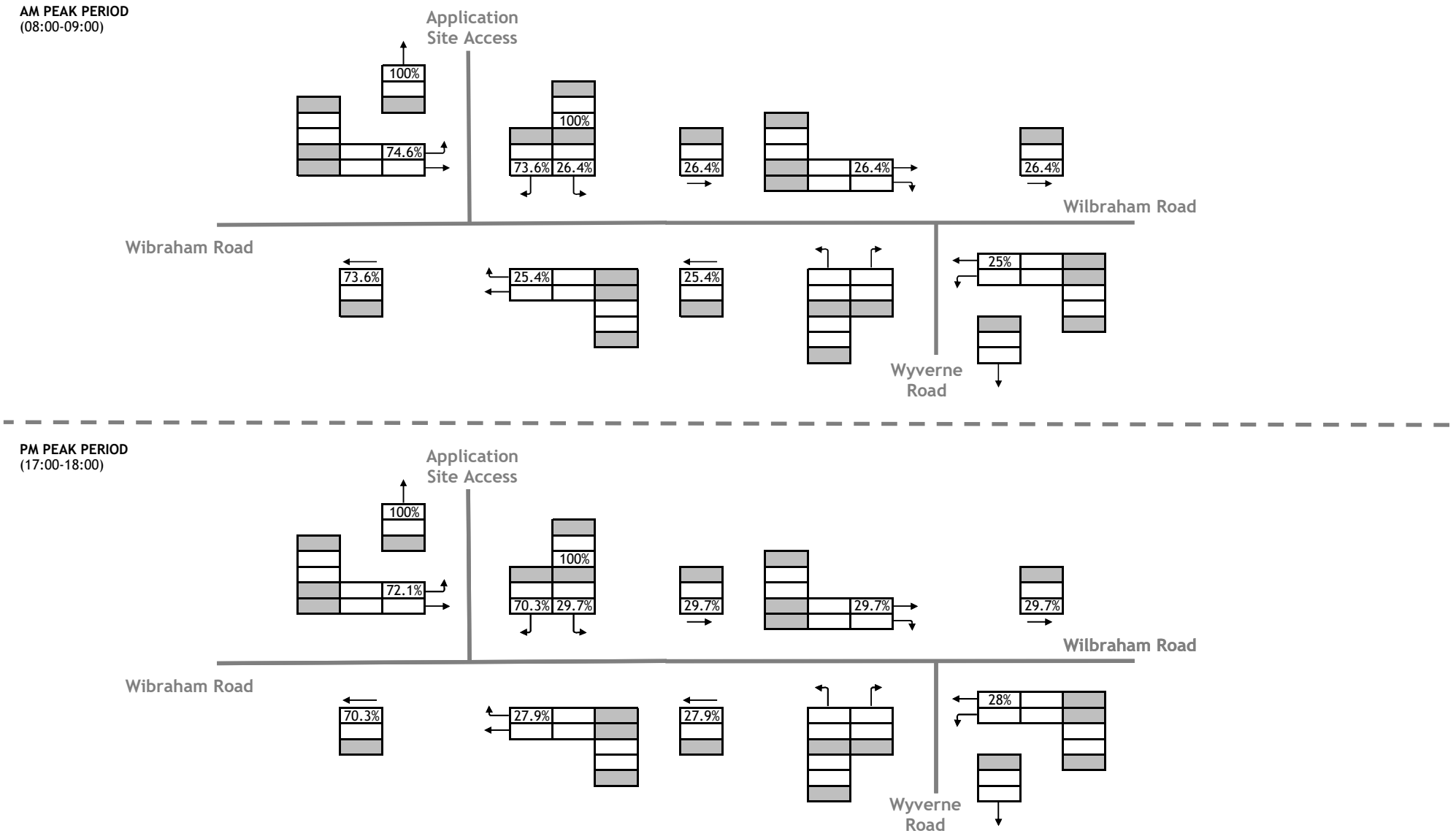


FIGURE TA12

Development Traffic Assignment Proportions (Calculated Based on Turns to / from Wyverne Road)

J000312

Land at Wilbraham Road, Manchester

October 2022

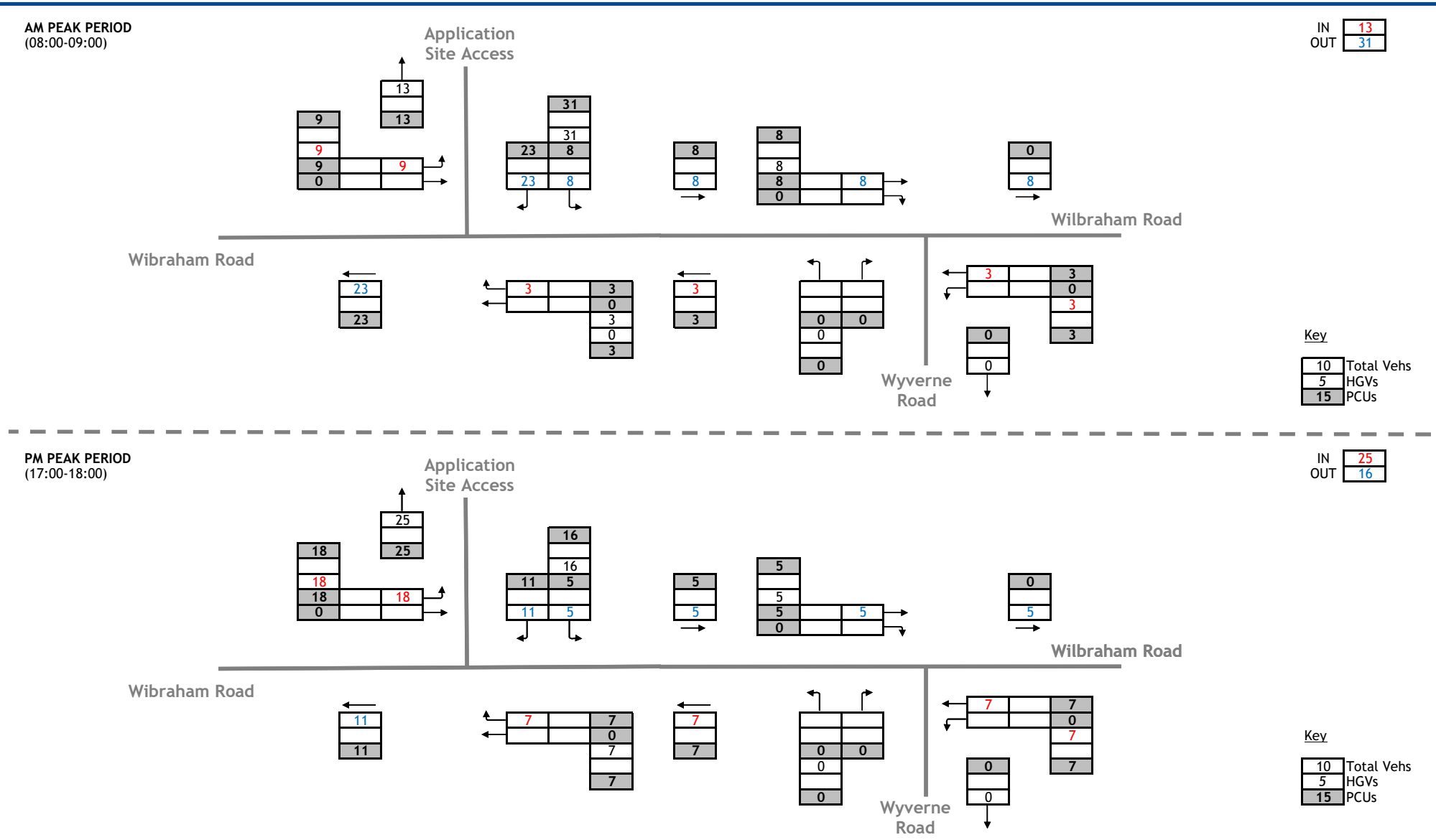
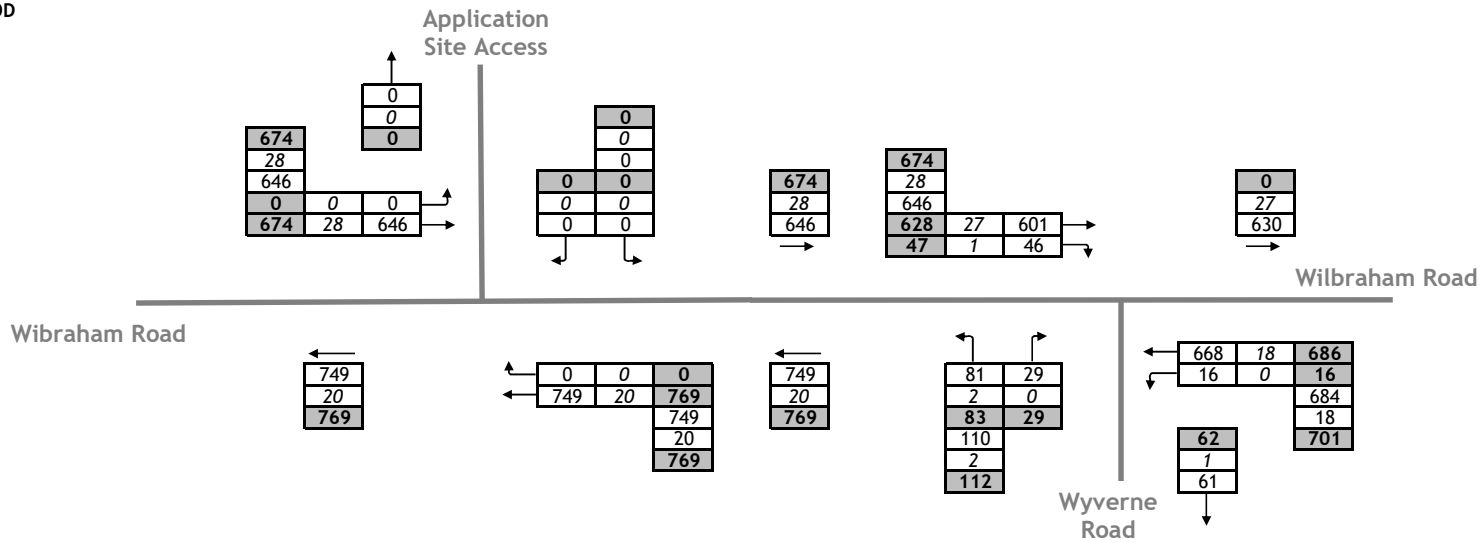


FIGURE TA13 **Predicted Application Scheme Development Traffic Assignment**

J000312 Land at Wilbraham Road, Manchester October 2022

AM PEAK PERIOD
(08:00-09:00)

2022-2025 Factor: 1.041

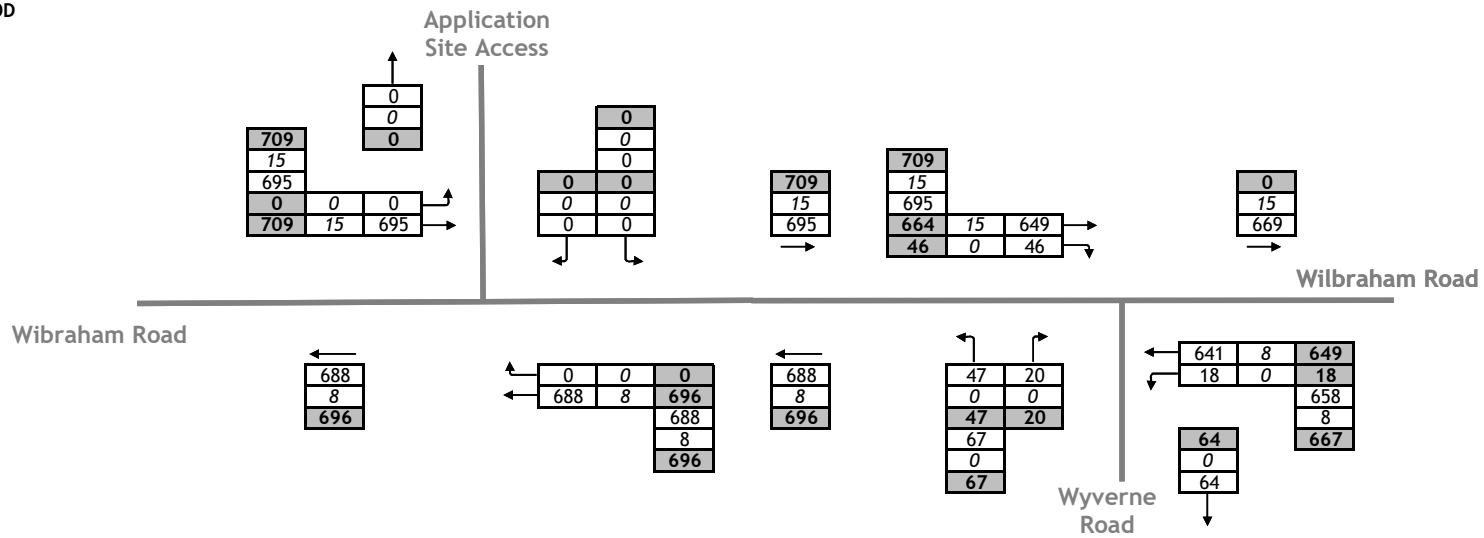


Key

10	Total Vehs
5	HGVs
15	PCUs

PM PEAK PERIOD
(17:00-18:00)

2022-2025 Factor: 1.042



Key

10	Total Vehs
5	HGVs
15	PCUs

FIGURE TA14 **2025 Baseline 'Do-Nothing' Traffic**

J000312 Land at Wilbraham Road, Manchester October 2022

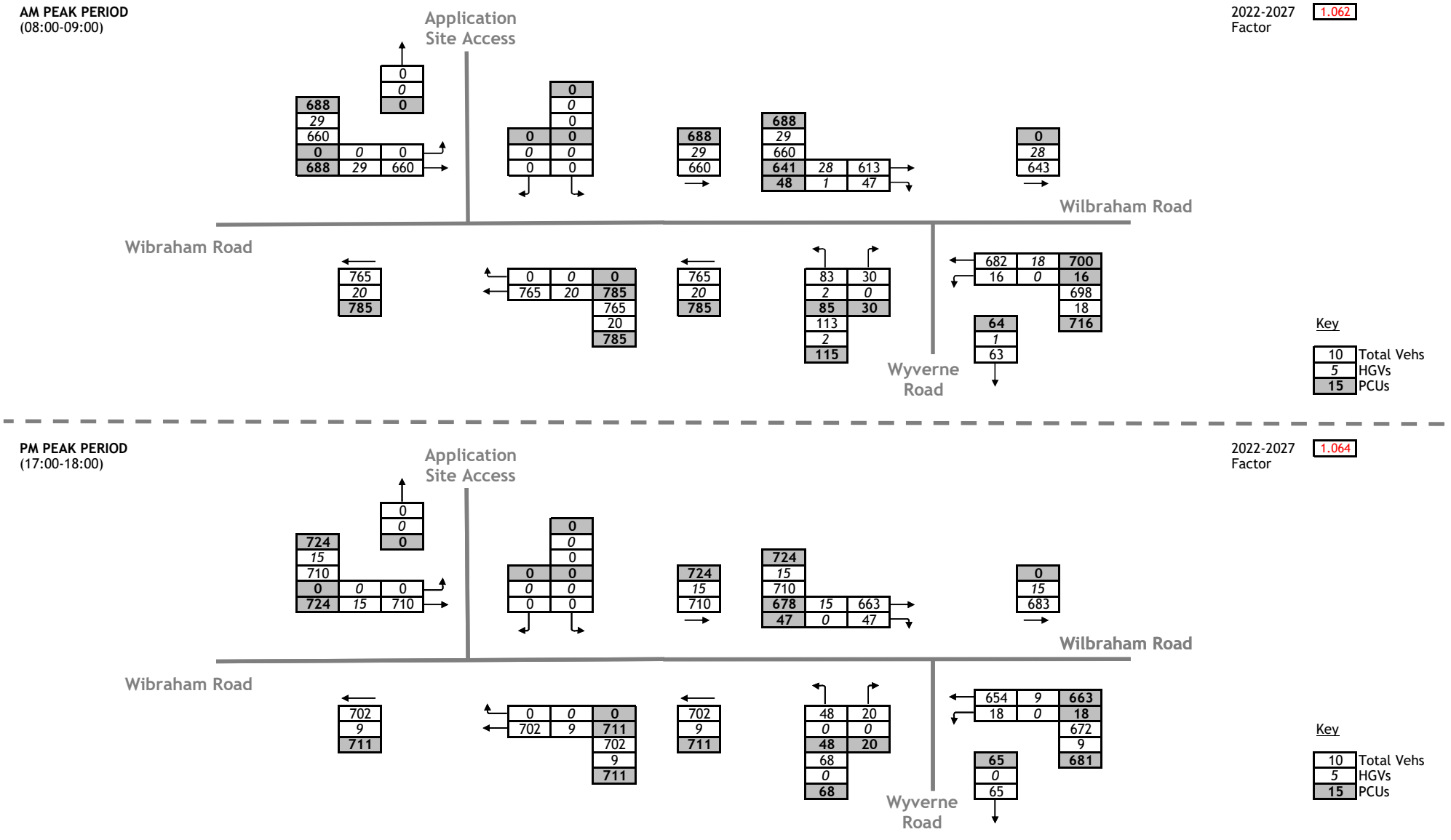


FIGURE TA15 **2027 Baseline 'Do-Nothing' Traffic**

J000312 Land at Wilbraham Road, Manchester October 2022

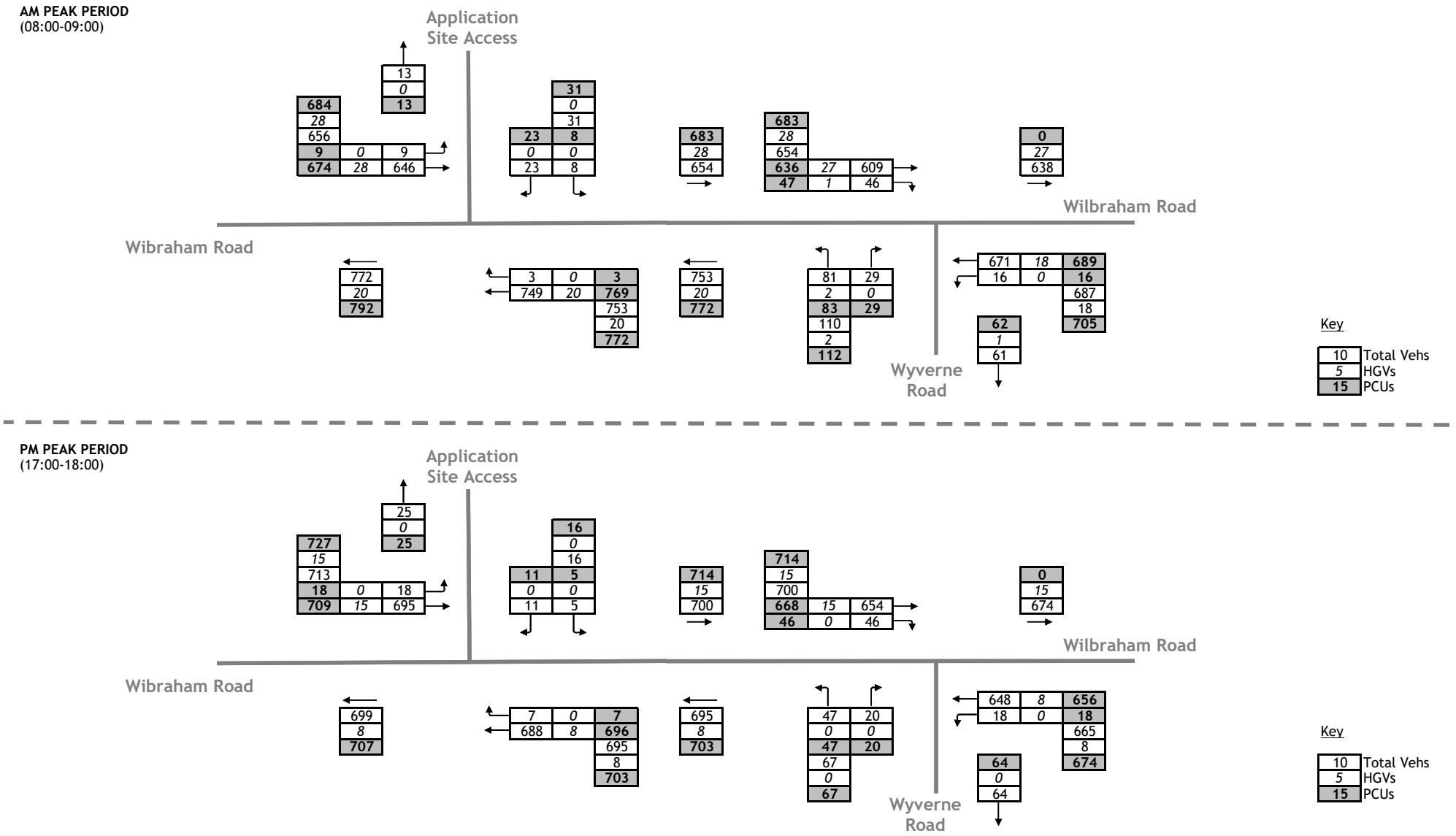


FIGURE TA16 **2025 'Do-Something' Baseline + Application Scheme (85th Percentile) Traffic**

J000312 Land at Wilbraham Road, Manchester October 2022

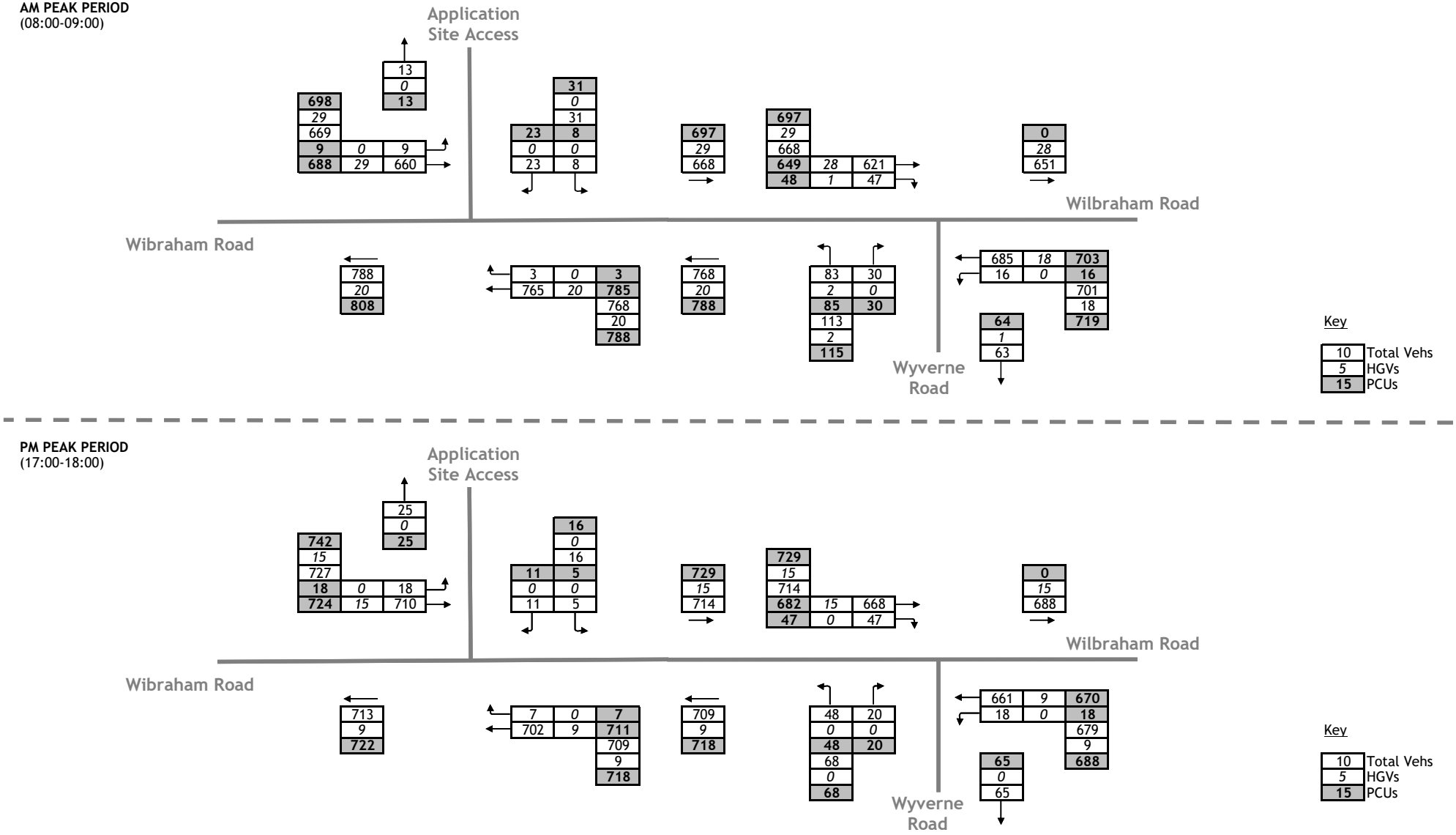


FIGURE TA17 **2027 'Do-Something' Baseline + Application Scheme (85th Percentile) Traffic**

J000312 Land at Wilbraham Road, Manchester October 2022

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APPENDICES



APPENDIX TA1

Appendix TA1

Photographs of Key Existing Network Features



Plate TA1 – Existing Rough Track Access to Application Site from A6010 Wilbraham Road



Plate TA2 – Layout of A6010 Wilbraham Road to the west of the Application Site Track Access Point (Note wide footway to site side)



Plate TA3 – Layout of A6010 Wilbraham Road to the east of the Application Site Track Access Point (Note verge and mature street trees to site side)



Plate TA4 – Layout of A6010 Wilbraham Road / Wyverne Road Junction (Note gap in central reserve for right turn vehicles)



Plate TA5 – Wyverne Road on Approach to A6010 Wilbraham Road Junction (Note extension of Double Yellow Lines)



APPENDIX TA2

Site:	**A6010 Wilbraham Road/Wyverne Road/Un-named Access Road**	**A:**	**A6010 Wilbraham Road (East)**
Day:	**Wednesday**	**B:**	**Wyverne Road**
Date:	**22 June 2022**	**C:**	**A6010 Wilbraham Road (West)**
Weather:	**Fine, Mainly Sunny & Warm**	**D:**	**Un-named Access Road to Former Planying Fields**

	A - B								A - C								A - D							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
07:30	1	0	0	0	0	0	0	1	86	12	0	0	1	0	1	100	0	0	0	0	0	0	0	0
07:45	1	1	1	0	0	0	0	3	107	11	0	1	5	0	2	126	0	0	0	0	0	0	0	0
08:00	3	0	0	0	0	0	0	3	129	13	0	0	3	0	5	150	0	0	0	0	0	0	0	0
08:15	2	0	0	0	0	0	0	2	150	8	1	0	3	0	1	163	0	0	0	0	0	0	0	0
08:30	3	0	0	0	0	0	0	3	143	11	1	0	2	1	5	163	0	0	0	0	0	0	0	0
08:45	6	1	0	0	0	0	0	7	148	13	1	0	1	0	3	166	0	0	0	0	0	0	0	0
09:00	4	0	0	0	1	0	0	5	104	12	3	0	1	1	3	124	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	99	8	4	0	1	0	0	112	0	0	0	0	0	0	0	0
Total	**20**	**2**	**1**	**0**	**1**	**0**	**0**	**24**	**966**	**88**	**10**	**1**	**17**	**2**	**20**	**1104**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
15:30	2	1	0	0	2	0	0	5	127	12	0	0	4	0	3	146	0	0	0	0	0	0	0	0
15:45	2	0	0	0	0	0	0	2	134	11	1	0	2	0	4	152	0	0	0	0	0	0	0	0
16:00	5	1	0	0	1	0	0	7	143	2	1	0	1	1	2	150	0	0	0	0	0	0	0	0
16:15	2	0	0	0	0	0	0	2	139	10	1	0	3	0	1	154	0	0	0	0	0	0	0	0
16:30	2	2	0	0	0	0	0	4	130	6	1	1	3	0	2	143	0	0	0	0	0	0	0	0
16:45	4	0	0	0	2	0	0	6	140	10	0	0	4	2	3	159	0	0	0	0	0	0	0	0
17:00	4	0	0	0	0	0	0	4	132	10	0	0	3	0	2	147	0	0	0	0	0	0	0	0
17:15	3	0	0	0	0	0	0	3	142	7	1	0	3	1	1	155	0	0	0	0	0	0	0	0
17:30	4	0	0	0	0	0	0	4	142	4	0	0	3	0	3	152	0	0	0	0	0	0	0	0
17:45	5	1	0	0	0	0	0	6	153	3	0	0	4	0	1	161	0	0	0	0	0	0	0	0
Total	**33**	**5**	**0**	**0**	**5**	**0**	**0**	**43**	**1382**	**75**	**5**	**1**	**30**	**4**	**22**	**1519**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	B - A								B - C								B - D							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
07:30	0	0	1	0	0	0	0	1	7	1	0	0	0	0	0	8	0	0	0	0	0	0	0	0
07:45	2	0	0	0	1	0	0	3	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
08:00	3	0	0	0	0	0	0	3	11	0	1	0	0	0	0	12	0	0	0	0	0	0	0	0
08:15	5	0	0	0	0	0	0	5	17	3	0	0	0	0	0	20	0	0	0	0	0	0	0	0
08:30	7	0	0	0	3	0	0	10	25	2	1	0	0	0	0	28	0	0	0	0	0	0	0	0
08:45	9	0	0	0	1	0	0	10	17	0	0	0	1	0	0	18	0	0	0	0	0	0	0	0
09:00	4	0	0	0	1	0	0	5	10	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
09:15	5	0	0	0	0	0	0	5	4	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0
Total	**35**	**0**	**1**	**0**	**6**	**0**	**0**	**42**	**99**	**7**	**2**	**0**	**1**	**0**	**0**	**109**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
15:30	4	0	0	0	0	0	0	4	12	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0
15:45	2	0	0	0	0	0	1	3	10	1	0	0	0	0	0	11	0	0	0	0	0	0	0	0
16:00	2	0	0	0	0	0	0	2	4	1	0	0	1	0	0	6	0	0	0	0	0	0	0	0
16:15	2	0	0	0	1	0	0	3	10	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
16:30	2	1	1	0	0	0	0	4	5	1	0	0	0	1	0	7	0	0	0	0	0	0	0	0
16:45	2	1	0	0	0	0	0	3	9	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
17:00	3	1	0	0	0	0	0	4	9	1	0	0	0	0	0	10	0	0	0	0	0	0	0	0
17:15	6	0	0	0	0	0	0	6	10	1	0	0	0	0	0	11	0	0	0	0	0	0	0	0
17:30	7	0	0	0	1	0	0	8	15	0	0	0	1	1	0	17	0	0	0	0	0	0	0	0
17:45	1	0	0	0	0	0	0	1	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
Total	**31**	**3**	**1**	**0**	**2**	**0**	**1**	**38**	**91**	**5**	**0**	**0**	**2**	**2**	**0**	**100**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	C - A								C - B								C - D							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
07:30	127	11	2	0	7	0	3	150	2	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0
07:45	140	14	2	0	1	0	3	160	2	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0
08:00	141	13	5	0	3	1	1	164	11	1	0	0	0	0	0	12	0	0	0	0	0	0	0	0
08:15	128	11	2	0	5	0	4	150	12	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0
08:30	111	13	3	0	0	1	6	134	7	0	0	0	0	0	1	8	0	0	0	0	0	0	0	0
08:45	106	16	1	1	2	0	3	129	11	1	0	0	0	0	0	12	0	0	0	0	0	0	0	0
09:00	110	17	1	1	0	0	3	132	9	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
09:15	89	10	0	0	1	0	3	103	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
Total	**952**	**105**	**16**	**2**	**19**	**2**	**26**	**1122**	**58**	**3**	**1**	**0**	**0**	**0**	**1**	**63**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
15:30	145	12	0	0	0	1	3	161	14	2	0	0	0	1	0	17	0	0	0	0	0	0	0	0
15:45	130	6	1	0	3	0	4	144	14	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0
16:00	119	12	1	0	1	2	0	135	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
16:15	100	11	0	0	4	1	3	119	8	0	0	0	0	1	0	9	0	0	0	0	0	0	0	0
16:30	140	7	1	0	1	0	2	151	6	1	0	0	0	0	0	7	0	0	0	0	0	0	0	0
16:45	136	6	0	0	3	1	2	148	9	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
17:00	122	6	1	0	4	0	4	137	11	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0
17:15	140	12	1	2	2	3	1	161	7	1	0	0	1	0	0	9	0	0	0	0	0	0	0	0
17:30	158	7	1	0	1	0	1	168	9	1	0	0	2	1	0	13	0	0	0	0	0	0	0	0
17:45	142	5	0	0	7	0	3	157	10	0	0	0	1	0	0	11	0	0	0	0	0	0	0	0
Total	**1332**	**84**	**6**	**2**	**26**	**8**	**23**	**1481**	**95**	**5**	**0**	**0**	**4**	**3**	**0**	**107**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

	D - A								D - B								D - C							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

A6010 Wilbraham Road, Chorlton (Wednesday 22nd June 2022)

Weather Conditions - Fine & Sunny/Road Surface - Dry

Westbound

26	32	27	29	32	28	26	36	23	31
31	25	33	27	33	29	26	23	36	29
26	51	27	31	26	35	43	28	24	36
29	36	25	29	32	24	26	35	22	26
31	25	29	22	27	33	29	41	28	20
28	24	28	26	30	27	24	30	34	26
25	28	30	27	30	25	31	28	25	29
28	26	30	23	26	32	22	32	28	23
25	28	23	27	30	26	35	27	24	26
31	26	36	30	26	22	31	26	32	28
28	32	24	29	22	32	26	23	28	24
25	28	33	25	31	22	25	30	26	32
29	24	22	34	24	37	29	23	29	24
22	30	26	23	28	22	33	29	21	26
29	24	28	22	25	33	22	27	25	30
23	28	25	28	23	28	36	25	35	27
25	31	27	32	21	24	27	37	27	29
26	29	24	27	25	34	25	33	23	25
33	25	28	23	31	21	30	24	26	31
25	22	33	29	24	27	23	33	27	23

Max - 51 **Min - 20** **85% - 32** **Ave - 28** **Sp. Limit - 30**

26 - Cars/LGV's **24 - HGV's/PSV's**

A6010 Wilbraham Road, Chorlton (Wednesday 22nd June 2022)

Weather Conditions - Fine & Sunny/Road Surface - Dry

Eastbound

28	33	29	27	30	28	24	33	28	26
28	24	28	34	27	29	37	27	24	29
24	27	25	26	23	25	28	30	25	27
24	29	32	29	25	27	24	26	28	23
27	25	28	30	26	23	29	22	26	29
31	28	27	21	30	21	29	25	30	26
29	26	23	29	25	37	31	26	27	24
27	34	29	26	33	22	25	28	23	27
22	29	25	30	25	28	32	25	29	24
25	28	31	26	29	22	26	29	22	27
27	38	28	26	32	27	30	25	28	23
31	29	25	29	31	28	25	26	32	26
27	39	27	25	23	28	24	28	26	29
27	31	24	29	32	25	29	33	29	24
30	28	25	34	27	22	28	25	27	29
27	24	29	26	36	25	46	27	23	26
30	27	30	28	21	26	29	25	29	26
26	28	31	25	28	36	26	33	26	30
28	25	27	23	26	28	31	25	29	22
25	33	29	24	32	26	32	28	34	28

Max - 46 **Min - 21** **85% - 31** **Ave - 28** **Sp. Limit - 30**

28 - Cars/LGV's **30 - HGV's/PSV's**



APPENDIX TA3

Land off Wilbraham Road, Chorlton

www.astlepd.co.uk

Proposed Colour Layout

Detailed Planning Application

Drawing Number	-	APD/AH158/PL01
Revision	-	F
Date	-	13/10/2022
Scale/Sheet Size	-	1:500/A1

1:500 0 5 10 15 25m

URBAN DESIGN GROUP REGISTERED PRACTICE

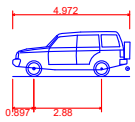
ANWYL thoughtful homes



APPENDIX TA4

Revision:

A	Masterplan Revision K	19/10/22
B	Final Scheme Layout from Architects	22/11/22



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

Client:
Anwyl Homes

Project:
Land off Wilbraham Road, Chorlton

Drawing Title:
Internal Site Layout Tracking
Luxury 4x4 Private Vehicle
Clockwise Movement

Drawing Number: J000312-ATR101(i)

Revision: A

Date: 29/09/22

Scale: 1:500@A3

Drawn By: APB

Checked By:

Status: Information

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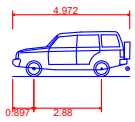
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Revision:

A	Masterplan Revision K	19/10/22
B	Final Scheme Layout from Architects	22/11/22



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

Client:
Anwyl Homes

Project:
Land off Wilbraham Road, Chorlton

Drawing Title:
Internal Site Layout Tracking
Luxury 4x4 Private Vehicle
Anti-Clockwise Movement

Drawing Number: J000312-ATR101(ii)

Revision: B

Date: 29/09/22

Scale: 1:500@A3

Drawn By: APB

Checked By:

Status: Information

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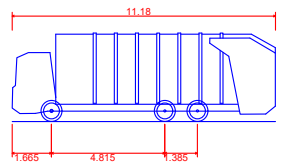
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Revision:

A	Masterplan Revision K	19/10/22
B	Final Scheme Layout from Architects	22/11/22



Phoenix 2 One-Pass (with Elite 6x4 chassis)

Overall Length	11.180m
Overall Width	2.550m
Overall Body Height	3.760m
Min Body Ground Clearance	0.312m
Track Width	2.550m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	10.150m

Client:
Anwyl Homes

Project:
Land off Wilbraham Road, Chorlton

Drawing Title:
Internal Site Layout Tracking
Large Refuse Collection Vehicle (11.2m)
Clockwise Movement

Drawing Number: J000312-ATR102(i)

Revision: B

Date: 29/09/22

Scale: 1:500@A3

Drawn By: APB

Checked By:

Status:
Information

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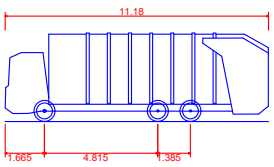
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Revision:

A	Masterplan Revision K	19/10/22
B	Final Scheme Layout from Architects	22/11/22



Phoenix 2 One-Pass (with Elite 6x4 chassis)

Overall Length	11.180m
Overall Width	2.550m
Overall Body Height	3.760m
Min Body Ground Clearance	0.312m
Track Width	2.550m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	10.150m

Client:
Anwyl Homes

Project:
Land off Wilbraham Road, Chorlton

Drawing Title:
Internal Site Layout Tracking
Large Refuse Collection Vehicle (11.2m)
Anti-Clockwise Movement

Drawing Number: J000312-ATR102(ii)

Revision: B

Date: 29/09/22

Scale: 1:500@A3

Drawn By: APB

Checked By:

Status:
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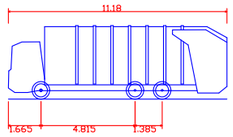
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Revision:

A Radius of 354 tree adjusted to tree survey dims 11/07/22

B Entry radius to 3m (limit impact on 354 tree) 19/07/22



Phoenix 2 One-Pass (with Elite 6x4 chassis)	
Overall Length	11.180m
Overall Width	2.550m
Overall Body Height	3.760m
Min Body Ground Clearance	0.312m
Track Width	2.550m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	10.150m

Client:
Anwyl Homes

Project:
Land off Wilbraham Road, Chorlton

Drawing Title:
Preliminary Site Acccess Sketch: Option 6
Large Refuse Collection Vehicle (11.2m)
Swept Path Assessment

Drawing Number: J000312-ATR103

Revision: B

Date: 08/07/22

Scale: 1:200@A3

Drawn By: APB

Checked By:

Status: Information

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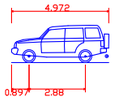
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Revision:

A Radius of 354 tree adjusted to tree survey dims 11/07/22

B Entry radius to 3m (limit impact on 354 tree) 19/07/22



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

Client:
Anwyl Homes

Project:
Land off Wilbraham Road, Chorlton

Drawing Title:
Preliminary Site Acccess Sketch: Option 6
Luxury 4x4 Private Vehicle
Swept Path Assessment

Drawing Number: J000312-ATR104

Revision: B

Date: 08/07/22

Scale: 1:200@A3

Drawn By: APB

Checked By:

Status: Information

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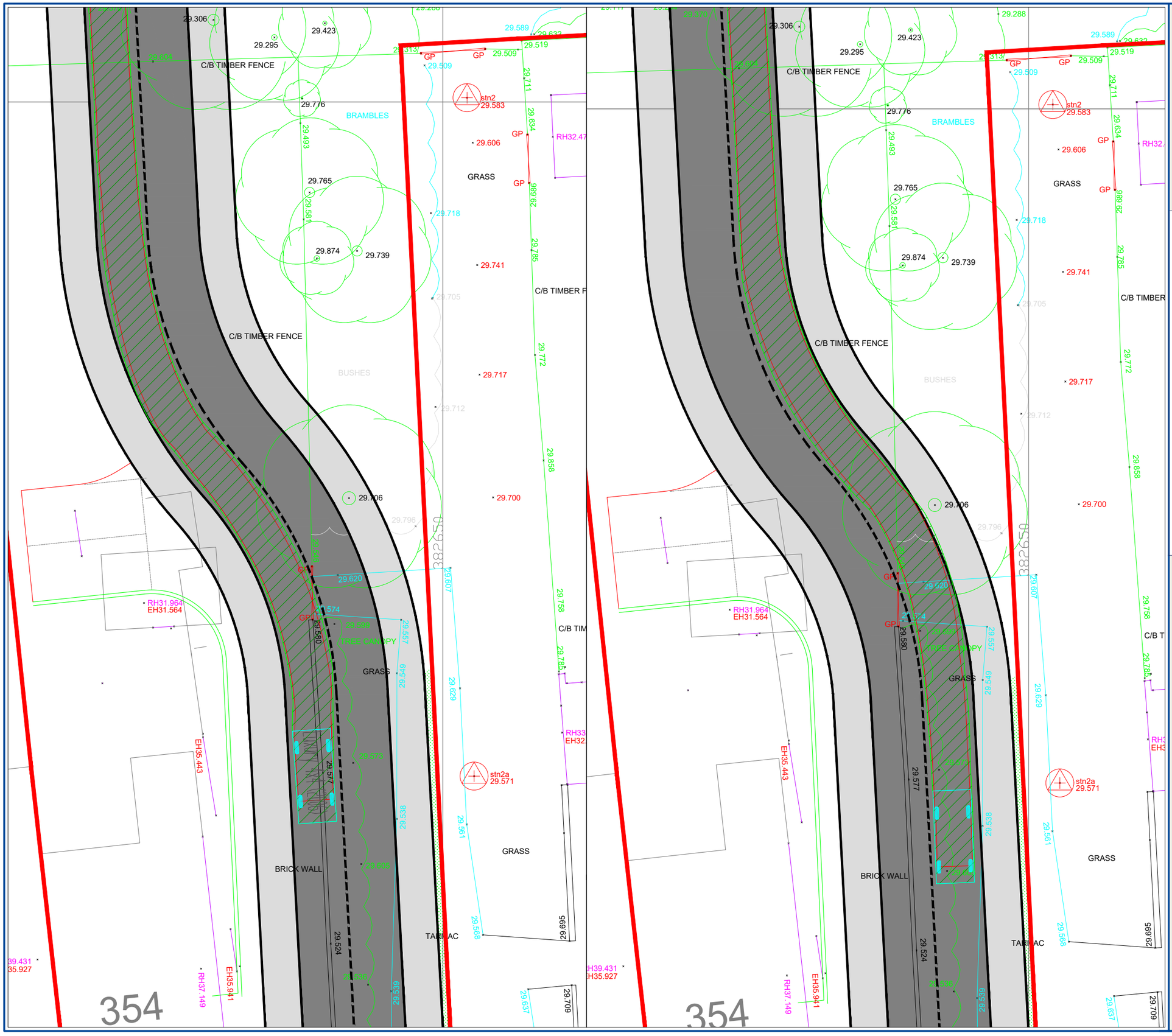
DO NOT SCALE - Follow any figured dimensions.

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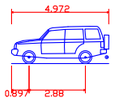
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Revision:
- -



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

Client:
Anwyl Homes

Project:
Land off Wilbraham Road, Chorlton

Drawing Title:
Preliminary Site Acccess Road Layout
Luxury 4x4 Private Vehicle
Swept Path Assessment

Drawing Number: J000312-ATR105

Revision: -

Date: 12/07/22

Scale: 1:200@A3

Drawn By: APB

Checked By:

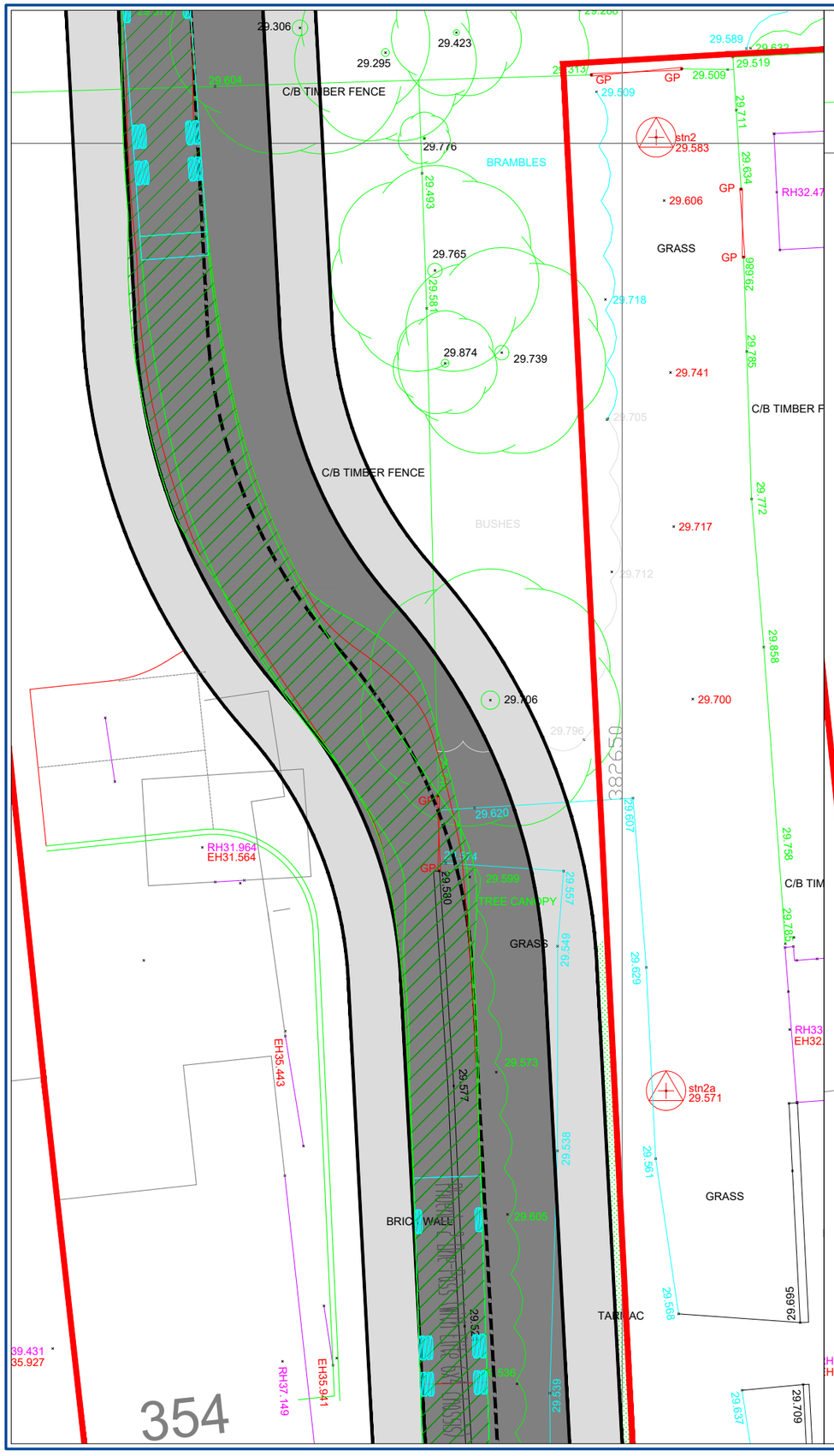
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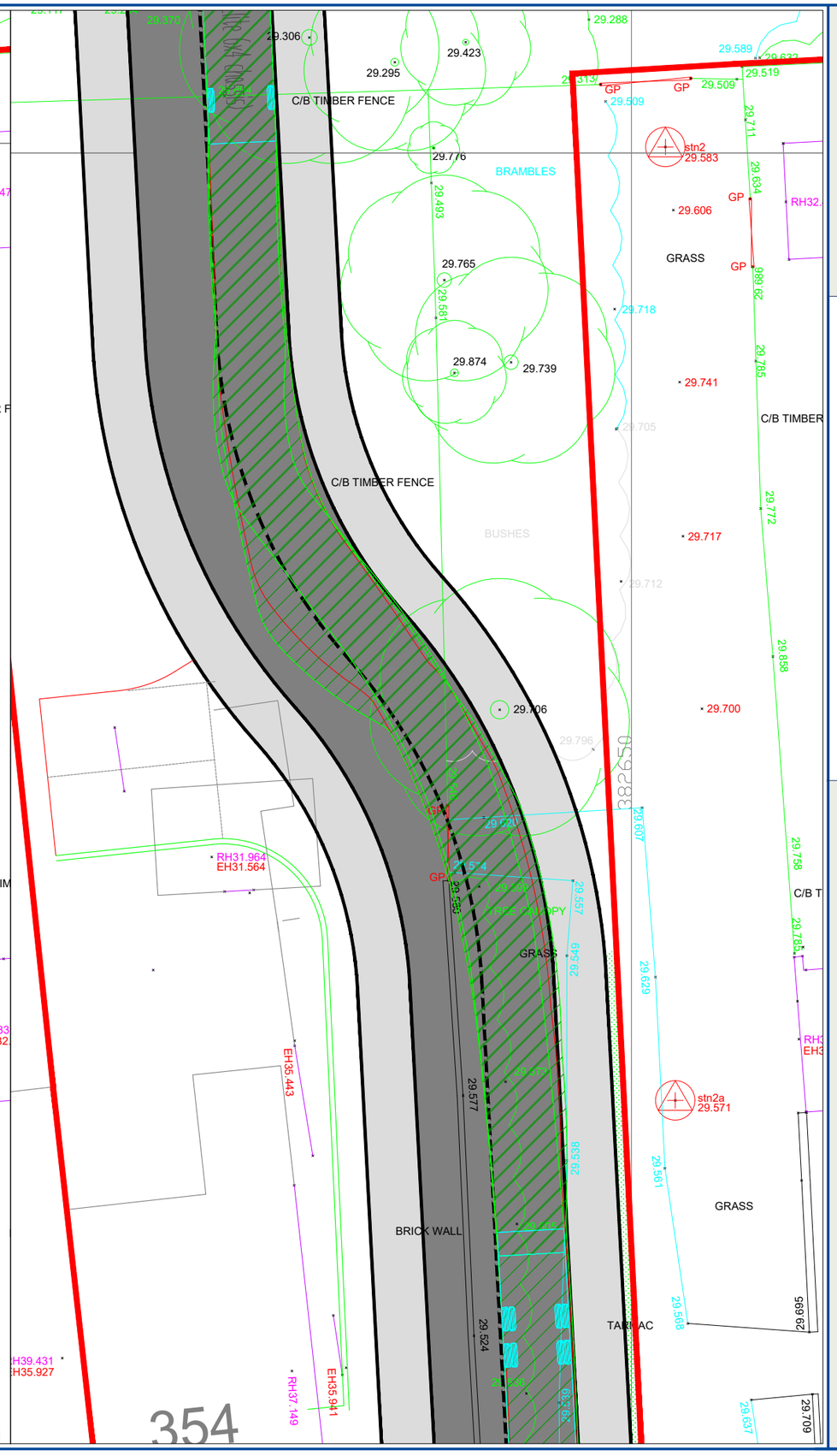
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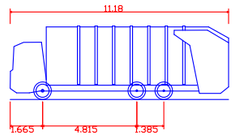
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Phoenix 2 One-Pass (with Elite 6x4 chassis)

Overall Length	11.180m
Overall Width	2.550m
Overall Body Height	3.760m
Min Body Ground Clearance	0.312m
Track Width	2.550m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	10.150m

Revision:
- -

Client:
Anwyl Homes

Project:
Land off Wilbraham Road, Chorlton

Drawing Title:
Preliminary Site Acccess Road Layout
Large Refuse Collection Vehicle
Swept Path Assessment

Drawing Number: J000312-ATR106

Revision: -

Date: 12/07/22

Scale: 1:200@A3

Drawn By: APB

Checked By:

Status:
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APPENDIX TA5

Residential Trip Rates - Total Vehicles

Proposed Development: 65 dwellings

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
Calculation Factor: 1 DWELLS
Count Type: TOTAL VEHICLES

			Rates per dwelling			Trip Demand - Average Trip Rates		
	Survey	Ave.	Arrivals	Departures	Total	Arrivals	Departures	Total
Time Range	Days	Dwellings	Trip Rate	Trip Rate	Trip Rate	Trip Rate	Trip Rate	Trip Rate
00:00-01:00	0	0	0	0	0	0	0	0
01:00-02:00	0	0	0	0	0	0	0	0
02:00-03:00	0	0	0	0	0	0	0	0
03:00-04:00	0	0	0	0	0	0	0	0
04:00-05:00	0	0	0	0	0	0	0	0
05:00-06:00	0	0	0	0	0	0	0	0
06:00-07:00	0	0	0	0	0	0	0	0
07:00-08:00	11	134	0.079	0.281	0.36	5	18	23
08:00-09:00	11	134	0.154	0.376	0.53	10	24	34
09:00-10:00	11	134	0.119	0.173	0.292	8	11	19
10:00-11:00	11	134	0.116	0.139	0.255	8	9	17
11:00-12:00	11	134	0.128	0.125	0.253	8	8	16
12:00-13:00	11	134	0.148	0.122	0.27	10	8	18
13:00-14:00	11	134	0.139	0.13	0.269	9	8	17
14:00-15:00	11	134	0.157	0.154	0.311	10	10	20
15:00-16:00	11	134	0.221	0.188	0.409	14	12	27
16:00-17:00	11	134	0.249	0.158	0.407	16	10	26
17:00-18:00	11	134	0.337	0.177	0.514	22	12	33
18:00-19:00	11	134	0.258	0.167	0.425	17	11	28
19:00-20:00	0	0	0	0	0	0	0	0
20:00-21:00	0	0	0	0	0	0	0	0
21:00-22:00	0	0	0	0	0	0	0	0
22:00-23:00	0	0	0	0	0	0	0	0
23:00-24:00	0	0	0	0	0	0	0	0
12hour (07-19)			2.105	2.19	4.295	**137**	**142**	**279**

Site Search Criteria: UK only (excluding Greater London & Eire)
75-250 dwellings
Excluding Town Centre & Edge of Town

Average Trip Rates

	In	Out	Total
AM Peak	0.154	0.376	0.530
PM Peak	0.337	0.177	0.514
12hr (07-19)	2.105	2.19	4.295

	In	Out	Total
AM Peak	10	24	34
PM Peak	22	12	33
12hr (07-19)	137	142	279

85th Percentile Rates

	In	Out	Total
AM Peak	0.193	0.474	0.667
PM Peak	0.382	0.248	0.630
12hr (07-19)	2.421	2.408	4.829

	In	Out	Total
AM Peak	13	31	43
PM Peak	25	16	41
12hr (07-19)	157	157	314

Ranked Sites (85th percentile rates)

	AM In	AM Out	PM In	PM Out	12hr In	12hr Out
1	0.213	0.513	0.379	0.355	2.511	2.644
2	0.185	0.504	0.344	0.283	2.49	2.44
3	0.194	0.444	0.450	0.160	2.352	2.376
4	0.192	0.392	0.385	0.178	2.339	2.331
5	0.170	0.400	0.333	0.213	2.24	2.36
6	0.176	0.392	0.352	0.152	2.25	2.339
7	0.161	0.344	0.340	0.147	2.017	2.167
8	0.167	0.289	0.354	0.117	2.019	2.148
9	0.102	0.324	0.292	0.083	1.702	2.044
10	0.075	0.283	0.219	0.132	1.627	1.893
11	0.080	0.253	0.173	0.120	1.692	1.625
	0.193	**0.474**	**0.382**	**0.248**	**2.421**	**2.408**

Calculation Reference: AUDIT-506501-220105-0114

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : M - MIXED PRIVATE/AFFORDABLE HOUSING

TOTAL VEHICLES

Selected regions and areas:

03	**SOUTH WEST**		
	SM	SOMERSET	1 days
04	**EAST ANGLIA**		
	NF	NORFOLK	7 days
06	**WEST MIDLANDS**		
	WK	WARWICKSHIRE	1 days
09	**NORTH**		
	TW	TYNE & WEAR	1 days
17	**ULSTER (NORTHERN IRELAND)**		
	AN	ANTRIM	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 75 to 240 (units:)
Range Selected by User: 75 to 250 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/13 to 29/09/21

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

Selected survey days:

Tuesday	1 days
Wednesday	6 days
Thursday	2 days
Friday	2 days

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

Selected survey types:

Manual count	7 days
Directional ATC Count	4 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 undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Neighbourhood Centre (PPS6 Local Centre)	9

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:

Residential Zone	2
Village	9

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,

Secondary Filtering selection:

Use Class:

C3	11 days

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	8 days
5,001 to 10,000	1 days
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:

5,001 to 25,000	1 days
25,001 to 50,000	3 days
50,001 to 75,000	1 days
75,001 to 100,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	2 days
500,001 or More	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	1 days
1.1 to 1.5	8 days
1.6 to 2.0	2 days

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

Travel Plan:

Yes	8 days
No	3 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	11 days

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

LIST OF SITES relevant to selection parameters

1 **AN-03-M-01** **TERRACED/SEMI D/FLATS** **ANTRIM**
SUNNYSIDE STREET
BELFAST

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 114
Survey date: THURSDAY *26/10/17* *Survey Type: MANUAL*

2 **NF-03-M-13** **MIXED HOUSES** **NORFOLK**
MACMILLAN WAY
NEAR NORWICH
LITTLE PLUMSTEAD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 75
Survey date: FRIDAY *20/09/19* *Survey Type: DIRECTIONAL ATC COUNT*

3 **NF-03-M-32** **MIXED HOUSES & FLATS** **NORFOLK**
MACMILLAN WAY
NEAR NORWICH
LITTLE PLUMSTEAD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 240
Survey date: WEDNESDAY *12/09/18* *Survey Type: DIRECTIONAL ATC COUNT*

4 **NF-03-M-42** **MIXED HOUSES** **NORFOLK**
STALHAM ROAD
HOVETON

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 120
Survey date: THURSDAY *16/09/21* *Survey Type: MANUAL*

5 **NF-03-M-43** **MIXED HOUSES** **NORFOLK**
PIGOT LANE
NEAR NORWICH
FRAMINGHAM EARL
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 100
Survey date: TUESDAY *21/09/21* *Survey Type: MANUAL*

6 **NF-03-M-45** **MIXED HOUSES** **NORFOLK**
MILL LANE
NEAR NORWICH
HORSFORD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 125
Survey date: WEDNESDAY *15/09/21* *Survey Type: MANUAL*

7 **NF-03-M-49** **MIXED HOUSES** **NORFOLK**
CAISTOR LANE
NEAR NORWICH
PORINGLAND
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 150
Survey date: WEDNESDAY *22/09/21* *Survey Type: DIRECTIONAL ATC COUNT*

8 **NF-03-M-50** **MIXED HOUSES & FLATS** **NORFOLK**
LONG LANE
NEAR NORWICH
MULBARTON
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 180
Survey date: WEDNESDAY *22/09/21* *Survey Type: DIRECTIONAL ATC COUNT*

LIST OF SITES relevant to selection parameters (Cont.)

9 **SM-03-M-01** **DETACHED & TERRACED HOUSES** **SOMERSET**
MILTON HILL
TAUNTON
MONKTON HEATHFIELD
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 135
Survey date: WEDNESDAY *26/09/18* *Survey Type: MANUAL*

10 **TW-03-M-02** **MIXED HOUSES & FLATS** **TYNE & WEAR**
BENTON ROAD
NEWCASTLE UPON TYNE

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 108
Survey date: FRIDAY *19/10/18* *Survey Type: MANUAL*

11 **WK-03-M-03** **MIXED HOUSES** **WARWICKSHIRE**
STOCKTON ROAD
LONG ITCHINGTON

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 124
Survey date: WEDNESDAY *27/06/18* *Survey Type: MANUAL*

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CA-03-M-02	Covid Date
WO-03-M-03	Covid Date

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	11	134	0.079	11	134	0.281	11	134	0.360
08:00 - 09:00	11	134	0.154	**11**	**134**	**0.376**	**11**	**134**	**0.530**
09:00 - 10:00	11	134	0.119	11	134	0.173	11	134	0.292
10:00 - 11:00	11	134	0.116	11	134	0.139	11	134	0.255
11:00 - 12:00	11	134	0.128	11	134	0.125	11	134	0.253
12:00 - 13:00	11	134	0.148	11	134	0.122	11	134	0.270
13:00 - 14:00	11	134	0.139	11	134	0.130	11	134	0.269
14:00 - 15:00	11	134	0.157	11	134	0.154	11	134	0.311
15:00 - 16:00	11	134	0.221	11	134	0.188	11	134	0.409
16:00 - 17:00	11	134	0.249	11	134	0.158	11	134	0.407
17:00 - 18:00	**11**	**134**	**0.337**	11	134	0.177	11	134	0.514
18:00 - 19:00	11	134	0.258	11	134	0.167	11	134	0.425
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.105			2.190			4.295

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:	75 - 240 (units:)
Survey date date range:	01/01/13 - 29/09/21
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	24
Surveys manually removed from selection:	2

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 show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

RANK ORDER for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING

TOTAL VEHICLES

Ranking Type: **TOTALS** Time Range: 08:00-09:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. **9** TW-03-M-02 Tot: 0.426

85th Percentile = No. **3** WK-03-M-03 Tot: 0.638

Median Values		Mean Values	
Arrivals:	0.176	Arrivals:	0.156
Departures:	0.392	Departures:	0.376
Totals:	0.568	Totals:	0.532

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces
								Arrivals	Departures	Totals	Per Dwelling
1	NF-03-M-49	MIXED HOUSES	NEAR NORWICH	NORFOLK	150	Wed	22/09/21	0.213	0.513	0.726	2.17
2	SM-03-M-01	DETACHED & TER	TAUNTON	SOMERSET	135	Wed	26/09/18	0.185	0.504	0.689	2.51
3	**WK-03-M-03**	**MIXED HOUSES**	**LONG ITCHINGTON**	**WARWICKSHIRE**	**124**	**Wed**	**27/06/18**	**0.194**	**0.444**	**0.638**	**5.84**
4	NF-03-M-42	MIXED HOUSES	HOVETON	NORFOLK	120	Thu	16/09/21	0.192	0.392	0.584	2.67
5	NF-03-M-43	MIXED HOUSES	NEAR NORWICH	NORFOLK	100	Tue	21/09/21	0.170	0.400	0.570	2.57
6	NF-03-M-45	MIXED HOUSES	NEAR NORWICH	NORFOLK	125	Wed	15/09/21	0.176	0.392	0.568	2.54
7	NF-03-M-50	MIXED HOUSES &	NEAR NORWICH	NORFOLK	180	Wed	22/09/21	0.161	0.344	0.505	2.79
8	AN-03-M-01	TERRACED/SEMI	BELFAST	ANTRIM	114	Thu	26/10/17	0.167	0.289	0.456	1.55
9	**TW-03-M-02**	**MIXED HOUSES &**	**NEWCASTLE UPON TYNE**	**TYNE & WEAR**	**108**	**Fri**	**19/10/18**	**0.102**	**0.324**	**0.426**	**1.49**
10	NF-03-M-32	MIXED HOUSES &	NEAR NORWICH	NORFOLK	240	Wed	12/09/18	0.075	0.283	0.358	2.17
11	NF-03-M-13	MIXED HOUSES	NEAR NORWICH	NORFOLK	75	Fri	20/09/19	0.080	0.253	0.333	2.16

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

RANK ORDER for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING

TOTAL VEHICLES

Ranking Type: **TOTALS** Time Range: 17:00-18:00

WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under 20 surveys is not recommended by TRICS and may be misleading.

15th Percentile = No. **9** NF-03-M-42 Tot: 0.375
85th Percentile = No. **3** NF-03-M-43 Tot: 0.610

Median Values		Mean Values	
Arrivals:	0.352	Arrivals:	0.329
Departures:	0.152	Departures:	0.176
Totals:	0.504	Totals:	0.506

Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces
								Arrivals	Departures	Totals	Per Dwelling
1	WK-03-M-03	MIXED HOUSES	LONG ITCHINGTON	WARWICKSHIRE	124	Wed	27/06/18	0.379	0.355	0.734	5.84
2	NF-03-M-50	MIXED HOUSES &	NEAR NORWICH	NORFOLK	180	Wed	22/09/21	0.344	0.283	0.627	2.79
3	**NF-03-M-43**	**MIXED HOUSES**	**NEAR NORWICH**	**NORFOLK**	**100**	**Tue**	**21/09/21**	**0.450**	**0.160**	**0.610**	**2.57**
4	SM-03-M-01	DETACHED & TER	TAUNTON	SOMERSET	135	Wed	26/09/18	0.385	0.178	0.563	2.51
5	TW-03-M-02	MIXED HOUSES &	NEWCASTLE UPON TYNE	TYNE & WEAR	108	Fri	19/10/18	0.333	0.213	0.546	1.49
6	NF-03-M-45	MIXED HOUSES	NEAR NORWICH	NORFOLK	125	Wed	15/09/21	0.352	0.152	0.504	2.54
7	NF-03-M-49	MIXED HOUSES	NEAR NORWICH	NORFOLK	150	Wed	22/09/21	0.340	0.147	0.487	2.17
8	NF-03-M-32	MIXED HOUSES &	NEAR NORWICH	NORFOLK	240	Wed	12/09/18	0.354	0.117	0.471	2.17
9	**NF-03-M-42**	**MIXED HOUSES**	**HOVETON**	**NORFOLK**	**120**	**Thu**	**16/09/21**	**0.292**	**0.083**	**0.375**	**2.67**
10	AN-03-M-01	TERRACED/SEMI	BELFAST	ANTRIM	114	Thu	26/10/17	0.219	0.132	0.351	1.55
11	NF-03-M-13	MIXED HOUSES	NEAR NORWICH	NORFOLK	75	Fri	20/09/19	0.173	0.120	0.293	2.16

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.

RANK ORDER for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING

TOTAL VEHICLES

Ranking Type: **TOTALS** Time Range: 07:00-19:00
WARNING: Using 85th and 15th percentile highlighted trip rates in data sets of under 20 surveys is not recommended by TRICS and may be misleading.
15th Percentile = No. **9** AN-03-M-01 Tot: 3.746
85th Percentile = No. **3** NF-03-M-45 Tot: 4.728

Median Values		Mean Values	
Arrivals:	2.250	Arrivals:	2.113
Departures:	2.339	Departures:	2.215
Totals:	4.589	Totals:	4.328

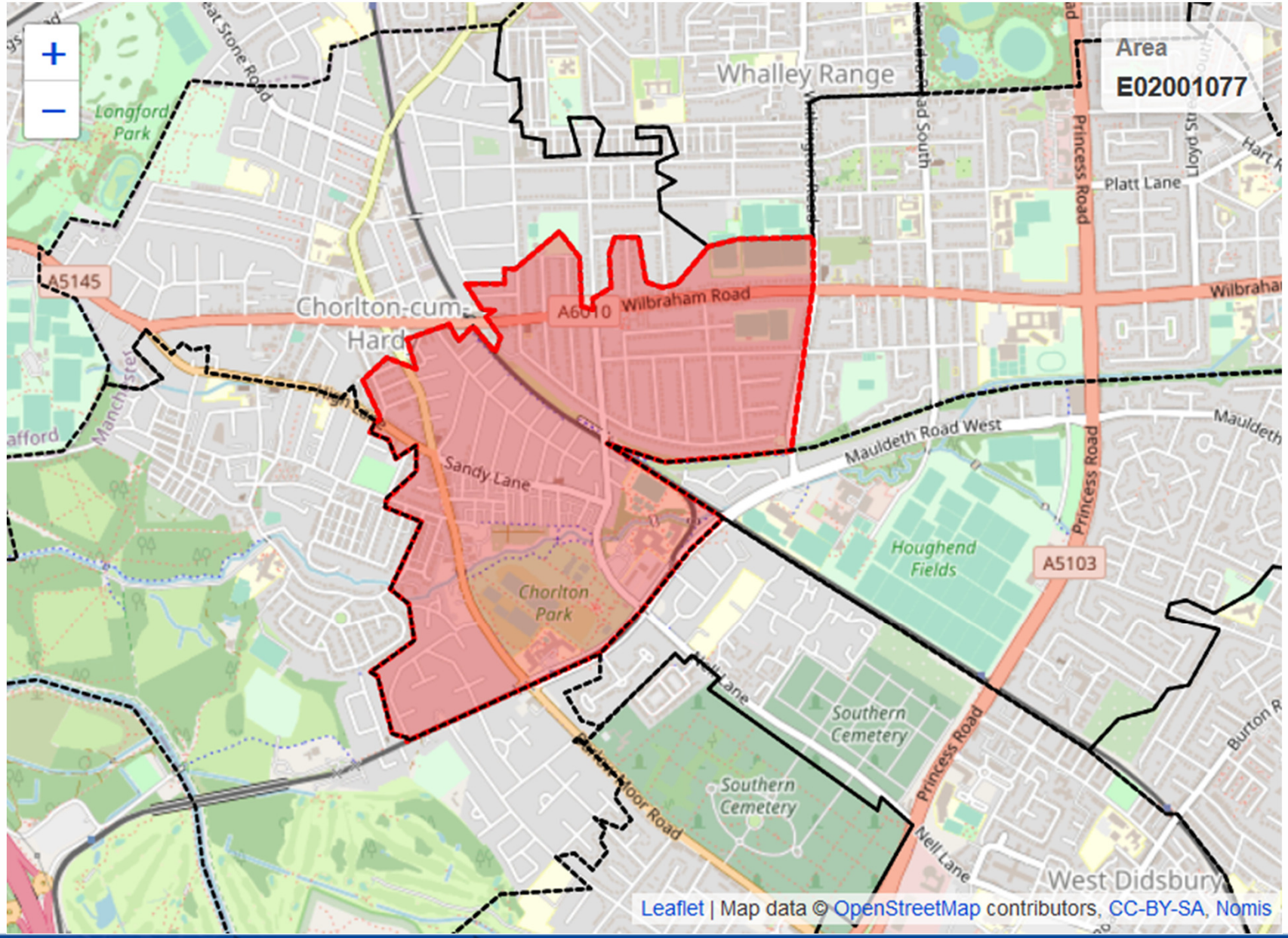
Rank	Site-Ref	Description	Town/City	Area	DWELLS	Day	Date	Trip Rate (Sorted by Totals)			Park Spaces
								Arrivals	Departures	Totals	Per Dwelling
1	SM-03-M-01	DETACHED & TER	TAUNTON	SOMERSET	135	Wed	26/09/18	2.511	2.644	5.155	2.51
2	NF-03-M-43	MIXED HOUSES	NEAR NORWICH	NORFOLK	100	Tue	21/09/21	2.490	2.440	4.930	2.57
3	**NF-03-M-45**	**MIXED HOUSES**	**NEAR NORWICH**	**NORFOLK**	**125**	**Wed**	**15/09/21**	**2.352**	**2.376**	**4.728**	**2.54**
4	WK-03-M-03	MIXED HOUSES	LONG ITCHINGTON	WARWICKSHIRE	124	Wed	27/06/18	2.339	2.331	4.670	5.84
5	NF-03-M-49	MIXED HOUSES	NEAR NORWICH	NORFOLK	150	Wed	22/09/21	2.240	2.360	4.600	2.17
6	NF-03-M-50	MIXED HOUSES &	NEAR NORWICH	NORFOLK	180	Wed	22/09/21	2.250	2.339	4.589	2.79
7	NF-03-M-42	MIXED HOUSES	HOVETON	NORFOLK	120	Thu	16/09/21	2.017	2.167	4.184	2.67
8	TW-03-M-02	MIXED HOUSES &	NEWCASTLE UPON TYNE	TYNE & WEAR	108	Fri	19/10/18	2.019	2.148	4.167	1.49
9	**AN-03-M-01**	**TERRACED/SEMI**	**BELFAST**	**ANTRIM**	**114**	**Thu**	**26/10/17**	**1.702**	**2.044**	**3.746**	**1.55**
10	NF-03-M-13	MIXED HOUSES	NEAR NORWICH	NORFOLK	75	Fri	20/09/19	1.627	1.893	3.520	2.16
11	NF-03-M-32	MIXED HOUSES &	NEAR NORWICH	NORFOLK	240	Wed	12/09/18	1.692	1.625	3.317	2.17

This section displays actual (not average) trip rates for each of the survey days in the selected set, and ranks them in order of relative trip rate intensity, for a given time period (or peak period irrespective of time) selected by the user. The count type and direction are both displayed just above the table, along with the rows within the table representing the 85th and 15th percentile trip rate figures (highlighted in bold within the table itself).

The table itself displays details of each individual survey, alongside arrivals, departures and totals trip rates, sorted by whichever of the three directional options has been chosen by the user. As with the preceeding trip rate calculation results table, the trip rates shown are per the calculation factor (e.g. per 100m2 GFA, per employee, per hectare, etc). Note that if the peak period option has been selected (as opposed to a specific chosen time period), the peak period for each individual survey day in the table is also displayed.



APPENDIX TA6



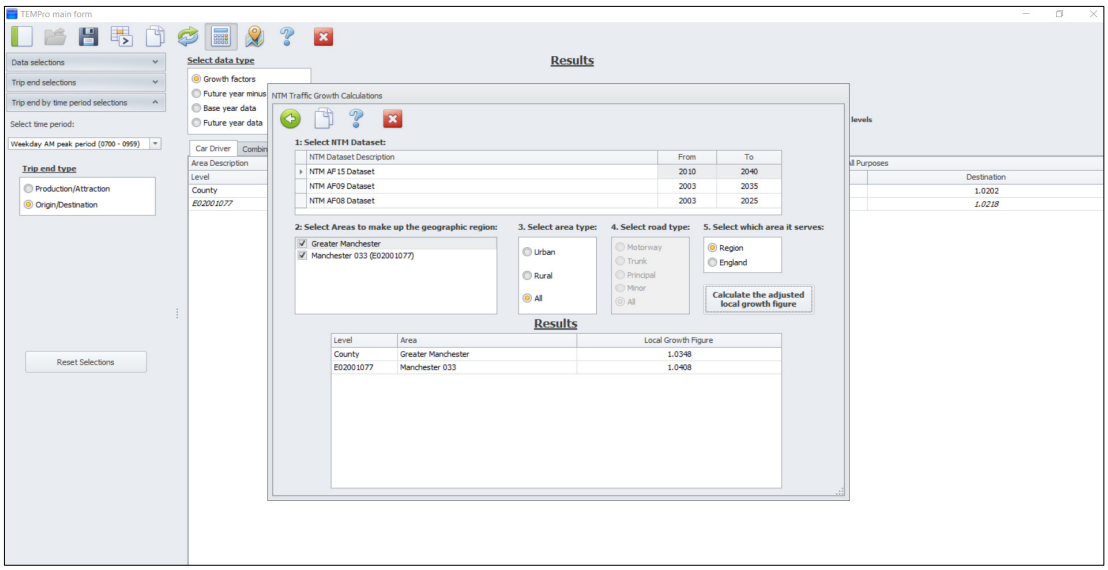
FOCUS TRANSPORT PLANNING

Appendix TA6 **Local Census Super Output Area to the Application Site (Manchester 033)**

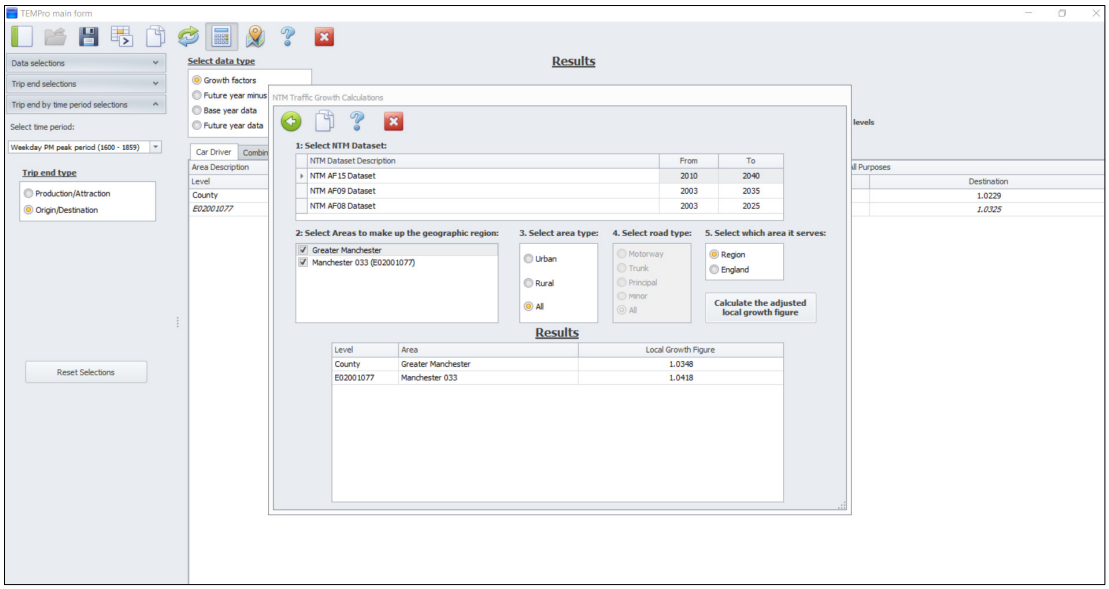
J000312 Land off Wilbraham Road, Manchester October 2022

Calculation of Locally Adjusted Growth Rates: 2022 - 2027 Future Year

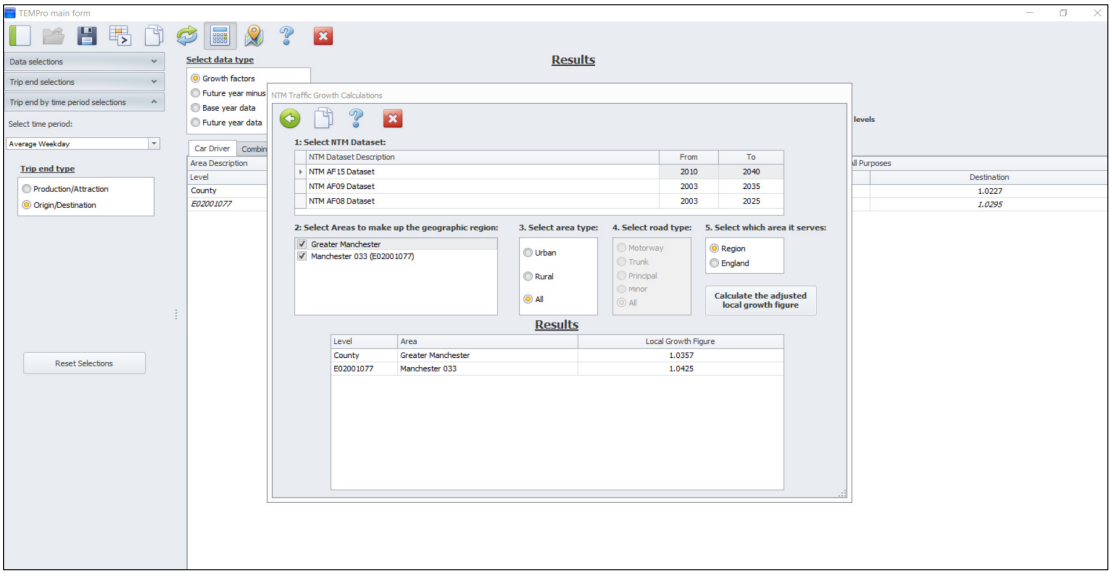
AM Peak Period 1.0408



PM Peak Period 1.0418

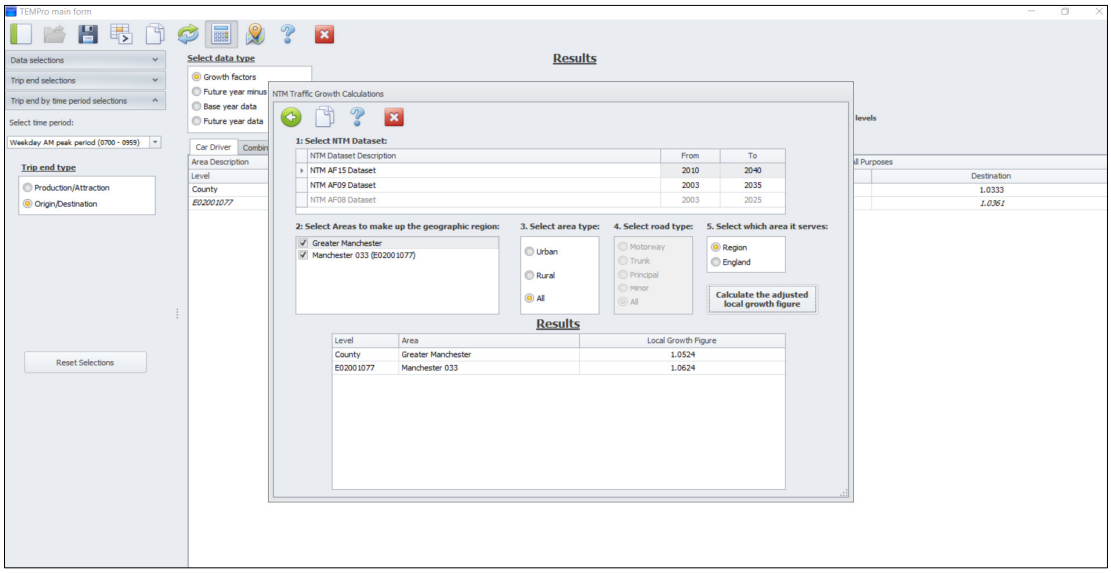


Average Weekday 1.0425

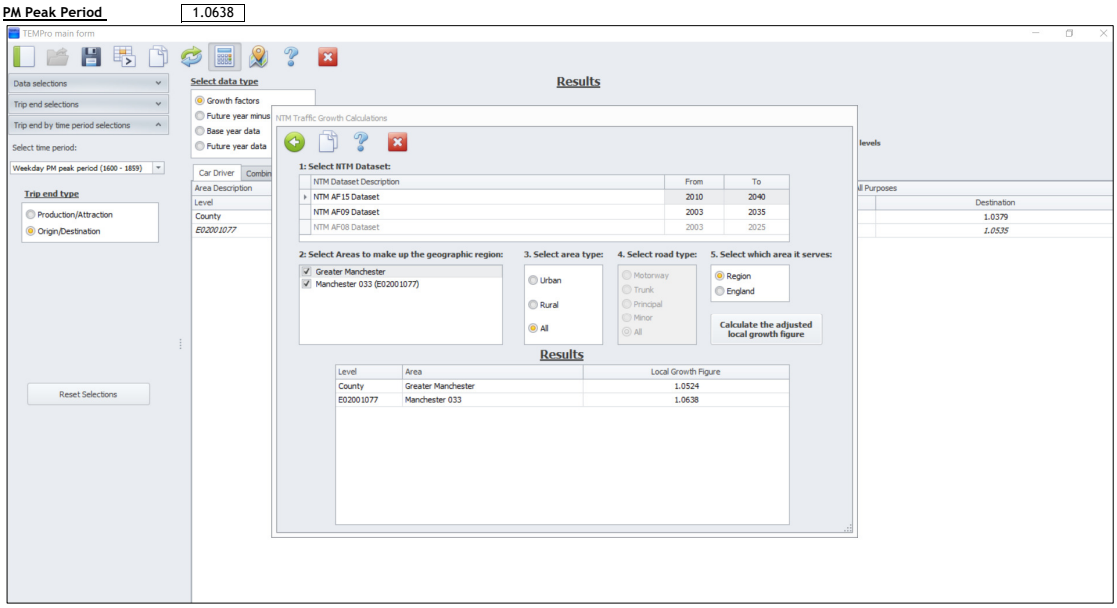


Calculation of Locally Adjusted Growth Rates: 2022 - 2027 Future Year

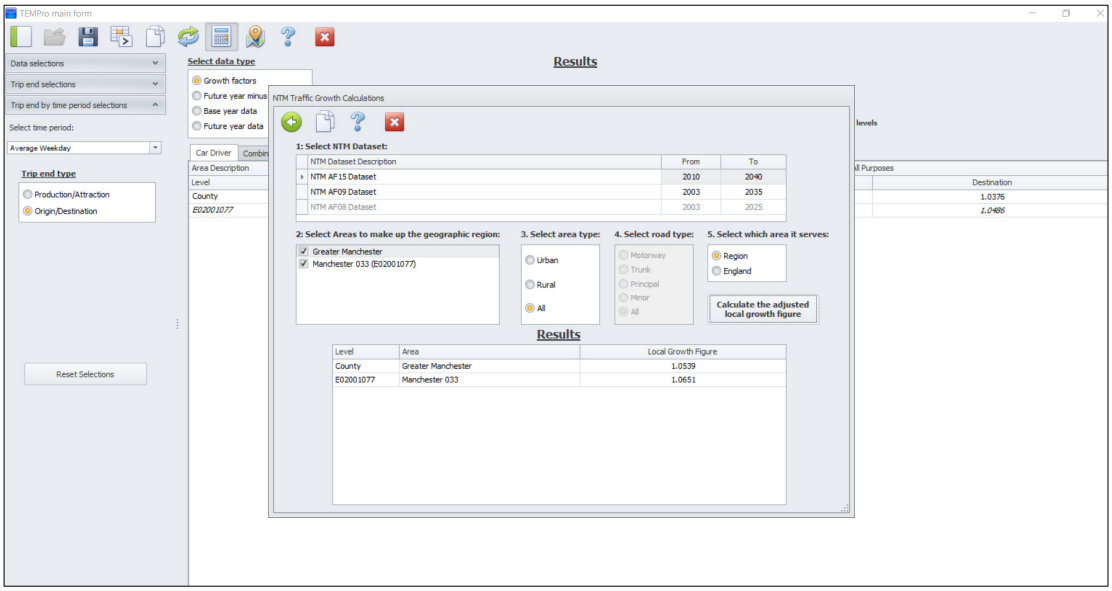
AM Peak Period 1.0624



PM Peak Period 1.0638



Average Weekday 1.0651





APPENDIX TA7

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
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Filename: Site Access.j9
Path: C:\Data\Projects\J000301-J000350\J000312 Wilbraham Road, Chorlton\Background Information\Junction Assessments
Report generation date: 29/09/2022 14:24:44

»2027 Baseline + Development, AM
»2027 Baseline + Development, PM

Summary of junction performance

	AM								PM							
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	2027 Baseline + Development															
Stream B-AC	D3	0.2	17.74	0.14	C	0.38	A	28 % [Stream B-AC]	D4	0.1	15.82	0.07	C	0.21	A	35 % [Stream B-AC]
Stream C-AB		0.0	8.15	0.01	A					0.0	8.47	0.02	A			

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

File summary

File Description

Title	Site Access Junction
Location	
Site number	
Date	29/09/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	J000312
Enumerator	FTPDT-01\Office
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2025 Baseline + Development	AM	ONE HOUR	07:45	09:15	15	
D2	2025 Baseline + Development	PM	ONE HOUR	16:45	18:15	15	
D3	2027 Baseline + Development	AM	ONE HOUR	07:45	09:15	15	✓
D4	2027 Baseline + Development	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2027 Baseline + Development, 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		0.38	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	28	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	Wilbraham Road (W)		Major
B	Site Access		Minor
C	Wilbraham 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	6.11			100.0	✓	3.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.20	24	24

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	507	0.092	0.232	0.146	0.332
B-C	652	0.099	0.251	-	-
C-B	632	0.244	0.244	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)

A		ONE HOUR	✓	697	100.000
B		ONE HOUR	✓	31	100.000
C		ONE HOUR	✓	788	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	9	688
	B	23	0	8
	C	785	3	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	4
	B	0	0	0
	C	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.14	17.74	0.2	C	28	43
C-AB	0.01	8.15	0.0	A	3	4
C-A					720	1080
A-B					8	12
A-C					631	947

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	23	6	336	0.069	23	0.0	0.1	11.491	B
C-AB	2	0.56	504	0.004	2	0.0	0.0	7.173	A
C-A	591	148			591				
A-B	7	2			7				
A-C	518	129			518				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	7	295	0.094	28	0.1	0.1	13.459	B
C-AB	3	0.67	479	0.006	3	0.0	0.0	7.553	A
C-A	706	176			706				
A-B	8	2			8				
A-C	618	155			618				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	9	237	0.144	34	0.1	0.2	17.696	C
C-AB	3	0.83	445	0.007	3	0.0	0.0	8.152	A
C-A	864	216			864				

A-B	10	2			10				
A-C	758	189			758				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	34	9	237	0.144	34	0.2	0.2	17.738	C
C-AB	3	0.83	445	0.007	3	0.0	0.0	8.152	A
C-A	864	216			864				
A-B	10	2			10				
A-C	758	189			758				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	7	295	0.094	28	0.2	0.1	13.497	B
C-AB	3	0.67	479	0.006	3	0.0	0.0	7.554	A
C-A	706	176			706				
A-B	8	2			8				
A-C	618	155			618				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	23	6	336	0.069	23	0.1	0.1	11.520	B
C-AB	2	0.56	504	0.004	2	0.0	0.0	7.173	A
C-A	591	148			591				
A-B	7	2			7				
A-C	518	129			518				

2027 Baseline + Development, 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		0.21	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	35	Stream B-AC

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	742	100.000
B		ONE HOUR	✓	16	100.000
C		ONE HOUR	✓	718	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	18	724
	B	11	0	5
	C	711	7	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	2
	B	0	0	0
	C	1	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.07	15.82	0.1	C	15	22
C-AB	0.02	8.47	0.0	A	6	10

C-A					652	979
A-B					17	25
A-C					664	997

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	12	3	344	0.035	12	0.0	0.0	10.828	B
C-AB	5	1	496	0.011	5	0.0	0.0	7.338	A
C-A	535	134			535				
A-B	14	3			14				
A-C	545	136			545				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14	4	303	0.047	14	0.0	0.0	12.457	B
C-AB	6	2	469	0.013	6	0.0	0.0	7.774	A
C-A	639	160			639				
A-B	16	4			16				
A-C	651	163			651				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	18	4	245	0.072	18	0.0	0.1	15.809	C
C-AB	8	2	433	0.018	8	0.0	0.0	8.467	A
C-A	783	196			783				
A-B	20	5			20				
A-C	797	199			797				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	18	4	245	0.072	18	0.1	0.1	15.822	C
C-AB	8	2	433	0.018	8	0.0	0.0	8.467	A
C-A	783	196			783				
A-B	20	5			20				
A-C	797	199			797				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14	4	303	0.047	14	0.1	0.1	12.468	B
C-AB	6	2	469	0.013	6	0.0	0.0	7.774	A
C-A	639	160			639				
A-B	16	4			16				
A-C	651	163			651				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	12	3	344	0.035	12	0.1	0.0	10.841	B
C-AB	5	1	496	0.011	5	0.0	0.0	7.341	A
C-A	535	134			535				
A-B	14	3			14				
A-C	545	136			545				