Transport Assessment

Viadux Plot 2A, Plot 2B, Manchester

Salboy Central Ltd

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Basis of Report

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Drawings

Redline Site Boundary **Dwg 10448-SHP-ZZ-A-B5D9-G000-XP-01-001-01-P01**

Great Bridgewater St / Watson St Phase 1 Highway Improvements
SVA-VEC-0-P1-DR-CH-000-P07

Great Bridgewater Street / Albion Street Phase 2 Highway Improvements
Dwg SVA-VEC-0-P2-DR-CH-0000-P06

Vehicle Tracking on the Highway Network
Dwg SVA-VEC-0-P2-SK-CH-SK07 P03.

Manchester Central Service Yard Tracking- Artic HGV Reversing up to Central Hall
Dwg VN232690-TR100 Rev B

Manchester Central Service Yard Tracking- Artic HGV Reversing out of Central Hall
Dwg VN232690-TR102 Rev B

Appendices

Appendix A **Active Travel Committed Highway Improvements**
Appendix B **Committed Developments**
Appendix C **Scheme Plans**
Appendix D **Cycle Suvrey**
Appendix E **TRICS Interrogation**
Appendix F **LINSIG Operational Outputs**

1.0 Introduction

1.1 Overview

1.1.1 This Transport Assessment (TA) has been prepared by SLR on behalf of Salboy Central Ltd. in support of the proposed development on land to the south of Manchester Central Convention Complex in Manchester city centre.

1.1.2 The Site is located in Manchester city centre. It is bounded by the Manchester Central Conference Complex, Great Bridgewater Street and Great Northern Warehouse to the north, Albion Street to the east, the Deansgate Castlefield Metrolink station and Deansgate Locks to the south, and the Beetham Tower to the west. The proposals are adjacent to Phase 1 Viadux, a 40-storey residential tower which is now practically completed and is being occupied.

1.1.3 The Proposed Development is within two towers; flexible retail space; residential amenities; secure cycle parking; public realm improvements and new green landscaping; and associated works to the public highway.

1.1.4 The Proposed Development will be delivered across two plots as follows:

- Plot 2a is located immediately east of the recently completed Phase 1 building, on land partially comprising the grade II listed Castlefield Viaduct. This plot will deliver a 76-storey mixed use tower comprising a hotel (Use Class C1) with associated bar and restaurant and residential units above comprising 1, 2 and 3 bed, and penthouse apartments (Use Class C3) with associated residential amenity spaces. Secure cycle spaces, serving this and the Phase 1 building, are provided at the ground floor level. At viaduct level, a redesigned service yard for the conference centre is enclosed by a new podium structure with residents' external amenity space above. A section of the Great Bridgewater Street bridge (deck) is removed to bring light into the street below.
- Plot 2b, located at the western-most section of the Site between the viaduct and Beetham Tower, consists of a 23-storey residential building accommodating affordable 1-, 2- and 3-bed apartments (Use Class C3), secure cycle parking spaces, flexible commercial units (Use Class E) opening onto the viaduct, and public realm enhancements on Great Bridgewater Street.

1.1.5 The Site extends to 1.49ha and the redline boundary is shown in **Dwg 10448-SHP-ZZ-A-B5D9-G000-XP-01-001-01-P01.**

1.1.6 The development proposals include changes to the operation of the service yard area of Manchester Central and as such, SLR has been engaged with members of the facilities and operations team there since May 2016 in order to understand the operational characteristics of the service yard and the traffic management strategies employed there.

1.1.7 This TA considers the transport and highway implications of the proposed development specifically in relation to the following:

- Access and provision for pedestrians, those with disabilities and cyclists;
- Public transport accessibility;
- Trip generation by all transport modes;
- Parking;
- Servicing; and
- Manchester Central Service Vehicle Operations.

1.1.8 This planning application for the proposed development is also supported by a Framework Travel Plan (FTP) and a Waste Management Strategy (WMS), both prepared by SLR.

1.1.9 This report has been prepared to be consistent with the wider Strategic Regeneration Framework and the Transport Strategy for the area.

1.1.10 Consultations regarding the proposals set out in this document have been held, and are ongoing, with Manchester Central and officers from Manchester City Council (MCC) and Transport for Greater Manchester (TfGM).

1.2 Report Scope

1.2.1 Following this introductory chapter, this TA comprises the following chapters:

- **Chapter 2** provides the transport planning policy context for the development;
- **Chapter 3** describes the existing highway conditions around the site including an audit of exiting pedestrian footways;
- **Chapter 4** presents the baseline traffic surveys and future traffic forecasts around the site;
- **Chapter 5** examines the road safety characteristics of the area;
- **Chapter 6** presents a review of the accessibility of the Site by sustainable travel modes;;
- **Chapter 7** outlines the development proposals, its access proposals and proposed highway improvements;
- **Chapter 8** sets out the Service Strategy for vehicles accessing the site;
- **Chapter 9** forecasts the traffic flows with development;
- **Chapter 10** presents an operational assessment of highway operation; and
- **Chapter 11** presents a summary and conclusion to the report.

2.0 Policy Context

2.1 National Planning Policy Framework (December 2023)

2.1.1 The latest National Planning Policy Framework (NPPF) was published in December 2023 by the Ministry of Housing, Communities and Local Government, replacing the previous versions published in 2012, 2018, 2019, 2021 and September 2023. The NPPF sets out the government's planning policies for England and how these are expected to be applied. At the heart of the Framework is a presumption in favour of sustainable development.

2.1.2 As part of promoting sustainable transport, paragraph 114 of the revised NPPF states that in assessing 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.

2.1.3 Paragraph 115 goes on to state that 'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe'.

2.1.4 Finally, the NPPF notes that all developments that will generate significant amounts of movement should be required to provide a Travel Plan.

2.1.5 Accordingly, a Framework Travel Plan (FTP) has been prepared in support of this application, which will form the basis of a long-term management strategy for the Site, delivering sustainable transport objectives.

2.2 Places for Everyone, 2024

2.2.1 The Places for Everyone (PfE) Plan took effect and became part of the statutory development plan for each of the nine PfE authorities including Manchester City Council on March 21, 2024.

2.2.2 Policy JP-Strat14 covers Sustainable and Integrated Transport with the aim of network improvements so that 'half of all daily trips can be made by public transport, cycling and walking, especially those shorter journeys around neighbourhoods.

2.2.3 Policy JP-C1 aims to deliver an integrated accessible, low carbon network with world-class connectivity by: delivering a pattern of development that minimises both the need to travel and the distance travelled by unsustainable modes; enabling the provision of high quality digital infrastructure; locating and designing development to deliver a significant increase in the proportion of trips that can be made by walking, cycling and public transport; securing investment in new and improved transport infrastructure and services; and ensuring that development and transport investment fully considers the needs of all people, following a hierarchy of pedestrians, cyclists, powered two-wheelers, and public transport users, those doing business or providing services, and lastly people in personal motorised vehicles.

2.2.4 Policy JP-C3 on Public Transport supports a range of measures, including enhanced connections to other major cities; increased capacity at the bottlenecks in Manchester City Centre for light and heavy rail; improved public transport routes and services to growth areas and Manchester Airport; better integration of services between modes; more and higher quality public transport stations and interchanges; improved access to rapid transit routes.

2.2.5 Policies JP-C 4 and C5 promotes the Streets for All approach with design and management to make a significant positive contribution to the quality of place and support high levels of walking, cycling and public transport.

2.2.6 Policy JP-C6: Walking and Cycling aims to deliver a higher proportion of journeys made by walking and cycling, by creating safe, attractive, direct, easily navigable and integrated routes, and active neighbourhoods and street networks, plus ensuring that new developments are planned and constructed with walking and cycling as the primary means of local access.

2.2.7 Freight and Logistics is considered in Policy JP-C7 supporting the more efficient and sustainable movement of freight, ensuring that new development makes appropriate provision for deliveries and servicing in terms of road safety, traffic congestion and environmental impacts, in accordance with Policy JP-C8

2.2.8 Policy JP-C8: Transport Requirements of New Development indicates planning applications will be accompanied by a Transport Assessment/Transport Statement and Travel Plan where appropriate. New development to be located and designed to enable and encourage walking, cycling and public transport use, to reduce the negative effects of car dependency, and help deliver high quality, attractive, liveable and sustainable environments. The policy supports development that complies with the Policies JP-C1-C7 above.

2.2.9 On Parking, it asks for adequate car parking provision including for disabled users and that provision is flexible to respond to demand. Cycle parking needs to meet the long-term demand from occupiers and where appropriate provide showers/changing facilities/cycle hire/pool bikes and information. It goes on to seek promotion of alternatives to car ownership such as ULEV car club vehicles and charging infrastructure and drop off points for taxis.

2.2.10 Servicing strategies needs to comply with safety requirements, aim to reduce emissions and traffic congestion such as by reducing the need for repeat deliveries.

2.2.11 The Policy requires that Construction Management Plans are produced for developments, where appropriate, to mitigate construction logistics and environmental impacts including air quality and noise on the surrounding area and encourage sustainable deliveries.

2.2.12 Policy JP-D2 concerns Developer Contributions, and the policy requires developers to provide, or contribute towards, the provision of mitigation measures to make the development acceptable in planning terms (Subject to considerations of viability). Contributions will be secured through the most appropriate mechanism, including, but not limited to, planning conditions, Section 106 planning obligations, agreements made under Section 278 of the Highways Act 1990 (as amended), or CIL (or any subsequently adopted planning gain regime.

2.3 Manchester Core Strategy, 2012-2027

2.3.1 The Core Strategy forms the key document in Manchester's Local Development Framework and was adopted in 2012. It sets out a number of strategic policies that will guide the development of the city. Policy SP1 sets out the spatial principles that will guide development to 2027. One of these principles is as follows:

2.3.2 'New development will maximise the potential of the City's transport infrastructure, in particular promoting walking, cycling and the use of public transport.'

2.3.3 In addition, the policy goes on to state that developments in all parts of the city should 'improve access to jobs, services and education and open space by being located to reduce the need to travel and provide good access to sustainable transport provision'.

2.3.4 This is reinforced through policy DM 1 of the Core Strategy, which concerns development management. This states that all developments should have regard to specific issues including the access to new development by sustainable transport modes and vehicular access and car parking.

2.3.5 Policy T1 of the Core Strategy concerns sustainable transport. It states that the Council will support proposals that:

- Improve choice by developing alternatives to the private car; and
- Take account of the needs of road users according to a broad hierarchy consisting of, in order of priority:
- Pedestrians and disabled people,
- Cyclists, public transport,
- Commercial access,
- General off-peak traffic,
- General peak time traffic.

2.3.6 The development proposals are in line with these policy objectives, ensuring that the Site will be accessible to all users by a range of different transport modes.

2.3.7 Policy T2 states that the Council will actively manage the pattern of development to ensure that new development is:

- Located to ensure good access to the City's main economic drivers, including the Regional Centre, the Oxford Road Universities and Hospitals and the Airport and to ensure good national and international connections; and
- Easily accessible by walking, cycling and public transport; connecting residents to jobs, centres, health, leisure, open space and educational opportunities.

2.3.8 With regards to parking standards, the Core Strategy states that the 'maximum standards for car parking do not apply to the City Centre as each development in the City Centre will be considered on a case-by-case basis.'

2.4 Guide to Development in Manchester SPD & Planning Guidance

2.4.1 This document brings together the development principles that will apply to new developments in Manchester. Paragraph 2.22 of the document states that:

'In order to reduce reliance on the car, residents and workers should be within easy walking distance of facilities such as clinics, corner shops, newsagents and public transport.'

2.4.2 The proposed development is well aligned with this goal, being located close to a range of different facilities. The guidance goes on to describe the need for Travel Plans in new developments, stating:

'A Travel Plan is a package of measures and actions aimed at reducing the need to travel by car by providing alternative choices and encouraging walking, cycling, and public transport use. At the planning stage consideration should be given to the proximity of the development to existing travel facilities and services, site layout, suitable density, cycling, pedestrian facilities and potential for parking restraint.'

2.4.3 Such an exercise has been completed for this development and informs part of this report along with the accompanying Framework Travel Plan.

2.5 Greater Manchester Transport Strategy 2040

2.5.1 TfGM has developed a 2040 Transport Strategy that sets out ambitions for a radical new approach to planning Manchester's transport system in support of long-term needs and aspirations.

2.5.2 The vision is for Greater Manchester to have 'World class connections that support long-term, sustainable economic growth and access to opportunity for all'. The Transport Vision aims are as follows:

- Supporting Sustainable Economic Growth;
- Protecting Our Environment;
- Improving Quality of Life for All; and
- Developing an Innovative City Region.

2.5.3 The 2040 Vision is supported by policies and proposals for improving the transport network in the medium term up to 2025 structured around spatial themes. A common theme is the need to tackle congestion on Manchester's transport networks and minimise the negative impacts of traffic on communities.

2.5.4 The development proposals aspire to conform to the vision and goals as set out within the 2040 Vision Document by ensuring that the Site is accessible by a variety of sustainable transport modes in order to deliver a quality development that enhances the environment.

2.6 City Centre Transport Strategy to 2040

2.6.1 The City Centre Transport Strategy, developed by MCC, TfGM and Salford City Council will guide how city centre transport is improved across the next two decades. It has been informed by a series of public consultation and engagement exercises, held over the last three to four years.

2.6.2 The strategy is a sub-strategy to the Greater Manchester Transport Strategy 2040. The vision, set out in the City Centre Transport Strategy, is for "a well-connected, zero-carbon city centre at the heart of the North, offering our residents, employees and visitors a great place to work, live and visit". The central aim is for 90% of all trips to the city centre in the morning peak to be made on foot (including people using wheelchairs, mobility scooters or guide dogs), by cycle, or on public transport before 2040.

2.6.3 The strategy sets out proposals to further improve the city centre's public transport and active travel networks and reduce car-based trips over the longer term, leading to the cleaner, greener, healthier, inclusive and integrated transport network that supports the growth of the city centre.

2.6.4 Walking will be prioritised as the main way for people to get around a cleaner, less congested city centre, which will also see more people encouraged to cycle to key destinations and improved public transport connections. The city centre will be age friendly and accessible, with all proposed changes taking accessibility, inclusion and the needs of different groups of city centre users into account.

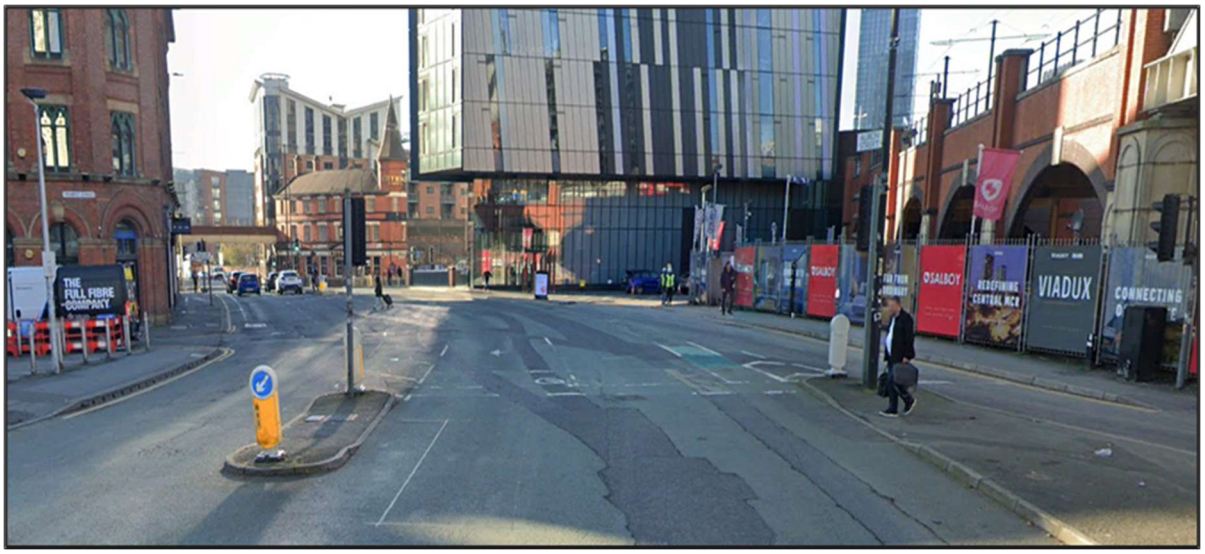
3.0 Baseline Highway Conditions

3.1 Audit of Local Highway, Pedestrian & Cycle Facilities

Albion Street

3.1.1 Albion Street borders the site to the east and runs in a general north/south alignment past the site. To the north, Albion Street becomes Lower Mosley Street which leads towards St Peter's Square. To the south, the road heads away from the city centre, ultimately becoming Medlock Street which links with the Mancunian Way. The nature of Albion Street is described in **Figure 3.1**.

Figure 3.1: Albion Street (Looking South)



(Source: Google Earth)

3.1.2 Albion Street along with all the roads in the city centre are subject to a 20mph speed restriction. There are also waiting and loading restrictions along the length of the road. A yellow box junction is provided at the Albion Street/Great Bridgewater Street junction.

3.1.3 Albion Street is one of the main routes into the city centre from the Mancunian Way. It is a very wide road within the city centre road at up to 6 lanes wide. To the south is the signalised junction of Whitworth Street which includes signalised pedestrian crossing facilities and to the north there is the Great Bridgewater signal junction, but this does not have signalised pedestrian crossing facilities and the crossing width for pedestrians is very wide.

3.1.4 One aspect that makes Albion Street so wide is a left turn slip road from Trafford Street. This directs Manchester Central vehicles from Trafford Street to turn left onto Albion Street, then left onto Great Bridgewater Street and this traffic then turns left again onto Deansgate to head south towards Mancunian Way.

3.1.5 Footways and street lighting are provided along Albion Street. In the immediate vicinity of the site, the road provides two lanes for northbound traffic. An additional lane is introduced at the junction with Great Bridgewater Street to accommodate traffic turning left.

3.1.6 Buses run along Albion Street including the X50 and Freebus 1 but there are no bus stops there.

3.1.7 Cycle lanes are provided along both sides of Albion Street in the vicinity of the site and form part of National Cycle Route 6. Advanced cycle stop lines are also provided at the junctions with Great Bridgewater Street and Whitworth Street West.

3.1.8 There are drop kerbs at pedestrian crossing points all along Albion Street but there is only tactile paving to assist visually impaired persons at the Whitworth Street signals and part of Trafford Street. the Left Turn Slip Road, Trumpet Street and the Great Bridgewater Street signals do not have any tactile paving.

3.1.9 Vehicular access from Trafford Street onto Albion Street has a left only slip road as shown in **Figure 3.2** which direct traffic from the Manchester Central service yard to turn left.

Figure 3.2: Albion Street/ Trafford Street Junction (Looking North)



(Source: Google Earth)

Trafford Street (E)

3.1.10 Trafford Street formerly linked Albion Street with Deansgate. It now provides a ramp to the Manchester Central Service Yard while from Deansgate it provides a link to the service area to the rear of Deansgate Locks.

3.1.11 The layout of Trafford Street from Albion Street is shown in **Figure 3.2** and here it shows the Axis Tower layby as well as the start of the left turn Slip Lane. Of note there is no footway on the ramp and pedestrians to the tram stop are directed via Whitworth Street and in the future from the new staircase/lift at Great Bridgewater Street.

3.1.12 This section of Trafford Street also serves the Axis Tower with a layby available. Larger vehicles to Axis have to travel up the ramp of Trafford Street before making a 3 point turn before coming back.

3.1.13 Pedestrians in this area crossing Trafford Street have to pass over two sections of wide highway access in a highway dominated environment. There are tactile dropped crossings across one highway section as shown above but not for crossing on the exit lane.

Figure 3.3: Trafford Street Looking West from Albion Street



(Source: Google Earth)

Great Bridgewater Street

3.1.14 Great Bridgewater Street runs west from Albion Street and connects with Deansgate and runs beneath a bridge viaduct. Footways are just over 2m wide while street lighting is provided along the route, the lighting environment is considered poor for pedestrians given the overbridge structure.

3.1.15 Beneath the viaduct arches, there are two bus stops are provided for services in the eastbound and westbound directions serving the half hourly 33 bus service.

3.1.16 East of the junction with Albion Street/Lower Mosley Street, Great Bridgewater heads towards Portland Street and Piccadilly and carries the 3 bus services, 33, X50 and Freebus 1.

3.1.17 The nature of the footways on Great Bridgewater Street under the arches is shown overleaf in **Figure 3.3**.

Figure 3.4: Great Bridgewater Street Footway



3.1.18 Traffic Regulation Orders which are in place along Great Bridgewater Street include a row of 4 pay and display parking bays and 2 x disabled parking bay are available on the southern kerbline include. ‘No Waiting’ restrictions along the length of the road and west of Watson Street these are upgraded to include ‘No Loading’ restrictions as well. Further west, adjacent to the Beetham Tower there is a designated loading bay which is 12m long.

Watson Street

3.1.19 Watson Street is a road that provides access to the Great Northern and Manchester Central Car Parks and their service areas. The road is subject to a 20mph speed restriction and waiting restrictions are in place along its length. There are loading restrictions at the mouth of the junction with Great Bridgewater Street. A 16m loading bay is located off the western section of Watson Street, around 70m north of its junction with Great Bridgewater Street.

3.1.20 There are footways along both sides of the carriageway and is street lit. At the signal junction of Watson Street with Great Bridgewater Street there are signalised pedestrian crossings with a large pedestrian island as shown in **Figure 3.4** below.

3.1.21 Approximately 120m north of the Great Bridgewater Street junction, Watson Street has a large 'Mini' Roundabout which offers access to Great Northern Warehouse and the Manchester Central Car Park. North of this there is a Manchester Central Service Yard and beyond that Watson Street becomes a narrow one-way road for 'Access Only' traffic heading northbound past the 235 Casino where there is a block paved surface and generous high quality and wide footways.

Figure 3.5: Watson Street Looking North



Trafford Street (West) Accessed from Deansgate

3.1.22 The section of Trafford Street accessed from Deansgate offers a service route to the rear of Beetham Tower and the Deansgate Locks commercial premises. This route runs underneath the Viaduct and the ramp to the Manchester Central Service Yard. The nature of this route is shown in **Figure 3.5**.

Figure 3.6: Trafford Street under the Viaduct



3.1.23 Here there is a footway on the south side of the carriageway which is often used to store bins and an intermittent footway on the north side.

3.1.24 Under the ramp there is a caged area where bins for the former Bauer Millet site used to be stored.

Deansgate (A56)

3.1.25 Deansgate lies to the west of the development site, immediately beyond the Beetham Tower. It is the longest road in the centre of Manchester and runs in a general north/south alignment providing a principal arterial route through the western section of the city centre. It is a wide street width a carriageway of up to 15m in width and it benefits from wide footways that are typically wider than 3m and cater for higher pedestrian volumes and has street lighting.

3.1.26 Deansgate is transforming from a main trafficked route to one that is a major cycle and pedestrian corridor providing access to business, but which is no longer a through route.

3.1.27 Signalised crossing facilities with dropped kerbs are provided at the major junctions in the vicinity of the Site including the Deansgate/Whitworth Street and Deansgate/Great Bridgewater Street junctions. Additionally, advanced cycle stop lines are provided at these junctions.

3.1.28 Deansgate can be relatively heavily trafficked during peak periods although in off-peak periods the traffic flows do fall notably.

3.1.29 A number of Traffic Regulation Orders (TROs) are in place along the section of Deansgate closest to the Site. These include a 20mph speed restriction and loading and waiting restrictions along both sides of the carriageway. A yellow box junction is provided at the Deansgate/Great Bridgewater Street/Liverpool Road junction.

Whitworth Street West

3.1.30 Whitworth Street West runs to the south of the Site beyond the Rochdale Canal. It runs in an east/west alignment connecting with Deansgate to the west and continuing to Oxford Road and then on to Piccadilly to the east.

3.1.31 It is busy during the peak hours with lower flows at all other times. In the vicinity of the Site, it is a single carriageway road with additional turning lanes introduced at the junctions with Albion Street and Deansgate.

3.1.32 Cycle lanes are provided on both sides of the road and advanced cycle stop lines are provided at all major junctions. A number of bus services operate along Whitworth Street West with services to the Trafford Centre, Chorlton and Partington.

3.1.33 Signal controlled pedestrian crossing facilities are located at the Whitworth Street West/Albion Street and Whitworth Street West/Deansgate junctions. Whitworth Street West is also subject to waiting and loading restrictions. Pay and display parking bays are provided along both sides of the carriageway with disabled bays, a taxi rank and a bus waiting area also being located along the northern carriageway.

3.2 Committed Local Highway Improvements

Deansgate /Whitworth Street West Active Travel Scheme

3.2.1 Manchester City Council are implementing an Active Travel improvement scheme for Deansgate/Whitworth Street West which is part of the aspiration aims to ensure that 90% of all morning peak trips to the city centre to be made on foot, by cycle or using public transport by 2040. In this vicinity there will be works to implement pedestrian, cycle and public transport improvements to Deansgate, Whitworth Street and parts of Chester Road.

3.2.2 These works are described in **Appendix A** and as well as the cycle and pedestrian improvements, the key traffic changes are to make Deansgate one way Southbound and to introduce segregated cycle lanes and a Cyclops junction with Bridgewater Street along with a one lane approach from the south. It is noted that the left turn from Deansgate onto Bridgwater Street will remain as it is currently (the previous proposals showed it as a banned movement).

3.2.3 On Whitworth Street there are changes to bus stops and the implementation of segregated cycle routes and for traffic there is Bus Gate to permit Buses/Taxis Only to travel westbound. On Whitworth Street West the cycle route now merges into the existing cycle lanes prior to the junction on Whitworth Street West and Albion Street.

3.2.4 Consequently, on Albion Street the right-hand turn into Whitworth Street West will be for buses, taxis and cycles only.

Watson Street/Great Bridgewater Street Improvement

3.2.5 Watson Street and the signalised junction with Great Bridgewater Street is being improved as part of the Viadux Phase 1 scheme. A key element is to narrow Watson Steet to help pedestrians cross in one movement across Waston Street allowing an all-red pedestrian crossing phase. This ties in with the expected new crossing demand from pedestrians heading towards the city from the Deansgate-Castlefield Metrolink stop which includes a new staircase and Lift. The proposed highway layout is shown in **Dwg SVA-VEC-0-P1-DR-CH-000-P07**. As part of the proposals a Car Club space will be provided on Watson Street on the western kerb. This scheme will also improve the footway surfacing for pedestrians on Watson Street and the adjacent areas on Great Bridgewater Street.

3.2.6 The parking bays will be amended on Great Bridgewater Street to provide 3 x standard on street parking bays, 2 x disabled bays and a loading bay.

3.2.7 This scheme has been developed through the Section 278 detailed design process and work will start in Spring 2025 after the completion of the Active Travel Scheme.

3.3 External Parking Provision

3.3.1 The area around Viadux benefits from a considerable amount of parking available nearby. As described above there will be 3 x on-street bays on Great Bridgewater Street plus 2 x disabled parking bays

3.3.2 Then there is a significant number of public car parks in the vicinity of the Site, many of which are within a 10-minute walk from the Site. A summary of the most significant parking areas in the vicinity of the Site is provided in **Table 3.1** below.

Table 3.1: Significant Car Parks within 10-minutes of Site

Car Park / Parking Area	Number of Spaces	Walk from Site (mins)
NCP, Manchester Central	643	2mins to the north
NCP, Great Northern Warehouse	527	4mins to the north
NCP, Bridgewater Hall	280	4miins to the south
NCP, Oxford Street	431	6mins to the east
Q-Park, First Street	700	7mins to the south
APCOA, Hulme Street	92	8mins to the south
Q-Park, Piazza (St James' Street)	225	9mins to the east
NCP, Palace (Whitworth Street)	411	10 mins to the east
Total Spaces within 10 minutes	**3,309**	

3.3.3 As can be seen in **Table 3.1**, there are over 3300 parking spaces available within a 10-minute walking radius of the Site and these spaces can also be secured on a contract basis as well as occasional day to day parking. In addition to these car parks, there are a number of smaller car parking areas as well as private car parks offering contract parking. Overall, drivers have an extensive number and variety of parking spaces available should they need to.

Existing Disabled Parking Provision

3.3.4 Disabled persons with a Blue Badge can park for free in the 2 x disabled spaces and the 3 x on-street parking spaces on Great Bridgewater Street.

3.3.5 The adjacent car parks at Great Northern Warehouse NCP provides 25 Disabled Parking Bays and at Manchester Central NCP there are 15 Disabled Parking Bays available. Therefore, disabled drivers are able to access good levels of parking provision close to the site along routes that are step free.

4.0 Traffic Flows and Highway Operation

4.1 Surveyed Traffic Flows

4.1.1 Traffic flows in the area and queue lengths were surveyed in 2022. These flows are presented in **Figure 4.1** for the AM peak and **Figure 4.2** for the PM peak overleaf. The Surveys were undertaken on the day of the main setup for the BIBA Insurance conference one of the larger conferences of the year.

4.1.2 In addition to this, the traffic data from the Great Northern Warehouse (GNW) application which was surveyed in March 2022 has also been reviewed and this showed similar comparable flows. The GNW application data includes the Deansgate / Great Bridgewater Street junction, although the peak periods on the network are slightly later than was actually surveyed for the GNW application and this is noted on the diagrams. This data also includes queue data for the junctions of Great Bridgewater Street with Deansgate/Watson Street and Albion Street.

4.1.3 On top of this data, we have video surveys showing where queues build up.

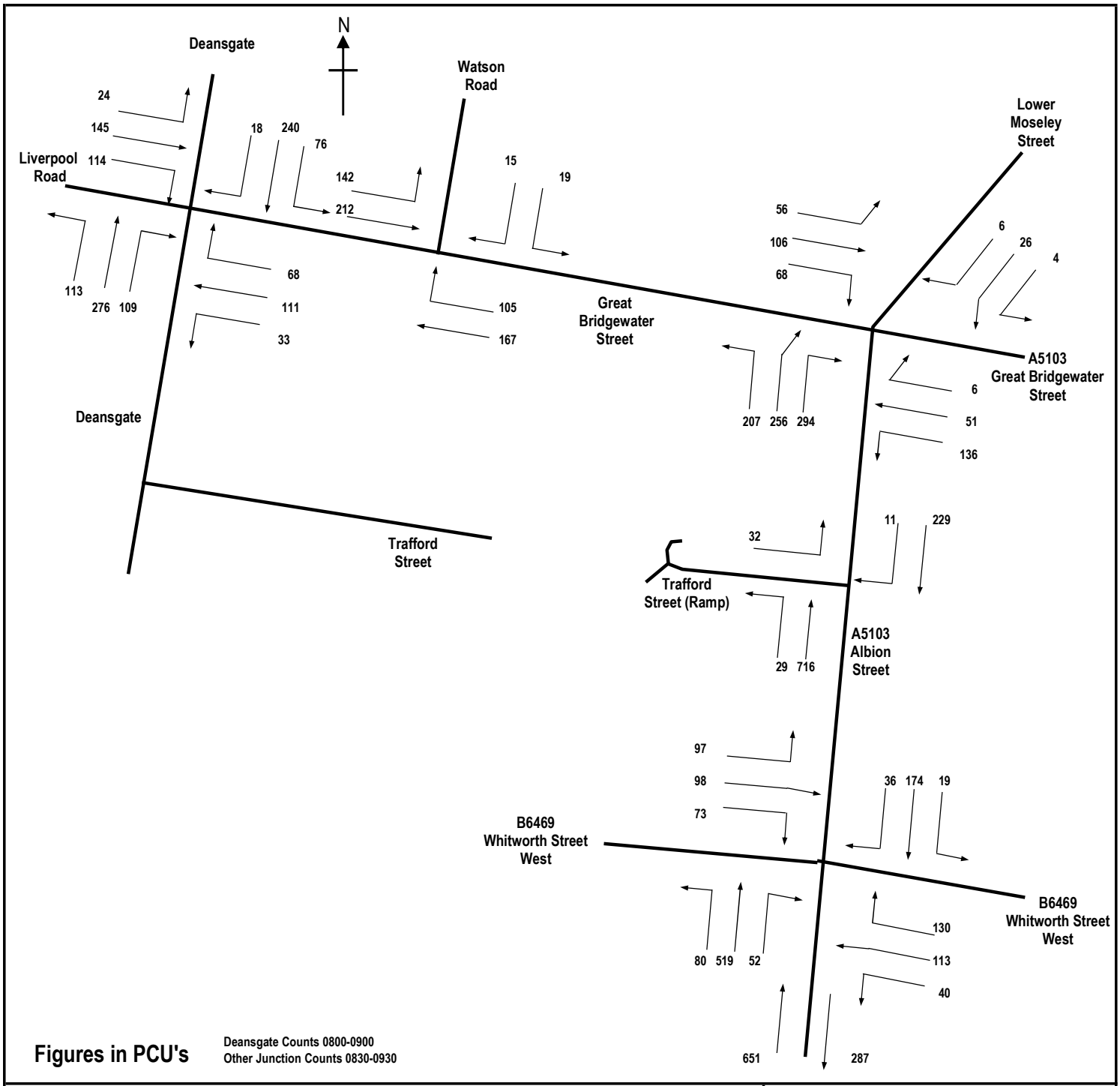
Manchester Central Operations

4.1.4 A key factor in the operation of the local highway network is the vehicles arriving to set up and break down events at Manchester Central. The general approach for vehicles looking to set up a large event will be for the larger articulated HGVs to arrive at the start of the week, possibly on Sunday. There is then a period of larger Rigid HGVs arriving say on a Monday and then a large number of vans and rigid HGVs arriving say on a Tuesday morning depending on the event start date.

4.1.5 It can be seen in **Figures 4.1** and **4.2** that the numbers of vehicles accessing Trafford Street equate to around 40 arrivals between 0800-0900 and 32 departures in that period. In the PM Peak between 1700-1800 there are 27 arrivals are and 33 departures.

4.1.6 Historically this volume of smaller vehicles would be held at the gate to the Manchester Central service yard and block down the ramp and onto Albion Street. That level of queueing on build up has tended to reduce there are now two holding areas at Castlefield Quay and the Salvation Army site off Wilmott Street to the south.

4.1.7 One of the busiest periods for Manchester Central logistics is the break down at the end of an event such as on a Thursday evening. Here there are larger volumes of traffic looking to leave the site and get away.

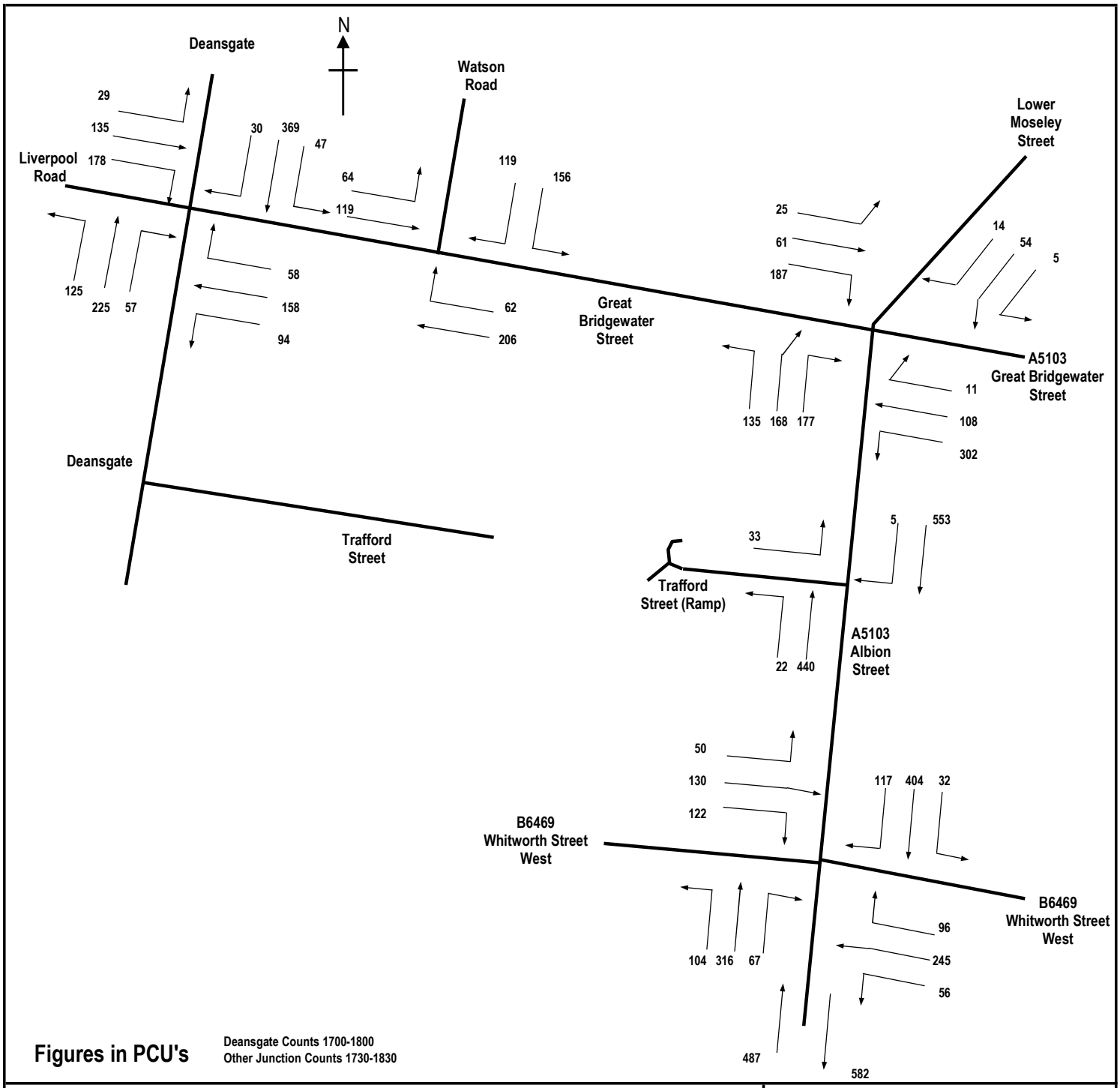


Figures in PCU's

Deansgate Counts 0800-0900
Other Junction Counts 0830-0930

DRAWING TITLE: Surveyed Traffic Flows Weekday AM Peak			
JOB TITLE: Viadux			
DRAWN BY: GD	DATE: MAY 2022	SCALE: NTS	REF: FIGURE 4.1

SLR



Figures in PCU's

Deansgate Counts 1700-1800
Other Junction Counts 1730-1830

DRAWING TITLE: Surveyed Traffic Flows Weekday PM Peak			
JOB TITLE: Viadux			
DRAWN BY: GD	DATE: MAY 2022	SCALE: NTS	REF: FIGURE 4.2

SLR

4.1.8 Manchester Central intend to implement the Voyage Control booking system which requires drivers to book a time slot and helps communicate about issues in advance which should also help regulate the arrivals of vehicles thereby reducing the potential for queuing on the highway. In addition, it should also keep drivers and the Manchester Central team more informed should there be any issues. It is expected that on exit after an event the drivers will want to get away as quickly as possible so there is less scope to regulate departures, but it is possible to inform drivers of potential delays or issues on the local highway.

4.1.9 The traffic surveys do show a small number of right turners into Trafford Street from the north. This traffic is thought to be from Manchester Central traffic approaching from the west and choosing to arrive via Liverpool Road and then via Great Bridgewater Street. In this case the approach to stay on Mancunian Way and approach via Medlock Street is considered similar in journey time and quality of approach.

Local Highway Operation

4.1.10 The local highway often experiences congestion and delays, particularly during the morning peak hours. Traffic primarily builds up on the Medlock Street approach to Whitworth Street, which helps to slow and regulate the flow before it reaches Albion Street. This regulation keeps traffic moving relatively smoothly on Albion Street and Great Bridgewater Street, with minimal queues and delays on those sections.

4.1.11 In the PM peak the junction of Albion Street with Whitworth Street has very little green time for the southbound approach which leads to queues blocking back through Albion Street and onto Great Bridgewater Street leading to long queues and only a few vehicles are able to join Albion Street every cycle.

4.1.12 The Great Bridgewater Street junction with Deansgate also suffers from a lack of capacity leading to queues blocking back through the Watson Street and towards Albion Street. We have looked at the operation of the Left Slip lane from Trafford Street during these periods. In general, these Slip Road vehicles can merge onto Albion Street relatively easily as there is little queuing as traffic turns left. However immediately as vehicles turn left they can get delayed at the Great Bridgewater Street queues blocking back from Deansgate, particularly in the PM peak and these delays can take several cycles for vehicles to pass along up to Deansgate.

4.1.13 We have considered numerous different options for traffic using Albion Street and in particular, whether the Manchester Central traffic can exit more easily from the area and specifically whether they can turn right and head south. This is described more fully in Section 7.

4.2 Daily Traffic Flows for ES

4.2.1 As will be described later the environmental implications of traffic flows is assessed based on two-way daily flows by link. To derive the Daily Flows, we used a 2022 Daily Survey published by DfT which provides the peak hour and daily flows and therefore gives a factor to growth the peak hour data to a daily flow. This information is given in **Table 4.1** for the links around the site.

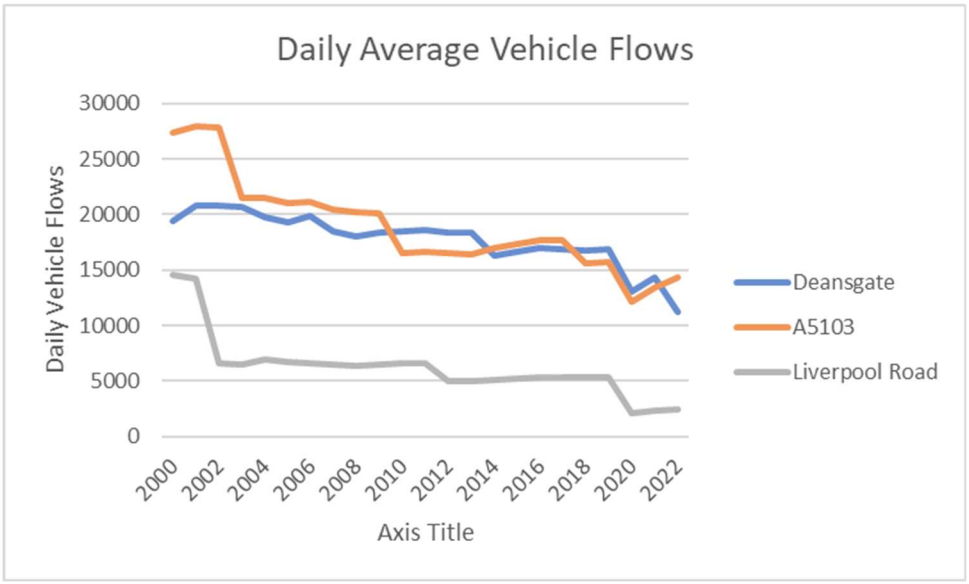
Table 4.1 Daily Traffic Flows	Two-Way Surveyed Flows					
	AM		PM		AADT 2022	
Road Link	**Vehicles**	**HGVs**	**Vehicles**	**HGVs**	**Vehicles**	**HGVs**
Great Bridgewater Street (West of Albion St)	510	25	539	15	6092	596
Albion Street	1020	66	1047	37	12004	1535
Deansgate	935	34	1129	5	11986	581
Great Bridgewater Street (East of Albion St)	469	28	689	4	6725	477
Trafford Street	65	12	52	15	377	402

AADT (24 hr)	Vehicles	HGVs
Conversion Factor	5.81	14.90

4.3 Future Traffic Forecasts

4.3.1 Traffic flows in this area have been falling significantly for over 20 years. **Figure 4.3** shows the changing flows on Deansgate, Medlock Street and Liverpool Road. As will be described later, this background of falling traffic is expected to continue with further measures in the City Centre Transport Strategy to limit traffic flows accessing the city centre.

Figure 4.3 Traffic Flow Reductions in the Area over Time



4.3.2 Therefore, the 2022 surveyed flows described in **Figure 4.1** and **Figure 4.2** will be used as the future baseline flows.

4.4 Committed Developments

4.4.1 Given the nature of its city centre location, the Site is located in close proximity to a number of developments which are either currently under construction or have been granted planning permission. We have reviewed the trip forecasts for these sites and their planning application reference numbers are provided in **Appendix B**.

4.4.2 We have reviewed the traffic forecasts made for these committed developments by reviewing the Transport Statements / Assessments. If a TA /TS forecast trips that passed through the highway network study area local to Viadux then it would be included. From these figures it is evident that the committed developments listed will not generate additional traffic on the highway network. This reflects that most developments in the city centre offer limited parking provision and are predominantly car free.

4.4.3 The future Baseline traffic forecasts do need to include the development traffic from the residential tower of Viadux Phase 1. This development does not have any dedicated parking provision, but service vehicles are expected over the course of the day. Here the larger HGV movements such as Refuse Collections will occur from the Viaduct Level shared with Manchester Central Service Yard. Smaller deliveries are expected from the Loading Bays on Great Bridgewater Street or from Trafford Street (West) accessed from Deansgate.

4.4.4 It was forecast there would be just 1 Rigid HGV accessing Viadux Plot1 in the AM peak and PM peak hour periods. The LGVs accessing Viadux Phase 1 equate to 4 vehicles in the AM peak and 1 vehicle in the PM peak and these may be spread between the loading bays on Great Bridgewater Street and to the rear on Trafford Street. These modest flows have been included in the assessment modelling undertaken to test highway operation with the new layout.

4.4.5 Finally, it is noted that the Active Travel Scheme will create a Bus/Taxi/Cycle only lane on Whitworth Street (W) westbound and that does result in some of the right turning traffic on Albion Street to swap to an ahead movement.

5.0 Accident Data

5.1.1 A review of highway safety in the vicinity of the Site has been conducted using accident data derived from an online mapping resource provided by Greater Manchester Transportation Unit (GMTU). An excerpt of this data from the last 5 years for the area surrounding the Site is provided in **Figure 5.1** overleaf, with the Site location indicated by the red star.

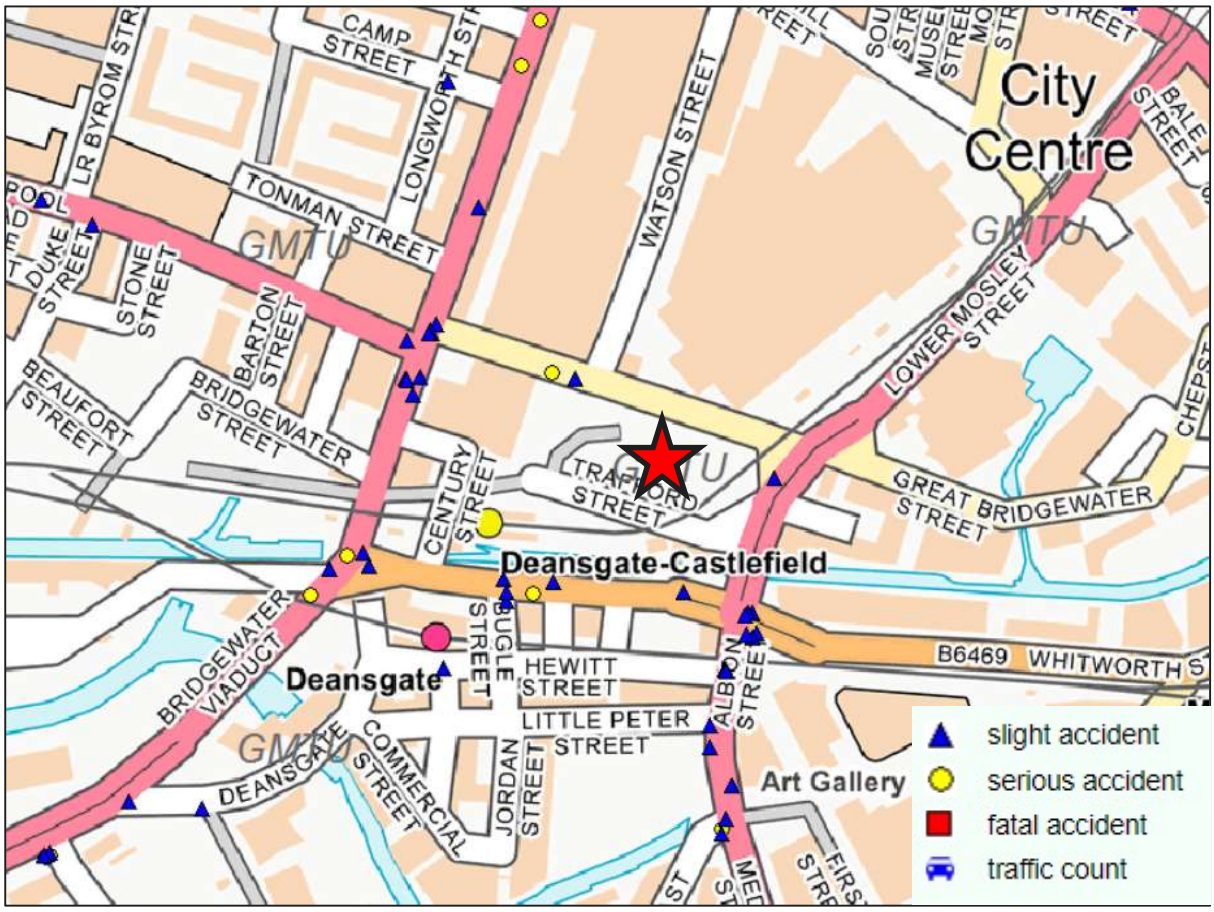
5.1.2 There have been a number of accidents on the highway network in the vicinity of the Site. However, the majority of these were recorded as slight and no fatal accidents have occurred in the surrounding area during the last 5 years.

5.1.3 There has only been one recorded accident at or on the approach to the Great Bridgewater Street / Albion Street junction to the immediate east of the Site. There have been small clusters of accidents at or on the approach to the Deansgate/Great Bridgewater Street and Albion Street / Whitworth Street West junctions, however across the 5-year period this still only equates to an average of less than 2 accidents at each of these junctions a year.

5.1.4 Given the nature of the surrounding highway network and the level of traffic and vehicular activity in the area, the overall accident rate is considered to be low. This is considered to be a reflection of the low traffic speed nature of the local highway and apart from the lack of pedestrian crossing facilities at the Albion Street signals with Great Bridgewater Street the local highway infrastructure is compliant with general highway design standards.

5.1.5 Therefore, apart from the lack of crossing facilities at the Albion Street signals, there are no other specific safety issues that need to be addressed as part of the development proposals.

Figure 5.1: Accident Data in Vicinity of Site



6.0 Accessibility by Sustainable Modes of Travel

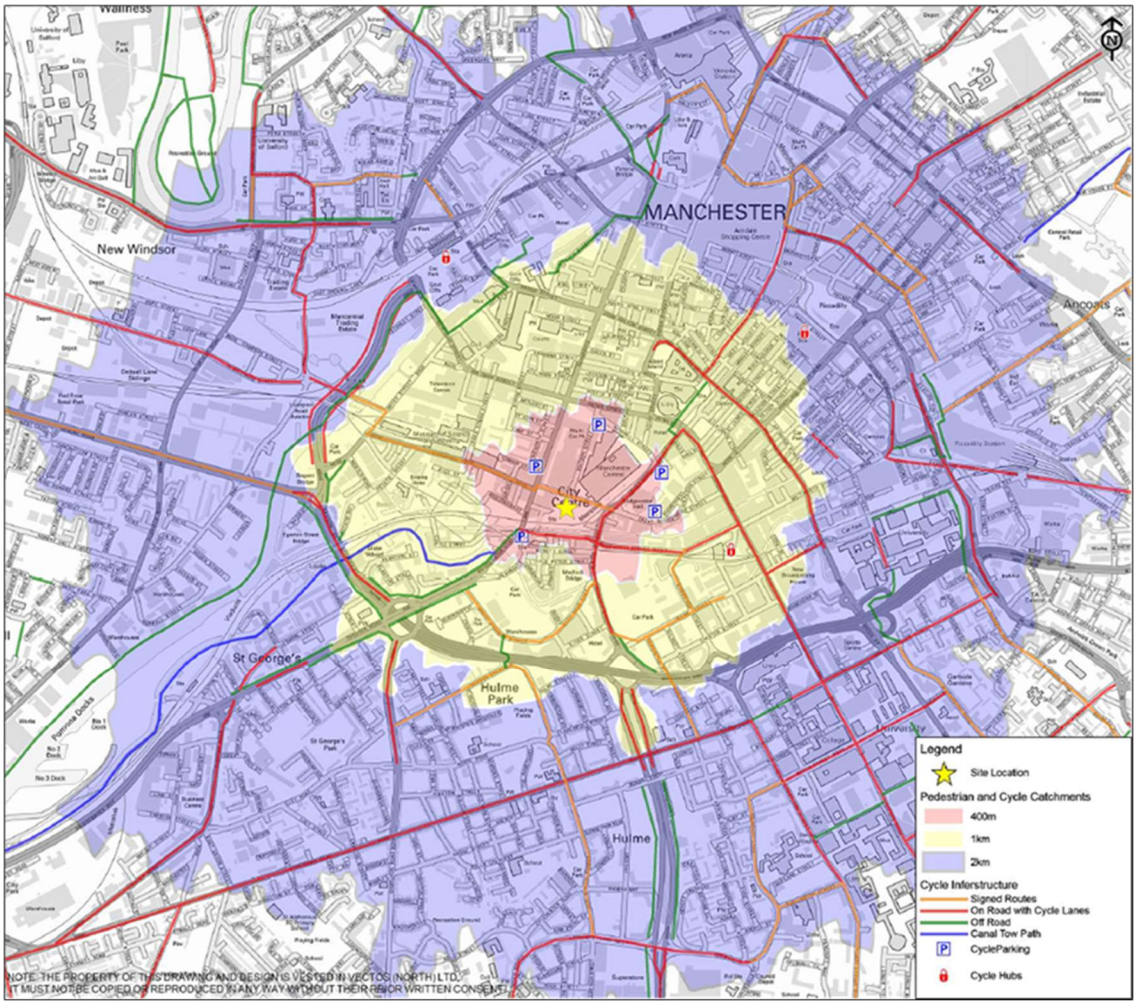
6.1 Walking

6.1.1 The Chartered Institution of Highways and Transportation (CIHT) document entitled 'Providing for Journeys on Foot' provides guidance on what are considered to be acceptable walking distances. The document states that the acceptable maximum walking distance for commuting trips is 2 kilometres which roughly equates to a 25-minute walk, while an 800 metres walking distance is stated as being the preferred maximum distance for shopping trips.

6.1.2 An analysis of the pedestrian routes in the area has been completed to identify areas situated within a 1km and 2km catchment and this is presented in **Figure 6.1**. This plan shows that a 2km walk covers the entirety of Manchester city centre providing access to extensive retail, employment and leisure opportunities.

6.1.3 The catchment also extends into parts of some nearby residential areas including Hulme and Ordsall. Furthermore, two rail stations and two Metrolink stations are accessible within an 1km walk of the site for those wishing to travel further distances.

Figure 6.1: Walking Catchment Plan

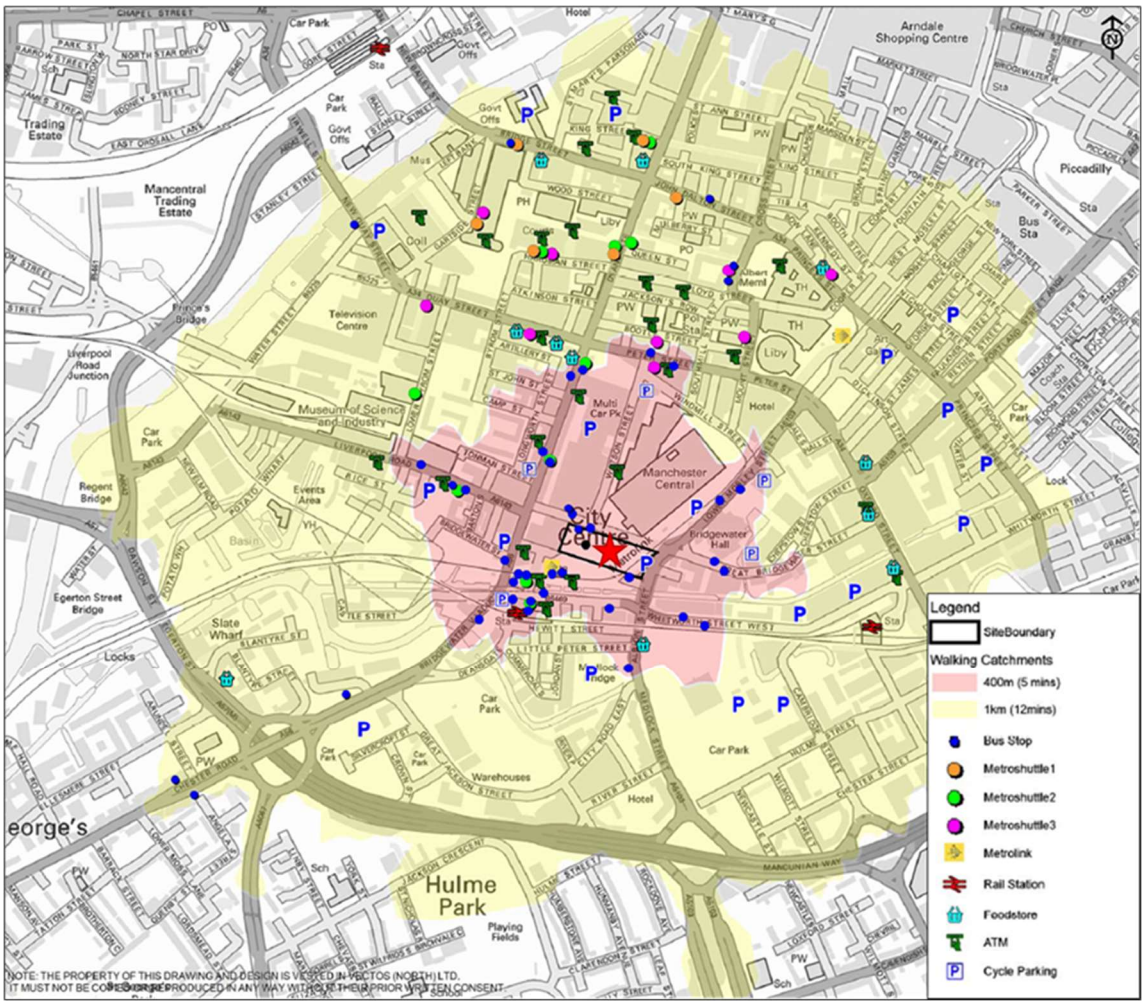


6.1.4 Given the city centre location of the proposals, pedestrian accessibility to the surrounding area is very good. Existing pedestrian links are present around the site which lead to the primary routes towards the centre of Manchester along Lower Mosley Street, Deansgate and Watson Street. All footways in the surrounding area are lit and there are appropriate crossing facilities across all the main highways.

6.1.5 Many local amenities are situated within the immediate vicinity of the site, including a Sainsbury's convenience store on First Street, a number of ATM facilities and a wealth of cafes and restaurants alongside employment education and leisure amenities. This allows occupiers and visitors to the development to access a wide range of services and amenities in the immediate locality.

6.1.6 The range of amenities located within a 5 minute (400m) and 12 minute (1km) walk of the site is given in **Figure 6.2**. Within a 20-minute walk, practically all of the city centre can be reached. The development site itself will have retail/leisure uses on the ground floor for use by residents and visitors.

Figure 6.2: Local Amenities within Walking Catchment Area

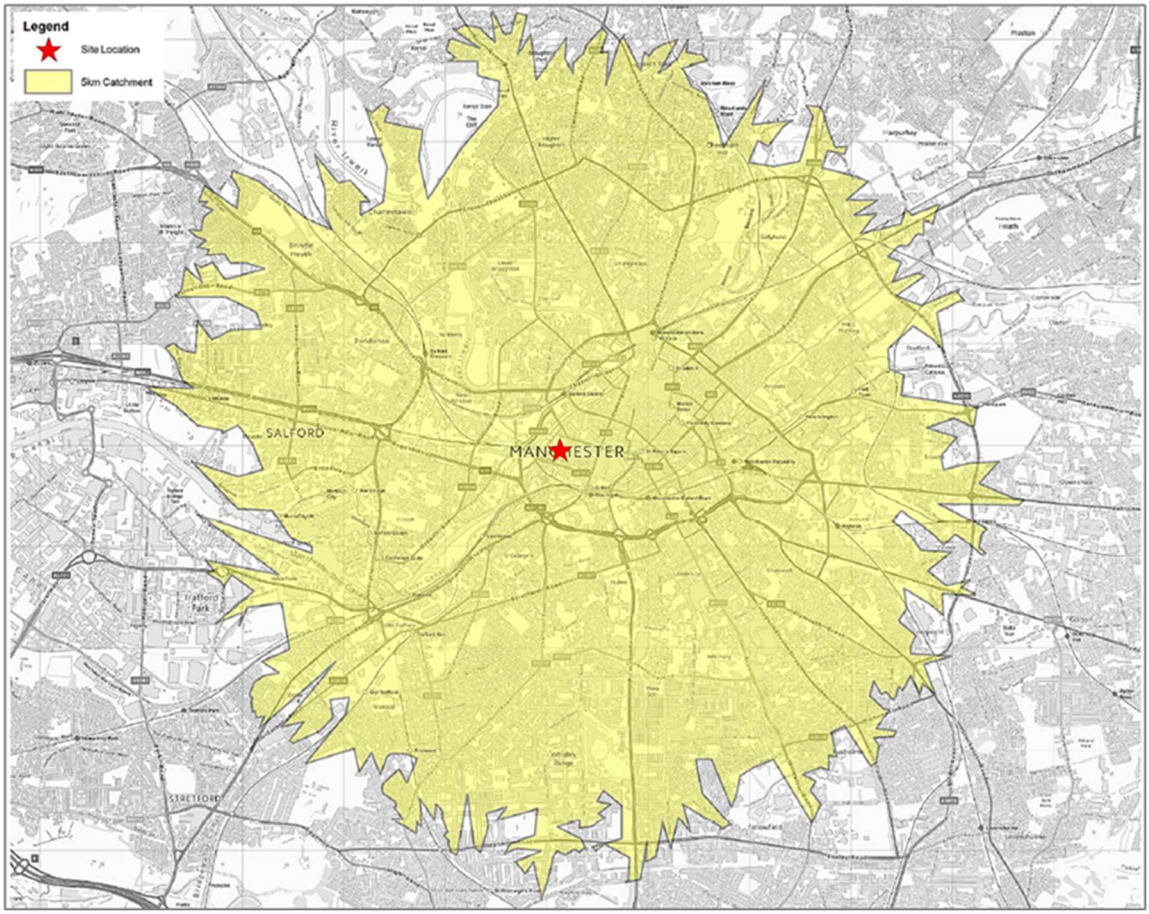


6.2 Cycling

6.2.1 Cycling is another effective mode for short trips. The Department for Transport's (DfT) Local Transport Note 1/20 Cycle Infrastructure Design notes that many utility cycle journeys are under 3 miles (5 km) although for commuters a trip distance of over 5 miles (8 km) is not uncommon.

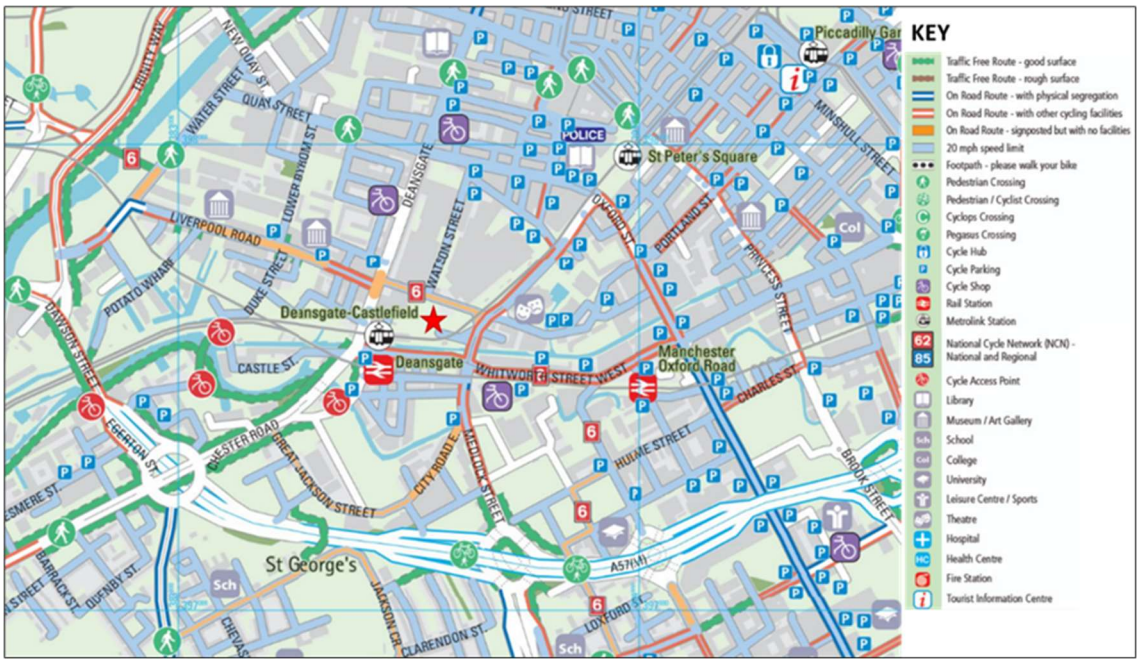
6.2.2 **Figure 6.3** illustrates that the 5-kilometre cycling catchment area encompasses the whole of Manchester city centre and much of the surrounding conurbation and would equate to a journey of around 25 minutes cycling trip.

Figure 6.3: Cycling Catchment Plan



6.2.3 **Figure 6.4** presents the local cycle routes within the vicinity of the site. It can be seen from this plan that there is an on-road cycle route along Great Bridgewater Street and Albion Street. These form part of National Cycle Route 6 which runs from London to Threlkeld in Cumbria. Locally, it connects with Chorlton, Hulme and Reddish to the south and Radcliffe and Bury to the north.

Figure 6.4: Cycling Map

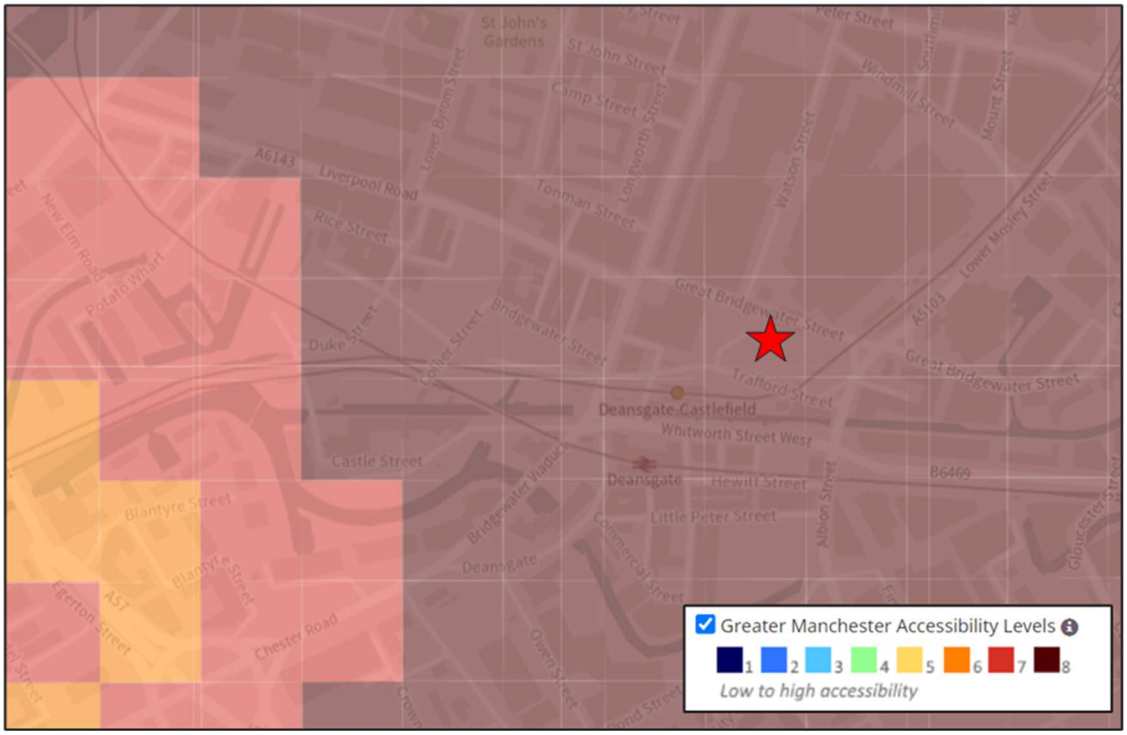


6.2.4 These excellent cycle links offer attractive cycle routes from both Salford and Trafford to the site whereupon cyclists will benefit from a good level of cycle parking provision.

6.3 Public Transport

6.3.1 Access by public transport represents a key mode choice to and from the Site. The Greater Manchester Combined Authority publish a plan of public transport accessibility levels which describe broadly how easy it is to access public transport. As show below in **Figure 6.5**, the site is located in the city centre area where the accessibility level is at its highest level for access by public transport. In practice, this means that within a short walk occupiers can access public transport and then travel across the city, the conurbation and to make onward journeys nationally.

Figure 6.5: GM Accessibility Levels

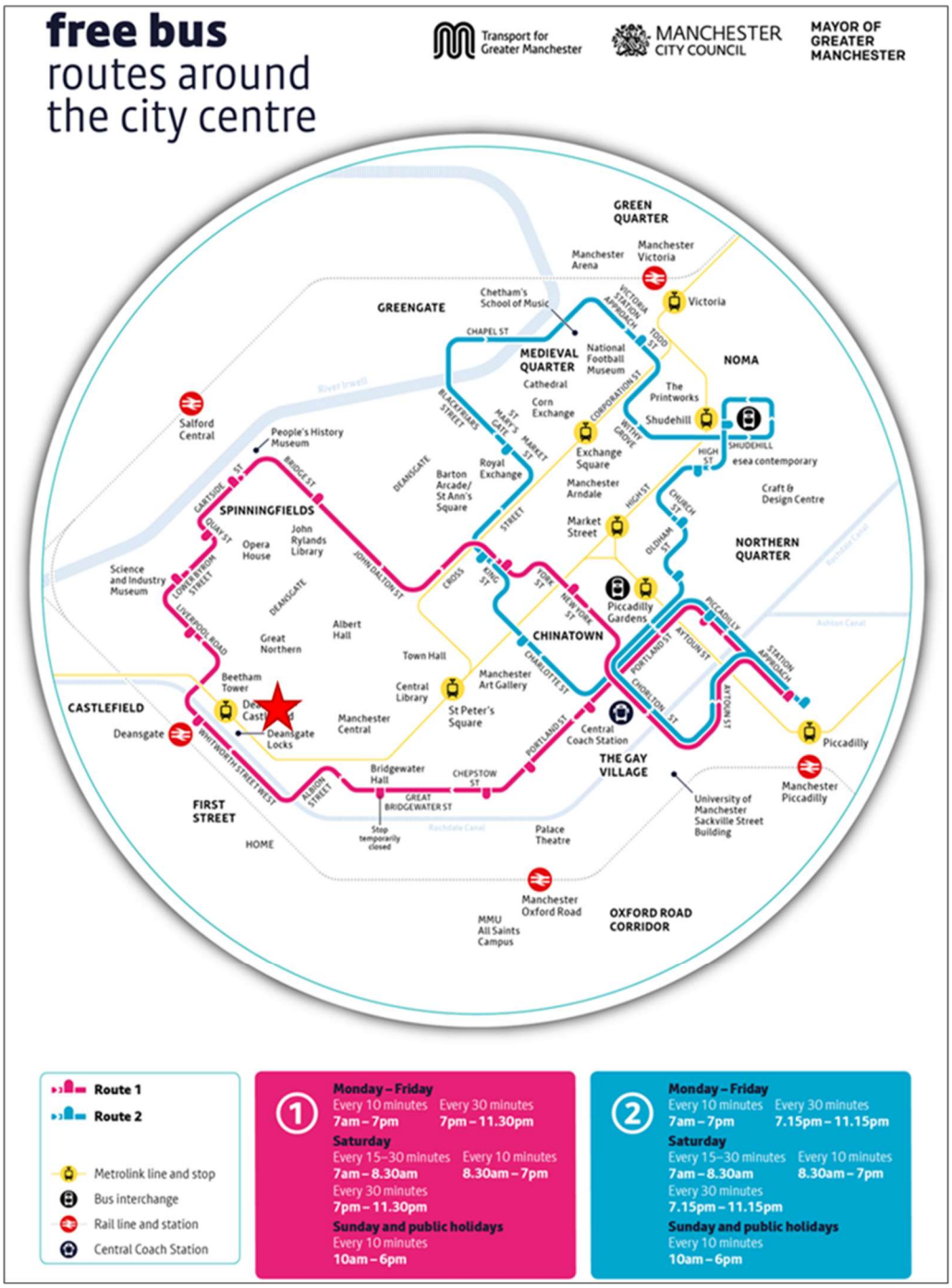


Free Bus

6.3.2 Free Bus is a free of charge bus service linking all the main destinations across Manchester City Centre. Free Bus buses are highly branded, are accessible by disabled users and run on a 10-minute daytime frequency. There are two routes, with Route 1 running from Piccadilly Station to Spinningfields and Deansgate area and Route 2 operates from Piccadilly Station to China Town and Northern Quarter.

6.3.3 The residents could access Route 1 from stops on Great Bridgewater Street and Whitworth Street. As illustrated in **Figure 6.6**, the Free Bus service covers most of the city centre and provides convenient access to major activity centres in the city. In particular, it completes the City's integrated public transport service and gives the site quick and convenient public transport connections to all mainline railway stations, principal car parks and retail centres.

Figure 6.6: Free Bus Map



Scheduled Bus Services

6.3.4 Other significant bus services are available within a short walk of the Site. The bus stops are located along Deansgate, Great Bridgewater Street and B6469 which are well within 200 meters of walking distance from the proposed site.

6.3.5 **Table 6.1** summarises the bus services accessible through the above-mentioned bus stops.

Table 6.1: Bus Services

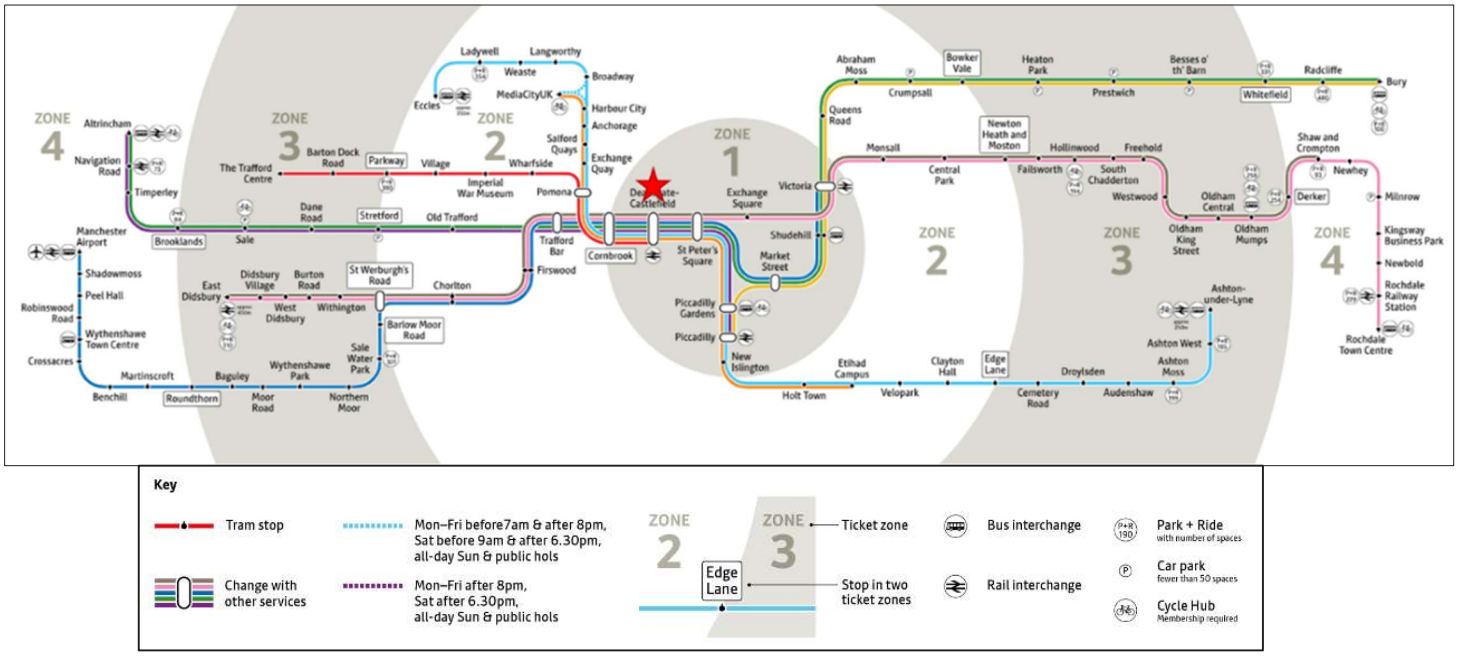
Service No.	Route	Frequency (Services/ Hr)		
		Mon - Fri	Sat	Sun
Freebus 1	Piccadilly-Castlefield-Spinningfields Circular	6	6	6
33	Shudehill - Ordsall - Weaste - Eccles - Winton – Worsley	2	2	1
255	Piccadilly Gardens - Stretford - Carrington - Partington	2	2	2
256	Piccadilly Gardens - Hulme - Stretford - Lostock – Flixton	3	3	2
X50	Piccadilly Gardens - Trafford Park - The Trafford Centre	5	5	5

6.3.6 Buses within It can therefore be concluded that the existing bus services operating in the vicinity of the Site provide the opportunity for many people travelling between the proposed development and the outlying surrounding areas of the conurbation to do so by bus. Occupiers of Viadux can therefore readily access bus services covering much of the conurbation directly or with an interchange.

Metrolink

6.3.7 The Viadux site is located adjacent to the Deansgate Castlefield tram stop. The Metrolink services currently covers much of Greater Manchester accessing key destinations and its outlying residential districts across the conurbation. The destinations and Metrolink stops are shown in **Figure 6.7** with respect to the site location highlighted in red.

Figure 6.7: Metrolink Network Map



6.3.8 The Metrolink network includes following services:

- Bury (via Manchester Victoria);
- Oldham & Rochdale (via Manchester Victoria);
- Ashton-Under-Lyne (via Manchester Piccadilly);
- East Didsbury;
- Manchester Airport (with a change at Cornbrook);
- Trafford Central
- Altrincham;
- Eccles and Media City.

6.3.9 The Metrolink will offer excellent public transport connectivity for occupants and visitors to the development.

Rail

6.3.10 The Site is conveniently located near to a number of rail stations such as Deansgate and Oxford Road Stations. Deansgate Railway Station is the closest, located immediately to the south of the development, just a five-minute walk away.

6.3.11 Major destinations accessible through this station are Manchester Airport, Blackpool North, Windermere and Southport. Manchester Piccadilly Station is accessible by a longer walk but is readily accessible by the Free Bus and access to further regional and national services is provided from this station.

6.4 Disabled Access

6.4.1 The consideration of access by disabled access into the site is described in the Design and Access Statement. We set out below the accessibility for disabled users on approach to the site using the main transport modes.

6.4.2 As described, disabled drivers conveniently can park on Great Bridgewater Street or in the adjacent NCP car parks.

6.4.3 Disabled pedestrians will in future benefit from disabled compliant crossing facilities at all the signal junctions in the local study area including tactile paving, audible tones and tactile cones for deaf and visually impaired persons.

6.4.4 For disabled users arriving by bus they benefit from all buses meeting legal accessibility standards and in the future all Bee Network buses will be fully accessible, with ramps, wheelchair bays, hearing induction loops, anti-slip flooring and audio and visual announcement systems – including announcements of next stop and final destination. Eligible disabled users can apply for a pass allowing them to travel for free after 09:30.

6.4.5 All Metrolink trams and tram stops are accessible for wheelchair users. Mobility scooter users must have a mobility scooter permit to take their scooter on a tram. All stops have a ramp, lift, or escalator, step-free access for wheelchair users and people with pushchairs, CCTV and emergency call-points plus platforms with tactile edges for visually impaired passengers. On the trams there is an area for people who use wheelchairs, space for pushchairs, seats marked for people who have trouble standing and emergency call points.

6.4.6 For disabled users, train services are becoming far more accessible, and many disabled people can use the rail network without help. If help is needed then they can book for assistance to get on and off trains.

6.4.7 Manchester hackney carriages (black cabs) are all equipped to accommodate wheelchair users with lowered floors and wheelchair ramps/lifts, as well as space to accommodate them and accompanying passengers safely. Many Private Hire taxis also have wheelchair-adapted vehicles with a ramp or a passenger lift to assist the wheelchair user getting into the vehicle.

7.0 Development Proposals

7.1 Overview

7.1.1 As described before, the Site is located in Manchester city centre. It is bounded by the Manchester Central Conference Complex, Great Bridgewater Street and Great Northern Warehouse to the north, Albion Street to the east, the Deansgate Castlefield Metrolink station and Deansgate Locks to the south, and the Beetham Tower to the west. The proposals are adjacent to Phase 1 Viadux, a 40-storey residential tower which has recently been completed.

7.1.2 The Proposed Development is within two towers; flexible retail space; residential amenities; secure cycle parking; public realm improvements and new green landscaping; and associated works to the public highway.

7.1.3 The Proposed Development will be delivered across two plots as follows:

- Plot 2a is located immediately east of the recently completed Phase 1 building, on land partially comprising the grade II listed Castlefield Viaduct. This plot will deliver a 76-storey mixed use tower comprising a hotel (Use Class C1) with associated bar and restaurant and residential units above comprising 1, 2 and 3 bed, and penthouse apartments (Use Class C3) with associated residential amenity spaces. Secure cycle spaces, serving this and the Phase 1 building, are provided at the ground floor level. At viaduct level, a redesigned service yard for the conference centre is enclosed by a new podium structure with residents' external amenity space above. A section of the Great Bridgewater Street bridge (deck) is removed to bring light into the street below.
- Plot 2b, located at the western-most section of the Site between the viaduct and Beetham Tower, consists of a 23-storey residential building accommodating affordable 1-, 2- and 3-bed apartments (Use Class C3), secure cycle parking spaces, flexible commercial units (Use Class E) opening onto the viaduct, and public realm enhancements on Great Bridgewater Street.

7.1.4 The relevant scheme plans that inform on the Transport and Access considerations are given in **Appendix C**.

7.1.5 The development will also provide highway improvements which will transform the nature of the local highway environment.

7.2 Improvements to Great Bridgwater Street

7.2.1 A key objective defined in the 2017 SRF was to enhance the pedestrian experience to Great Bridgewater Street by bringing light and activity into this dark and unwelcoming bridge underpass. This necessitated the removal of sections the bridge.

7.2.2 The alterations to the bridge were approved as part of the Phase 1 proposals and included the removal of two sections of existing cast iron ribs, making good the existing brickwork and the introduction of a new balustrade around the opening.

7.2.3 The first section of bridge removal to the Watson Street end of the Viaduct was undertaken in 2023 during the Phase 1 construction works.

7.2.4 To complement the works being undertaken for Viadux Phase 1 to remove the western section of bridge over Great Bridgwater Street the central bridge section will be removed while leaving the bridge ribs in place to open up the street to daylight while retaining the historic infrastructure as indicated in **Figure 7.1**.

Figure 7.1 Opening up the Central Section of the Gt Bridgewater Street Bridge



Proposed - Visual showing Bridge Deck Removal and Enlarged Openings

7.3 Improvements to Albion Street

7.3.1 There is then a further transformation of the signal junction of Albion Street with Great Bridgewater Street. This junction is currently a hindrance to pedestrian movement as there is no dedicated signalised pedestrian crossing facility and the width of the crossings do not allow crossing in one movement.

7.3.2 To make the junction suitable for pedestrians to cross, the junction needs to be reduced in size which in turn has benefits in reducing the lost time between the signal phases. The junction also needs to accommodate traffic with sufficient capacity and to allow the turning of the largest articulated HGVs including those serving Manchester Central.

7.3.3 The proposed highway layout is shown in **Dwg SVA-VEC-0-P2-DR-CH-0000-P06** along with key vehicle tracking movements as shown in **Dwg SVA-VEC-0-P2-SK-CH-SK07 P03.**

7.3.4 This design narrows the carriageway and removes the pedestrian islands which make the crossing much larger. This design has been presented to MCC Highways and TfGM signals officers for review and would be subject to detailed highway design as part of a Section 278 agreement. This design would ensure that this junction is consistent with the active travel improvements being delivered by MCC on Deansgate and Whitworth Street.

Left Slip Lane

7.3.5 As described, a key strategy in the design is to narrow the width of Albion Street which is currently up to 6 lanes wide at its greatest extent and this in turn enables enhanced signalised pedestrian crossing facilities. To achieve this narrowing, it is proposed to remove the left turn slip lane on Albion Street and to replace that with a standard give way junction layout at Trafford Street/Albion Street.

7.3.6 The layout and operation of the local highway network has been subject to much scrutiny and consultation with Manchester Central and their consultants who want to ensure that any changes to the highway or service yard layout do not adversely affect the accessibility of their site by event vehicles and if there are any opportunities to improve the current highway operation, which can be affected by delays on the network. A key element in those discussions was the use of the left slip lane from Trafford Street onto Albion Street.

7.3.7 The left slip was in place to force Manchester Central traffic to turn left onto Albion Street and then left again onto Great Bridgewater Street as part of a routeing strategy. This was to stop vehicles turning right out of Trafford Street which is too close to the Whitworth Street signals for traffic to straighten up. In effect right turning traffic needs the Whitworth Street signals moving around 15m to the south which dramatically changes the Whitworth Street junction and Whitworth Street itself.

7.3.8 Whilst this doesn't form part of the Proposals, if MCC are looking to enforce a banned right turn from Trafford Street this can be undertaken with a Traffic Regulation Order and signage, or if a physical barrier is considered needed then this can be provided by simply extending the current central island on Trafford Street. This island extension would prevent right turners into Trafford Street from the north. This is not a heavily used approach, and such traffic can potentially choose a better route from Mancunian Way.

Event Signal Timing Plan

7.3.9 Having a standard junction layout on Trafford Street does mean that traffic does have to give way to northbound traffic. However, each signal cycle at Whitworth Street does create gaps for such traffic to come out onto Albion Street without conflict. Manchester Central are concerned that such traffic could be delayed at this give way line and so it is proposed that vehicle detectors are installed on the ramp and close to the give way line to record the presence and passing of vehicles leaving Trafford Street. These detectors could be linked to the Whitworth Street signals so that should the Manchester Central vehicles be delayed then the Whitworth Street signals can hold back the northbound traffic and for a longer period of time thereby allowing traffic to egress.

7.3.10 There are delays for this egressing traffic on Great Bridgewater Street and this is primarily caused by lack of green time for traffic at the Deansgate signals. TfGM have been consulted and they say that they can develop an **Event Signal Timing Plan** which is based on data from large events at Manchester Central and offers extra green time for the traffic arriving at and departing large events at Manchester Central. This can respond to the Calendar of Events which is known in advance.

7.3.11 An additional benefit is that the signals in the area are being upgraded as part of the Active Travel Scheme and the Viadux signal works. These upgrades will be part of an area-wide SCOOT system, which links the signals to respond to real-time traffic demands rather than operating on a fixed-time plan.

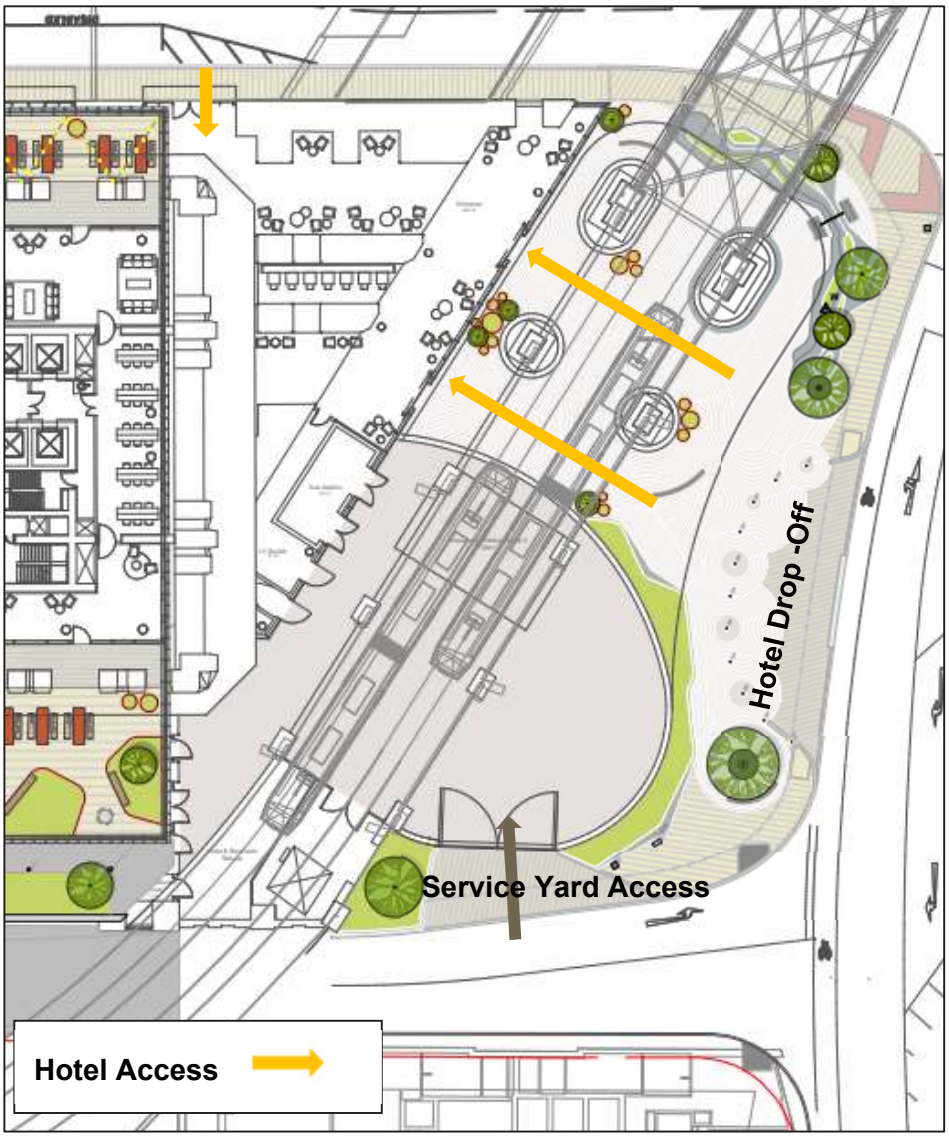
7.3.12 This operational signal strategy can help avoid excessive delays for Manchester Central Event traffic. The detail of this still needs to be developed and coordinated with the signal upgrades being delivered by TfGM as part of their Active Travel scheme and the Viadux Phase 1 signal upgrade on Watson Street.

Hotel Drop Off and Public Realm Improvements

7.3.13 The proposed Hotel will attract a taxis and drop-off traffic. Albion Street offers the optimum location for this activity and a design strategy has been developed which transforms the public realm in this area by hiding the Metrolink Bridge Structure and Service Yard behind a high quality architecturally design 'wrap' complemented by a high-quality landscaped space.

7.3.14 The proposed landscape treatment of this space is described in the Design & Access Statement and is indicated in **Figure 7.2** below.

Figure 7.2 Albion Street Ground Floor Access and Landscape Improvements



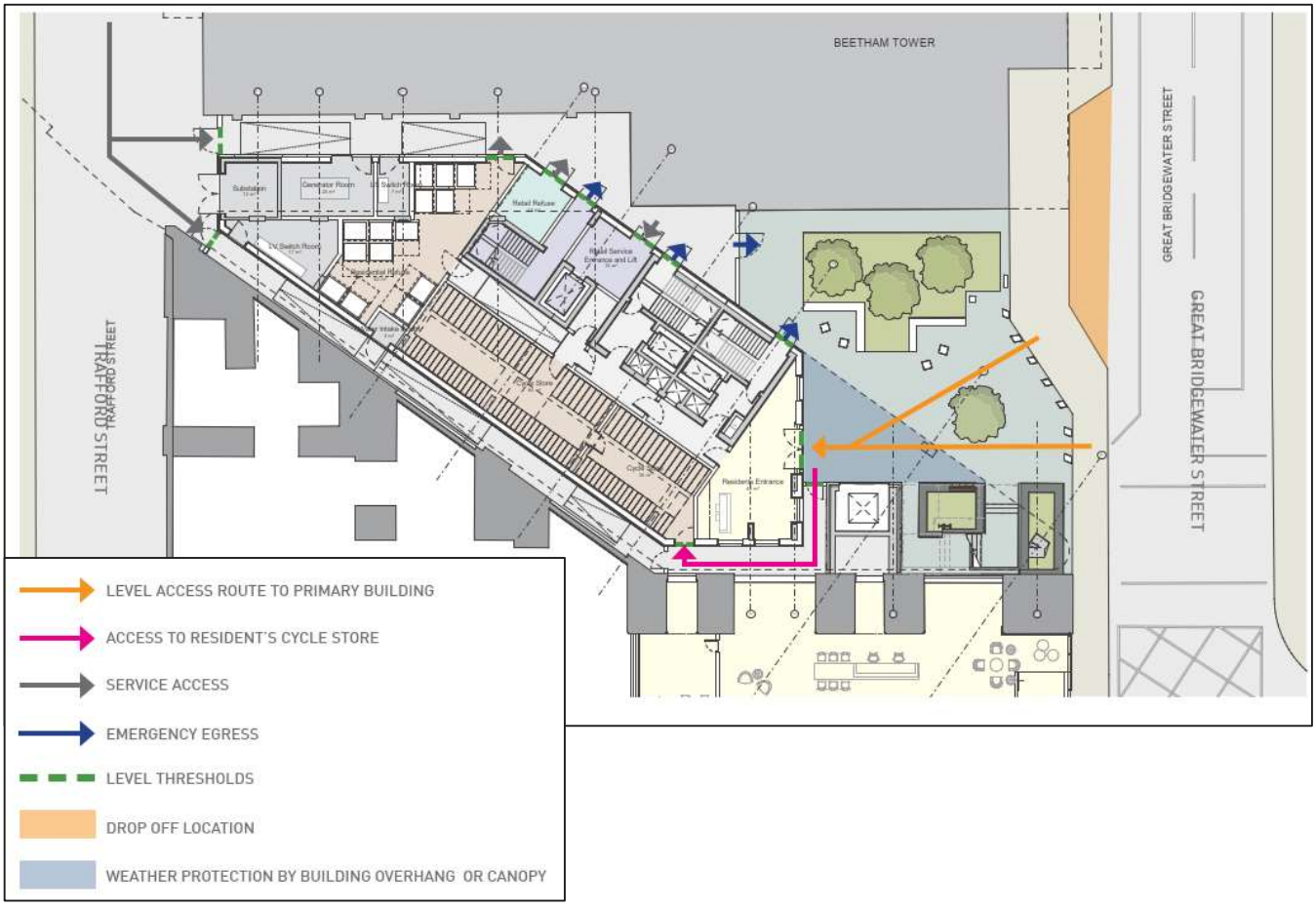
7.3.15 This Hotel Drop Off is generally expected to be lightly trafficked. It is designed to offer a quality space for the pedestrian where the vehicle is the guest. In this we propose that the design incorporates a 'Copenhagen' style crossing which should be appropriate for the levels of traffic expected.

7.3.16 The tracking of taxis and large cars at this location has been undertaken and is as shown in **Dwg SVA-VEC-0-P2-SK-CH-SK07 P03,** demonstrating that there is capacity to meet demand, noting that there is an alternative for taxis to drop off on the bays on Great Bridgewater Street if needed.

7.4 Access Strategy

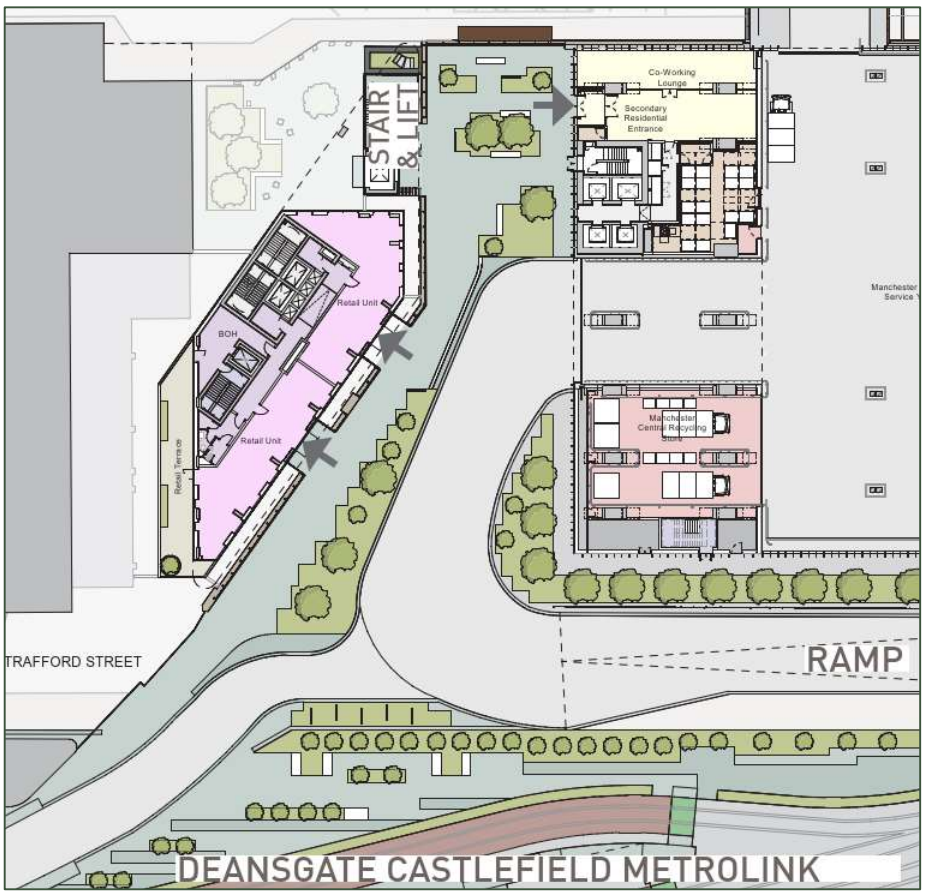
7.4.1 The Access Strategy for Plot 2b Ground Floor is described in **Figure 7.3** below. Here the main entrance fronts onto Great Bridgewater Street and here there is a cycle access route and a gated access to the service /Back of House area as shown. The main Service Access is expected from Trafford Street to the south via 2 more gated accesses.

Figure 7.3 Plot 2b Ground Floor Access



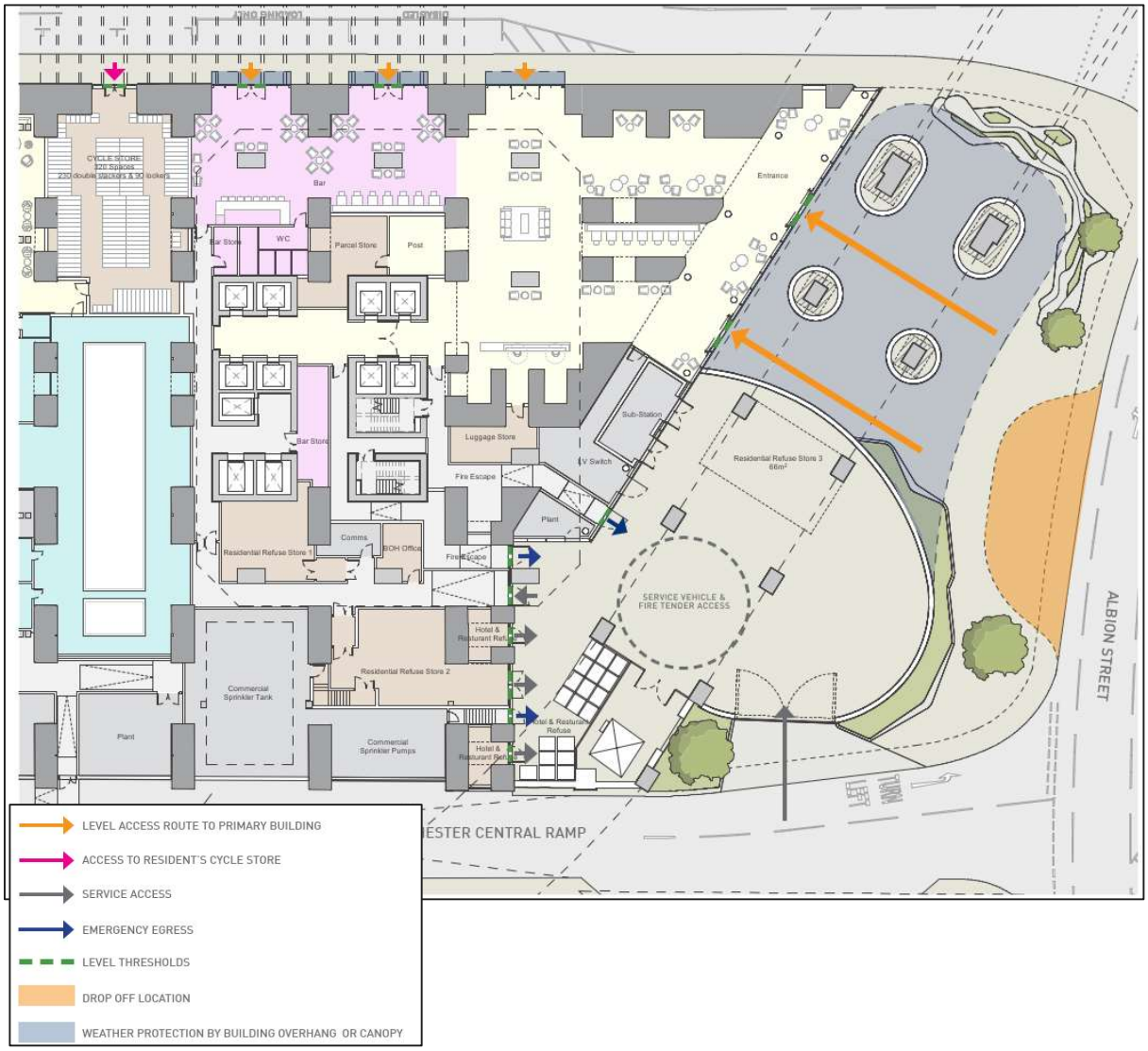
7.4.2 The Plot 2b commercial units gain access from Viaduct level off a new pedestrian link connecting the Deansgate Castlefield Tram Stop with Great Bridgwater Street as shown in **Figure 7.4**.

Figure 7.4 Plot 2b Access at Viaduct Level



7.4.3 The ground Floor Access to Plot 2a is described in **Figure 7.5**. There are direct accesses through the existing arches onto Great Bridgewater Street including a dedicated access to the cycle store. The main Hotel access will be a high-quality route under the Metrolink bridge structure from a new landscaped area on Albion Street that will also provide the drop off area.

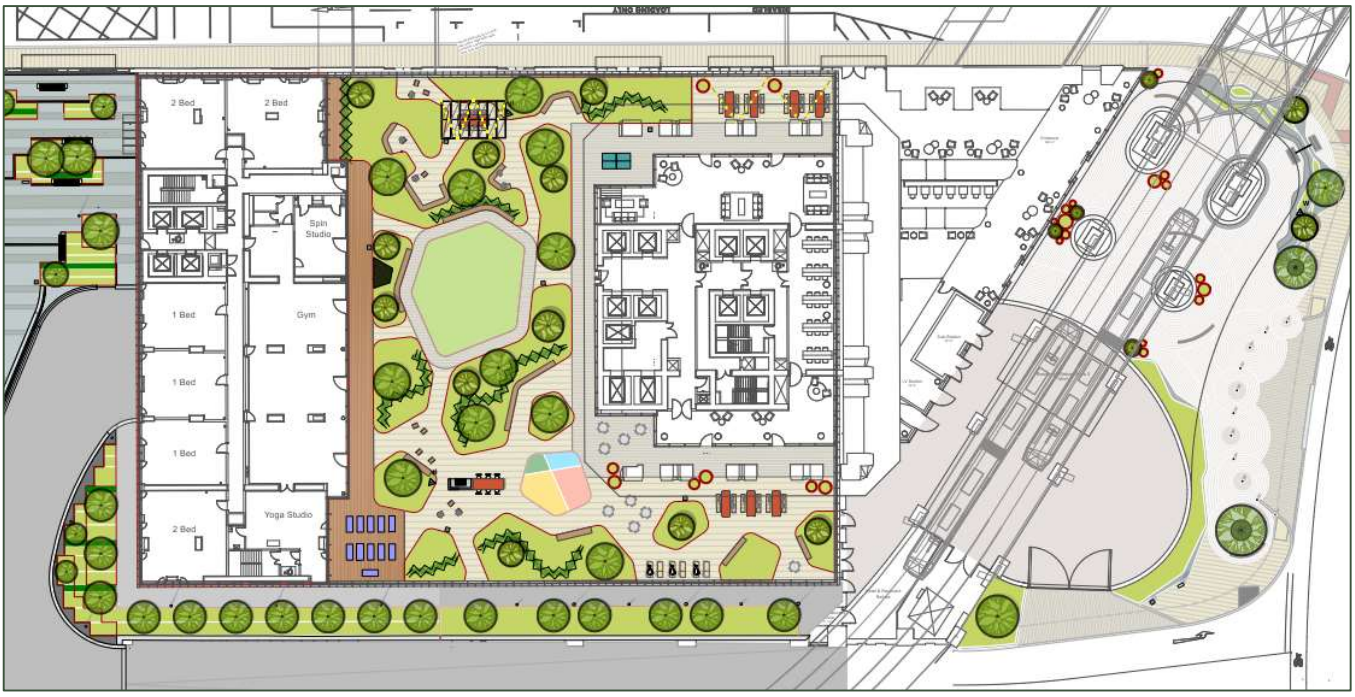
Figure 7.5 Plot 2a Ground Floor Access



7.4.4 The Service Yard is partly under the bridge structure and is accessed from Trafford Street. This service yard provides access for the back of house functions.

7.4.5 Residents of Plot 2a will benefit from access to a podium level landscaped space shared with Viadux Phase 1 that sits on top of the Manchester Central Service yard as shown in **Figure 7.6.** For clarity residents do not have access to the Manchester Central Service Yard and there is no regular service activity expected at this level for Plot 2a.

Figure 7.6 Podium Level Residents Amenity Space



7.5 Parking

Cycle Parking

7.5.1 Cycle parking for the site will be provided in a combined cycle store that is shared with Viadux Phase 1. The overall cycle parking provision for Viadux as a whole is given below:

- Plot 2a – 390 Secure Cycle Parking (Shared with Phase 1). 16 spaces allocated for Hotel use.
- Plot 2b – 133 Secure Cycle Parking in a ground floor cycle store.

7.5.2 Therefore, Plot 2b benefits from 1:1 cycle parking provision. Plot 2a includes a hotel land use which will be allocated 16 cycle parking spaces. The remaining 374 spaces are shared between the residents of Viadux Phase 1 and Plot 2a (375+452 apartments) c.45%.. This is well in excess of the likely demand for a city centre location.

7.5.3 In 2024, Urban Bubble conducted cycle parking surveys at five city-centre apartment schemes. The survey found that, on average, only 15% of the cycle storage spaces were occupied, despite the apartments within these buildings being nearly at full occupancy. The survey data is presented in **Appendix E.**

7.5.4 Therefore, the current level of provision is anticipated to significantly exceed the actual demand. This suggests that the available resources will likely surpass what is necessary to meet resident needs.

7.5.5 The allocation of cycle parking access will be managed through the Travel Plan to help allocate spaces according to demand. The Travel Plan will also assist cyclists with information and promotion of events such as Bike Doctor visits that will play a vital role in keeping people moving and act as a central hub for cycle use.

Car Parking

7.5.6 It is noted that there is no on-site car parking provided as part of the Phase 2 development due to its excellent location and accessibility characteristics. There is parking available nearby with 2 disabled parking bays and 3 standard parking bays on Great Bridgewater Street along with over 3300 parking spaces available within a 10-minute walk of the site.

7.5.7 The site will also benefit from a Car Club Bay located on Watson Street being delivered as part of Phase 1.

8.0 Service Access Strategy

8.1.1 The Servicing Strategy benefits from the following Service/loading bay locations, as follows:

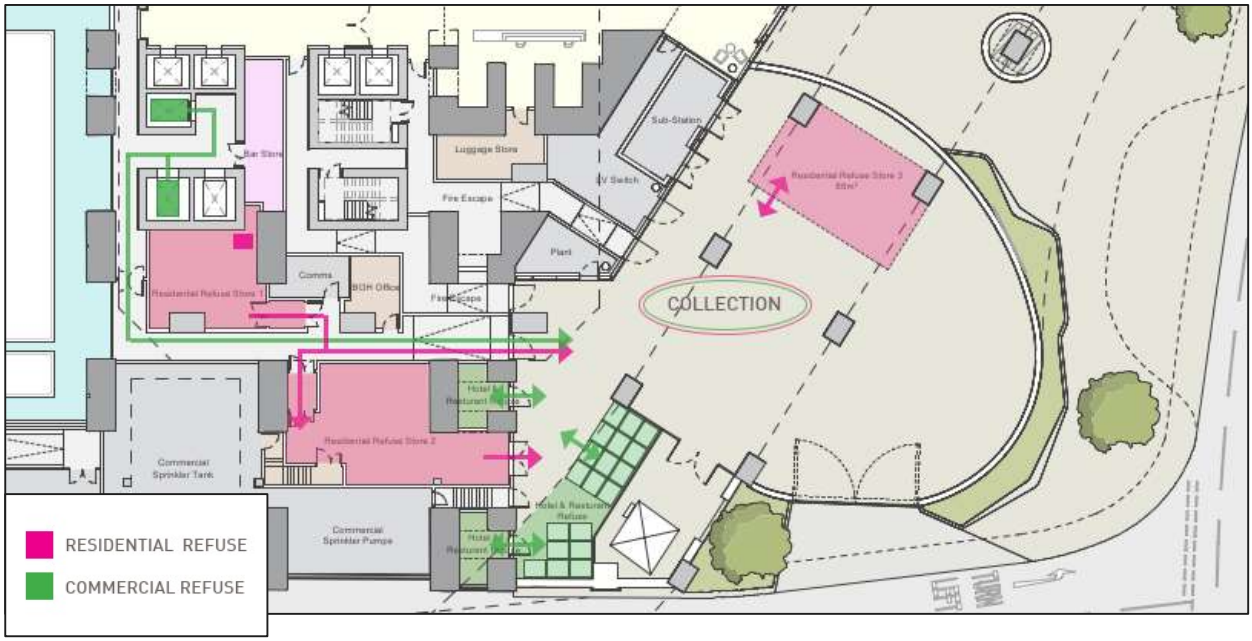
- Service Yard off Trafford Street (East) –Accessed from Albion Street;
- Great Bridgewater Street, Loading Bay for Plot 2A;
- Great Bridgwater Street, Loading Bay west of Watson Street for Plot 2B, and;
- Trafford Street (West) accessed from Deansgate, for Plot 2B.

Plot 2a

8.1.2 The main Service Yard for Plot 2a is via a vehicle gate to the eastern side of Trafford Street, at the base of the MCCC ramp. The gate leads to a secure external service area below the Metrolink Bridge, where refuse/service vehicles can pull into and serve the site. Here there is also access to the substation and also for Fire Tenders looking to access the Fire Fighting core.

8.1.3 The Service Yard Layout along with the Bin Store layout and waste transfer routes is shown in Figure 8.1.

Figure 8.1 Plot 2a Service Yard



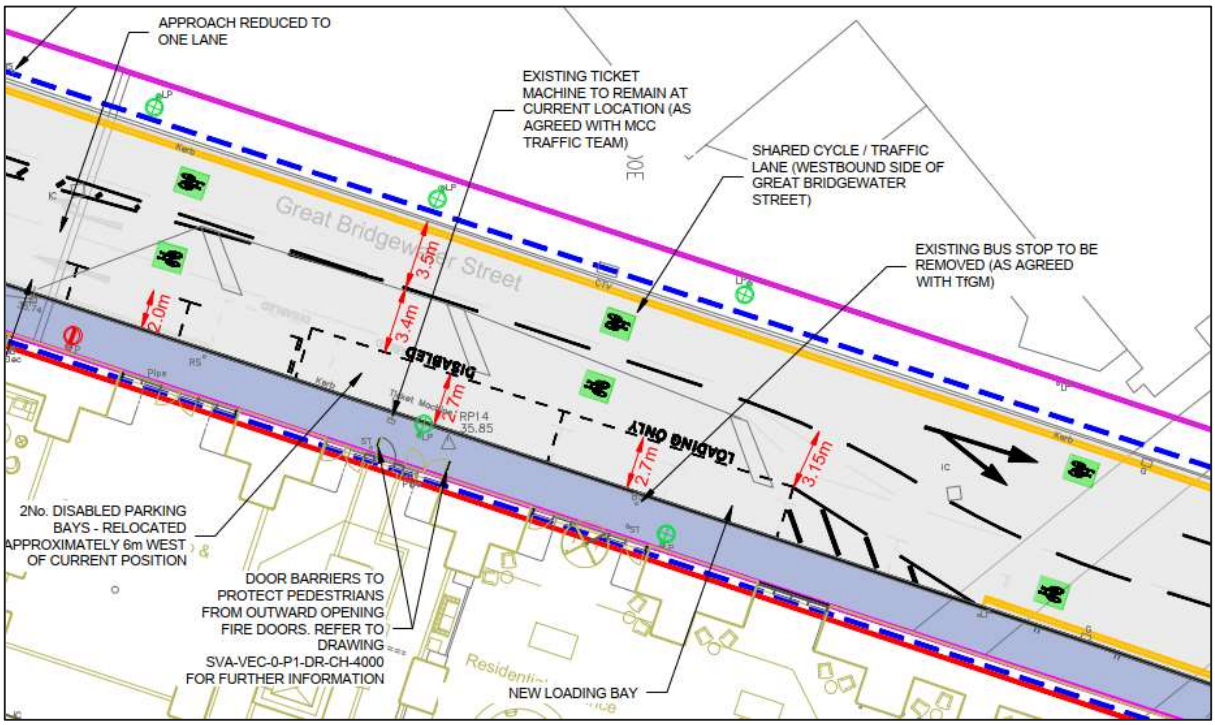
8.1.4 The tracking of service vehicles within this space has been tested and there is sufficient space for this as shown in **Figure 8.2** below.

Figure 8.2 Large Rigid Service Yard Tracking



8.1.5 Plot 2a also benefits from a Loading Bay on Great Bridgewater Street as shown in **Figure 8.3**. This Loading Bay was developed as part of the Viadux Phase 1 servicing strategy but can also support Plot 2a as a secondary facility for light goods deliveries. It is noted that the loading bay can also be used by taxis for drop-off and pick up as required.

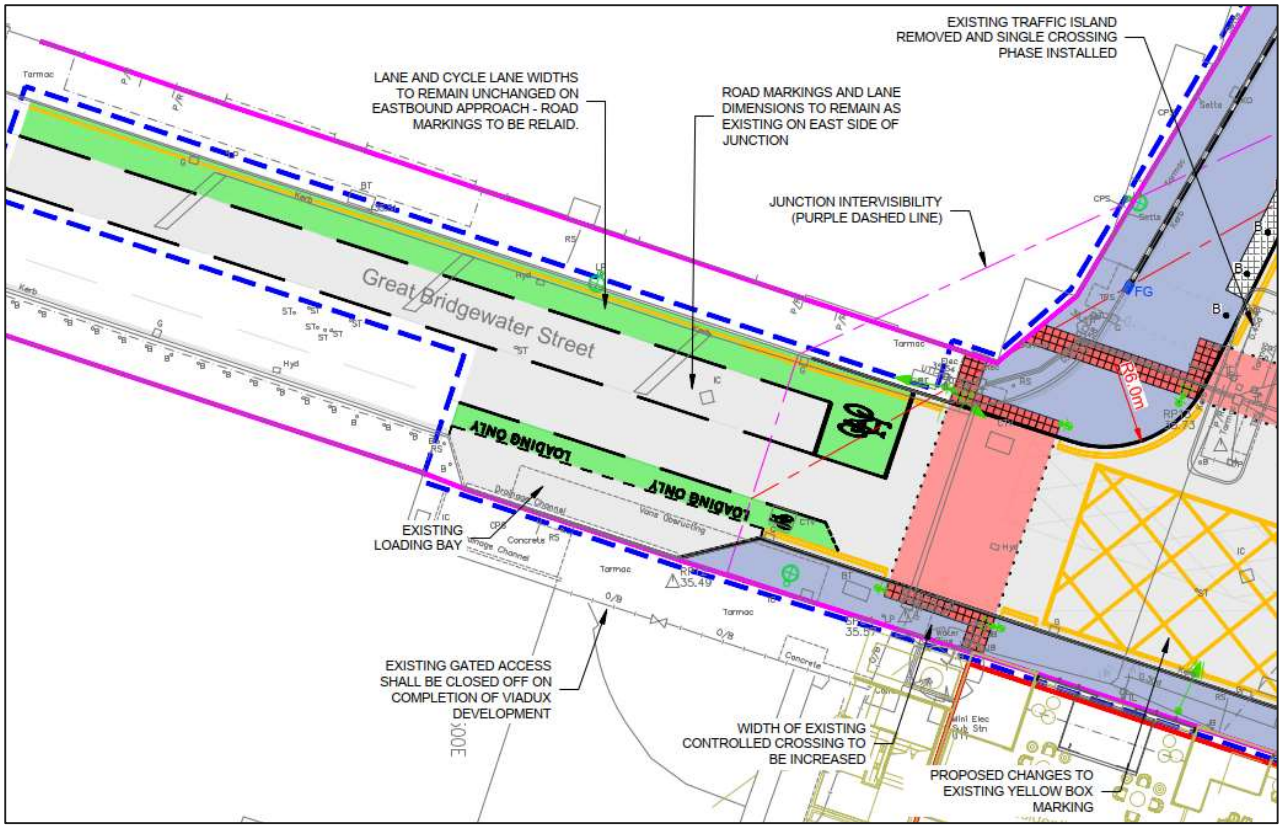
Figure 8.3 Great Bridgewater Street (E) Loading Bay



Plot 2b

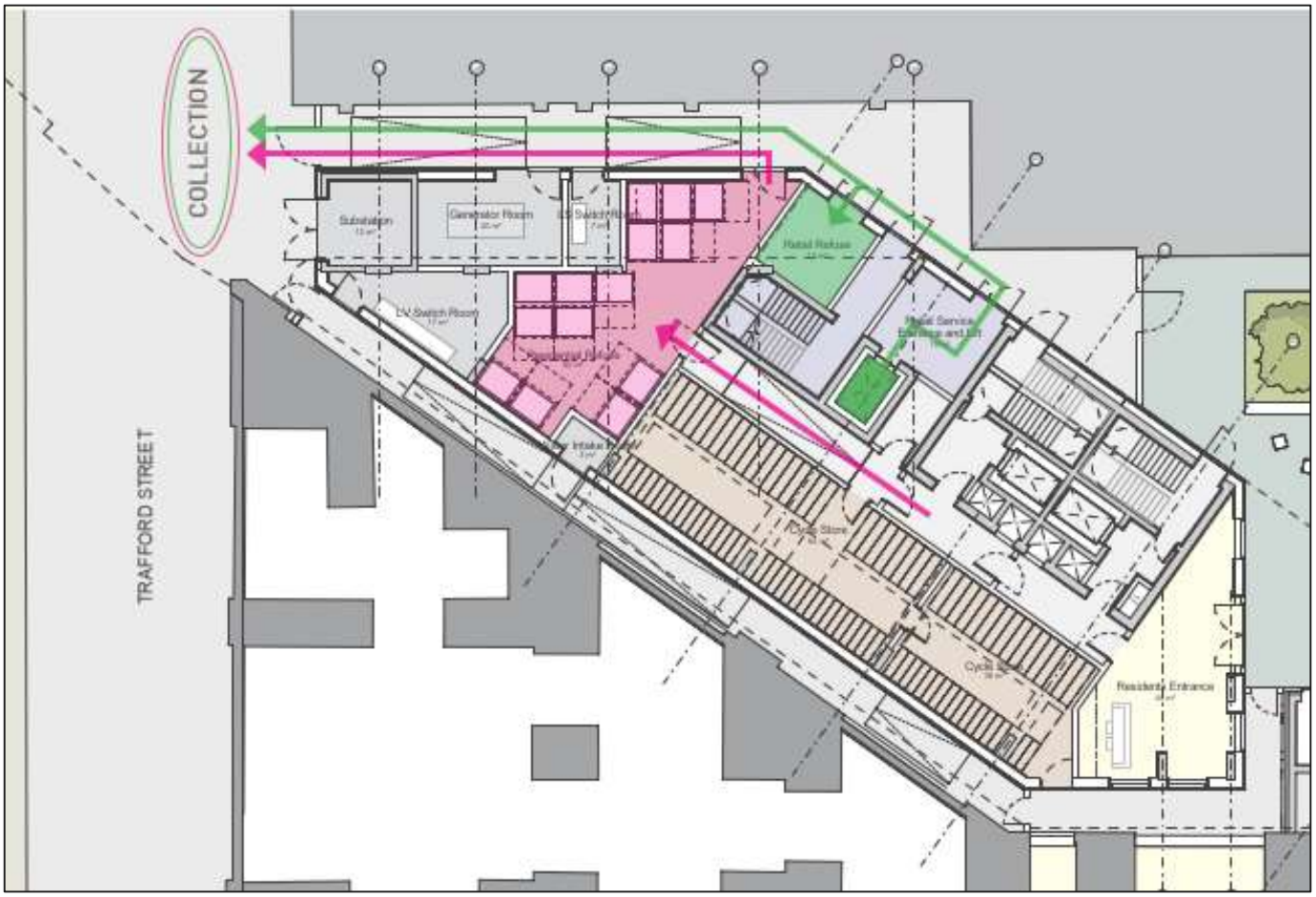
8.1.6 There is a further, existing layby on Great Bridgewater Street that can serve both Phase 1 and Plot 2b and this is shown in **Figure 8.3**. As before, the loading bay can also be used by taxis for drop-off and pick up.

Figure 8.3 Great Bridgwater Street (W) Loading Bay



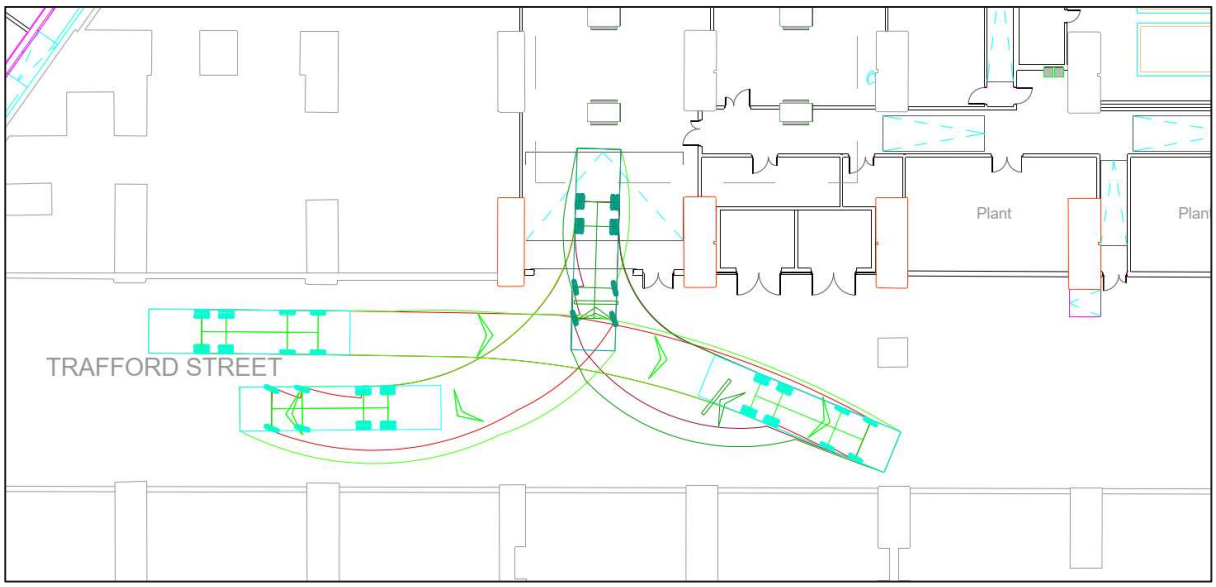
8.1.7 Trafford Street accessed from Deansgate acts as a service road for Beetham Tower, as well as the premises on Deansgate Locks. This route can provide a service access for Plot 2b and here there is space for a vehicle to pull in. The proposed space for service and refuse vehicles to pull in is shown in **Figure 8.4** along with the Waste Transfer routes from the bin stores. It is noted that this location also acts (via the goods lift) as the service route for the Viaduct Level Commercial properties.

Figure 8.4 Trafford Street (West) accessed from Deansgate



8.1.8 The available width of Trafford Street between the building facades is around 11.5m with around 13m at the Plot 2b site. This means that a large delivery/ refuse lorry can reverse into the former access space, and this manoeuvre is shown in **Figure 8.5**.

Figure 8.5 Service Vehicle Manoeuvres on Trafford Street

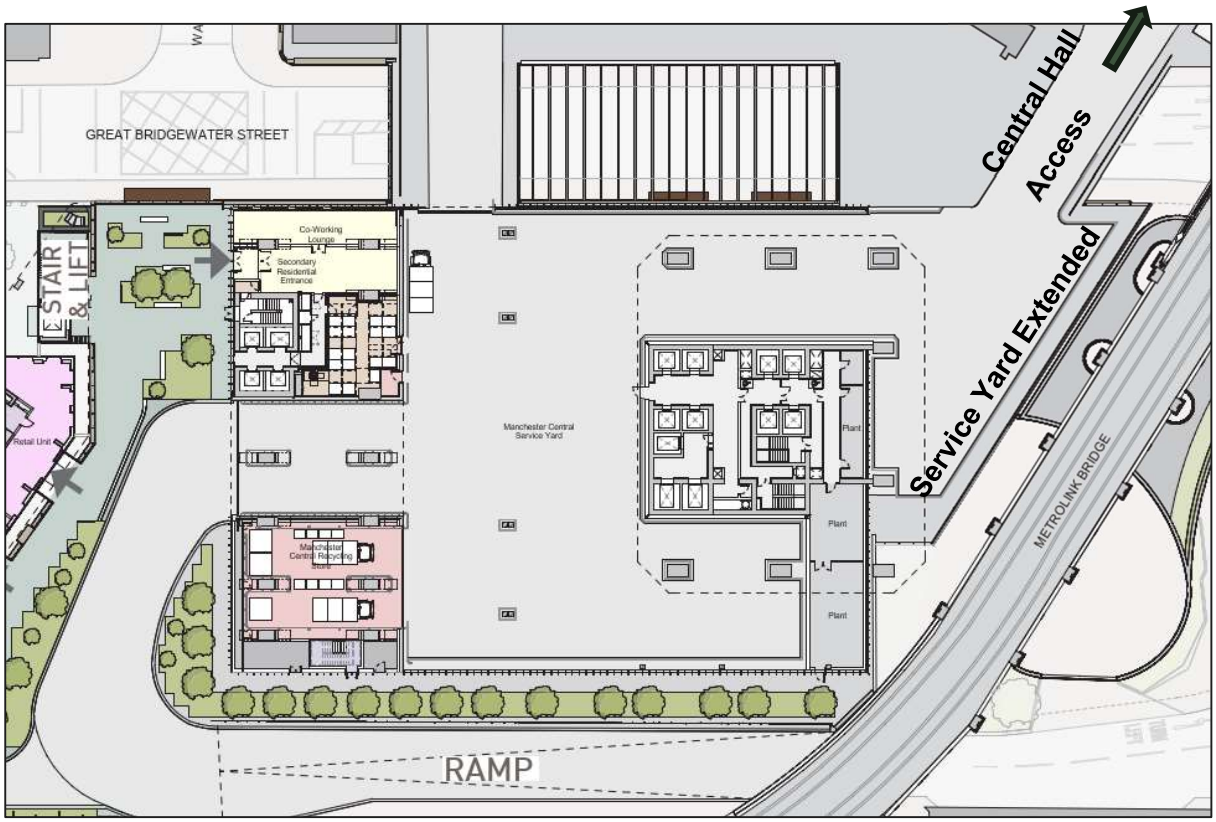


8.2 Manchester Central Service Yard

8.2.1 Manchester Central operate a world class events venue and they use the service yard at Viaduct level to manage the arrival of event vehicles that come to set up and break down events. The types of events held there are many and varied but for a typical large conference event, the vehicles arriving are characterised by large articulated HGVs arriving first to set up the main structures, followed by the Large Rigid HGVs to set up the stands, and finally the van arrivals are for each company hosting a stand at the event. In general, the arrivals occur over say 3 days prior to a large event, however it is after the conference closes that the drivers want to disassemble and exit quickly and here there is potentially the greatest demand for vehicle movements.

8.2.2 The service yard space has already been changed as part of the development of Viadux Phase 1 and will in the future will have the core areas of Viadux Plot 2a occupying space within that service yard as shown in **Figure 8.6**.

Figure 8.6 Proposed Manchester Central Service Yard



8.2.3 With this change there is the core structure and columns that comes through Viaduct Structure below. To help in the movement of vehicles the service yard has been extended as shown and this effectively forms the roof structure of parts of Plot 2a below.

8.2.4 Manchester Central have been consulted on this arrangement and their requirements for a safe and efficient access has been critical in the design process.

8.2.5 It is noted that Event vehicles need to access the eastern elevation of the Central Hall and here, larger articulated HGVs need to reverse up alongside that space. The tracking of such a vehicle to access the Central Hall is shown in **Dwg VN232690-TR100 Rev B** overleaf. If the vehicle drives straight in and then reverse out this is shown in **VN232690-TR102 Rev B**.

8.2.6 Within this space there are three large column structures which offer a route to the north which could provide a route for smaller vehicles, fork lift trucks or be kept clear for pedestrians so there is flexibility as to how this access route is managed.

8.2.7 The columns and bridge parapets within this space are all designed with safety barriers to protect both vehicles and the structures within the service yard.

8.2.8 The Service Yard is managed by Manchester Central who, as has been described, will apply management of arrivals via the Voyage Control booking system which will manage the timing of vehicle arrivals and allow communication for drivers to inform of any issues on approach and if required to wait in a holding area until space is available and this should help in the management of vehicles internally so it operates in a safe and efficient manner.

9.0 Development Trip Forecasts

9.1 Overview

9.1.1 To forecast the trip movements expected to arise from the proposed development, the TRICS trip rate database has been interrogated. As there will not be any on-site parking provision, the proposed development is not expected to generate many vehicle trips except for servicing trips and pick-up / drop-off activity e.g. taxi trips.

9.2 Residential Trip Forecasts

9.2.1 For the residential element of the proposed development, trip rates have been derived from the Land Use 03 Residential C Flats Privately Owned parameter within the TRICS database as shown in **Appendix F**. For the purpose of this trip forecast exercise, the same trip rates have been used for the apartments in Plot 2A and Plot 2B. This is because despite the latter specifically providing affordable homes, it is not considered that travel behaviour will differ significantly between residents of the two buildings.

9.2.2 In order to calculate the most accurate trip forecasts, total person trip rates have been derived from the TRICS database. A breakdown by travel mode based on localised modal share estimates is provided later in this chapter.

9.2.3 The trip rates and estimated number of trips for the Plot 2A (max.452 apartments) and Plot 2b (133 apartments), given a total approximate maximum number of 585 apartments, are provided in **Table 9.1** overleaf, hour by hour over the course of a typical weekday (07:00-19:00).

Table 9.1: Total Person Trip Rates and Number of Trips

Time Period	Trip Rates (per apartment)			Number of Trips (585 apartments)		
	Arr.	Dep	Total	Arr.	Dep	Total
07:00-08:00	0.062	0.356	0.418	36	208	245
08:00-09:00	**0.113**	**0.537**	**0.65**	**66**	**314**	**380**
09:00-10:00	0.128	0.225	0.353	75	132	207
10:00-11:00	0.154	0.194	0.348	90	113	204
11:00-12:00	0.154	0.179	0.333	90	105	195
12:00-13:00	0.187	0.186	0.373	109	109	218
13:00-14:00	0.17	0.175	0.345	99	102	202
14:00-15:00	0.139	0.146	0.285	81	85	167
15:00-16:00	0.268	0.172	0.44	157	101	257
16:00-17:00	0.281	0.176	0.457	164	103	267
17:00-18:00	**0.383**	**0.195**	**0.578**	**224**	**114**	**338**
18:00-19:00	0.448	0.241	0.689	262	141	403
Daily	**3.027**	**3.036**	**6.063**	**1771**	**1776**	**3547**

9.2.4 As can be seen in **Table 9.1**, the proposed residential development could generate up to an estimated 380 two-way trips in the traditional AM peak hour (08:00-09:00) and 338 two-way total person trips in the traditional PM peak hour. Over the course of a day, we expect just under 1800 person trips in and out of the residential buildings of Plot2a and Plot 2a.

9.2.5 Considering the forecast modal share for residential trips to Viadux Phase 2. We expect that in this location where the residents are already in the city centre most trips will be made on foot and even those that do use public transport are in fact travelling away from the city centre. To provide an estimate of modal share, we have looked at the modal share from the TfGM's Transport Statistics 2019 report for access to and from the 'Key Centre' (Manchester City Centre). Therefore, the assumed modal share for the residential element of the Site is as follows:

- Walk = 60%;
- Cycle = 2%;
- Bus = 7%;
- Rail = 9%;
- Metrolink = 7%;
- Taxi = 4%; and
- Vehicles (LGVs/OGVs*/Car Club Trips) = 11%.

*OGVs are 3+ axle Heavy Goods Vehicles in excess of 7.5t.

9.2.6 In the next set of Tables, we forecast the person trips based on those modal share percentages and also the vehicle trips expected. Based on this modal share, the breakdown of total person trips, as detailed **in Table 9.1**, is provided in **Table 9.2**, for arrivals, and in **Table 9.3** for departures.

Table 9.2: Residential Trip Generation Modal Share (Arrivals)

Time Period	Walk	Cycle	Bus	Rail	Metrolink	Taxis*
07:00-08:00	22	1	3	3	3	1
08:00-09:00	**40**	**1**	**5**	**6**	**5**	**3**
09:00-10:00	45	1	5	7	5	3
10:00-11:00	54	2	6	8	6	4
11:00-12:00	54	2	6	8	6	4
12:00-13:00	66	2	8	10	8	4
13:00-14:00	60	2	7	9	7	4
14:00-15:00	49	2	6	7	6	3
15:00-16:00	94	3	11	14	11	6
16:00-17:00	99	3	12	15	12	7
17:00-18:00	**134**	**4**	**16**	**20**	**16**	**9**
18:00-19:00	157	5	18	24	18	10
Daily	**1062**	**35**	**124**	**159**	**124**	**39**

**Please note that the Taxi trips are based directly on the TRICS information rather than the MCC modal share values so the totals for the person trips will not directly match up*

Table 9.3: Residential Trip Generation Modal Share (Departures)

Time Period	Walk	Cycle	Bus	Rail	Metrolink	Taxis
07:00-08:00	125	4	15	19	15	2
08:00-09:00	**188**	**6**	**22**	**28**	**22**	**3**
09:00-10:00	79	3	9	12	9	2
10:00-11:00	68	2	8	10	8	3
11:00-12:00	63	2	7	9	7	5
12:00-13:00	65	2	8	10	8	3
13:00-14:00	61	2	7	9	7	2
14:00-15:00	51	2	6	8	6	1
15:00-16:00	60	2	7	9	7	2
16:00-17:00	62	2	7	9	7	3
17:00-18:00	**68**	**2**	**8**	**10**	**8**	**3**
18:00-19:00	85	3	10	13	10	5
Daily	**1066**	**36**	**124**	**160**	**124**	**40**

9.2.7 Based on the above trip generation exercise and modal share split, it can be seen that 85% of all trips are estimated to occur by sustainable modes of travel. The majority of trips to and from the Site by residents will be on foot, and then a modest proportion of cyclists and those using public transport reflecting that for most daily destinations it would be easier to walk than use other modes. There is forecast to be a modest steady movement of taxi trips, at around 40 over a typical day.

9.2.8 It is recognised that there are two flexible commercial units associated with Plot 2B. These are expected to trade off pass-by or walk in trips being in a location adjacent to the tram stop, Viadux or those living or working nearby.

9.3 Servicing Trips

9.3.1 The trip rates and estimated number of servicing trips for the Plot 2a (max 452 apartments) and Plot 2b (133 apartments) combined are provided in **Table 9.5** and **Table 9.6** overleaf for LGVs and OGVs respectively for weekday daily profile (07:00-19:00). There is a factor that for larger or multi-building developments the number of servicing trips tends not to increase at the same level as smaller or single building developments as would be included in the TRICS database. This is because many regular service vehicles such as post, courier or refuse vehicles would only make one trip to serve multiple drops /collections at Viadux. This proportion of multiple drop/collection activity for large developments can be significant. For robustness, we have not made a reduction for this factor, but we have not specifically forecast the occasional service vehicles to the two commercial units in Plot 2b.



Table 9.4: Residential OGV Trip Rates and Number of Trips

Time Period	Trip Rates (per apartment)			Number of Trips (585 apartments)		
	Arr.	Dep	Total	Arr.	Dep	Total
07:00-08:00	0.002	0.002	0.004	1	1	2
08:00-09:00	**0.001**	**0.001**	**0.002**	**1**	**1**	**1**
09:00-10:00	0.003	0.003	0.006	2	2	4
10:00-11:00	0.001	0	0.001	1	0	1
11:00-12:00	0.004	0.003	0.007	2	2	4
12:00-13:00	0.001	0.001	0.002	1	1	1
13:00-14:00	0.002	0.003	0.005	1	2	3
14:00-15:00	0.002	0.002	0.004	1	1	2
15:00-16:00	0	0.001	0.001	0	1	1
16:00-17:00	0	0	0	0	0	0
17:00-18:00	**0**	**0**	**0**	**0**	**0**	**0**
18:00-19:00	0	0	0	0	0	0
Daily	**0.016**	**0.016**	**0.032**	**9**	**9**	**19**

Table 9.5: Residential LGV Trip Rates and Number of Trips

Time Period	Trip Rates (per apartment)			Number of Trips (585 apartments)		
	Arr.	Dep	Total	Arr.	Dep	Total
07:00-08:00	0.004	0.007	0.011	2	4	6
08:00-09:00	**0.009**	**0.01**	**0.019**	**5**	**6**	**11**
09:00-10:00	0.011	0.008	0.019	6	5	11
10:00-11:00	0.016	0.015	0.031	9	9	18
11:00-12:00	0.012	0.015	0.027	7	9	16
12:00-13:00	0.016	0.017	0.033	9	10	19
13:00-14:00	0.012	0.015	0.027	7	9	16
14:00-15:00	0.005	0.008	0.013	3	5	8
15:00-16:00	0.014	0.011	0.025	8	6	15
16:00-17:00	0.015	0.015	0.03	9	9	18
17:00-18:00	**0.011**	**0.006**	**0.017**	**6**	**4**	**10**
18:00-19:00	0.005	0.003	0.008	3	2	5
Daily	**0.135**	**0.136**	**0.271**	**79**	**80**	**159**

9.4 Hotel Trip Forecasts

9.4.1 The hotel trip forecasts have been based on the sites in TRICS Land Use 06 for Town Centre located Hotels as shown in **Appendix F** and summarised in **Table 9.6** for the Arrivals and **Table 9.7** for the Departures. This shows that for a 160-bed hotel we might expect around 500 person trips a day. In this the majority arrive on foot and around a third of people arrive by public transport. The number of service vehicles is modest at two large rigid HGVs per day and 10 vans.

Table 9.6: Hotel Trip Generation Modal Share (Arrivals)

Time Period	Person	Public Transport	Taxi	Cyclist	OGV	LGV
07:00-08:00	16	6	3	0	0	1
08:00-09:00	25	6	1	0	1	1
09:00-10:00	19	2	2	0	1	2
10:00-11:00	21	4	2	0	0	1
11:00-12:00	29	11	0	0	0	0
12:00-13:00	25	5	2	0	0	1
13:00-14:00	37	15	3	0	0	0
14:00-15:00	36	11	3	0	0	0
15:00-16:00	32	10	2	1	0	0
16:00-17:00	40	11	3	0	0	0
17:00-18:00	45	15	2	0	0	1
18:00-19:00	42	13	3	1	0	1
Daily	**485**	**148**	**30**	**4**	**2**	**10**

Please note for the low hourly flows there are notable rounding up/down errors

Table 9.7: Hotel Trip Generation Modal Share (Departures)

Time Period	Person	Public Transport	Taxi	Cyclist	OGV	LGV
07:00-08:00	25	4	3	0	0	1
08:00-09:00	51	17	1	0	1	1
09:00-10:00	53	22	2	0	1	2
10:00-11:00	59	18	2	0	0	1
11:00-12:00	35	6	0	0	0	0
12:00-13:00	32	8	2	0	1	1
13:00-14:00	31	5	3	0	0	0
14:00-15:00	31	4	3	0	0	0
15:00-16:00	27	9	2	1	0	1
16:00-17:00	33	8	3	1	0	1
17:00-18:00	36	8	2	0	0	0
18:00-19:00	44	9	3	0	0	1
Daily	**541**	**134**	**30**	**4**	**2**	**8**

Please note for the low hourly flows there are notable rounding up/down errors

9.5 Combined Service Trips

9.5.1 When considering large developments with multiple land uses there is scope to allow for a reduction in service vehicle trips due to a single vehicle making multiple deliveries or a bin lorry collecting refuse from several locations in one trip. The TRICS data above only reflects individual sites and tends to be smaller, and this effect is recognised to result in around a third reduction in overall trip generation of service vehicle trips thereby reducing the implications on highway and service yard operations.

9.6 Construction Traffic

9.6.1 The volume of construction traffic would vary significantly from day to day and by the various construction activities. In this assessment we have undertaken a robust forecast which bears in mind that there would be two buildings under construction at the same time. The busiest periods are during construction pours when there are large volumes of concrete wagons arriving. However, these are episodic and so are not consistent across a typical week. Therefore, the forecast of vehicle flows is based on a typical robust forecast of construction traffic is assumed to be c.75 vehicle movements per day of which the majority are Rigid HGVs. We forecast c.60 vehicles with 3+axles accessing the site, c. 6 articulated HGVs per day and 5 LGVs a day arriving on site.

9.6.2 This latter number is reflective that there is no scope for large numbers of contractor vehicles to be parked on site and they will need to park locally, and most contractor staff are expected to arrive by public transport.

9.6.3 This estimate reflects the nature of the site, and the level of construction activity expected.

9.6.4 The impact of construction vehicles will be controlled via an agreed Construction Environmental Management Plan (CEMP). The CEMP sets out how construction traffic will be managed on the local highway network during the anticipated construction period. The purpose of a CEMP is to ensure that the effect of construction traffic is mitigated against, particularly in relation to local residents and any air quality issues. The CEMP will control the timings, routing and volume of traffic entering and leaving the site during each phase of construction.

10.0 Traffic Impact Assessment

10.1 Forecast Traffic Flows

Operational Peak Hour Flows

10.1.1 To undertake the operational assessment, the peak hour development trips as indicated in Section 9 have been applied to the highway network. There is some spread in these trips according to the various destination loading bays or hotel drop off locations. The AM peak Flows are given in **Figure 10.1** and the PM in **Figure 10.2**. It can be seen that these flows are very low, reflecting the fact that this site is located in a central location with excellent public transport accessibility and without any parking spaces provided.

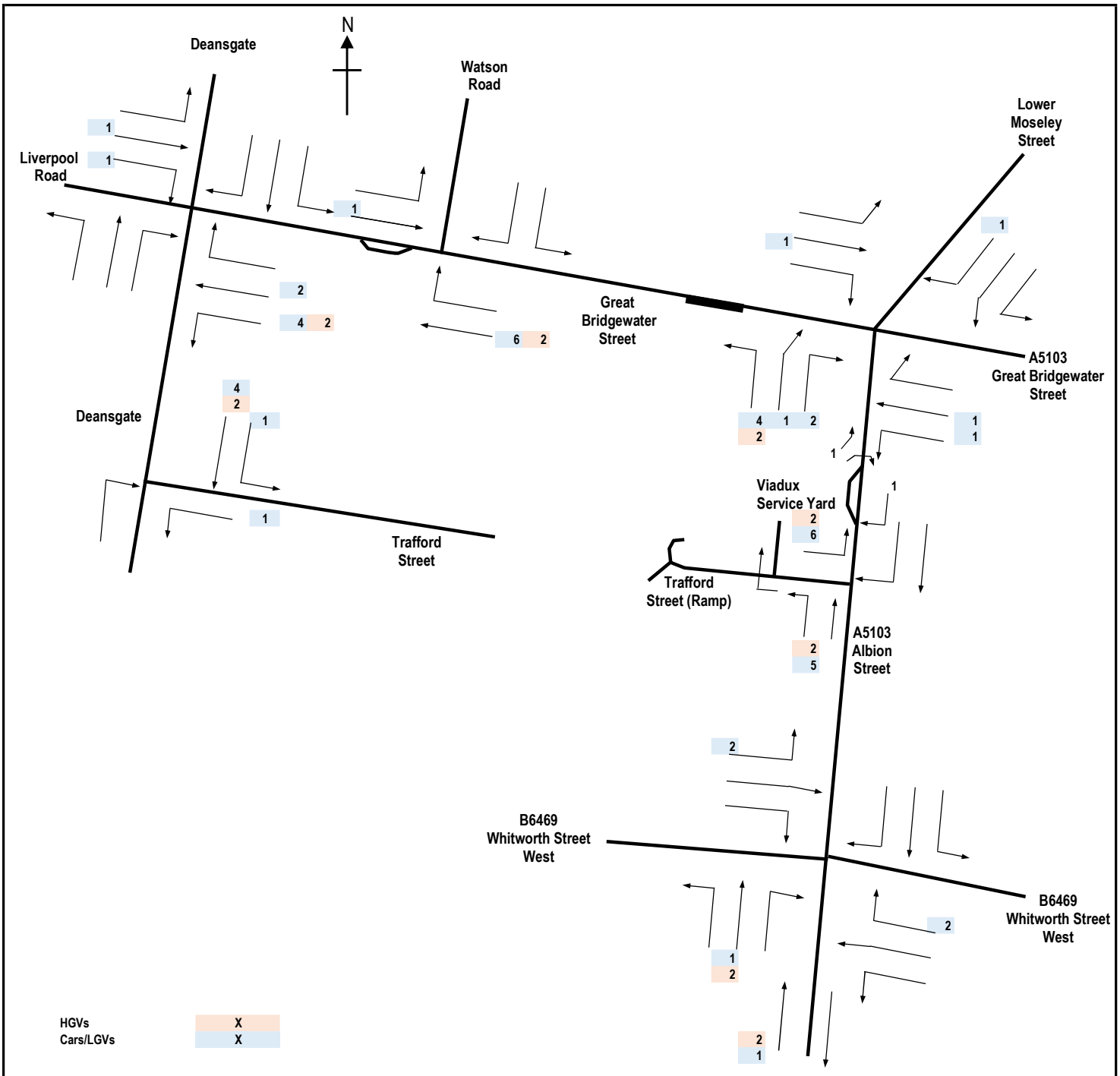
Operational Daily Flows

10.1.2 To help support the environmental assessment a daily trip forecast has been made and this is shown in **Figure 10.3.** Again, these traffic flows are very flow and would be barely perceptible by the general observer. Even when considering the busiest location for traffic accessing the Viadux Service Yard, here the flows equate to 40 vehicles across the day, 9 of which are large vehicles. In the busiest hour this gives an average vehicle arrival every 10 minutes, so we do not expect this to present any adverse implications in terms of congestion delay or pedestrian amenity.

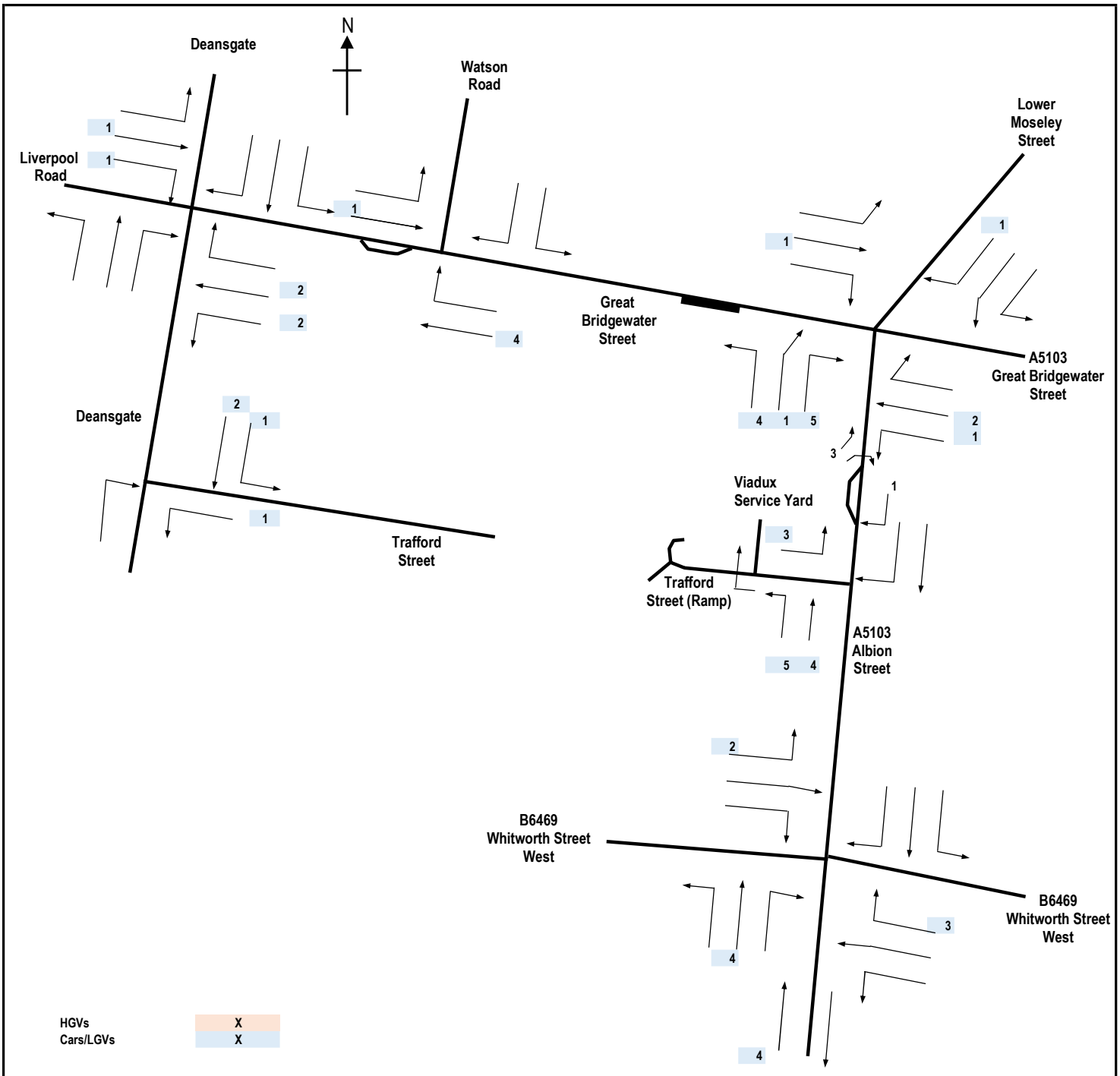
Assessment Flows

10.1.3 To undertake the operational assessment, the peak hour development trips as indicated in **Figure 10.1** and **Figure 10.2** are added to the relevant Baseline flows in in **Figures 4.1** and **4.2** along with the committed development flows from Viadux Phase 1.

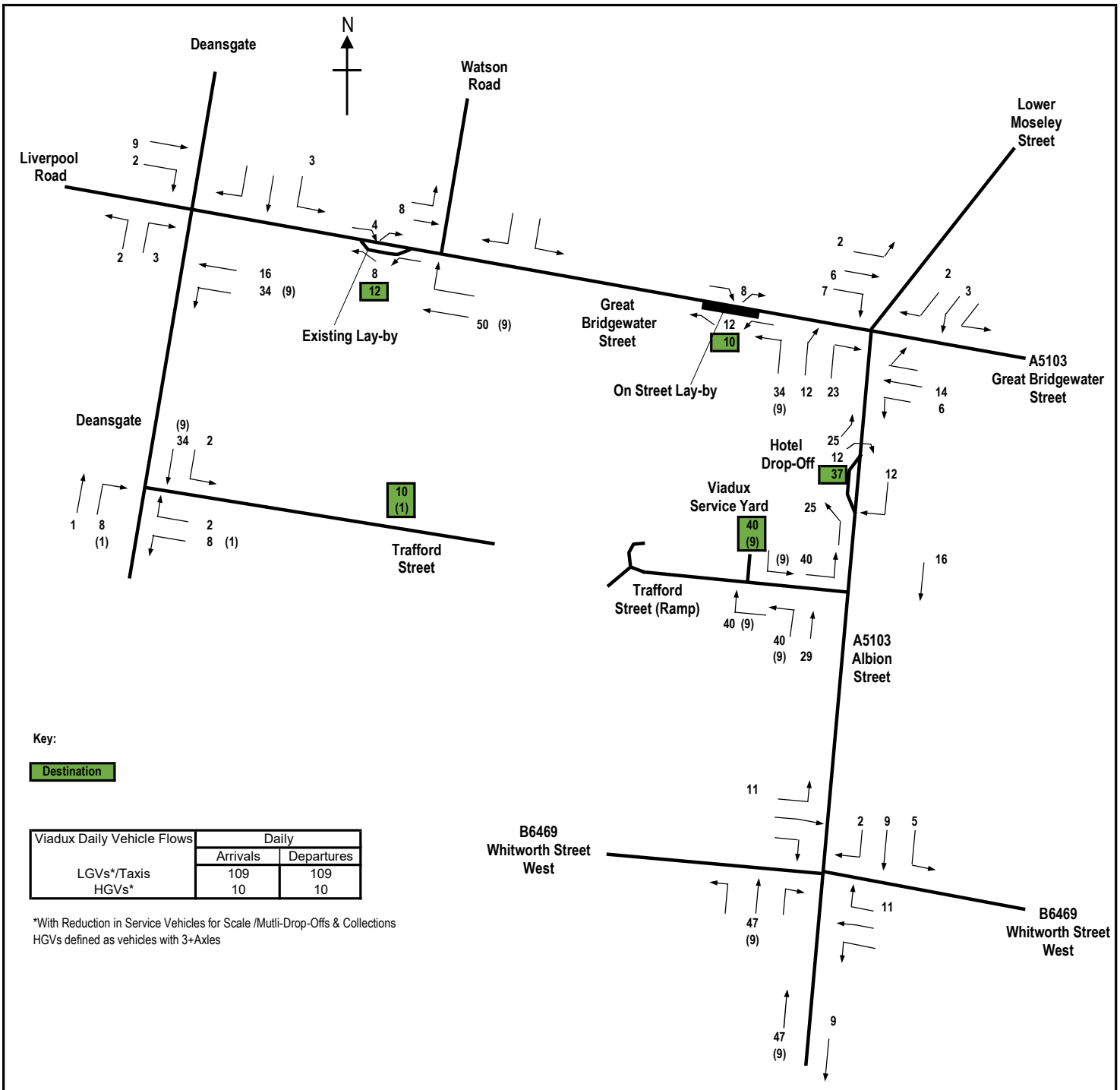
10.1.4 These assessment flows which will be used to modelling the local highway network are given in **Figure 10.4** and **Figure 10.5** for the respective peak periods.



DRAWING TITLE: Viadux Development Trips - Weekday AM Peak			
JOB TITLE: Viadux			
DRAWN BY: GD	DATE: Oct 2024	SCALE: NTS	REF: FIGURE 10.1



DRAWING TITLE: Viadux Development Trips - Weekday PM Peak			
JOB TITLE: Viadux			
DRAWN BY: GD	DATE: Oct 2024	SCALE: NTS	REF: FIGURE 10.2

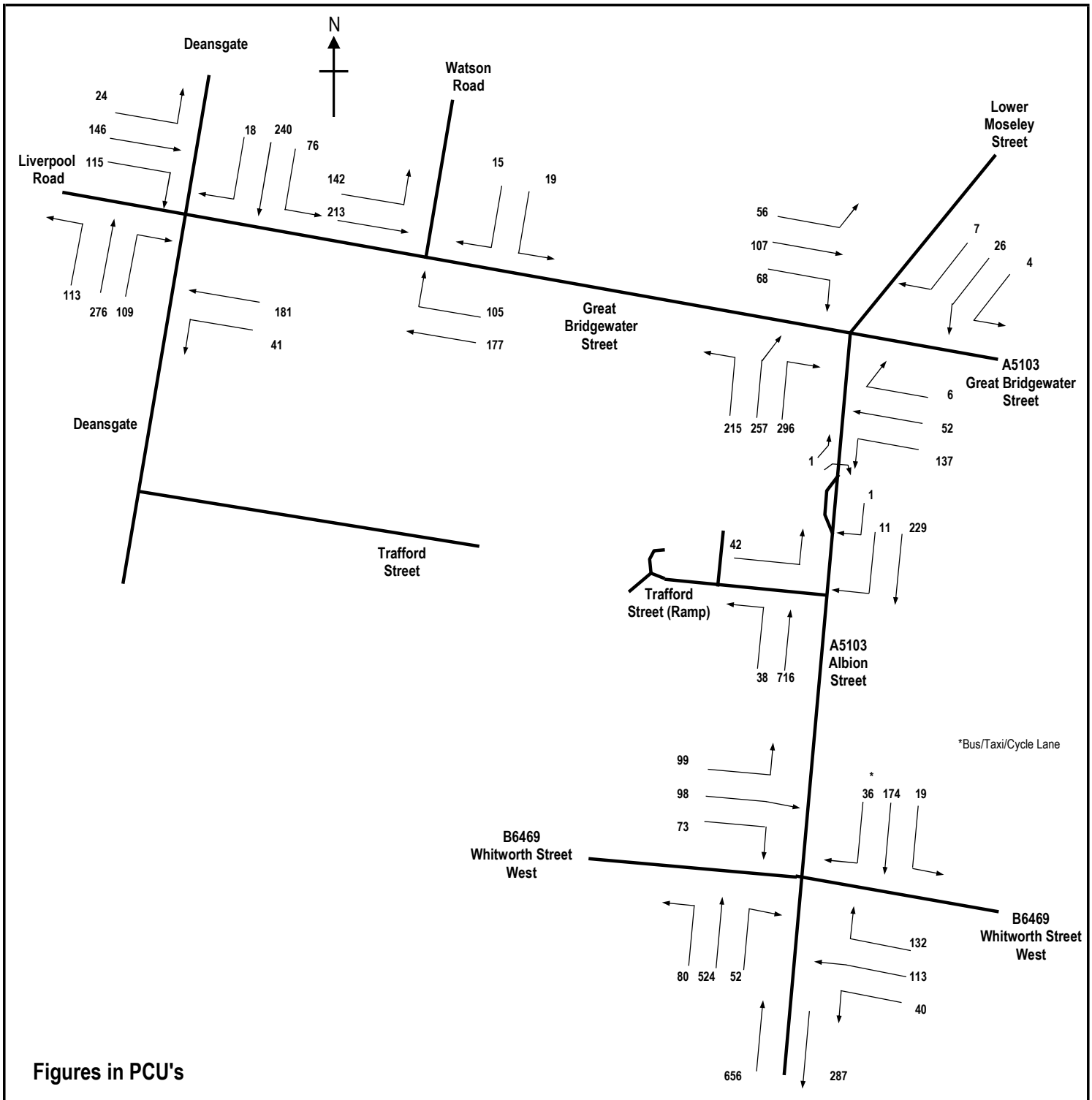


Viadux Daily Vehicle Flows	Daily	
	Arrivals	Departures
LGVs*/Taxis	109	109
HGVs*	10	10

*With Reduction in Service Vehicles for Scale /Mutli-Drop-Offs & Collections
HGVs defined as vehicles with 3+Axles

DRAWING TITLE	Viadux Development Trips - Weekday Daily		
JOB TITLE	Viadux Phase 2		
DRAWN BY	DATE	SCALE	REF
GD	Oct 2024	NTS	FIGURE 10.3

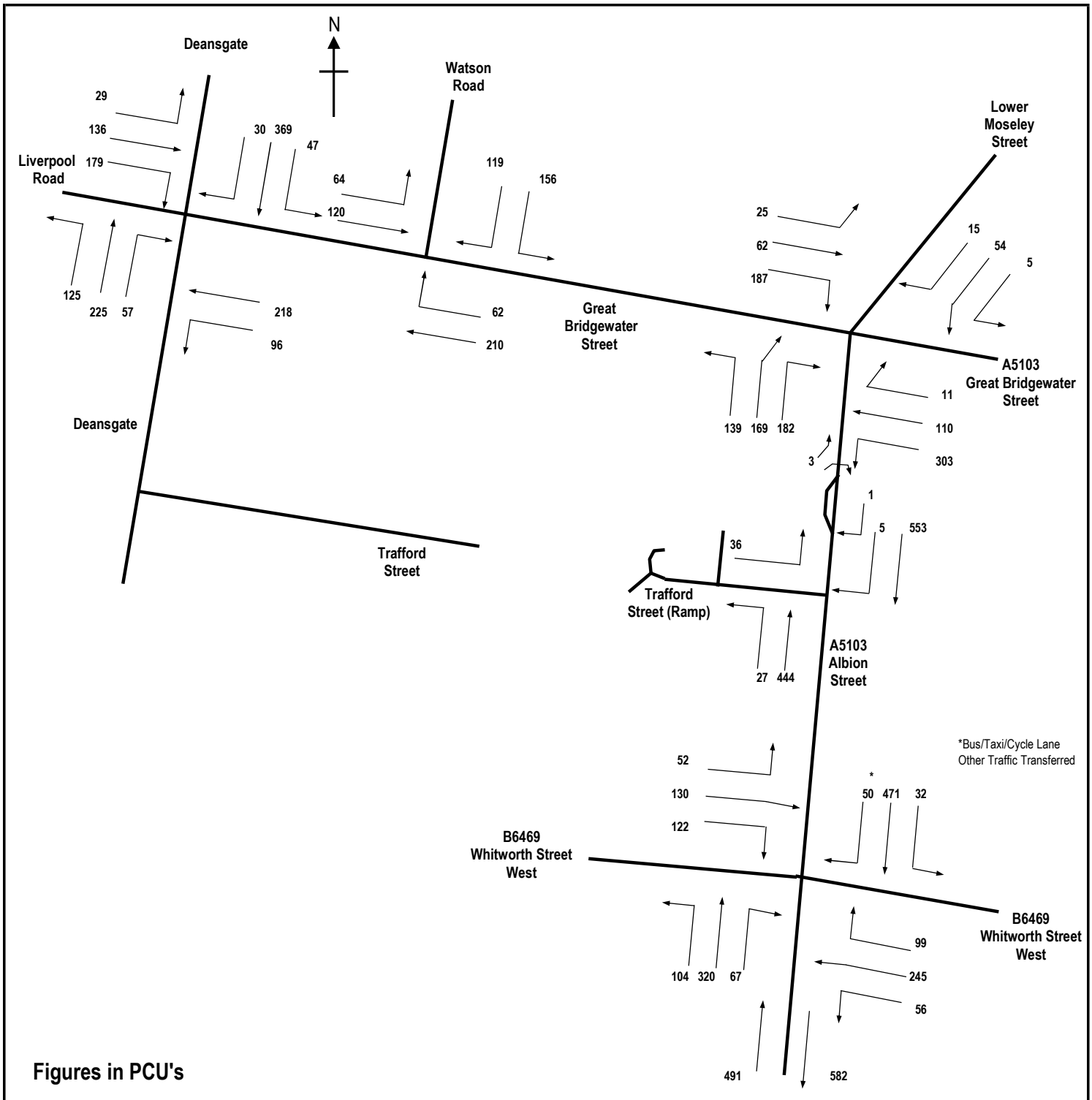
SLR



Figures in PCU's

DRAWING TITLE: Assessment Traffic Flows Weekday AM Peak			
JOB TITLE: Viadux			
DRAWN BY: GD	DATE: MAY 2022	SCALE: NTS	REF: **FIGURE 10.4**

SLR



DRAWING TITLE: Assessment Traffic Flows Weekday PM Peak			
JOB TITLE: Viadux			
DRAWN BY: GD	DATE: Oct 2024	SCALE: NTS	REF: FIGURE 10.5

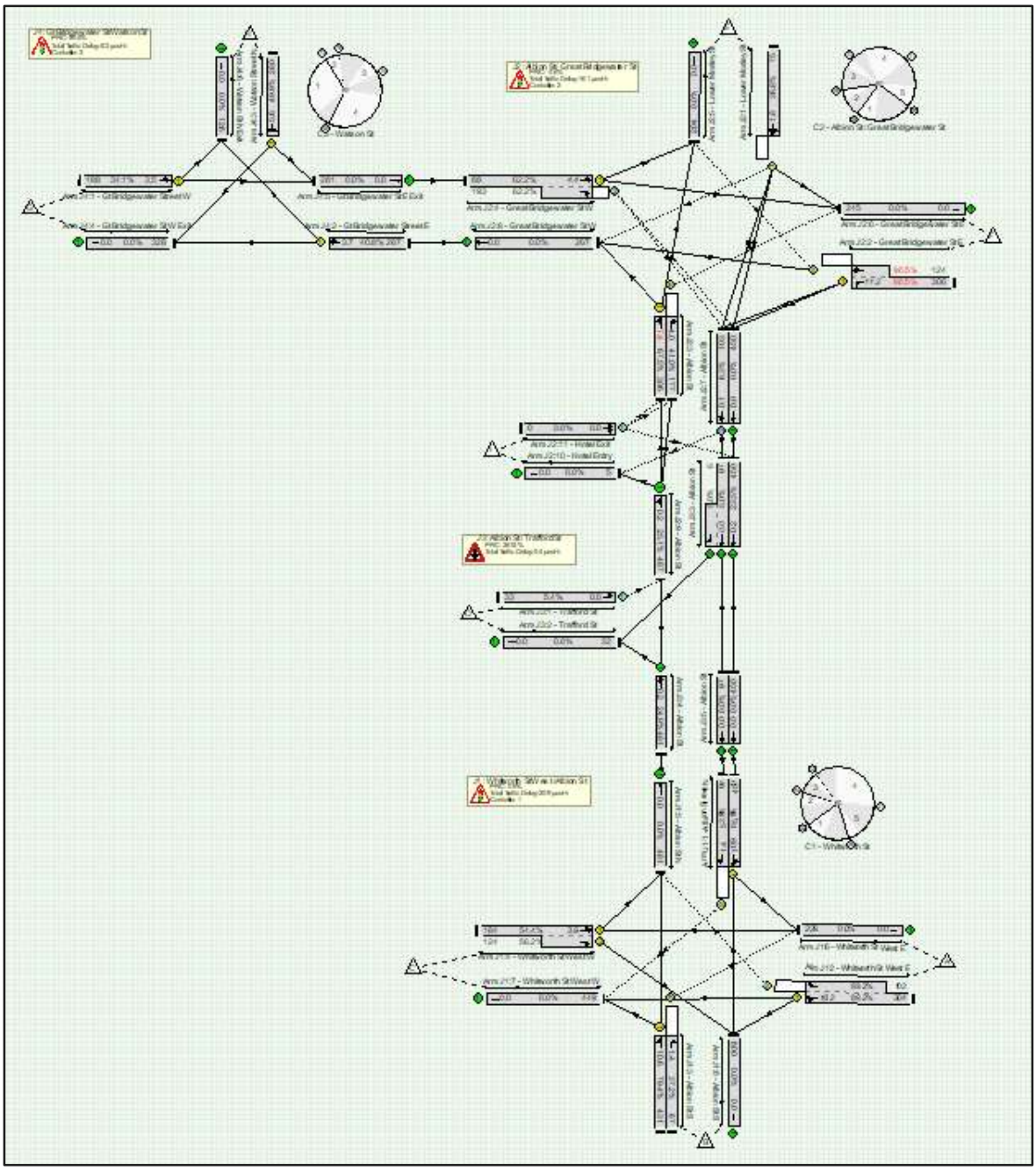
SLR

10.2 Operational Assessment

10.2.1 The proposed development results in very few additional trips on the highway. However, as the junction layouts do change significantly it is worth assessing the operation of the traffic signals. This has been done using the industry standard LINSIG software package.

10.2.2 The modelled signal network tested is shown in **Appendix G** and is indicated in **Figure 10.5**. The network includes the highway improvements as well as the hotel drop off and as well as the physical works there will be a new dedicated pedestrian crossing phases which does slightly change the highway operation.

Figure 10.5: Modelled LINSIG Network



10.2.3 The output from the LINSIG assessment is presented in **Table 10.1** below for the 'With Development' scenario.

Table 10.1: LINSIG Operational Assessment: With Development

Link	AM Peak		PM Peak	
	DoS (%)	Mean Max Q	DoS (%)	Mean Max Q
Albion St / Whitworth St West				
Albion St Southbound	29%	4	95%	16
Whitworth St West (Eastern arm)	68%	5	89%	10
Medlock St Northbound	92%	18	79%	11
Whitworth St West (Western arm)	42%	4	56%	4
Trafford St Access Ramp Junction				
Albion St North	10%	0	26%	0
Manchester Central Access	8%	0	5%	0
Albion St South	40%	0	25%	0
Great Bridgewater St/ Lower Mosely St				
Gt Bridgewater St (Eastern Arm)	71%	4	91%	11
Albion Street (South)	73%	8	68%	7
Gt Bridgewater St (Western Arm)	37%	2	62%	4
Lower Mosley St (North)	10%	1	37%	2
Great Bridgewater St/ Watson St				
Watson Street	18%	1	50%	6
Gt Bridgewater St (Eastern Arm)	27%	4	41%	4
Gt Bridgewater St (Western Arm)	38%	5	34%	4
Practical Reserve Capacity %	**-2.6**		**-5.4**	
Cycle Time	**80**		**80**	

*Degree of Saturation (DoS) is a general measure of junction performance

10.2.4 The Degree of Saturation (DoS) is a general indicator of junction and link performance whereby 100% indicates a junction working at its theoretical capacity. here there are several links operating between 90%-95% of its capacity.

10.2.5 In this location there are notable queues in the AM peak on Medlock Street, similar to current levels of queuing. In the PM peak we forecast queue lengths to block back along the southbound Albion Street link with 16 vehicles queuing back to Great Bridgewater Street.

10.2.6 Overall, the forecast operation is expected to be similar than then existing network. This is because there is expected to some improvement in signal operation with the linking of the signals on a SCOOT system and the tightening up of the Albion Street junction layout. However, this is offset by introducing a pedestrian crossing phase at that junction.

10.2.7 The forecast development traffic would have hardly any material effect on traffic operation in the area during peak times.

10.2.8 However, it should be stressed that pedestrians will benefit from a considerable environmental improvement on Great Bridgewater Street and Albion Street and that they will in future have compliant signalised pedestrian crossing facilities on the key desire lines to the city.

10.3 Manchester Central Traffic Operation

10.3.1 The forecast traffic flows and the LINSIG modelling show that there will be relatively little change in highway operation with the signal changes. The modelling shows that Manchester Central Traffic are likely to continue to see moderate levels of queues on Medlock Street in the AM weekday peak.

10.3.2 In the PM peak with an event breakdown, we expect to see practically no queues or delays for traffic coming down Trafford Street ramp as there are gaps in the traffic flows coming from the Whitworth Street signals. As stated previously, there is scope to ensure that this is the case by installing vehicle detectors on the Trafford Street ramp and link those to the signals to ensure that for large events the Trafford Street traffic is guaranteed sufficient gaps every cycle to allow traffic to egress.

10.3.3 This would be part of a Large Events Signal Timing Plan. At this location if the traffic is held back at the Whitworth Street signals to allow the Manchester Central traffic to egress we expect a small increase in queues on other arms but not for the Albion Street Southbound approach. This approach signal phasing could be the extended, so this gets extra green time under this scenario.

10.3.4 The Manchester Central traffic is then looking to turn left onto Great Bridgewater Street. We expect an Events Timing Plan to prioritise this movement and then also critically at the Deansgate junction which tends to be the junction that causes the blocking back.

10.3.5 By employing a SCOOT system along with an Events Timing Plan this should help Manchester Events traffic to egress the city. The principle of an Events Timing Plan has been discussed with TfGM and is a practical solution in prioritising this specific traffic which is vital to supporting Manchester Central and their attractiveness for event's organisers.

11.0 Summary and Conclusions

11.1 Summary

11.1.1 This Transport Assessment has been prepared by SLR on behalf of Salboy Central Ltd. in support of the proposed development on land to the south of Manchester Central Convention Complex in Manchester city centre.

11.1.2 The Site is located in Manchester city centre. It is bounded by the Manchester Central Conference Complex, Great Bridgewater Street and Great Northern Warehouse to the north, Albion Street to the east, the Deansgate Castlefield Metrolink station and Deansgate Locks to the south, and the Beetham Tower to the west. It extends to 1.49ha.

11.1.3 The Proposed Development will be delivered across two plots as follows:

- Plot 2a is located immediately east of the recently completed Phase 1 building, on land partially comprising the grade II listed Castlefield Viaduct. This plot will deliver a 76-storey mixed use tower comprising a hotel (Use Class C1) with associated bar and restaurant and residential units above comprising 1, 2 and 3 bed, and penthouse apartments (Use Class C3) with associated residential amenity spaces. Secure cycle spaces, serving this and the Phase 1 building, are provided at the ground floor level. At viaduct level, a redesigned service yard for the conference centre is enclosed by a new podium structure with residents' external amenity space above. A section of the Great Bridgewater Street bridge (deck) is removed to bring light into the street below.
- Plot 2b, located at the western-most section of the Site between the viaduct and Beetham Tower, consists of a 23-storey residential building accommodating affordable 1-, 2- and 3-bed apartments (Use Class C3), secure cycle parking spaces, flexible commercial units (Use Class E) opening onto the viaduct, and public realm enhancements on Great Bridgewater Street.

11.1.4 The Site occupies a highly sustainable location, accessible by a range of sustainable travel modes, and well-placed to facilitate access on foot to a wide variety of everyday facilities, amenities, employment locations, leisure destinations and transport hubs.

11.1.5 Therefore, Plot 2b benefits from 133 cycle parking spaces at a 1:1 provision. Plot 2a includes a hotel land use which will be allocated 16 cycle parking spaces. The remaining 374 spaces are shared between the residents of Viadux Phase 1 and Plot 2a at a provision of 45%. This is well in excess of the likely demand for a city centre location and surveys of 5 modern city centre apartment towers showed an average occupancy of 15% so the provision is more than double the expected demand. In addition, a cycle hire facility will be available for occupiers offering quality bicycles without the need to own one.

11.1.6 A new Car Club bay is to be installed on Watson Street as part of Viadux Phase 1 and residents can access this vehicle should they have a need to access a car.

11.1.7 The development will not provide any car parking space for residents. However, there are 2 disabled parking bays on Great Bridgewater Street and next to those, 3 standard on-street pay and display parking bays as well as a large number of public car parks available within a short walk.

11.1.8 The facilities for disabled who need a car have been considered. They can park on the disabled/on street bays for free on Great Bridgewater Street and also with the adjacent NCP car parks at Great Northern Warehouse and Manchester Central which have a total of 40 disabled parking bays available within a short distance of the site. Disabled users benefit from excellent provision on public transport, as well as disability compliant taxis.

11.1.9 The application is supported by a Framework Travel Plan that will help manage access to the site in a sustainable manner. While the site is Car Free, the Travel Plan does have a role in providing transport information to occupiers, allocating cycle parking spaces, coordinating promotional activities, securing discounts from transport providers and promoting the use of the Car Club vehicle among other initiatives. This Travel Plan will be benefit from annual surveys, it will be monitored and benefit from consultation with TfGM/MCC.

11.1.10 As this scheme is Car Free, there is relatively little traffic generated and those that do are from service vehicle trips alongside drop-off pick-up trips from taxis. The site benefits from numerous loading bay and drop off /pickup locations which will help spread the demand for such activity so that any implications are minimised.

11.1.11 As part of the development, there will be highway improvements to Albion Street and Great Bridgewater Street to significantly enhance the environment for pedestrians and cyclists. In particular, this will narrow Albion Street, by widening the footway, and provide a signalised pedestrian crossing at the signals with Great Bridgewater Street which it does not have, making it much easier to cross. The on-road cycle facilities will be greatly improved through the junction.

11.1.12 The scheme incorporates a Hotel Drop Off on Albion Street offers the optimum location for this activity and a design strategy has been developed which transforms the public realm in this area by hiding the Metrolink Bridge Structure and Service Yard behind a high quality architecturally design ‘wrap’ complemented by a high-quality landscaped space for pedestrians to enjoy.

11.1.13 Great Bridgewater Street would be transformed with improved paving and public realm along with lighting improvements along with the removal of the central part of the overbridge thereby opening this gloomy corridor. This ties in with the Phase 1 improvements at the Watson Street signals which makes crossing the highway much easier for commuters from the Deansgate Castlefield Metrolink stop into the city.

11.1.14 Assessment of junctions in the vicinity of the Site has been undertaken using the industry standard LINSIG software package. With development, there is only a modest change on traffic flows with development the local highway network does not see a significant change in highway operation. The most significant benefit is for pedestrians who are able to cross under signal control in one movement.

11.1.15 The signal junction of Albion Steet /Great Bridgewater Street does lose some capacity as a result of the pedestrian crossing phase but there is a benefit in reducing the size of the junction (which benefits in the intergreen lost time).

11.1.16 This strategy of improving pedestrian and cycle facilities is consistent with other improvements occurring on Deansgate and Whitworth Street as proposed by Manchester City Council/TfGM as part of their Active Travel Strategy. The improvement of all the signals in the local area will improve operation with the linking of the signals in a SCOOT system.

11.1.17 Consultation with TfGM has confirmed that an Events Timing Plan can be implemented which gives priority for Manchester Central vehicles when they are arriving to or departing form a large event during busy periods. To help with this it is proposed to ensure that Manchester Central vehicles have sufficient gaps so that they can leave Trafford Street without excessive delay. Here it is proposed that vehicle detector loops are installed on Trafford Street which are linked to the Whitworth Street signals which can then trigger longer gaps in the signal timings to hold traffic back from travelling north on Albion Street.

11.1.18 This Events Timing Plan would also link to the signals on Great Bridgewater Street and Deansgate to minimise the queues and delays that are currently experienced.

11.1.19 The development does affect the service yard of Manchester Central by reducing the available space for vehicles due to the building footprint and also the presence of columns within the space. The service yard will be extended to the east as part of the roof structure over the ground floor Plot 2a buildings, allowing large articulated HGVs to manoeuvre and reverse to the Central Hall (or vice versa).

11.1.20 It is noted that this service yard would benefit from vehicle management and Manchester Central are implementing the Voyage Control booking system which along with management of vehicles internally should help control the movements within the service yard, so it operates in a safe and efficient manner.

11.1.21 Manchester Central and MCC highways officers have been consulted on the proposed improvements as well as the technical data and vehicle tracking. It is expected that the proposals would be subject to appropriate conditions to ensure that highways operations including the movement of Manchester Central traffic is not significantly affected by the proposed development.

11.1.22 The impact of construction vehicles will be controlled via an agreed Construction Environmental Management Plan (CEMP). The CEMP will set out how construction traffic will be managed on the local highway network during the anticipated construction period. The purpose of a CEMP is to ensure that the effect of construction traffic is mitigated against, particularly in relation to local residents and any air quality issues. The CEMP will control the timings, routing and volume of traffic entering and leaving the site during each phase of construction.

11.2 Conclusion

11.2.1 In view of the above positive findings this Transport Assessment concludes that the proposed development should be considered acceptable in highway, traffic and transportation terms.

Drawings

Appendix A Active Travel Committed Highway Improvements

Transport Assessment

Viadux Plot 2A, Plot 2B, Manchester

Salboy Central Ltd

SLR Project No.: VN232690

15 November 2024

Appendix B Committed Developments

Transport Assessment

Viadux Plot 2A, Plot 2B, Manchester

Salboy Central Ltd

SLR Project No.: VN232690

15 November 2024

Appendix C Scheme Plans

Transport Assessment

Viadux Plot 2A, Plot 2B, Manchester

Salboy Central Ltd

SLR Project No.: VN232690

15 November 2024

Appendix D Cycle Suvrey

Transport Assessment

Viadux Plot 2A, Plot 2B, Manchester

Salboy Central Ltd

SLR Project No.: VN232690

15 November 2024

Appendix E TRICS Interrogation

Transport Assessment

Viadux Plot 2A, Plot 2B, Manchester

Salboy Central Ltd

SLR Project No.: VN232690

15 November 2024

Appendix F LINSIG Operational Outputs

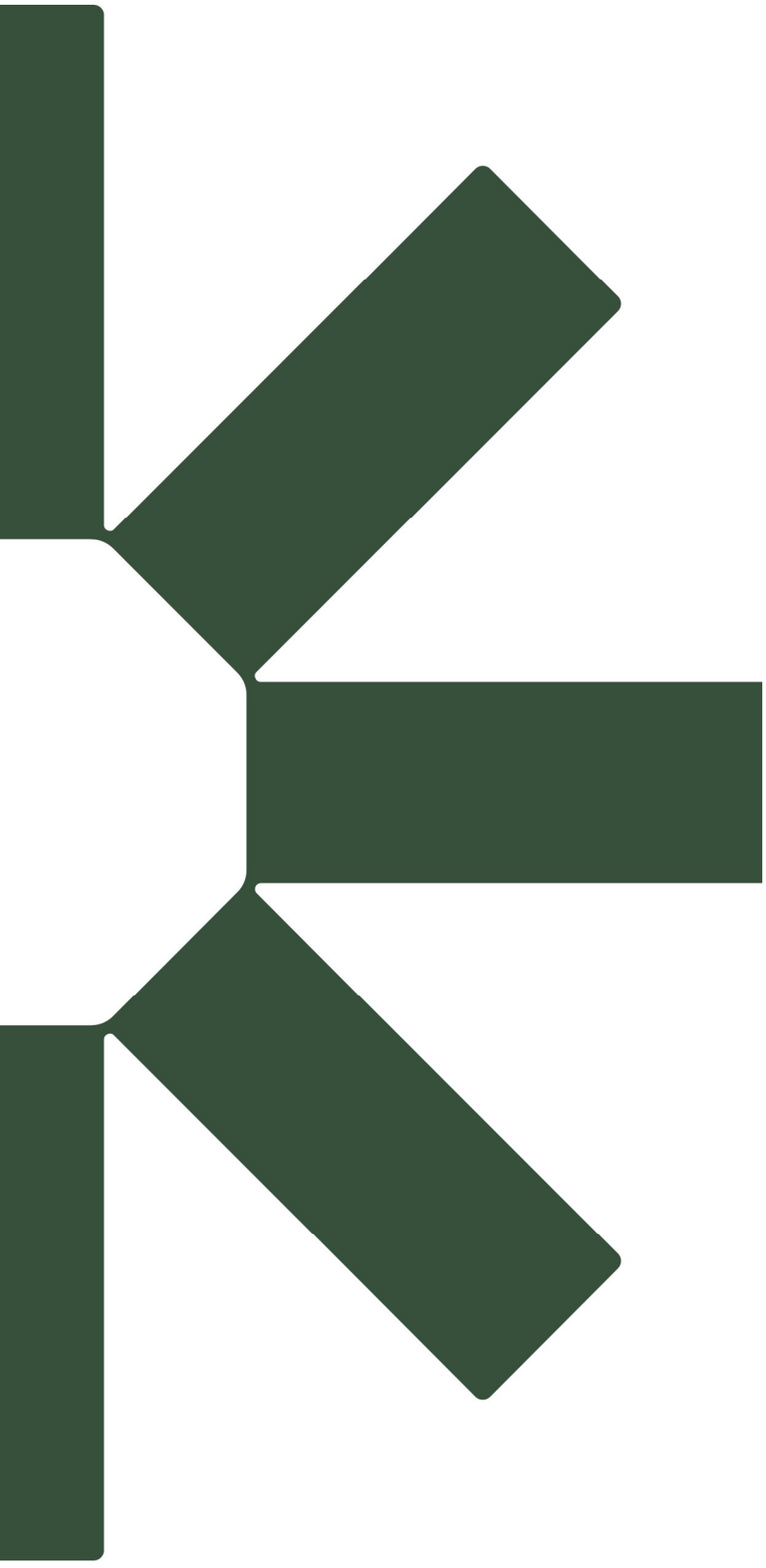
Transport Assessment

Viadux Plot 2A, Plot 2B, Manchester

Salboy Central Ltd

SLR Project No.: VN232690

15 November 2024



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