

City Football Group  
**Etihad Campus - Movement and  
Transport Strategy**  
Transport Assessment

Issue | 28 February 2020

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# 1 Introduction

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Ove Arup and Partners Ltd (Arup) has been commissioned by City Football Group to prepare a transport assessment of the future proposed development of the Etihad Campus.

## 1.1 Context

As an international visitor destination, the Etihad Campus has a major role to play in the successful ongoing regeneration and future development of Eastlands and the wider East Manchester. It is anticipated that a range of new developments and uses of the Etihad Campus will come forward in coming years as set out in the Eastland Regeneration Framework.

This new development will create a wide range of opportunities for the local community and for Greater Manchester as a region. However, it is recognised that the movement of large numbers of people to, from and through the area can create challenges both for the local community and for the organisations that are already based at the Etihad Campus.

As individual developments come forward, transport assessments will be prepared on the behalf of the operators of these developments by the associated design teams. These transport assessments will demonstrate that the interventions associated with each development would satisfactorily mitigate any potential transport impacts during its construction and operation. The transport assessments for each development will be prepared in consultation with the appropriate authorities including Manchester City Council (MCC) and Transport for Greater Manchester (TfGM) in sufficient detail to support any associated planning applications.

This document provides an overall framework for the transport assessments that will be prepared for these individual developments. The purpose of this document is to demonstrate that, in addition to the impact of individual developments being acceptable (as set out in the transport assessment for an individual development), the future development of the Etihad Campus is supported by a wider strategy to manage the movement of large volumes of people and goods to, from and through the area in a manner that:

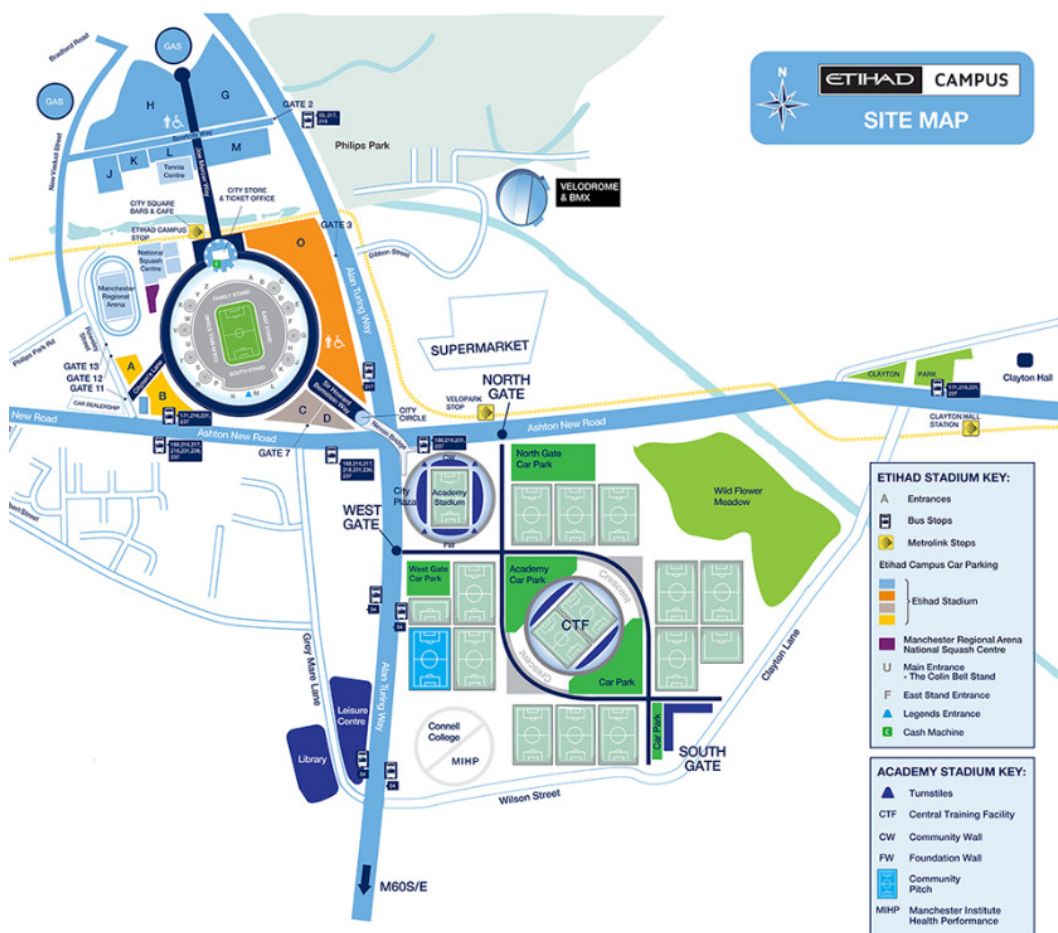
- Does not adversely affect the local community;
- Supports the visitor experience of getting to and from the Etihad Campus, and
- Reflects the world class facilities that are provided within it.

## 2 The Etihad Campus Today

The Etihad Campus is located approximately 1.6km to the east of Manchester City Centre. The Etihad Campus includes a range of sports-based facilities including the Etihad Stadium (the Stadium), the City Football Academy (CFA), the National Cycling Centre, Manchester Regional Arena, Manchester Tennis and Football Centre, and the National Squash Centre.

Although the Etihad Campus is commonly referred to as a single site, as the name suggests in reality it is a collection of sites across a campus environment. There are three main parts of the Etihad Campus, centred around the intersection of the key roads of Alan Turing Way and Ashton New Road.

Figure 1 - Existing Etihad Campus



To the north-west of this junction is the area of the Etihad Campus that has been identified for future development. This part of the Etihad Campus is currently home to the Stadium, Manchester Regional Arena, Manchester Tennis and Football Centre, and the National Squash Centre. Within this part of the Etihad Campus there is undeveloped land that has been identified for future development within the Eastlands Regeneration Framework. Some of this undeveloped land is currently used as parking for the Stadium on event days.

To the south-east of this junction is the CFA. Opened in 2014, this 80-acre training facility includes a 7,000-seat capacity stadium (used by the Elite Development Squad, Manchester City Women's team and other senior academy teams), training pitches, offices and media facilities. No further development is currently planned on this part of the Etihad Campus.

To the north-east of the junction are the National Cycling Centre, residential dwellings and a number of retail units, including a large Asda superstore. No further development is currently planned on this part of the Etihad Campus.

Within the remainder of this document any future proposed developments on the Etihad Campus therefore relate to the part of the Etihad Campus to the north-west of the Alan Turing Way/Ashton New Road junction.

## 2.1 Consented Development

In 2014 planning consent was granted to expand the Etihad Stadium to provide an additional 12,500 seats (Ref. No: 104315/FO/2013/N2). This consent has been partially implemented through the expansion of the South Stand by 6,250 seats. The permission for an additional 6,250 seats in the North Stand is consented but is yet to be implemented. Upon implementation, this will increase the Stadium capacity to 61,250 people. This is therefore the 'approved base case' against which any future scenarios should be assessed.

The approved transport strategy for the consented Stadium expansion is based upon a modal shift in which any trips that are new to the network will be encouraged by a variety of measures to use sustainable modes of transport such as public transport, walking and cycling. Surveys undertaken as part of this work, supported by data from previous studies, indicates that this is being achieved. Indeed, since the surveys undertaken as part of the 2014 application, recorded car numbers on site have reduced.

The overarching aim of the transport strategy for the Stadium expansion is to maintain and not increase existing levels of match day parking. New journeys generated by the Stadium expansion would use alternative modes to the car. No additional parking supply, junction capacity improvements, or other schemes that might encourage additional traffic are proposed as part of the strategy.

A series of transport interventions were proposed as part of the strategy including:

- Residents Parking Scheme / On-street Waiting Restrictions;
- Completion of the Metrolink line to Ashton-under-Lyne;
- Park and Ride facilities adjacent to the Ashton-under-Lyne Metrolink;
- Improvements to walk routes between Manchester City Centre and the Etihad Stadium;
- Additional secure cycle stands around the Stadium;
- Improved Walk Route along Grey Mare Lane and links to Ashbury rail station;

- Improvements to bus facilities on Ashton New Road;
- Improved usage of Central Park and Monsall Metrolink stations;
- Increased promotion of home coach parking;
- Gate 1 Pedestrian Walk route improvements;
- Promotion of Stadium Travel Opportunities;
- Rowsley Street Taxi Rank;
- Combined Ticketing Initiatives and
- A Staff Travel Plan

Most of the above interventions have subsequently been implemented as part of the South Stand expansion. The expansion of the CPZ into Clayton (zone E6) has not yet been fully implemented, although it is understood that the required Section 106 Agreement contributions have been paid to MCC.

## 2.2 Committed and Emerging Measures

It is recognised that on days when there are matches and other major events at the Etihad Campus, significant pressures and short-term demands are placed on the surrounding transport infrastructure. The extent to which the local transport infrastructure can accommodate these short-term additional demands has an important bearing upon the local community and on the quality of the visitor experience at the Etihad Campus.

The football club is actively working to continuously improve the matchday experience, including the journey to and from the Stadium. As such, a series of initiatives are ongoing related to matchday and staff travel. These initiatives will help to support the objectives of the Strategic Vision for the Etihad Campus going forward.

### 2.2.1 Current Club-led Initiatives

Discussions with football club staff have identified a range of initiatives that they are in the process of implementing. These include the following:

- Accompanied walking groups from the City Centre to the Etihad Campus on a matchday;
- Optimisation of urban traffic control (UTC) signal sequencing post-match to increase efficiency of traffic movements away from the Stadium– this is currently being piloted by TfGM in partnership with the football club;
- Additional banners/improved wayfinding on the existing ‘City Link’ walking route to the City Centre to promote use of this route;
- Directional parking trials have been undertaken, with plans to continue these in the future. These trials may influence the future arrangement of parking spaces and egress points as the Etihad Campus is developed; and

- Initiatives to increase staff use of sustainable transport as part of the staff sustainable travel plan, including promotion of travel plan measures, participation in national initiatives and incentivisation of use of sustainable modes.

These measures are aimed at making continuous improvements for supporters and the local community by promoting non-car travel modes and improving the efficiency of supporters' ability to leave the Etihad Campus, thereby shortening the period over which traffic and pedestrian movements impact upon the community.

## 2.2.2 Emerging Club-led Measures

Discussions with key stakeholders including the football club, MCC and TfGM have identified a series of additional measures, which are currently being progressed irrespective of additional development coming forward on the Etihad Campus.

The measures include:

- TfGM working with the football club to maximise the range, availability and capacity of matchday public transport services to the Etihad Campus including measures to maximise the availability of double-unit Metrolink services pre- and post-match and maximise the operational efficiency of Metrolink services;
- Promoting and incentivising the use of public transport services for supporters, including greater use of existing Park and Ride sites across Greater Manchester, and, in particular, Ashton Moss and Ashton West;
- TfGM and bus operators working with the football club to explore opportunities to develop an improved bus network that better serves the Etihad Campus and surrounding developments, linking into key public transport nodes. In particular, considering the potential for improved orbital bus services to complement the existing services that operate along the radial corridors into the City Centre). In time this may be linked to future opportunities created by bus reform;
- TfGM developing integrated ticketing solutions for matchday public transport, including contactless and Mobility as a Service options as these services are implemented across Greater Manchester;
- Introducing contactless payment for car parking to improve the flow of vehicles onto the Etihad Campus prior to a match/event;
- TfGM exploring opportunities with the football club for improved smart/interactive travel demand management and real-time information/data sharing. This includes a travel demand management pilot scheme that is currently being implemented along Ashton New Road the main route through the Etihad Campus;
- An ongoing series of trials and initiatives to promote sustainable travel options including bespoke coach services to key towns across Greater Manchester, and car-occupancy-based parking charges;

- Supporting the development of (potentially branded) travel apps and exploring the ‘gamification of journeys’ to promote and encourage sustainable transport use (e.g. an app that compares the distance walked by a supporter to the distance run by a player during a match);
- Developing and promoting car-sharing opportunities for staff and supporters, potentially include partnering arrangements with car-share service providers such as GoCarShare or LiftShare;
- Introducing electric vehicle charging into the mix of on-site parking spaces over time to support the increased use of these vehicles in Greater Manchester; and
- As part of the roll-out of an anticipated future GM-wide cycle hire scheme as part of the Made to Move scheme, promoting the Etihad Campus as a suitable location for a cycle hire hub for the use of staff and visitors.

These measures would help to improve the overall experience for both visitors to the Etihad Campus and the local community. The measures could help to support the continued transition towards increased sustainable travel and a reduced reliance on private car use to access the Etihad Campus. As such, these measures should be supported by all existing and future Etihad Campus venues.

## 2.3 Benchmarking

There are a number recent studies and surveys comparing the relative sustainability credentials of stadia and arenas. Whilst these studies are not authoritative, as such, they provide an indication of how well the Etihad Campus compares against other similar venues both globally and nationally across a range of criteria. A selection of these studies is presented below.

### 2.3.1 Footy.com

The website footy.com published a study on 10 September 2019 ranking 16 global sports stadia against a number of criteria, including ‘distance from the nearest city with transport links and time to get there’, ‘accessibility’, ‘use of smart tech’, and any ‘eco-friendly initiatives’ the stadium has in place. Stadia were selected for inclusion in the study based on the following criteria:

- Placing first in domestic league 2018/19;
- Winning a significant title in their respective sports in 2018/19.

The Etihad Stadium ranked in 1<sup>st</sup> place in this study, scoring 70 points out of a possible 90 and beating Camp Nou (Barcelona), Allianz Arena (Munich) and Le Parc Princes (Paris) in the process. Some of the transport related criteria used in the study included:

- Distance from the nearest city in miles;
- Length of time it would take to walk; and
- Average transport time from the nearest city (driving, public transport).

### 2.3.2 BBC Sport

In November 2019, BBC Sport (working with United Nations-backed Sport Positive Summit) published research on the sustainability of all 20 Premier League clubs. This research considered a range of criteria, including sustainable transport.

Manchester City were awarded joint 1<sup>st</sup> place in this study, scoring full marks across all criteria (one of only four clubs to do so). With regards to sustainable transport, specific mention was given to the club being an advocate of walking, cycling and public transport and their trialling of car sharing, cycle parking and electric charging points across the Campus.

## 2.4 Baseline Transport Surveys

This Transport Strategy is informed by previous surveys undertaken on behalf of the football club and a series of bespoke matchday traffic and movement surveys that have been undertaken before, during and immediately after the following Manchester City home games at the Etihad Stadium during the 2018/19 season:

- vs West Ham United (Wednesday 27th February 2019 – 20:00 kick-off);
- vs Tottenham Hotspur (Saturday 20th April 2019 – 12:30 kick-off); and
- vs Leicester City (Monday 6th May 2019 – 20:00 kick-off).

Non-matchday surveys have also been undertaken (on Thursday 7<sup>th</sup> November 2019 and Saturday 9<sup>th</sup> November 2019) to provide an understanding of transport network conditions on dates when there is no event taking place at the Etihad Stadium.

The initial scope and extent of these surveys was defined through discussions including the football club, based upon a subjective assessment known matchday traffic patterns. The scope, extent and summary results of the initial surveys was shared with a working group (including MCC and TfGM). These sessions, in part, influenced the amended/additional scope of subsequent surveys.

The boundary of the area covered by these surveys included Great Ancoats Street within the City Centre to the west, Oldham Road to the north, Stockport Road to the south and the M60 to the east. Traffic surveys at key junctions were undertaken alongside a wider multi-modal suite of extensive surveys that included pedestrian counts, Metrolink surveys, bus surveys, Park and Ride, on- and off-street parking surveys.

The geographic scope of the surveys undertaken was intended to be extensive, in order to ensure that a full understanding of existing matchday travel patterns was developed, and in an attempt to minimise the potential need for infill or resurveys at a later date. The transport assessments developed for subsequent planning applications would then be able to draw upon these base surveys as appropriate to define an assessment extent for each respective development (to be defined and agreed through consultation with MCC and TfGM).

## 3 Strategic Policy Context

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### 3.1 Eastlands Regeneration Framework

The overall vision for the Etihad Campus is set out in the Eastlands Regeneration Framework. This vision is to develop a place that can successfully host a globally competitive sport, leisure and recreation offer.

As such the Etihad Campus aims to be:

- The home of a new destination where residents and visitors will come to spend their time on leisure and recreation related activities
- The home of global and national sports organisations which can thrive and develop global best practice. In doing so the Etihad Campus can become the home to new sports related businesses in a new “Sports-Tech” cluster for the city-region
- The home of a Manchester exemplar stimulating a change in behaviours towards the zero-carbon agenda, creating employment opportunities for local people and driving innovation and economic growth across the city.

The Etihad Campus has the capacity to respond to and host significant new opportunities for a globally competitive leisure and recreation offer. If secured this would deliver key benefits to residents and the wider Greater Manchester economy through investment and jobs.

In promoting any such opportunity, it is recognised that there must be a robust and comprehensive movement and transport strategy, together with supporting mitigation measures encompassing a range of infrastructure interventions and behavioural changes.

### 3.2 Greater Manchester Transport Strategy 2040

TfGM has developed the Greater Manchester Transport Strategy 2040 on behalf of the Greater Manchester Combined Authority (GMCA) and Greater Manchester Local Enterprise Partnership (LEP).

Informed by key trends that will influence transport infrastructure requirements between now and 2040, the Strategy sets out long-term proposals to create a cleaner, greener more prosperous city region through better connections and simpler travel.

The overall vision as set out in the Strategy is for Greater Manchester to have *‘World class connections that support long-term, sustainable economic growth and access to opportunity for all’*.

The four key elements of TfGM’s Vision, which represent the goals of their strategy, are as follows:

- Supporting sustainable economic growth;
- Improving the quality of life;

- Developing an innovative City Region; and
- Protecting our environment.

The elements of TfGM's Vision reflect some of the critical challenges for Greater Manchester. These challenges also apply at a more local level to the Etihad Campus.

The Greater Manchester Transport Strategy recognises the growing regional centre of Manchester, including the Etihad Campus, as a major driver for economic growth and identifies leisure, retail and tourism as being critical to the future economic success of Greater Manchester.

Improved connectivity between the City Centre and the Etihad Campus is identified as a focus area within the Strategy.

The relative proximity of the Etihad Campus to the City Centre is identified as a particular opportunity to promote higher levels of walking and cycling, through investment in pedestrian and cycle networks supported by comprehensive and consistent on-street and digital wayfinding infrastructure. Potential improvements to rapid transit to the Etihad Campus are also identified.

### 3.3 Etihad Campus Strategic Sustainability Framework

The Etihad Stadium and City Football Academy have already been catalysts for the transformation of Eastlands. As the Campus embarks on the next key phase of its transformation to a world-class destination amidst increasing public awareness of the climate and biodiversity crisis, it recognises the opportunity for it to play its full part in exemplifying sustainable development.

The Etihad Campus aspires to be a pioneer for the whole of Manchester in pursuing its twin objective of realising locally-inclusive, globally-competitive economic growth, whilst simultaneously transforming to a net zero-carbon campus.

Four key themes underpin the delivery of this vision:

- **Climate and Nature Positive** - The Campus is a beacon of Manchester's rapid transition to a zero-carbon city, rich with wildlife and green infrastructure;
- **Vibrant & Inclusive** - The Campus works for everyone and provides unrivalled education, training and employment opportunities for local residents;
- **Healthy & Active** - The Campus is a world-class destination for sport, performance and leisure that inspires healthy lifestyles and workplaces; and
- **Open & Connected** - The Campus is fully integrated into the fabric of the City, with excellent transport connections that support sustainable travel.

### 3.4 Etihad Campus Strategic Vision

To support the future development of the Etihad Campus, a Strategic Vision for Movement and Transport has been prepared in consultation with key stakeholders including TfGM and MCC. The document supports the delivery of the Campus Sustainability Framework and sets out the long-term vision for how movement to, from and around the Etihad Campus will evolve over the next 20 years.

The Strategic Vision recognises that, as an international visitor destination, the Etihad Campus has a major role to play in the future development and ongoing regeneration of Eastlands and the wider East Manchester.

The strategy will be evolutionary, building on existing policies, strategies and plans and articulating the Etihad Campus' priorities in order to focus on the things that will make a positive impact and return for staff, visitors, the local community and the environment.

It is recognised that there will be an increasing importance placed on the co-ordinated planning, management and operation of events and activities at the Etihad Campus as it is developed. The Etihad Campus must effectively operate as a collective destination rather than as a number of individual components or uses.

This will require close co-ordination and co-operation between a range of stakeholders including the football club, other existing Etihad Campus venues, MCC, TfGM and operators of new developments as they come forward. A Campus Operational Plan will be developed that will build upon the strong working relationships and arrangements that already exist between these parties.

Informed by the nature of development proposed at the Etihad Campus and the key future drivers for Greater Manchester, a series of movement and transport objectives for the Etihad Campus have been developed within five key themes.

The key themes are as follows:

- **The Etihad Campus and the community** - the Etihad Campus is a key part of the Eastlands community. Well thought out interventions should offer opportunities to enhance the day-to-day life of the local community;
- **The visitor experience** - travel to, from and within the Etihad Campus is a key part of the overall visitor experience. A positive travel experience can significantly contribute towards a visitor's overall enjoyment of their visit and influence their decision on whether or not to return;
- **Managing the transport network** - management of the transport networks serving the Etihad Campus will be key to ensuring that impacts arising from movements to and from the area are minimised. This should be considered both at a local level and on a city/city region wide scale.;
- **A sustainable Campus** - in support of local, regional and national sustainability objectives, the movement of people and goods to, from and around the Etihad Campus should be achieved in a way that considers the sustainability of the transport movements and seeks to minimise the potential environmental effects of these movements; and

- **Embracing technological change** - new technologies will present opportunities to change and enhance the movement and transport of people and goods to and from the Etihad Campus. The transport sector is currently undergoing considerable change in this regard with the increasing emergence of electric vehicles, connected autonomous vehicles and sharing models based around app development.

This transport assessment has been prepared on the basis of and is underpinned by these objectives.

## 3.5 Planning Policy

This transport assessment has not been prepared for inclusion within a planning application. Separate transport assessments will be produced to accompany the planning applications for each new development on the Etihad Campus as they come forward. However, this document has been prepared with regard to relevant national and local planning policy and guidance. Key documents in this regard are described below.

### 3.5.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) was originally published by the Department for Communities and Local Government (DCLG) in March 2012, with the most recent revision being published in June 2019.

The document sets out national planning policy for England and seeks to contribute to achieving sustainable development, through three overarching objectives:

- *An economic objective, to build a strong, responsive and competitive economy;*
- *A social objective, to support strong, vibrant and healthy communities; and*
- *An environmental objective, to contribute to protecting and enhancing our natural, built and historic environment.*

To this end, the NPPF sets out a presumption in favour of sustainable development. This effectively means that development proposals that accord with the NPPF are more likely to be recommended for approval. When making planning decisions, this means approving development proposals that accord with an up-to-date development plan without delay.

The guidance advises that significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions and improve air quality and public health.

All developments that generate significant movement should be required to provide a Travel Plan, and be supported by a Transport Statement or Assessment, demonstrating:

- *“appropriate opportunities to promote sustainable transport 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”; and*
- *“any significant impacts from the development on the transport network (in terms of capacity and congestions), or on highway safety, can be cost effectively managed to an acceptable degree”.*

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.

Through this transport assessment and those for individual developments at the Etihad Campus, it will be demonstrated that the proposed development of the Etihad Campus is consistent with these considerations.

### 3.5.2 Manchester City Council Core Strategy (2012-2027)

MCC's Core Strategy is the key Development Plan Document in the Local Development Framework (LDF). It sets out the long term strategic policies for Manchester's future development and forms the framework that planning applications will be assessed against.

Transport forms one of the six spatial objectives within the Core Strategy. The overriding objective for transport is to *‘improve the physical connectivity of the City, through sustainable and accessible transport networks, to enhance its functioning and competitiveness and provide access to jobs, education, services, retail, leisure and recreation’.*

Within the Core Strategy there are several policies that set out how this objective will be achieved. These are discussed in greater detail below.

**Policy T1** relates to sustainable transport. It states that:

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

- *Improve choice by developing alternatives to the car.*
- *Promote regeneration and economic vitality by relieving traffic congestion and improving access to jobs and services, particularly for those most in need and for those without a car.*
- *Improve access to transport services and facilities in order to enable disabled people and people with mobility impairments to participate fully in public life.*
- *Improve pedestrian routes and the pedestrian environment.*
- *Improve and develop further Manchester’s cycle network (for example the Manchester Cycleway and the Trans Pennine Trail).*

- *Contribute to improvements to the extent and reliability of the public transport network through safe and attractive waiting and interchange facilities, better priority, improved services and information provision.*
- *Improve and develop appropriate road, rail and water freight transport routes and associated intermodal freight transport facilities in order to assist in the sustainable and efficient movement of goods.*
- *Facilitate modes of transport that reduce carbon emissions e.g. by incorporating charging points for electric vehicles, subject to their appropriate design and location.*
- *Would reduce the negative impacts of road traffic, for example, congestion, air pollution and road accident casualties.*
- *Take account of the needs of road users according to a broad hierarchy consisting of, in order of priority:*
  - *Pedestrians and disabled people*
  - *Cyclists, public transport*
  - *Commercial access*
  - *General off-peak traffic*
  - *General peak time traffic*

**Policy T2** relates to accessible areas of opportunity and need. It 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.*
- *Is easily accessible by walking, cycling and public transport; connecting residents to jobs, centres, health, leisure, open space and educational opportunities. Particular priority will be given to providing all residents access to strategic employment sites including: -*
  - *Links between North Manchester residents and key employment locations, including the City Centre, Central Park, Salford Quays and Chadderton Industrial Estate and Trafford Park.*
  - *Links within East Manchester to employment locations, Central Park and Eastlands in particular.*
  - *Links within Central Area between residents and employment, the Corridor in particular and east/west connectivity for residents in Central Area to employment areas in Trafford and East Manchester.*
  - *Maintaining strong links between residential areas in the South and the Regional Centre and improving connectivity with the Airport.*
  - *Ensuring good links between Wythenshawe residents and the Airport and further employment opportunities in Stockport, Trafford and the Regional Centre.*
- *Within the City Centre, provides a level of car parking which reflects the highly accessible nature of the location, as well as the realistic requirements*

*of the users of the development. Elsewhere, all new development should provide appropriate car parking facilities, taking account of the guidance in appendix B, which reflects policy in the Regional Strategy (RS). In all parts of the City proposals should have regard to the need for disabled and cycle parking, in line with appendix B. If the RS is revoked the Council will continue to use these standards when applying this policy. Standards are set for two different area types:*

- *District Centres; and*
- *Areas not within the City Centre or District Centres.*
- *The car parking standards are maximums and the cycle and disabled car parking standards are minimums. However, the Council will take the circumstances of each proposal into account to establish what level of parking is appropriate.*
- *Includes proportionate Traffic Impact Assessments and Travel Plans for all major applications and for any proposals where there are likely to be access or transport issues.”*

As demonstrated through this transport assessment, the proposed development is in accordance with this policy and in particular seeks to enhance access to strategic employment opportunities within East Manchester and to improve east/west connectivity between the Central Area and East Manchester by walking, cycling, and public transport. It is therefore considered to be in line with policy T2 of the Core Strategy.

### 3.6 City Centre Transport Strategy

In late 2018 TfGM ran a public conversation alongside Manchester and Salford City Councils to find out what people thought of city centre transport and public spaces. The findings will inform the development of the draft City Centre Transport Strategy, with a formal public consultation on its proposals expected later this year.

Some of the key issues raised in the public conversation included:

- The identification of air quality as an important issue for the city centre;
- A majority view that increasing cycling, walking and public transport infrastructure would help to improve the city centre;
- A majority view that reducing levels of traffic was the best way to create a high-quality city centre, while nearly half felt that cars, motorcycles and mopeds had too much space; and
- Poor accessibility and ticketing and the need for greater integration between modes were all highlighted as preventing more people from using public transport to access the city centre.

It is expected that the draft City Centre Transport Strategy will seek to respond to these issues. The Campus Strategy has been developed with due consideration of these emerging priorities.

## 4 Development Proposals

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It should be noted that, whilst a number of potential proposals and projects are being explored for the Etihad Campus, at this stage, there is no defined masterplan for the site. Given the scale of the potential development areas within the Etihad Campus and the nature of such developments, some of these proposals and projects are more developed than others.

These proposals will continue to evolve until such time that they become fixed through a series of individual planning applications/consents. The proposals assessed within this transport assessment therefore represent a ‘moment in time’ for the proposed development of the Etihad Campus but are reflective of the scale of development that is anticipated and is set out in the Eastlands Regeneration Framework.

### 4.1 Proposed Elements

The Eastlands Regeneration Framework identifies two sub-areas of future development at the Etihad Campus. These are:

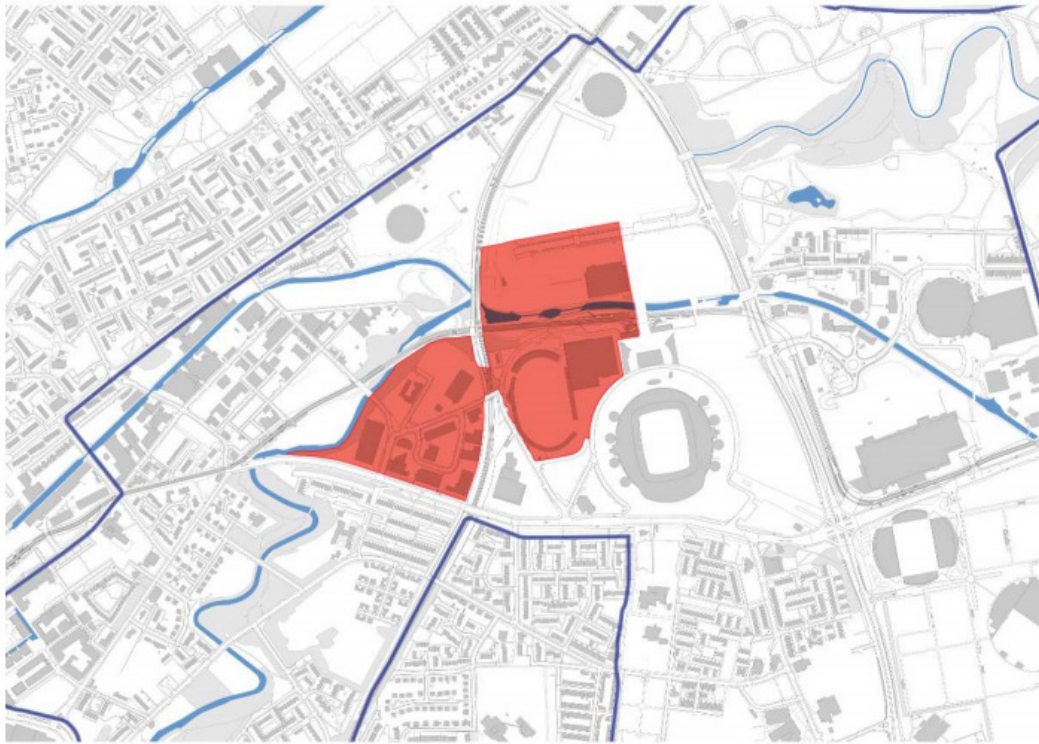
- The Etihad Campus Sports and Innovation Zone; and
- The Etihad Campus Commercial Zone.

Potential uses that could be delivered within each of these sub-areas are described below. These uses form the basis of this assessment.

#### 4.1.1 The Etihad Campus Sports and Innovation Zone

The Etihad Campus Sport and Innovation Zone is centred to the north and south of the Ashton Canal to the north west of the Etihad Stadium adjacent and encompasses the existing Regional Athletics Centre, the indoor training centre, the National Squash Centre and the Regional Tennis Centre.

Figure 2 - The Etihad Campus Sports and Innovation Zone



The Eastlands Regeneration Framework identifies this zone as consisting of new higher education and support facilities, new student accommodation and a diverse range of commercial workspace and office requirements.

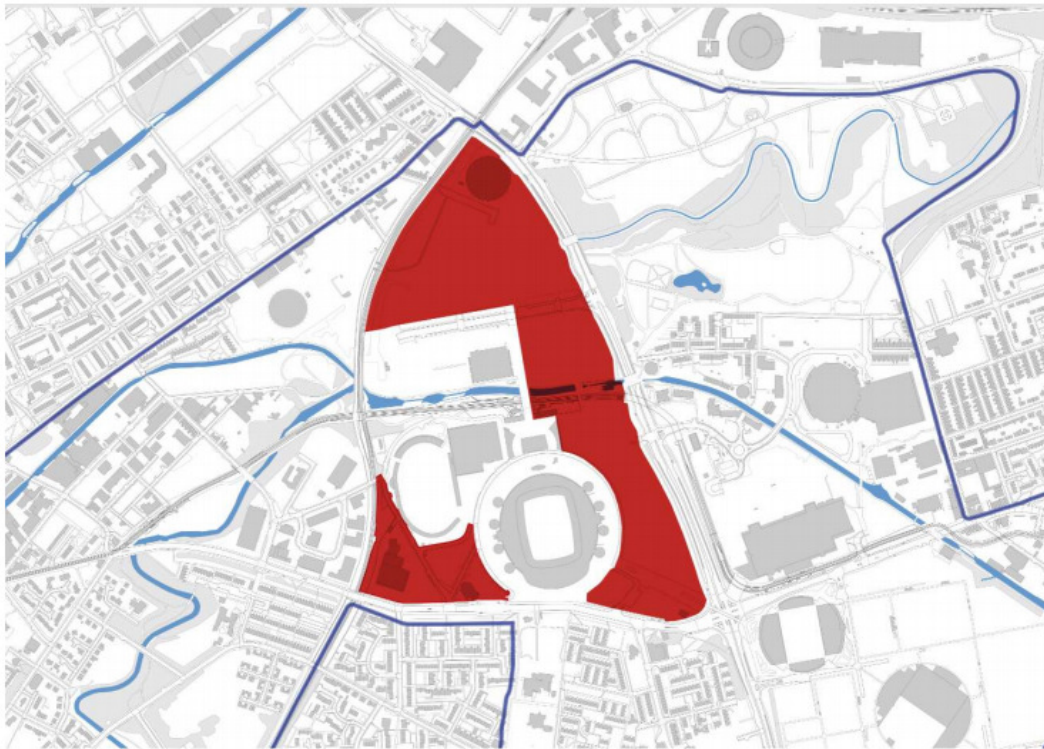
For the purposes of this assessment, the following uses and quantum of development has been assumed:

- The Manchester Institute of Sport - a new higher education institution incorporating approximately 150 staff and 3,000 students;
- House of Sport – office space for National Governing Bodies housing approximately 300 staff; and
- Student accommodation and live/work space with an approximate 1,000 bed accommodation).

#### 4.1.2 The Etihad Campus Commercial Zone

The Eastlands Regeneration Framework identifies this zone as an opportunity to diversify the pattern of uses on the Etihad Campus, create a wider profile of activity day by day and all the year round and fully exploit the latent economic capacity of the Etihad Campus as a whole.

Figure 3 - The Etihad Campus Commercial Zone



For the purposes of this assessment, the following uses and quantum of development has been assumed:

- A new indoor arena (with a capacity of up to 23,500 spectators);
- Commercial offices (assumed to be up to 500,000 sqft)
- A multiplex cinema (assumed to have 10 screens);
- Two hotels (assumed to have 150 beds each)
- Food and beverage units; and
- An attraction with touring content (3,000 maximum capacity).

## 4.2 Event Planning, Management and Partnerships

It should be noted that the Etihad Campus already operates successfully as a multi-organisational facility with a range of uses including the Stadium, CFA, the National Cycling Centre, Manchester Regional Arena, Manchester Tennis and Football Centre, and the National Squash Centre. As such, there are already established procedures and processes in place to successfully plan, manage and operate events and activities at multiple venues within the Etihad Campus.

It is recognised, however, that the scale of the Stadium relative to the other existing venues is such that it is the primary focus of event planning and management for the Etihad Campus. As the Etihad Campus develops with additional uses and venues, the co-ordinated planning, management and operation of events and activities at the Etihad Campus will take on even greater importance and the relative balance between the Stadium and other uses may change.

The Etihad Campus must continue to operate as a collective destination rather than as a number of individual components or uses. This will require continued close co-ordination and co-operation between a range of stakeholders including the football club, MCC, TfGM and operators of new developments as they come forward.

A Campus Operational Plan is being developed in order to achieve this. The Operational Plan will build upon the strong working relationships and arrangements that already exist between these parties.

As the primary use within the Etihad Campus, it is assumed that the football club would continue to 'hold' the single diary, being responsible for activating operational plans and overseeing their implementation. A clear proposal will be developed with all stakeholders to outline how this will be implemented.

As the Etihad Campus develops and more organisations and developments are based there, it is expected that the collective opportunity for Campus venues and transport operators to promote positive campaigns for sustainable transport options and messages to a wider audience will grow. Opportunities for co-ordinated promotion of such events will continue to be explored as the Campus develops.

## 4.3 Coincident Events

Organisations based at the Etihad Campus would commit to work together to manage potential conflicts through the organised planning and operation of events. This will be particularly important in terms of events at the Stadium and proposed Arena. Football matches can, however, be rescheduled at short notice beyond the control of the football club.

### 4.3.1 Frequency of Coincident Event Days

Detailed analysis of the likelihood of a Stadium event occurring on a coincident day to an Arena event has been undertaken. This is presented in Appendix A and is summarised below. This is based upon an assumed Arena programme of in the order of 120-180 events per year.

The analysis considers three periods of the year as follows:

- January-June & August – A period that coincides with the football season and summer Stadium concerts\* with a lower frequency of Arena events
- July – a period where no major events take place at the Stadium
- September-December - The busiest period for Arena events

\*Concerts are typically held at the Stadium over a short period with a similar frequency to the profile of matches for a typical month during the season.

This is summarised in the following tables.

Table 1 - Forecast number of coincident days between Stadium and Arena (120 events per year)

| Period                    | Expected Coincident Event Days<br>(based on 120 events per year) |            |          |
|---------------------------|------------------------------------------------------------------|------------|----------|
|                           | Midweek                                                          | Saturday   | Sunday   |
| January – June (& August) | 1                                                                | 2          | 1        |
| July                      | 0                                                                | 0          | 0        |
| September-December        | 1-2                                                              | 3-4        | 1        |
| <b>Total</b>              | <b>2-3</b>                                                       | <b>5-6</b> | <b>2</b> |

Table 2 - Forecast number of coincident days between Stadium and Arena (180 events per year)

| Period                    | Expected Coincident Event Days<br>(based on 180 events per year) |            |            |
|---------------------------|------------------------------------------------------------------|------------|------------|
|                           | Midweek                                                          | Saturday   | Sunday     |
| January – June (& August) | 2                                                                | 5          | 1-2        |
| July                      | 0                                                                | 0          | 0          |
| September-December        | 1-2                                                              | 3-4        | 1          |
| <b>Total</b>              | <b>3-4</b>                                                       | <b>8-9</b> | <b>2-3</b> |

It is therefore anticipated that (prior to any of the proposed forward planning/co-ordination) there could be a coincident event on approximately 10-15 days per year on average (i.e. approximately once a month). A coincident event is more likely between September and December, during the football season when Arena event frequencies are higher. However, even during this busy period, coincident events would only be anticipated at a peak rate of approximately twice a month, with most of these being on Saturdays.

## 4.3.2 Timing of Events

The analysis in Section 4.3.1 considers the likelihood of there being an event on at both the Stadium and the Arena on the same day and demonstrates that such

occurrences would be infrequent. However, even if events both take place on the same day, that does not mean that the events, or the travel to and from them would be coincident.

Midweek matinee events at the Arena are assumed not to coincide with football match movements. The arrival period for such events would be typically 11:30-13:30 with an exit at 16:30. This is outside of the period of evening football related transport movements, which are not typically experienced until around 18:30.

Where there is a football match at the Stadium and an evening Arena event on the same day midweek, it is likely that the events would start and end at similar times due to the confines of the working day. There may be some scope for the Arena operator to adjust stage times to reduce the overlap of arrivals and departures, but this could also be limited by commercial and licensing constraints. For the purposes of this assessment, it has been assumed that midweek evening events at the Stadium and the proposed Arena would always be coincident in terms of transport impacts. The arrival period for such Arena events would be typically 17:30-19:30 with an exit at 22:30. This arrival period is coincident with that of visitors to the Stadium. However, it should be noted that the departure time is after the typical Stadium related movements on the transport network have subsided (assuming an 20:00 kick off and no extra-time/penalties).

On the limited number of occasions where there is a Saturday match at the Stadium and a Saturday matinee event at the Arena, the arrival and departure periods of the two events may coincide depending upon kick-off time. The arrival period for matinee Arena events would be typically 11:30-13:30 with an exit at 16:30. This could coincide with both the arrival and departure of a weekend football match. However, it should be noted that the capacity of a matinee event at the Arena is likely to be approximately half of the full event capacity (i.e. 11,750).

The arrival period for weekend evening Arena events would be typically 17:30-19:30 with an exit at 22:30. Arrivals and departures between an evening event at the Arena and a football match are unlikely to be coincident as the latest current weekend kick off time is 17:30 (and therefore football supporters would be within the Stadium by the time Arena visitors have started arriving). There could be some coincidence between a football match ending and people starting to arrive for an Arena event, though in this situation flows would generally be in opposite directions (i.e. football attendees travelling away from the Etihad Campus as Arena visitors arrive) and are therefore less likely to cause capacity issues.

This is summarised in the following table.

Table 3 - Coincidence of Stadium and Arena events based on day and time

| Day     | Football Match (kick off time) | Arena Event Type | Coincident | Note                                                                                                                 |
|---------|--------------------------------|------------------|------------|----------------------------------------------------------------------------------------------------------------------|
| Midweek | Evening (19:00-20:30)          | Matinee          | No         | Not coincident                                                                                                       |
|         |                                | Evening          | Yes        | Coincident – expected 3-4 times across a year on average                                                             |
| Weekend | Early (12:30-13:30)            | Matinee          | Yes        | Matinee is typically half capacity only                                                                              |
|         |                                | Evening          | No         | Not coincident                                                                                                       |
|         | Mid-Afternoon (14:00-16:30)    | Matinee          | Yes        | Matinee is typically half capacity only                                                                              |
|         |                                | Evening          | Partly     | Different directions of travel                                                                                       |
|         | Evening (17:30)                | Matinee          | Partly     | Different directions of travel (football arrivals, Arena departures).<br><br>Matinee is typically half capacity only |
|         |                                | Evening          | Partly     | Different directions of travel (football departures, Arena arrivals).                                                |

It can therefore be seen that a truly coincident event, with the full capacity of attendees arriving and departing at the same time in the same direction would only occur when there is an evening event at both venues on the same day midweek. This is expected to occur approximately at a peak rate of every 2 months between September and December.

### 4.3.3 Special Event Operational Plan

In the same way as events are currently managed with other existing Etihad Campus uses, every event at the Stadium and the proposed Arena would have an operational plan in place that would cover a wide range of aspects of the event including movement and transport. When coincident events occur, a ‘special event operational plan’ is likely to be required.

The special event operational plan would seek to minimise additional vehicle movements within the immediate area. Working with stakeholders, additional

public transport capacity could be required at least on a temporary basis as part of the special event operational plan.

Event attendees would be contacted, informed that the area surrounding the Etihad Campus would be busier than usual and attempts to directly influence or change their behaviour towards sustainable transport modes would be made. The Etihad Campus would also work alongside TfGM to implement Travel Demand Management measures to encourage attendees to 're-route', 're-mode' and 're-time' their journeys in order to reduce the impact on the network. This advice and information would also be aimed at other network users (i.e. those not attending events at the Etihad Campus).

This could be supported by the provision of additional stewarding at (and on key routes to) the Etihad Campus to promote and provide information on alternative travel modes.

#### **4.3.4 Wider Event Planning, Co-ordination and Management**

It is also noted that, in addition to events at the Etihad Campus, other large events could also be taking place at other locations across Manchester (and Greater Manchester) that could have cumulative transport impacts, particularly within Manchester City Centre and on the Strategic Road Network. These events could include major sporting events, music concerts, and other public events.

At a city-wide scale, the impacts of the additional development proposed at the Etihad Campus would be relatively small in scale compared to other major events, particularly at locations remote from the Etihad Campus itself, such as the City Centre and M60.

When there is no event at the Stadium, the proposed Arena would attract less than half the number of people that typically attend a Stadium event due to the relative capacity of the proposed Arena. As such, the city-wide traffic impacts of the Arena would be significantly lower in scale than those currently accommodated by the existing transport networks on a regular basis during Stadium event days.

Notwithstanding the low frequency of coincident events at the Etihad Campus, the potential impact of such occurrences has been considered and discussed with wider stakeholders. It is considered that if these were to happen, it would be unlikely to have an unacceptable impact on the wider City Centre and transport networks.

In terms of other events that may be taking place across the city, due to existing restrictions, a football match at the Etihad Stadium would not coincide with either a football match at Old Trafford or a match at FC United. Other major events take place at other locations such as Heaton Park. This includes the annual Park Life festival and other music events. These events have always historically taken place during summer months (i.e. June/July). As such they would not coincide with a football match at the Etihad Stadium and would therefore not coincide with a 'coincident event' at the Etihad Campus.

Other events taking place across the city, such as those at the Victoria Warehouse, O2 Apollo and other venues are much smaller in terms of capacity and are unlikely to have significant city-wide impacts.

The Transport Assessment for the proposed Arena considers the impacts of that development on the surrounding transport networks, including on a Co-incident Event day at the Etihad Campus. Based on the assessment undertaken in the Arena Transport Assessment, it is anticipated that the forecast additional traffic due to the proposed Arena would represent an approximate 10% increase in background traffic at major roads adjacent to other major event venues (e.g. Old Trafford and Heaton Park). This does not make any allowance for the fact that people would generally attempt to find alternative routes avoiding these areas, if there were an event taking place. It is suggested that an increase in traffic flow of this magnitude is generally considered to be insignificant given that variations in background traffic flows of this magnitude can fluctuate by similar amounts on a daily basis.

Engagement with TfGM has been undertaken to understand how such events are currently coordinated and managed across Greater Manchester to ensure that adverse impacts on the networks are minimised. TfGM manages an events calendar that includes all 'known' planned events such as sports and leisure events as well as planned roadworks and public transport maintenance/closures. Within this calendar, each event is assessed on a Red/Amber/Yellow/Green (RAYG) rating based on the anticipated number of attendees and past knowledge and experience of similar events as follows.

- Red – high impact;
- Amber – medium-high impact;
- Yellow – low-medium impact; and
- Green – low impact.

The database currently includes both matches at the Etihad Stadium and large music events such as those at the Manchester Arena. The database also includes events at lower capacity local venues such as FC United and the O2 Apollo. It should be noted that football events at the Stadium are typically rated as yellow (low-medium impact) and events at Manchester Arena and smaller capacity venues are typically rated as green (low-impact). Higher-impact events (on a standalone basis) are very infrequent and typically associated with major road closures due to roadworks or large-scale events (e.g. Great Manchester Run).

The database also considers the cumulative impact of events taking place across the network on the same date. Individual events are assigned a score based on their RAYG rating to produce a combined score for the day. This score is then used to provide a RAYG rating for the day overall. It is noted that it would take multiple 'Yellow' events to be taking place simultaneously for the day as a whole to score 'Amber' or 'Red' for the day as a whole. 'Green' events do not affect the overall score for a day.

For context, based on the TfGM Events Calendar, a 'red-day' has occurred once or twice a year in recent years.

Notwithstanding the above analysis, there may be other large one-off events or network disruptions that would require a co-ordinated approach to effectively plan, manage and mitigate the transport impacts at a city-wide level. The Etihad

Campus commits to continue to actively engage with TfGM, MCC and other key stakeholders to ensure that all future events are planned and managed effectively from both an internal-Campus perspective and in the context of wider events and works across the city and across Greater Manchester.

## 5 Walking and Cycling

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### 5.1 Connectivity to the Local Community

#### 5.1.1 Existing Situation

The Etihad Campus is surrounded by a number of residential communities. As a major destination for leisure and employment in the local area, it is important that good pedestrian connectivity to and from the local community is provided.

Pedestrian accesses into the Etihad Campus are described in Section 7.1.1.

The Etihad Campus is surrounded by busy roads on two sides, however, formal crossings are in place to overcome these potential barriers to pedestrian movement. This includes crossings at the following locations:

- The junction of Hulme Hall Lane/Bradford Road;
- The junction of Alan Turing Way/Briscoe Lane;
- The junction of Alan Turing Way/Sportcity Way;
- The junction of Alan Turing Way/Gibbon Street;
- The junction of Alan Turing Way/Ashton New Road;
- Ashton New Road (between Grey Mare Lane and Swallow Street); and
- Ashton New Road (between Rowsley Street and Swallow Street).

In addition to the at-grade pedestrian crossings at the junction of Alan Turing Way/Ashton New Road, a pedestrian overbridge provides connectivity between the Etihad Campus and the communities to the south and east.

The Ashton Canal Towpath provides connections to the communities east and west of the Etihad Campus. Joe Mercer Way provides a grade-separated crossing of the canal itself to allow internal north-south movements within the Etihad Campus.

To the west of the Etihad Campus, Philips Park Road/Rowsley Street and the City Link connection provides pedestrian connectivity over and under (respectively) the potential barrier to movement of the railway corridor.

#### 5.1.2 Future Situation

As the Etihad Campus develops, the number and range of employment and leisure opportunities on the site will increase. Improving walking links to the Etihad Campus will help to promote sustainable travel options for staff and visitors and help to make employment and leisure opportunities accessible for the local community.

In order to facilitate this, upgrades to footways and crossing points along key routes between the Etihad Campus and adjacent communities may be required.

There may be opportunities to fund and deliver some of these improvements through the GM Mayor's Cycling and Walking Challenge Fund.

Specific crossing opportunities and routes to and through local communities have been identified to the east, south and west as part of the Bee Network programme. These include:

- Improved crossing facilities at the junction of Bradford Road / Cambrian Street to better link to the communities to the west of the Etihad Campus such as Miles Platting;
- Improved pedestrian facilities at the junction of Fairclough Street / Bank Street to better link to the communities to the east of the Etihad Campus such as Clayton;
- Improved connectivity on Albert Street as it crosses the railway line to better link to the communities to the south of the Etihad Campus such as Beswick;
- Improved crossing facilities at the junction of Alan Turing Way / Grey Mare Lane / Bank Street to better link to the communities to the south-east of the Etihad Campus such as Openshaw.

Although these are the key crossing points identified within the Bee Network, it may be that the local communities would value other alternative improvements to better connect them into the opportunities at the Etihad Campus. These communities should be consulted to identify the most appropriate improvements to achieve this objective.

Department for Transport funding has been secured for an improvement scheme at the Alan Turing Way/Ashton New Road junction. The scheme would provide fully segregated cycle facilities for all junction movements. The proposed scheme is expected to address identified road safety issues by providing dedicated, Dutch-style segregated cycle facilities throughout the junction. The stated safety benefits are expected to be achieved without significant adverse impact on overall junction capacity for motor vehicles and should not, therefore adversely affect congestion on event days. Indeed, this junction is closed in any event post-match as part of the traffic management measures to protect pedestrian movements.

## **5.2 Connectivity between the Etihad Campus and City Centre**

### **5.2.1 Existing Situation**

The Etihad Campus is located approximately 1.6km from the edge of Manchester City Centre (as defined by Great Ancoats Street). This is approximately a 20-minute walk.

The Etihad Campus itself is largely traffic-free, particularly south of the Metrolink/canal. Limited vehicular access to car parks and servicing areas is provided, but pedestrian movements dominate, particularly on Stadium event days.

There are a number of alternative walking routes from the City Centre available. The most direct route, known as the 'City Link' is via the A662 Pollard Street/Merrell Street/Ashton New Road. The 'City Link' was initially developed for the 2002 Commonwealth Games. This route is signed between the Etihad Campus and the City Centre and is lit with footways on either side and controlled-crossings at junctions with major roads of which there are only two (Carruthers Street and Every Street). A branch of this route connects from Every Street to the centre of the Etihad Campus via a traffic-free route.

Although the route is signed, some of the signs are hard to find and are only likely to be seen by people who are actively looking for them. There is no wayfinding or signage within Piccadilly Station itself and no signage from either the London Road or Fairfield Street entrances to the station.

The route itself is generally a good route with limited requirements to cross busy roads, however, there are some locations where improved crossings, footway widening or tightening of kerb radii may make the route more attractive for pedestrians.

Great Ancoats Street forms a significant barrier to pedestrian movements into the wider City Centre. A major highway improvement scheme is currently being implemented by MCC on Great Ancoats Street. One of the key objectives of the scheme is to improve pedestrian crossings along the route, reducing the severance currently caused by traffic. This is described in more detail below. There are informal crossings (dropped kerbs) provided at the junctions with Pollard Street and Store Street, though no pedestrian crossing signals are provided.

An alternative traffic-free walking route between the City Centre and the Etihad Campus is available via the Ashton Canal towpath. This route takes approximately 20-minutes to walk to the City Centre. This route passes beneath Great Ancoats Street alongside the canal.

### 5.2.2 Future Situation

Great Ancoats Street forms a major barrier to pedestrian movements between the Etihad Campus and the wider City Centre. As noted above, a major highway improvement scheme is currently being implemented by MCC on Great Ancoats Street. Additional crossings will be installed along the route, making travelling by foot or bicycle from the City Centre to the surrounding neighbourhoods easier and safer. Controlled pedestrian crossings will be provided at the junction of Great Ancoats Street / Store Street. This is on the route of the City Link pedestrian route from the City Centre to the Etihad Campus. These additional crossings will therefore directly benefit pedestrian connectivity between the Etihad Campus and the City Centre.

The £4.2m Northern and Eastern Gateway will become the second City Centre cycling and walking corridor to be funded by the Greater Manchester Mayor's Challenge Fund. The route will connect the neighbourhoods of Ancoats, New Islington, New Cross, New Town, Redbank and the Green Quarter by creating a high-quality, continuous east-west walking and cycling route for the north and

east City Centre fringe. This will provide improved connectivity between the City Link route and these areas and towards Victoria Station.

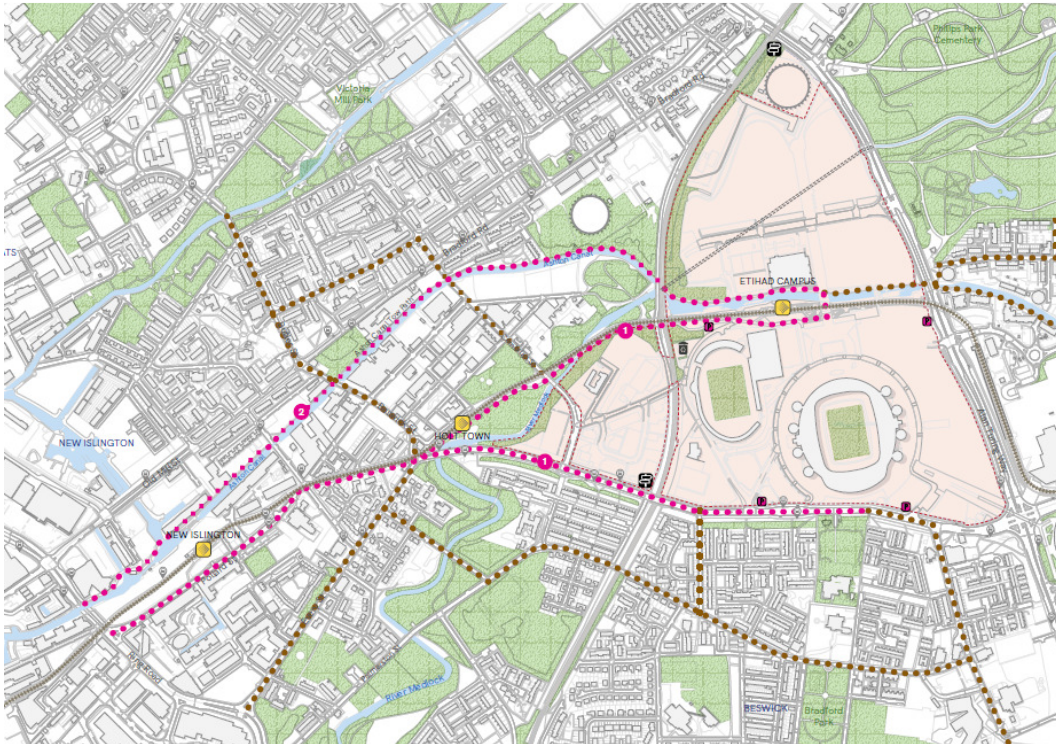
Challenge Fund investment for an £11.6m Piccadilly - Victoria cycling and walking route - which will run parallel to Great Ancoats Street to its south and include improvements for people travelling on foot or by bike to Thomas Street and Stevenson Square - was confirmed in March 2019, this will also help to link the City Link route into the wider City Centre.

More generally, the ongoing regeneration of the Ancoats and New Islington areas will improve the quality and amenity of the existing walking routes between the Etihad Campus and the City Centre and create new opportunities for people to spend leisure time along the route with bars, restaurants and high density residential developments effectively expanding the 'City Centre' offer eastwards towards the Etihad Campus.

Similarly, the increasing density of residential development between Great Ancoats Street and the Etihad Campus, with accompanying improvements to the quality and safety of connecting routes, will also help to make access to the City Centre easier for communities to the east of Great Ancoats Street.

There is significant potential to enhance the use of the existing pedestrian routes between the City Centre and the Etihad Campus. In part, this could be achieved through increased promotion and wayfinding of routes both before an event (i.e. as visitors are planning their journey) and on the day of an event (i.e. wayfinding signage along the route). There are also opportunities for wayfinding signs along the route to be larger and more prominent to increase the number of people walking the route.

Two key routes have been identified as priority routes for future investment based on their existing levels of use and potential for improvement. These are along Ashton New Road / Merrill Street / Pollard Street and the City Link route north of the River Medlock. There is also a longer-term aspiration to improve connectivity to, from and along the Ashton Canal towpath from the Etihad Campus. The plan below shows these priority routes to the city centre in pink with some of the key community links shown in brown.



Increased levels of stewarding and security along routes could also increase people's willingness to use the routes as a means of accessing the Etihad Campus. This would have a number of potential benefits. Firstly, it would encourage people to be more confident to use the route from a safety and personal security perspective, particular in the evenings and in the dark. Secondly, it would help to guide people as to the location and existence of the route, effectively acting as wayfinding for the route. Finally, it would also provide opportunities for communication of information to people using the route (e.g. how much further is the Etihad Campus/City Centre).

### 5.3 Connectivity to Other Key Destinations

Other key transport interchanges can also be accessed on foot from the Etihad Campus. These include the following locations:

- Ashton Old Road bus corridor - approximately 900m south of the Etihad Campus – accessed directly along Alan Turing Way/Pottery Lane. Controlled crossing facilities are provided at the main junctions with Ashton New Road and Ashton Old Road;
- Oldham Road bus corridor - approximately 1,000m north of the Etihad Campus – accessed directly along Alan Turing Way/Hulme Hall Lane. Controlled crossing facilities are provided at the main junctions with Bradford Road and Oldham Road;
- Ashburys Station – approximately 1,100m south of the Etihad Campus – accessed directly along Alan Turing Way/Pottery Lane. Controlled crossing facilities are provided at the main junctions with Ashton New Road and Ashton Old Road;

- Central Park Metrolink stop – approximately 2km north of the Etihad Campus accessed along Briscoe Lane and Ten Acres Lane. This stop is on the Rochdale-East Didsbury line. Controlled crossing facilities are provided at the main junctions with Briscoe Lane and Oldham Road; and
- Queens Road Metrolink stop – approximately 2.5km north-west of the Etihad Campus accessed along Hulme Hall Lane. This stop is on the Bury-Altrincham line. Controlled crossing facilities are provided at the main junctions along the route.

## 5.4 Cycling Facilities

There are a number of cycle parking stands located around the Stadium at the Etihad Campus. This includes 272 spaces at the Stadium and 12 spaces at the Manchester Tennis & Football Centre. There are also five cycle stands (10 spaces) at the Etihad Campus Metrolink stop.

National Cycle Route 60 runs adjacent to the site along Alan Turing Way. This route starts in North Manchester and then along Hulme/Hall Lane/Alan Turing Way before joining the Ashton Canal east of Alan Turing Way and travelling south to join the Fallowfield Loop in South Manchester. Adjacent to the site, the route is a combination of on-street segregated and unsegregated cycle lanes.

Regional Route 86 is a largely traffic-free route that runs east-west through the site. It connects from Ducie Street within the City Centre along the Ashton Canal towpath through the Etihad Campus and then through Philips Park. A branch of this route runs south from the Etihad Campus alongside the River Medlock down to Ashton Old Road and Pin Mill Brow.

There are also cycle lanes on Ashton New Road from a point close to the entrance to City Football Academy through to Holt Town. These lanes are on-street and not segregated from traffic.

## 6 Public Transport

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The Etihad Campus is highly accessible by public transport with Metrolink, bus and heavy rail all serving the site. The existing services to and from the Etihad Campus are described below.

As the Etihad Campus is developed, the public transport offer will continue to evolve to reflect the changing nature of the Etihad Campus from a location that experiences high levels of public transport use for short and infrequent periods on Stadium event days to a location with a strong daily demand for public transport throughout the day. This will build on the highly accessible nature of the existing site.

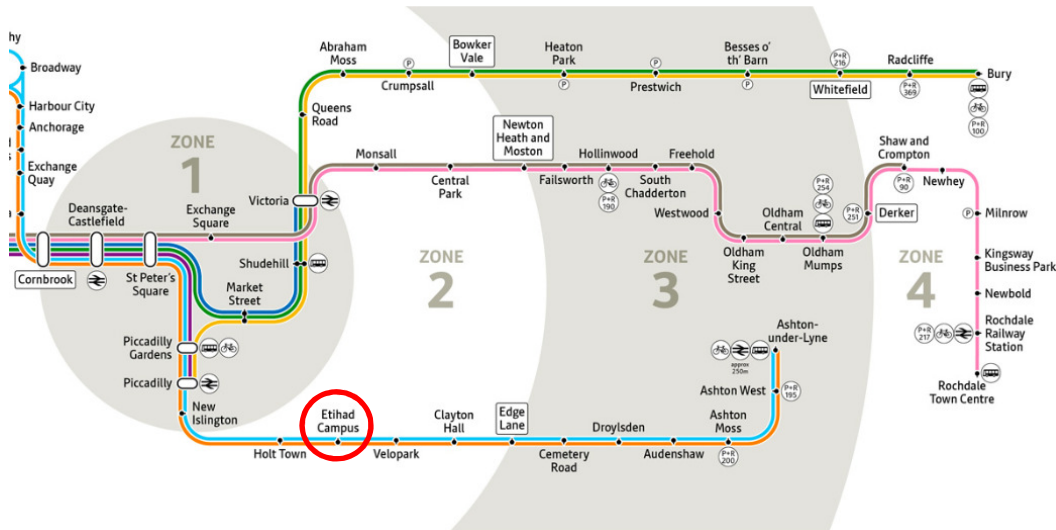
### 6.1 Metrolink

#### 6.1.1 Existing Situation

The Etihad Campus benefits from having a Metrolink stop located centrally within the site. The Etihad Campus stop has supporting crowd-control infrastructure to enable it to deal with high volumes of passengers before, and particularly following an event at the Stadium. There are additional Metrolink stops to the west and east of the Etihad Campus (Holt Town and Velopark respectively) that serve the areas immediately surrounding the Etihad Campus (and also serve parts of the Etihad Campus more conveniently than the main stop).

The Etihad Campus stop is on the existing Ashton-under-Lyne to Eccles/MediaCityUK Metrolink line, which currently provides a six-minute frequency (i.e. 10 trams per hour) in both directions. These services call at key City Centre stops including Piccadilly, Piccadilly Gardens, St Peter's Square and Deansgate Castlefield. Interchange onto all other Metrolink lines is possible at these City Centre stops. Three Park and Ride facilities are located on the line providing a total of 845 parking spaces at Ashton West (195 spaces), Ashton Moss (200 spaces) and Ladywell (450 spaces). Other Park and Ride facilities are located across the Metrolink network, providing a further total of over 2,300 spaces.

Figure 4 - Existing Metrolink Network (part)



At times when there is no event at the Stadium there is significant capacity available on the Metrolink line. This is supported by survey data and anecdotal information provided by TfGM.

TfGM currently operate an 'enhanced service' on Metrolink to serve football matches and other major events at the Etihad Campus. This enhanced service is specifically tailored to the requirements of each event based on TfGM intelligence, previous experience and anticipated demand, but is typically intended to operate such that every other tram is a 'double unit' (i.e. two connected tram units) for a period of approximately two-hours before and two-hours after the event.

## 6.1.2 Future Situation

Discussions with TfGM have been held to understand the potential for enhanced service operations before and after events at an arena at the Etihad Campus. Based on these discussions TfGM has confirmed that they would consider operating further enhanced services before and after an Arena event, subject to their operational experience demonstrating that the demand for Metrolink travel to/from the Arena requires enhancement. This could include an enhanced service similar to that operated on a matchday (i.e. operating every other tram as a 'double unit' before and after the event).

In the scenario where there are coincident events at the Stadium and the Arena, further enhancements to the Metrolink service may be desirable. This could include operating every other tram as a 'double unit' for longer periods of the day (e.g. if the two events have limited overlap in terms of arrival and departure) or operating every tram as a double unit for a period of time (e.g. if the two events have a significant degree of overlap in terms of arrival and departure times). Through discussions with TfGM it has been established that there are no technical reasons why these enhanced services could not be operated, subject to demonstration that there is sufficient passenger demand and the availability of

trams. Such an enhancement to the service (i.e. all services as double-units would also be beneficial on Stadium only event days).

The ability for TfGM and the Metrolink operator to deliver enhanced services is related to the availability of tram units. TfGM has recently purchased 27 additional tram units, which are due to be in operation in 2020. Whilst these units are not intended specifically for use on the Eccles to Ashton-under-Lyne service, it is anticipated that this additional rolling stock would increase the resilience of rolling stock, reduce the impacts of vehicles being out of service and ultimately increase the availability of trams to support enhanced services (on this and other lines across the network). As such it is expected that TfGM's ability to operate enhanced services on this and other lines in the future would be improved as the network grows and the rolling stock expands accordingly.

## 6.2 Buses

### 6.2.1 Existing Situation

The Etihad Campus is currently well served by high frequency radial bus services between Manchester City Centre and both Ashton-under-Lyne /Stalybridge (services 216, 217 230, and 231) and Oldham (services 74, 76, and 76A). These services stop approximately every 10 minutes (or sometimes more frequently) in each direction close to the Etihad Campus along Ashton New Road and Bradford Road respectively. There is also a radial bus service that operates between Cheetham Hill and Salford Quays/Pendleton (service 53), stopping on Alan Turing Way though this operates less frequently (approximately every 30mins).

Figure 5 - Existing Bus Services at the Etihad Campus



Based on discussions with TfGM, it is understood that Stagecoach currently operate ‘enhanced services’ to serve football matches and other major events at the Etihad Campus on a commercial basis. This effectively increases bus frequencies along the existing Manchester to Ashton-under-Lyne 216 route for a period on these days.

Following events at the Stadium, a ‘shuttle-bus’ service is operated by Stagecoach to transport passengers into the City Centre, with services stopping in Piccadilly Gardens. This service is operated on a commercial basis and typically consists of 10-15 buses (subject to anticipated demand), which are boarded at a managed boarding point on Ashton New Road.

Due to the available space on the highway network in this location and the post-event traffic management measures that are implemented, some buses are required to stack on the eastbound section of Ashton New Road and perform a U-turn until space on the westbound layby becomes available.

## 6.2.2 Future Situation

In discussions with TfGM, the potential to provide a similar shuttle bus service to that provided for Stadium events for events at the Arena has been explored. It is considered that there would be potential interest from bus operators in providing such a service, subject to their operational experience demonstrating that there is the demand to make it commercially viable. It is considered that the City Centre is

the most appropriate destination for these services, with Piccadilly Gardens offering a central point to serve multiple City Centre transport interchanges, hotels and other destinations.

To be effective, an Arena shuttle bus service would need to be well managed and signposted to ensure that visitors are aware where to board and are confident that the service will transport them to their destination. Over time there is scope for enhancing the existing facilities if shuttle bus services continue to be an established part of Campus operations. For Arena-only events the existing facility on Ashton New Road is likely to be able to fulfil these requirements.

Over time, alternative locations for shuttle buses may be explored to improve the visibility of buses following an Arena event. This may be internal to the Etihad Campus or external, perhaps on Alan Turing Way. An alternative route for these buses via Alan Turing Way and Oldham Road could offer a potentially quicker route than Ashton New Road (from this boarding point) and would have reduced potential for conflict with large pedestrian movements heading into the City Centre and any traffic management measures on Ashton New Road immediately following an event.

On the limited occasions when there is an event at the Arena at the same time as the Stadium, the events would be managed as far as is practical to try to avoid the events starting/finishing simultaneously. Providing that there was a stagger of approximately 45mins-1 hour between the finish time of events, it is considered that it would be possible for buses to pick up people from one event, transport them to the City Centre and then return to the Etihad Campus to pick up people exiting from the later event. This is based upon a typical journey time to the City Centre of 15-20mins, which makes some allowance for post-event congestion and delay on the network.

### 6.3 Heavy Rail

The closest heavy rail station to the Etihad Campus is Ashburys. This is approximately 15-minutes' walk from the southern edge of the Etihad Campus. Ashburys station is served by the following services:

- Between Manchester Piccadilly and Hadfield/Glossop (via Guide Bridge/Newton for Hyde /Broadbottom) – approximately 40 trains per day in each direction;
- Between Manchester Piccadilly and Rose Hill/New Mills Central (via Bredbury/Guide Bridge/Hyde North & Central/Marple) – approximately 30 trains per day in each direction; and
- Between Manchester Piccadilly and Sheffield - two trains per day in each direction.

Whilst there are frequent services to Ashburys station, it has limitations in terms of its capacity to accommodate the large volumes of passengers that may wish to use the station immediately following an event due to the infrastructure.

Manchester Piccadilly is the main station serving the City Centre. There is a signed walking route between the Etihad Campus and Piccadilly Station. Piccadilly has rail services to a wide range of local and national destinations as well as interchange to other modes including Metrolink, bus and taxi. The Etihad Campus is an 8-minute journey from Piccadilly via a direct Metrolink service

Manchester Victoria is located slightly further from the Etihad Campus but still within the City Centre. Victoria has services to a wide range of local destinations and other locations across the North of England including Leeds, Liverpool and Newcastle.

## 6.4 Integrated Ticketing

A comprehensive and targeted communication strategy is proposed to encourage attendees to use sustainable transport modes to access the Etihad Campus. Each development that is delivered would be accompanied by a travel plan that would be aligned with the overall Strategic Vision which seeks to promote sustainable transport for both staff and visitors.

Arena visitors would be targeted with information and advice relating to sustainable travel to and from the Etihad Campus first. On-site parking for the Arena would be limited and would not be released until shortly before the event (likely to be some time after event tickets are released) due to the potential for a football match to be rescheduled at short notice. Arena visitors would therefore be encouraged to make alternative arrangements in the meantime and advised on the public transport, and active travel options available. Once on-site parking becomes available, it is therefore likely that many visitors will have already made alternative travel arrangements using sustainable transport or off-site parking located outside the surrounding area (e.g. City Centre or Park & Ride).

Discussions have been held with TfGM to understand the potential for packaging event-ticketing with public transport tickets. There are numerous examples of where TfGM has previously worked with a range of partners to provide such schemes previously. Specifically, at the Etihad Campus, TfGM currently works alongside the football club to offer matchday season passes and 'queue-jump' tickets (though the latter is becoming largely superseded by the introduction of contactless payment for Metrolink). Under the existing transport operating model in Greater Manchester, TfGM is only currently able to offer these packages for Metrolink, though this could change in the future.

TfGM has a long-term aspiration to move towards integrated ticketing across the network as set out in their 'Our Network' vision. This is intended to make it easier for passengers to travel seamlessly between transport modes and help to remove some of the barriers to interchange that currently exist.

Initial steps towards this goal have been taken recently with the introduction of a new zonal Metrolink system in January 2019 and the launch of a contactless system for Metrolink payment in July 2019.

TfGM has recently consulted on major proposed changes to bus travel within Greater Manchester, which could represent a major step towards full integration

of the public transport network. TfGM are proposing a bus franchising scheme for the whole of Greater Manchester. This would see Greater Manchester taking control of bus services and deciding which services should be provided. This would give Greater Manchester the power to set the routes, timetables, tickets and standards, while the bus operators would run the services.

As the Etihad Campus develops, and other operators are established on the site there will be opportunities for these parties to work together with TfGM to promote public transport through integrated ticketing and incentives. As more organisations become based at the Etihad Campus, opportunities for shared incentives and partnership working will increase.

## 7 Access, Parking and Traffic Management

### 7.1 Site Access

The Etihad Campus has a number of entry points which provide different levels of access onto the site for vehicles and pedestrians.

#### 7.1.1 Existing Situation

There are a number of existing vehicular accesses into the Etihad Campus. These are shown in the attached plan and are as follows.

Figure 6 - Access Points to the Etihad Campus



- Gate 1 – northernmost access onto Alan Turing Way. This is a left-out junction but currently has bollards to prevent use by vehicles;
- Gate 2 – main entrance into the Etihad Campus (Sportcity Way) car parking areas for Alan Turing Way. Junction operates under traffic signal control;
- Gate 3 – access from Alan Turing Way into undeveloped land, (shown shaded Orange on plan). Junction is under traffic signal control;
- Gate 7 – access from Ashton New Road into Grey Car Park. Junction is an ‘all movements’ priority junction;

- Gate 11 – access from Rowsley Street into Yellow Car Park Junction is an ‘all movements’ priority junction;
- Gate 12 – access from Rowsley Street into the Tunnel Club, Founder and Premier Member Car Parks;
- Gate 13 – access from Rowsley Street to the Manchester Regional Arena and National Squash Centre; and
- Gate 15 – access to a servicing area at the northern end of Rowsley Street.

As the numbering suggests, there are other, minor, gated accesses to the Etihad Campus though these are either not used or are for minor servicing and deliveries only.

All of the above gated accesses are also used by pedestrians (with the exception of Gate 15). Gate 1 is available for pedestrian only use. In addition, there are a number of pedestrian only accesses to the Etihad Campus as follows:

- Ashton New Road – this frontage to the Etihad Campus is accessible to pedestrians at various points along its length;
- City Link – this pedestrian route enters the centre of the Etihad Campus from the west just to the south of the Metrolink and canal;
- Ashton Canal Towpath – this pedestrian route provides access to the centre of the Etihad Campus from the east and west with a single point of entry onto the site onto Joe Mercer Way to the north of the Stadium; and
- Sir Howard Bernstein Way – a major pedestrian only route from the junction with Ashton New Road / Alan Turing Way. There is also a pedestrian footbridge across the junction linking to City Football Academy.

Passengers embarking from the Metrolink service also enter the centre of the Etihad Campus as pedestrians immediately to the north of the Stadium.

### 7.1.2 Future Situation

As new developments are delivered within the Campus, alterations to the site access and egress arrangements may be proposed. These alterations may seek to improve the flow of vehicles into and out of the Campus or to improve the safe movement of people to, from and within the site.

Whilst it is not currently envisaged that any new access points would be formed, some of these alterations may require permanent changes to infrastructure. Other alterations may only require temporary traffic management changes within the existing infrastructure on site. Any such changes would be agreed with MCC as the local highway authority through the planning process as required.

## 7.2 On-Site Parking

### 7.2.1 Existing Situation

There is currently capacity for approximately 4,200 on-site parking spaces within the Etihad Campus (excluding those spaces dedicated to the Manchester Tennis and Football Centre and the Manchester Regional Arena). This capacity is split across a number of car parks within the Etihad Campus, as shown on Figure 6. Approximately 2,600 of these spaces are located in areas adjacent to Sportcity Way (marked as G, H, J, K and M in Figure 6). Approximately 300 spaces are located in areas to the south of the Stadium (marked as A, B and C in Figure 6). The remaining 1,300 space capacity is spread across cleared sites, earmarked for future development (marked as O in Figure 6).

On days when there is no event at the Stadium, this parking provision is more than sufficient to meet the day-to-day requirements of the Etihad Campus, including for events at the non-stadium venues within the Etihad Campus.

On Stadium event days, based upon data for the 2018/2019 football season, the average demand for parking on-site was just under 3,000 spaces with a maximum use of just over 3,500 spaces. Off-site parking is available on private third-party land in the areas surrounding the Etihad Campus. To mitigate the risk of on-street parking in the area surrounding the Etihad Campus there is a residents parking scheme that operates only on event days. This is described in Section 7.3.1.

### 7.2.2 Future Situation

The overall parking strategy for the future development of the Etihad Campus is not to increase the supply of parking on the site and to mitigate the risk of undesirable off-site parking on-street through amendments to the residents parking scheme such that it operates every day and not just on Stadium event days.

During construction of the proposed Arena, there would be a loss to the overall parking capacity at the Etihad Campus of approximately 500 parking spaces from the site of the building, together with approximately 400 further spaces from area 'O' to allow its use as a construction compound for the Arena. This would result in a reduction in on-site parking to approximately 3,300 spaces during the construction of the Arena. Once the Arena is operational, the 400 spaces taken by the construction compound would become live again, restoring the on-site parking capacity to approximately 3,700 spaces.

The table below summarises the future situation.

Table 4 - Car Parking On Site with Arena

| Scenario              | Net change in spaces                           | Impact on parking | On-site Spaces Available |
|-----------------------|------------------------------------------------|-------------------|--------------------------|
| Existing              | N/A                                            | N/A               | 4,200                    |
| Construction of Arena | 500 spaces lost from Arena site                | -900              | 3,300                    |
|                       | 400 spaces lost temporarily from site compound |                   |                          |
| Operation of Arena    | Site compound returned as part of capacity     | +400              | 3,700                    |

On a non-matchday, the on-site provision would be more than sufficient to meet the day-to-day requirements of the Etihad Campus during construction, and may allow for construction worker parking on site, in order to avoid the need for these workers to park off-site.

On a matchday, the provision of spaces during construction of the Arena would still be above the average number of spaces that were used on matchdays during the 2018/19 season.

Once the Arena is operational, on a matchday when there is no event at the Arena, the available capacity of 3,700 spaces for Stadium use is above both the average and maximum number of spaces that were used on matchdays during the 2018/19 season.

When there is an event at the Arena (but no event at the Stadium) up to 3,000 of these spaces would be allocated for use by the Arena. This would retain capacity for a further 700 spaces for use by other existing Etihad Campus uses (including Stadium non-matchday staff).

On the limited occasions where there is a coincident event at the Stadium and the Arena, up to 3,000 spaces would be available for use by the Stadium. Up to 500 spaces would be available for use by the Arena (to serve hospitality and disabled guests). Capacity for up to 200 spaces would be available for other Campus uses. The Stadium provision is in accordance with the average number of spaces that were used on matchdays during the 2018/19 season.

As further uses are developed on the Etihad Campus, this may result in the loss of parking capacity, where these uses are constructed on sites currently used for parking but earmarked for future development. In order to ensure that this does not reduce the retained parking provision below an acceptable operational level, it is proposed that any spaces lost to development are reprovided if demand at the time requires it.

## 7.3 Off-Site Parking

### 7.3.1 Existing Situation

A resident parking scheme operates within the area surrounding the Etihad Campus on Stadium event days. The scheme is enforced from two hours before the event until it ends (if the times of the event fall between 10am to 10pm). Although there are several resident parking schemes in operation across Manchester, the one at the Etihad is unique in that it only operates on Stadium event days. The dates of these events must therefore be advertised on signs within the area that the scheme operates and changed after each event. Local residents and businesses must therefore check when the scheme is due to operate and plan accordingly.

During that time, only people with permits can park. Outside of these hours anyone can park for any time. The normal rules apply for double yellow lines (i.e. permit holders cannot park on them).

Any vehicle parked on the street for longer than three hours while the scheme is in force needs to have a permit. Residents are eligible for a free resident permit for each vehicle registered to their property. Residents can apply for up to two visitor permits, which last for one year. Up to three vehicles can be registered against each visitor's permit, but only one vehicle can use a permit at a time.

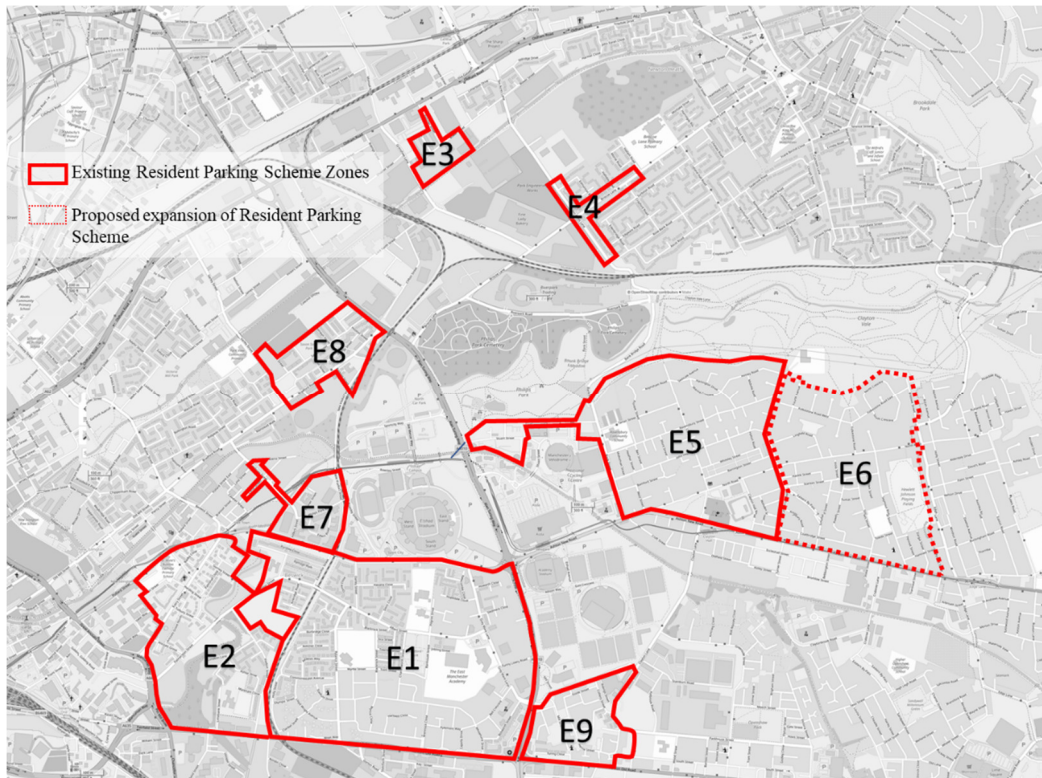
Resident and visitor permits are applied for online. No paper permits are issued. Each permit is registered to a specific vehicle and this can be altered online as required.

Where appropriate, residents can apply for a free transferable permit for someone caring for them at home. This is a paper permit and is to be displayed on the carer's dashboard and return to the resident before they leave.

Businesses that have premises in the parking scheme can apply for one permit. Businesses that have visitors that need to park during event times can apply for five transferable visitor's permits. These are valid for one year. Business and visitor permits are also applied for online, with no paper permit issued.

The scheme is split into nine zones (E1-E9) as shown below.

Figure 7 - Etihad Campus Resident Parking Scheme



The expansion of the CPZ into Clayton (zone E6) has not yet been fully implemented, although it is understood that Manchester City Football Club has paid the Section 106 Agreement contributions to MCC as part of the planning consent for the Stadium expansion.

Within a radius of approximately 800m from the centre of Campus there are an estimated 1,500 off-street parking spaces. This includes parking at the National Cycling Centre and sites to the east, south and west of the Etihad Campus. Within a radius of approximately 1500m from the centre of Campus there are an estimated further 4,500 off-street parking spaces. These are primarily located towards the north of the Etihad Campus around the industrial areas north-east of Hulme Hall Lane. Beyond 1500m of the Etihad Campus there is additional parking, the majority of which is within Manchester City Centre, but which also includes on-street parking beyond the extent of the current residents parking scheme.

### 7.3.2 Future Situation

The proposed development is anticipated to increase the frequency of events at the Etihad Campus and may also require parking charges to be implemented on days other than matchdays. The parking strategy for the Etihad Campus and the surrounding area should therefore reflect the increase in the frequency of events and attempt to mitigate any adverse impacts arising from this.

As such, it is anticipated that, once the Arena is operational, the Resident Parking Scheme would need to change to operate seven days a week, bringing it in line with other resident parking schemes that are operated across the city. The other

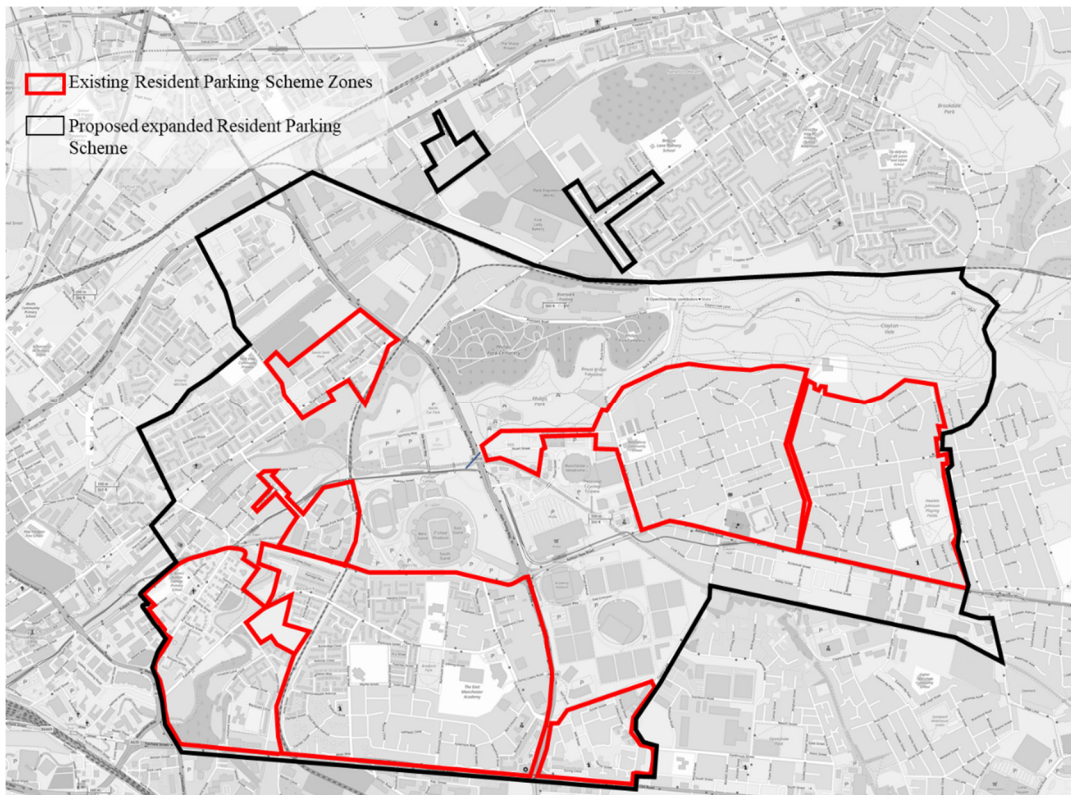
schemes typically operate on all days and allow only permit holders to park within designated times (e.g. 08:00-18:00).

Given the anticipated demand for parking during the evening generated by the Arena it is considered that any restrictions would need to apply until after events have commenced. It may therefore be appropriate for the restrictions to apply between 12:00 and 22:00 or similar to ensure that the amenity of residents is protected during this time.

In addition to the expanded resident parking scheme area committed to as part of the Stadium expansion, additional demand generated by coincident events at the Stadium and the Arena may require a change to the geographical coverage of the scheme. It is therefore recommended that the geographical extent of the scheme is reviewed, and additional areas are considered for inclusion.

An initial suggested area, presented below, equating to an approximate 20-minute walking distance from a central point within the Etihad Campus, would have the benefit of providing a complete zone surrounding the Etihad Campus that drivers know they cannot park within. This could assist in influencing travel behaviours at all times, reducing the demand for parking. The actual details of any changes to the existing Resident Parking Scheme would need to be determined following consultation with local Members and residents.

Figure 8 – Proposed Expanded Resident Parking Scheme



As the current resident parking scheme is considered sufficient (in planning terms) to mitigate the impacts of Stadium event parking, and as the Arena would attract much smaller numbers of people compared to the Stadium, it is considered that any geographical expansion of the scheme would only be required as part of

the 'special event operational plan' when there is a coincident event at the Stadium and the Arena. However, for reasons of simplicity and practicality, it is considered that the resident parking scheme should operate on a consistent basis at all times.

Surveys have been undertaken to identify the extent of existing on-street parking in order to help inform the potential expansion of the resident parking scheme. Based on this, areas surrounding the Etihad Campus have been identified as being potentially suitable for consideration in any expansion, as shown in the plan above. Care would need to be taken with regards to displacement effects on existing parking within these areas, as well as the requirements of local residents and businesses potentially affected by any changes.

In addition to the above enhancements to the resident parking scheme, there will be opportunities to refine the operation and management of the scheme through the introduction of new technologies and infrastructure over time. Particular enhancements could include the use of mobile technology to make it easier for residents to register for and amend visitor pass vehicle registrations, thereby making it easier for those residents and visitors who do not have the necessary access to technology or IT skills required to use the system. Technological advancements may also help with regards to enforcement and management of the scheme.

## 7.4 Traffic Management

### 7.4.1 Existing Situation

A traffic management plan is employed on Stadium event days. The primary objective of the plan is to ensure the safety of pedestrians walking to and from the Stadium, whilst also managing and improving traffic flows around the site. The plan also considers the needs of other road users, not associated with the event. Measures such as vehicle sterile road closures, lane closures and the deployment of pedestrian barrier systems are introduced during the exit phase, to ensure safe egress.

During a typical event, the following measures are put into place:

- The closure of Ashton New Road from its junction with Alan Turing Way to its junction with Darley Street (except for buses and emergency vehicles) to create a sterile pedestrian zone. There are also road closures at Swallow Street, Rowsley Street and Grey Mare Lane to prevent vehicles from entering Ashton New Road;
- A road closure on Frost Street from the junction with Ashton New Road to the junction of Beswick Street, in both directions.
- A lane closure on Alan Turing Way (northbound) south of Ashton New Road and southbound prior to Gate 1;
- Following pedestrian dispersion, a road opening sequence is highlighted to ensure that the roads are opening in a safe manner;

- No Waiting cones are deployed along Rowsley Street and New Viaduct Street with junction protection for side streets to prevent public parking along these roads;
- No Waiting cones are deployed around the junction of Ashton New Road and Darley Street, these measures are put in place so as to prevent parked vehicles causing restrictions when Ashton New Road is closed; and
- Buses are stacked on Ashton New Road to cater for pedestrians after the match with buses departing as soon as they are full.

The plan is developed and executed by a specialist contractor in consultation with Greater Manchester Police. The plan is continually reviewed and adapted based upon past experience and latest information.

### 7.4.2 Future Situation

On occasions where there is no event at either the Stadium or the Arena it is not considered that it would be necessary to employ a traffic management plan.

On days when there is an event at the Arena but no event at the Stadium then there may be a requirement for a traffic management plan to be operated in the exit phase of the Arena event. Due to the lower capacity, the number of attendees at the Arena event would be significantly lower than those accommodated at a Stadium event. It is therefore anticipated that the traffic management plan would be less extensive than that required on a matchday. It would, however, similar objectives with a primary objective of the safe dispersal of pedestrians following an event. The specific details of the Arena traffic management plan would be developed in consultation with key stakeholders, including MCC, TfGM and GMP.

On days when there is both an event at the Stadium and an event at the Arena, it would be necessary to ensure that the existing traffic management plan for the Stadium is modified to ensure that it also considers any additional traffic management requirements due to the Arena event. A co-ordinated plan would be developed in consultation with key stakeholders, including MCC, TfGM and GMP as part of a wider 'special event plan' for these limited number of occasions.

## 8 Baseline Scenario

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### 8.1 Surveys Undertaken

A series of surveys have been undertaken across a range of transport modes in order to understand existing conditions on the transport networks serving the Etihad Campus during both matchday and non-matchday conditions.

The scopes for these surveys are presented in Appendix B, but included the following:

- Pedestrian surveys – to understand the volume of pedestrians using key walking routes to and from the Etihad Campus (undertaken on matchdays only);
- Shuttle bus surveys - boarding surveys of post-match special service buses on Ashton New Road after match to understand the operation and utilisation of the service (undertaken on matchdays only);
- Metrolink surveys - boarding/alighting surveys of all Metrolink stops between Piccadilly and Ashton-under Lyne line to understand existing patronage levels across the line;
- Car park entry/exit surveys - fully classified vehicular in/out counts at on-site car parks on the Etihad Campus and the off-site Metrolink park and ride facilities at Ashton-under-Lyne to understand their utilisation across the survey periods;
- On-street parking surveys - parking beat surveys to identify the presence of on-street car parking within and adjacent to the residents parking scheme to help understand the effectiveness of the existing scheme and identify potential issues related to the operation and potential expansion of the scheme (undertaken on matchdays only); and
- Junction surveys - classified turning counts and queue length surveys across a wide range of junctions across the highway network to provide an understanding of traffic movements across the area and to inform junction modelling for the Transport Assessment at key locations.

#### 8.1.1 Matchday survey dates

A series of matchday traffic and movement surveys were undertaken before, during and immediately after the following Manchester City home games at the Etihad Stadium during the 2018/19 season:

- vs West Ham United (Wednesday 27th February 2019 – 20:00 kick-off);
- vs Tottenham Hotspur (Saturday 20th April 2019 – 12:30 kick-off); and
- vs Leicester City (Monday 6th May 2019 – 20:00 kick-off).

Midweek surveys were undertaken between 16:00 and 23:00 to ensure that the network peak, pre-match and post-match periods were covered. Saturday surveys

were undertaken between 10:00 and 17:00 to ensure that the pre-match and post-match periods were covered.

### 8.1.2 Non Matchday survey dates

In order to provide a comparison of the conditions on the transport networks when there was not a match taking place at the Stadium, a similar range of surveys were undertaken on both a weekday and Saturday non-matchday for the same time periods. There were some matchday surveys that were not appropriate or not possible to replicate on a non-matchday (e.g. the post-match shuttle bus survey as this service only operates on matchdays).

The dates of the non-matchday surveys were as follows:

- Thursday 07 November 2019; and
- Saturday 09 November 2019.

## 8.2 Pedestrians

Pedestrian surveys were undertaken at key locations on the approach to the Etihad Campus. The results of these surveys are presented below. It should be noted that there are a large number of possible walking routes to the Etihad Campus and therefore the surveys do not pick up all pedestrians walking to the Etihad Campus, but provide an indication of the high volumes of visitors walking between the City Centre and the Etihad Campus.

### 8.2.1 Midweek Matchday (pre-match)

In the order of 2,000 pedestrians were surveyed walking along Pollard Street from the City Centre towards the Etihad Campus in the surveyed pre-match period (16:00-20:00). Pollard Street forms part of the City Link walking route. Approximately 50% of these movements were in the hour prior to kick-off (i.e. 19:00-20:00) and the majority of the remaining movements were within two hours of kick-off (i.e. 18:00-20:00).

At Ashton New Road (just to the west of the Stadium), the number of pedestrian movements towards the Etihad Campus reached approximately 7,400 in the pre-match period (16:00-20:00). This is also part of the City Link route. Approximately two-thirds of these movements were in the hour prior to kick-off (19:00-20:00).

Approximately 300 pedestrians were surveyed walking along the canal towpath from the City Centre towards the Etihad Campus in the surveyed pre-match period (16:00-20:00). Almost 60% of these were in the hour prior to kick-off.

Internal to the Etihad Campus, approximately 10,000 pedestrians crossed the canal using the Joe Mercer Way bridge prior to kick off (16:00-20:00). This was a mix of people from the north car parks and people entering the Etihad Campus via Gate 1. The majority of these were in the hour prior to kick-off (19:00-20:00).

These flows are summarised below (West Ham United survey/Leicester City survey).

Table 5 - Surveyed pre-match pedestrian flows (midweek matchday)

| Time Period        | Pollard Street     | Ashton New Road* | Canal Towpath** | Joe Mercer Way      |
|--------------------|--------------------|------------------|-----------------|---------------------|
| 16:00-17:00        | 79/74              | -/125            | 14/-            | 659/1,034           |
| 17:00-18:00        | 236/202            | -/446            | 31/-            | 708/1,136           |
| 18:00-19:00        | 802/898            | -/1,963          | 82/-            | 2,206/3,201         |
| 19:00-20:00        | 1,095/724          | -/4,839          | 169/-           | 8,852/5,142         |
| <b>16:00-20:00</b> | <b>2,212/1,898</b> | <b>-/7,373</b>   | <b>296/-</b>    | <b>9,425/10,503</b> |

\* surveyed on Leicester City match only

\*\* surveyed on West Ham United match only

## 8.2.2 Midweek Matchday (post-match)

Between 2,500 and 3,000 pedestrians were surveyed walking along Pollard Street towards the City Centre from the Etihad Campus in the surveyed post-match period (21:30-23:00). This forms part of the City Link walking route. Approximately 90% of these movements were within 30 minutes of full time.

At Ashton New Road (west of the Stadium), the number of pedestrian movements away from the Etihad Campus reached approximately 8,200 in the post-match period. This is also part of the City Link route. Approximately 80% of these were in the half-hour after full-time.

Over 200 pedestrians were surveyed walking along the canal towpath away from the Etihad Campus towards the City Centre in the surveyed post-match period. Almost all of these were within 30 minutes of full time.

Internal to the Etihad Campus, approximately 9,300 pedestrians crossed the canal using the Joe Mercer Way bridge after the match had finished. This was a mix of people accessing the north car parks and people exiting the Etihad Campus via Gate 1. Approximately 90% of these movements were within 45 minutes of full time.

These flows are summarised below (West Ham United survey/Leicester City survey).

Table 6 - Surveyed post-match pedestrian flows (midweek matchday)

| Time Period        | Pollard Street     | Ashton New Road* | Canal Towpath** | Joe Mercer Way     |
|--------------------|--------------------|------------------|-----------------|--------------------|
| 21:45-22:00        | 155/52             | -/2,403          | 16/-            | 4,450/1,438        |
| 22:00-22:15        | 1,791/954          | -/4,767          | 148/-           | 3,740/3,941        |
| 22:15-22:30        | 639/1,779          | -/777            | 55/-            | 338/1,201          |
| 22:30-22:45        | 46/205             | -/131            | 3/-             | 347/466            |
| 22:45-23:00        | 29/76              | -/79             | 4/-             | 123/422            |
| <b>21:45-23:00</b> | <b>2,630/3,066</b> | <b>-/8,157</b>   | <b>226</b>      | <b>8,998/7,468</b> |

\* surveyed on Leicester City match only

\*\* surveyed on West Ham United match only

## 8.2.3 Saturday Matchday (pre-match)

Over 2,500 pedestrians were surveyed walking along Pollard Street from the City Centre towards the Etihad Campus in the surveyed pre-match period. This forms part of the City Link walking route. Approximately 50% of these were in the hour prior to kick-off and the majority of the remaining movements were within two hours of kick-off. These results are broadly consistent with the midweek matchday.

At Ashton New Road (west of the Stadium), the number of pedestrian movements towards the Etihad Campus reached approximately 7,500 in the pre-match period. This is also part of the City Link route. Approximately 70% of these were in the hour prior to kick-off. This is broadly consistent with the midweek matchday.

Over 700 pedestrians were surveyed walking along the canal towpath from the City Centre towards the Etihad Campus in the surveyed pre-match period. Almost 90% of these were in the hour two hours prior to kick-off (i.e. 10:30-11:30). Again, these numbers are significantly higher than the midweek flows and were also earlier relative to the kick-off time

Internal to the Etihad Campus, almost 8,500 pedestrians crossed the canal using the Joe Mercer Way bridge prior to kick off. This was a mix of people from the north car parks and people entering the Etihad Campus via Gate 1. Over 60% of these were in the hour prior to kick-off. These numbers are slightly lower than the midweek matchday equivalent.

These flows are summarised below.

Table 7 - Surveyed pre-match pedestrian flows (Saturday matchday)

| Time Period        | Pollard Street | Ashton New Road | Canal Towpath | Joe Mercer Way |
|--------------------|----------------|-----------------|---------------|----------------|
| 10:00-10:30        | 244            | 294             | 231           | 471            |
| 10:30-11:00        | 370            | 658             | 377           | 736            |
| 11:00-11:30        | 662            | 1,267           | 102           | 1,620          |
| 11:30-12:00        | 991            | 2,689           | 5             | 3,594          |
| 12:00-12:30        | 287            | 2,459           | 6             | 2,068          |
| <b>10:00-12:30</b> | <b>2,554</b>   | <b>7,367</b>    | <b>721</b>    | <b>8,489</b>   |

#### 8.2.4 Saturday Matchday (post-match)

Over 4,500 pedestrians were surveyed walking along Pollard Street towards the City Centre from the Etihad Campus in the surveyed post-match period. This forms part of the City Link walking route. Approximately 85% of these movements were within 30 minutes of full time. These flows are significantly higher than the midweek match flows, though the early kick-off time meant that full time was mid-afternoon, which could account for this increase.

At Ashton New Road (west of the Stadium), the number of pedestrian movements away from the Etihad Campus reached approximately 6,400 in the post-match period. This is also part of the City Link route. Approximately 70% of these were in the half-hour after full-time. These numbers are slightly lower than the midweek matchday equivalent.

Over 900 pedestrians were surveyed walking along the canal towpath away from the Etihad Campus towards the City Centre in the surveyed pre-match period. The majority of these were within 30 minutes of full time. These flows are significantly higher than the midweek match flows

Internal to the Etihad Campus, approximately 6,000 pedestrians crossed the canal using the Joe Mercer Way bridge after the match had finished. This was a mix of people accessing the north car parks and people exiting the Etihad Campus via Gate 1. Approximately 60% of these movements were within 30 minutes of full time. These numbers are significantly lower than the midweek flows and were also less concentrated relative to the kick-off time

These flows are summarised below.

Table 8 - Surveyed post-match pedestrian flows (Saturday matchday)

| Time Period        | Pollard Street | Ashton New Road | Canal Towpath | Joe Mercer Way |
|--------------------|----------------|-----------------|---------------|----------------|
| 14:00-14:30        | 45             | 1,351           | 674           | 1,675          |
| 14:30-15:00        | 3,798          | 4,129           | 195           | 2,748          |
| 15:00-15:30        | 508            | 561             | 45            | 854            |
| 15:30-16:00        | 167            | 228             | 31            | 373            |
| 16:00-16:30        | 85             | 109             | 16            | 144            |
| <b>14:00-16:30</b> | <b>4,603</b>   | <b>6,378</b>    | <b>961</b>    | <b>5,736</b>   |

### 8.3 Shuttle Bus

Surveys of the post-match shuttle bus that operates from Ashton New Road into Manchester City Centre were undertaken on matchdays. The matchday surveys showed that these buses were well used by supporters with approximately 1,100 passengers boarding 15 buses. This results in an average occupancy of approximately 73 passengers per bus, indicating that each bus is almost full (based on an assumed capacity of 80 passengers per bus).

### 8.4 Metrolink

Surveys were undertaken at each Metrolink stop between Piccadilly and Ashton-under-Lyne on a midweek day and a Saturday for both a matchday and a non-matchday.

The survey captured the number of boarders and alighters at each stop across the seven-hour survey period. This data has then been used to estimate the average existing tram occupancy across the survey period in half-hourly increments. This data is presented in Appendix C.

#### 8.4.1 Midweek Non-Matchday

The average non-matchday occupancy of eastbound trams between Piccadilly and Ashton-under-Lyne during the surveyed period was well below the capacity of a single tram of 200 passengers. Trams were typically busiest as they left Piccadilly with occupancy reducing gradually along the route. A significant proportion of passengers were still on the tram when it reached its destination of Ashton-under-Lyne.

The busiest surveyed periods eastbound between Piccadilly and Ashton-under-Lyne on non-matchdays were 16:30-17:00 and 17:00-17:30. Surveyed occupancy levels during this period reached approximately 70% of the capacity of a single tram. Outside of the peak commuting period, surveyed occupancy reduced significantly to levels of 10-20% of a single tram.

The average occupancy of westbound trams between Ashton-under-Lyne and Piccadilly during the surveyed period was also well below the capacity of a single tram. Trams in this direction were typically busiest as they arrived at Piccadilly although occupancy was relatively steady (and low) along the whole route.

The busiest surveyed periods westbound between Ashton-under-Lyne and Piccadilly on non-matchdays were 16:00-16:30 and 16:30-17:00. Surveyed occupancy levels during this period reached approximately 25% of the capacity of a single tram. Outside of the peak commuting period, the surveyed occupancy was even lower.

#### 8.4.2 Midweek Matchday (pre-match)

Before kick-off on the midweek matchday survey, it can be seen that the average surveyed occupancy of eastbound trams exceeded the assumed capacity of a single tram-unit (i.e. 200 passengers) for the following half-hour periods between Piccadilly and the Etihad Campus:

- 18:00-18:30 – average surveyed occupancy across the period of up to 209 passengers per tram;
- 18:30-19:00 – average surveyed occupancy across the period of up to 219 passengers per tram;
- 19:00-19:30 – average surveyed occupancy across the period of up to 367 passengers per tram; and
- 19:30-20:00 – average surveyed occupancy across the period of up to 212 passengers per tram.

As described in Section 6.1, TfGM operates an enhanced Metrolink service on matchdays. This enhanced service is intended to operate every other tram as a double unit (400 passenger capacity). As such, the average tram capacity increases from 200 passengers to 300 passengers. This capacity would accommodate all but the busiest half-hourly surveyed period.

The peak eastbound average surveyed occupancy of 367 passengers during this peak half-hour period is likely to have been achieved due to a higher frequency of double tram units arriving in this period and a degree of overcrowding. However, the surveyed occupancies demonstrate that across the pre-match peak of 18:00-20:00 a Metrolink service pattern of every other tram operating as a double unit would broadly satisfy the surveyed demand for eastbound services between Piccadilly and the Etihad Campus.

The average surveyed occupancy of westbound trams between Ashton and the Etihad Campus during this period was significantly below the capacity of a single tram. The westbound service would benefit from the same enhanced service as the eastbound service between Piccadilly and the Etihad Campus. It is therefore

considered that westbound Metrolink capacity between Ashton-under-Lyne and the Etihad Campus is not an issue pre-match.

### 8.4.3 Midweek Matchday (post-match)

Following the end of the midweek matchday, it can be seen that the average surveyed occupancy of westbound trams exceeded the assumed capacity of a single tram-unit (i.e. 200 passengers per tram) for the following period between the Etihad Campus and Piccadilly.

- 22:00-22:30 – average occupancy across the period of up to 376 passengers per tram.

The average surveyed occupancy of 376 passengers during this half-hour period is likely to be due to a higher frequency of double tram units arriving in this period and a degree of overcrowding. However, given that the surveyed westbound tram occupancies outside of this peak half-hour period were considerably lower than the capacity of a single tram, it is demonstrated that a Metrolink service pattern of every other tram operating as a double unit would broadly satisfy the surveyed demand in the period following a match, even if some passengers need to wait until the crowds waiting for Metrolink have dispersed in the immediate aftermath of a Stadium event.

The average occupancy of eastbound trams between the Etihad Campus and Ashton-under-Lyne during the post-match period was significantly below the capacity of a single tram. As noted above, the eastbound service would benefit from the same enhanced service as the westbound service between the Etihad Campus and Piccadilly. It is therefore considered that post-match Metrolink capacity on eastbound services between the Etihad Campus and Ashton-under-Lyne is not an issue.

### 8.4.4 Saturday Non-Matchday

The average non-matchday occupancy of eastbound trams between Piccadilly and Ashton-under-Lyne on a Saturday during the surveyed period was well below the capacity of a single tram-unit (i.e. 200 passengers per tram). As during the weekday, trams were typically busiest as they left Piccadilly with occupancy reducing steadily along the route. A significant proportion of passengers were still on the tram when it reached its destination of Ashton-under-Lyne.

The busiest surveyed period for eastbound trams on a Saturday between Piccadilly and Ashton-under-Lyne on non-matchdays was 14:00-14:30. Surveyed occupancy levels during this period reached approximately 35% of the capacity of a single tram.

The average occupancy of westbound trams between Ashton-under-Lyne and Piccadilly during the surveyed period was also well below the capacity of a single tram. Trams were typically busiest as they arrived at Piccadilly although occupancy was relatively steady (and low) along the route.

The busiest surveyed periods for westbound trams on a Saturday between Ashton-under-Lyne and Piccadilly on non-matchdays were 16:00-16:30 and 16:30-17:00. Surveyed occupancy levels during this period reached approximately 25% of the capacity of a single tram. Outside of this peak period, the surveyed occupancy was lower.

#### 8.4.5 Saturday Matchday (pre-match)

On the Saturday matchday it can be seen that the average surveyed occupancy of an eastbound tram did not exceed the assumed capacity of a single tram-unit during any half-hour period between Piccadilly and the Etihad Campus.

Surveyed occupancies were generally lower than those surveyed on the midweek match. This may be due to a combination of a longer visitor arrival period on the Saturday combined with lower background (i.e. non-match) passenger numbers.

The peak surveyed periods were as follows:

- 10:30-11:00 – average surveyed occupancy across the period of up to 154 passengers per tram;
- 11:00-11:30 – average surveyed occupancy across the period of up to 174 passengers per tram;
- 11:30-12:00 – average surveyed occupancy across the period of up to 181 passengers per tram; and
- 12:00-12:30 – average surveyed occupancy across the period of up to 127 passengers per tram.

As described in Section 6.1, TfGM operates an enhanced service on matchdays. This enhanced service is intended to operate every other tram as a double unit (400 passenger capacity). As such, the average tram capacity increases from 200 passengers to 300 passengers. This capacity would accommodate the surveyed demand across all of the surveyed periods.

The average surveyed occupancy of westbound trams between Ashton and the Etihad Campus during this period was significantly below the capacity of a single tram. As noted above, the westbound service would benefit from the same enhanced service as eastbound services between Piccadilly and the Etihad Campus. It is therefore considered that pre-match Metrolink capacity of westbound trams between Ashton-under-Lyne and the Etihad Campus is not an issue.

#### 8.4.6 Saturday Matchday (post-match)

Following the end of the Saturday matchday, it can be seen that the average surveyed occupancy of a westbound tram exceeded the assumed capacity of a single tram-unit for the following period between the Etihad Campus and Piccadilly.

- 15:00-15:30 – average occupancy of up to 249 passengers per tram.

It is demonstrated that a Metrolink service pattern of every other tram operating as a double unit (with an average capacity of 300 passengers per service) would broadly satisfy the surveyed demand in the period following a match.

The average surveyed occupancy of eastbound trams between the Etihad Campus and Ashton-under-Lyne during post-match was significantly below the capacity of a single tram. As noted above, the eastbound service would benefit from the same enhanced service as westbound services between the Etihad Campus and Piccadilly. It is therefore considered that post-match Metrolink capacity on eastbound trams between the Etihad Campus and Ashton-under-Lyne is not an issue.

## 8.5 Park and Ride Sites

Surveys were undertaken at the Metrolink Park & Ride sites located at Ashton Moss and Ashton West. The surveys were used to provide an estimate of the use of these car parks and to understand any potential available capacity to serve Stadium and Arena events at the Etihad Campus.

### 8.5.1 Midweek Non-Matchday

On the midweek non-matchday survey, there were approximately 150 vehicles parked in the Ashton Moss Park & Ride car park at 16:00. This left approximately 50 spaces available. By 19:00 the number of vehicles parked had dropped to approximately 50, with 150 spaces therefore being available at this time.

At Ashton West, there were approximately 60 vehicles parked at 16:00, meaning that approximately 135 spaces were available. By 19:00 the number of vehicles parked had dropped to approximately 30, with 165 spaces therefore being available.

Across the two sites, it is therefore estimated that there were approximately 315 parking spaces available at 19:00 that could potentially be used to serve visitors to an evening event at the Etihad Campus on a non-matchday.

### 8.5.2 Midweek Matchday

On the midweek matchday survey, there were approximately 140 vehicles parked in the Ashton Moss Park & Ride car park at 16:00. This left approximately 60 spaces available. The number of vehicles within the car park then dropped until approximately 17:30 but then started to fill again as kick-off time (20:00) approached. By 19:00 the number of vehicles parked had increased to approximately 160, with 40 spaces therefore being available.

At Ashton West, there were approximately 50 vehicles parked at 16:00, meaning that approximately 145 spaces were available. The number of vehicles within the car park then dropped until approximately 17:30 but then started to fill again as kick-off time (20:00) approached. By 19:00 the number of vehicles parked had increased to approximately 80, with 115 spaces therefore being available.

Across the two sites, it is therefore estimated that there were approximately 155 spaces available at 19:00 that could be used to serve visitors to an evening event at the Etihad Campus on a matchday.

### 8.5.3 Saturday Non-Matchday

On the Saturday non-matchday survey, there were approximately 50 vehicles parked in the Ashton Moss Park & Ride car park at 10:00. This left approximately 150 spaces available. By 13:00 the number of vehicles parked had peaked at approximately 100, with 100 spaces therefore being available.

At Ashton West, there were approximately 10 vehicles parked at 10:00, meaning that approximately 185 spaces were available. By 16:00 the number of vehicles parked had peaked at approximately 60, with approximately 135 spaces therefore being available.

Across the two sites, it is therefore estimated that there were approximately 235 spaces available at the respective peaks of these car parks that could be used to serve visitors to an event at the Etihad Campus without adversely impacting on the existing use of the car parks.

### 8.5.4 Saturday Matchday

On the Saturday matchday survey, there were approximately 40 vehicles parked in the Ashton Moss Park & Ride car park at 10:00. By 13:00 the number of vehicles parked had peaked at approximately 150, with 50 spaces therefore being available.

At Ashton West, there were no vehicles parked at 10:00, meaning that all 195 spaces were available. By 13:00 the number of vehicles parked had peaked at approximately 90, with 105 spaces therefore being available.

Across the two sites, it is therefore estimated that there were approximately 155 spaces available on matchdays that could be used to serve visitors to an event at the Etihad Campus on a matchday without adversely impacting on the existing use of the car parks.

## 8.6 On-Site Car Parks

Surveys were undertaken at the main on-site car park entrances onto the Etihad Campus. These are the 2,600-space capacity area (accessed via Gate 2 - Sportcity Way) and the 1,300-space capacity area (accessed via Gate 3 – Gibbon Street).

Surveys were not undertaken at any of the car parks to the south of the Stadium. These are only relatively small in size (approximately 300 spaces in total) and are not proposed to be used to access the new developments proposed at the Etihad Campus. Therefore, no changes to the use of these car parks is anticipated as a result of the development.

### 8.6.1 Midweek Non-Matchday

Surveys of the midweek non-matchday showed that Blue Car Parks (accessed via Sportcity Way) reached a maximum evening occupancy of approximately 60 vehicles. The peak arrival period was 18:30-19:00 with approximately 35 vehicles arriving during this time period. The peak departure period was 20:00-20:30 with approximately 40 vehicles exiting in this time period.

The land temporarily used for parking, (shown shaded Orange on plan) is not open on a non-matchday.

### 8.6.2 Midweek Matchday

Surveys of the midweek matchdays showed that the car parks accessed via Sportcity Way reached a maximum occupancy of just under 2,000 vehicles prior to kick-off. The peak arrival period was 19:00-19:30 with approximately 430 vehicles arriving during this time period. The peak departure period was 22:00-22:30 with approximately 600 vehicles exiting in this time period. It is noted that the exit for the Leicester game was later than this (22:30-23:00) but this is considered to be unusual as it was the last game of the season with a post-match trophy presentation and lap of honour.

The area accessed via Gate 3) reached a maximum occupancy of just under 1,000 vehicles prior to kick-off. The peak arrival period was 19:00-19:30 with approximately 270 vehicles arriving during this time period. The peak departure period was 22:00-22:30 with approximately 430 vehicles exiting in this time period.

The peak overall number of vehicles parked on the surveyed areas was approximately 3,000 vehicles, which is consistent with the recorded average for the 2018/19 season.

### 8.6.3 Saturday Non-Matchday

Surveys of the Saturday non-matchday showed that the car parks accessed via Sportcity Way reached a maximum daytime occupancy of approximately 130 vehicles. The peak arrival period was 10:30-11:00 with approximately 50 vehicles arriving during this time period. The peak departure period was 16:00-16:30 with approximately 50 vehicles exiting in this time period.

The area accessed via Gate 3 is not open on a non-matchday.

### 8.6.4 Saturday Matchday

Surveys of the Saturday matchday showed that the car parks accessed via Sportcity Way reached a maximum occupancy of just under 1,800 vehicles prior to kick-off, slightly lower than the midweek evening match. The peak arrival period was 11:30-12:00 with approximately 440 vehicles arriving during this time period. The peak departure period was 15:00-15:30 with approximately 600 vehicles exiting in this time period.

The area accessed via Gate 3 reached a maximum occupancy of just under 1,000 vehicles prior to kick-off. The peak arrival period was 11:30-12:00 with approximately 240 vehicles arriving during this time period. The peak departure period was 15:00-15:30 with approximately 300 vehicles exiting in this time period.

The peak overall number of vehicles parked in the surveyed areas was approximately 2,800 vehicles, which is slightly below the season average for 2018/19 of 3,000 vehicles.

## 8.7 Highway Network

Traffic survey data has been used to develop models of key junctions within the local highway network serving the Etihad Campus. These models have been used to develop an understanding of the performance of the network on both a non-matchday and a matchday.

### 8.7.1 Non-Matchday

On a non-matchday, the highway network surrounding the Etihad Campus is operating close to capacity in the evening network peak periods of 16:00-17:00 and 17:00-18:00. However, the key junctions have large capacities which are generally capable of accommodating the large traffic flows experienced.

As is typical across Manchester's highway networks during peak periods there are localised congestion and delay issues at some of the junctions serving the Etihad Campus. Outside of the network peak periods, these large junctions have significant amounts of spare capacity.

### 8.7.2 Matchday

On a matchday, there is some worsening of congestion and delay at the key junctions serving the Etihad Campus during the evening network peak periods. The impact of matchday traffic during these periods is relatively limited, however. This may be, in part, due to traffic avoiding the area in anticipation of Stadium traffic congestion but is also likely to be reflective of the fact that Stadium arrivals typically occur after the evening network peak period.

During the hour before the match (19:00-20:00), congestion levels are generally similar to those during the evening network peak. Although Stadium traffic movements are higher at this time, background flows are considerably lower than during the network peak. Local queuing and delay close to the Etihad Campus are experienced close to the start of the match, in particular at the junctions on Alan Turing Way.

## 9 Forecast Movements

**ALL FIGURES USED FOR FUTURE FORECASTS AND SUBSEQUENT ANALYSIS WITHIN THIS STRATEGIC TRANSPORT ASSESSMENT ARE INDICATIVE ONLY.**

**DETAILED ANALYSIS WILL BE UNDERTAKEN AND SUBMITTED AS PART OF DEVELOPMENT-SPECIFIC TRANSPORT ASSESSMENTS.**

### 9.1 Trip Generation

The proposals for the Etihad Campus envisage a range of new mixed use developments across the Etihad Campus. These uses would operate on both non-matchdays and matchdays. The new uses could include the following:

- Etihad Campus Sport and Innovation Zone including
  - Institute of Sport (126 staff, 25 professional services staff, 3,087 students)
  - House of Sport (300 staff)
  - Student accommodation and live/work space (1,000 bed accommodation)
- Etihad Campus Commercial Zone
  - Offices (500,000 sqft)
  - 10-screen cinema
  - 2 x 150 bed hotels
  - Food and beverage units
  - Potential attraction with touring content (3,000 maximum capacity)
- Indoor Arena with a capacity of up to 23,500 people.

The trip generation associated with these proposed developments has been forecast, based primarily on trip rates from similar uses within the TRICS database (an industry-standard methodology of forecasting traffic generation for new developments).

The exception to this is the proposed Arena, for which trip generation has been forecast from 'first principles' based on information provided by the potential Arena operator on the likely arrival and departure patterns of staff and visitors.

The trip generation has been developed for a midweek evening period as this is likely to represent the worst-case for the following reasons:

- The proposed office and higher education uses would not be operational (or would have very limited use) during the weekend and would therefore not generate many trips. These developments are the main trip generators of the non-Arena uses;
- Background traffic movements on the network are significantly higher during the midweek evening peak period than on Saturdays;
- Matinee shows at the Arena would only typically be half-capacity events, but evening events could be full-capacity (though not all would have the full 23,500 capacity); and

- The main potential interaction between the proposed commercial uses, the Stadium and the Arena would occur during the evening prior to events.

Full details of the anticipated trip generation of each use (including trip rate tables are presented in Appendix D. These are summarised in the tables below.

### 9.1.1 The Etihad Campus Sports and Innovation Zone

Total people trips for the potential uses within the Etihad Campus Sports and Innovation Zone are set out below.

Table 9 - Forecast person trips - Sports and Innovation Zone

| Time Period | Institute of Sport |     | House of Sport |     | Student Accommodation |     | Combined |     |
|-------------|--------------------|-----|----------------|-----|-----------------------|-----|----------|-----|
|             | Arr                | Dep | Arr            | Dep | Arr                   | Dep | Arr      | Dep |
| 16:00-16:30 | 45                 | 129 | 11             | 41  | 102                   | 35  | 158      | 205 |
| 16:30-17:00 | 45                 | 129 | 11             | 50  | 102                   | 35  | 158      | 215 |
| 17:00-17:30 | 46                 | 96  | 8              | 101 | 84                    | 59  | 138      | 255 |
| 17:30-18:00 | 46                 | 96  | 3              | 61  | 84                    | 59  | 133      | 216 |
| 18:00-18:30 | 44                 | 56  | 2              | 47  | 98                    | 61  | 144      | 164 |
| 18:30-19:00 | 44                 | 56  | 1              | 15  | 98                    | 61  | 142      | 131 |
| 19:00-19:30 | 33                 | 62  | 0              | 0   | 37                    | 35  | 70       | 97  |
| 19:30-20:00 | 33                 | 62  | 0              | 0   | 37                    | 35  | 70       | 97  |
| 20:00-20:30 | 19                 | 47  | 0              | 0   | 49                    | 39  | 68       | 86  |
| 20:30-21:00 | 19                 | 47  | 0              | 0   | 49                    | 39  | 68       | 86  |
| 21:00-21:30 | 13                 | 29  | 0              | 0   | 30                    | 17  | 42       | 46  |
| 21:30-22:00 | 13                 | 29  | 0              | 0   | 30                    | 17  | 42       | 46  |
| 22:00-22:30 | 0                  | 0   | 0              | 0   | 0                     | 0   | 0        | 0   |
| 22:30-23:00 | 0                  | 0   | 0              | 0   | 0                     | 0   | 0        | 0   |

## 9.1.2 The Etihad Campus Commercial Zone

Total people trips for the potential uses within the Etihad Campus Commercial Zone are set out below.

Table 10 - Forecast person trips - Commercial Zone

| Time Period | Office |     | Cinema |     | Hotel |     | Combined |     |
|-------------|--------|-----|--------|-----|-------|-----|----------|-----|
|             | Arr    | Dep | Arr    | Dep | Arr   | Dep | Arr      | Dep |
| 16:00-16:30 | 84     | 315 | 6      | 6   | 36    | 31  | 126      | 353 |
| 16:30-17:00 | 85     | 389 | 6      | 6   | 36    | 31  | 128      | 427 |
| 17:00-17:30 | 65     | 781 | 32     | 25  | 42    | 29  | 138      | 835 |
| 17:30-18:00 | 23     | 476 | 32     | 25  | 42    | 29  | 96       | 530 |
| 18:00-18:30 | 19     | 366 | 50     | 19  | 47    | 35  | 115      | 419 |
| 18:30-19:00 | 5      | 114 | 50     | 19  | 47    | 35  | 101      | 168 |
| 19:00-19:30 | 0      | 0   | 14     | 9   | 33    | 29  | 48       | 38  |
| 19:30-20:00 | 0      | 0   | 14     | 9   | 33    | 29  | 48       | 38  |
| 20:00-20:30 | 0      | 0   | 62     | 32  | 26    | 18  | 89       | 50  |
| 20:30-21:00 | 0      | 0   | 62     | 32  | 26    | 18  | 89       | 50  |
| 21:00-21:30 | 0      | 0   | 16     | 43  | 22    | 10  | 38       | 53  |
| 21:30-22:00 | 0      | 0   | 16     | 43  | 22    | 10  | 38       | 53  |
| 22:00-22:30 | 0      | 0   | 0      | 66  | 0     | 0   | 0        | 66  |
| 22:30-23:00 | 0      | 0   | 0      | 66  | 0     | 0   | 0        | 66  |

### 9.1.3 Proposed Arena

Total people trips for the proposed Arena are set out below.

Table 11 - Forecast person trips - Arena

| Time Period | Staff (event day) |     | Visitors (event day) |        | Combined (event day) |        | Staff (non-event day) |     |
|-------------|-------------------|-----|----------------------|--------|----------------------|--------|-----------------------|-----|
|             | Arr               | Dep | Arr                  | Dep    | Arr                  | Dep    | Arr                   | Dep |
| 16:00-16:30 | 115               | 0   | 0                    | 0      | 115                  | 0      | 0                     | 8   |
| 16:30-17:00 | 115               | 0   | 0                    | 0      | 115                  | 0      | 0                     | 9   |
| 17:00-17:30 | 0                 | 0   | 0                    | 0      | 0                    | 0      | 0                     | 16  |
| 17:30-18:00 | 0                 | 0   | 7,050                | 0      | 7,050                | 0      | 0                     | 16  |
| 18:00-18:30 | 0                 | 0   | 1,410                | 0      | 1,410                | 0      | 0                     | 11  |
| 18:30-19:00 | 0                 | 0   | 5,640                | 0      | 5,640                | 0      | 0                     | 10  |
| 19:00-19:30 | 0                 | 0   | 9,400                | 0      | 9,400                | 0      | 0                     | 0   |
| 19:30-20:00 | 0                 | 0   | 0                    | 0      | 0                    | 0      | 0                     | 0   |
| 20:00-20:30 | 0                 | 24  | 0                    | 0      | 0                    | 24     | 0                     | 0   |
| 20:30-21:00 | 0                 | 24  | 0                    | 0      | 0                    | 24     | 0                     | 0   |
| 21:00-21:30 | 0                 | 24  | 0                    | 0      | 0                    | 24     | 0                     | 0   |
| 21:30-22:00 | 0                 | 24  | 0                    | 0      | 0                    | 24     | 0                     | 0   |
| 22:00-22:30 | 0                 | 58  | 0                    | 0      | 0                    | 58     | 0                     | 0   |
| 22:30-23:00 | 0                 | 58  | 0                    | 23,500 | 0                    | 23,558 | 0                     | 0   |

### 9.1.4 No Arena Event-Day Peak

The peak period for a non event-day at the Arena can be forecast by combining the forecast trips for the Sports and Innovation Zone, the Commercial Zone and the Arena non event-day trips as follows.

Table 12 - Forecast additional person trips – No Arena Event Day

| Time Period        | Sports & Innovation Zone |            | Commercial Zone |            | Arena (non-event day) |           | Combined (non-event day) |              |              |
|--------------------|--------------------------|------------|-----------------|------------|-----------------------|-----------|--------------------------|--------------|--------------|
|                    | Arr                      | Dep        | Arr             | Dep        | Arr                   | Dep       | Arr                      | Dep          | Two-way      |
| 16:00-16:30        | 158                      | 205        | 126             | 353        | 0                     | 8         | 283                      | 566          | 849          |
| 16:30-17:00        | 158                      | 215        | 128             | 427        | 0                     | 9         | 286                      | 650          | 936          |
| <b>17:00-17:30</b> | <b>138</b>               | <b>255</b> | <b>138</b>      | <b>835</b> | <b>0</b>              | <b>16</b> | <b>276</b>               | <b>1,107</b> | <b>1,383</b> |
| <b>17:30-18:00</b> | <b>133</b>               | <b>216</b> | <b>96</b>       | <b>530</b> | <b>0</b>              | <b>16</b> | <b>229</b>               | <b>761</b>   | <b>991</b>   |
| 18:00-18:30        | 144                      | 164        | 115             | 419        | 0                     | 11        | 259                      | 594          | 853          |
| 18:30-19:00        | 142                      | 131        | 101             | 168        | 0                     | 10        | 244                      | 309          | 552          |
| 19:00-19:30        | 70                       | 97         | 48              | 38         | 0                     | 0         | 117                      | 135          | 252          |
| 19:30-20:00        | 70                       | 97         | 48              | 38         | 0                     | 0         | 117                      | 135          | 252          |
| 20:00-20:30        | 68                       | 86         | 89              | 50         | 0                     | 0         | 156                      | 136          | 293          |
| 20:30-21:00        | 68                       | 86         | 89              | 50         | 0                     | 0         | 156                      | 136          | 293          |
| 21:00-21:30        | 42                       | 46         | 38              | 53         | 0                     | 0         | 80                       | 99           | 179          |
| 21:30-22:00        | 42                       | 46         | 38              | 53         | 0                     | 0         | 80                       | 99           | 179          |
| 22:00-22:30        | 0                        | 0          | 0               | 66         | 0                     | 0         | 0                        | 66           | 66           |
| 22:30-23:00        | 0                        | 0          | 0               | 66         | 0                     | 0         | 0                        | 66           | 66           |

The table shows that the non-event day peak (i.e. no event at the Arena) would occur between 17:00-18:00 on a midweek evening. The forecast trip generation during the hour prior to a football match (i.e. between 19:00-20:00 - assuming an 20:00 kick-off) is approximately one fifth of this peak hour value.

### 9.1.5 Event-Day Peak

The peak period for an event-day at the Arena can be forecast by combining the forecast trips for the Sports and Innovation Zone, the Commercial Zone and the Arena event-day trips as follows.

Table 13 - Forecast additional person trips –Arena Event Day

| Time Period        | Sports & Innovation Zone |            | Commercial Zone |            | Arena (event day) |          | Combined (event day) |            |              |
|--------------------|--------------------------|------------|-----------------|------------|-------------------|----------|----------------------|------------|--------------|
|                    | Arr                      | Dep        | Arr             | Dep        | Arr               | Dep      | Arr                  | Dep        | Two-way      |
| 16:00-16:30        | 158                      | 205        | 126             | 353        | 115               | 0        | 398                  | 558        | 956          |
| 16:30-17:00        | 158                      | 215        | 128             | 427        | 115               | 0        | 401                  | 641        | 1,042        |
| 17:00-17:30        | 138                      | 255        | 138             | 835        | 0                 | 0        | 276                  | 1,091      | 1,367        |
| 17:30-18:00        | 133                      | 216        | 96              | 530        | 7,050             | 0        | 7,279                | 745        | 8,025        |
| 18:00-18:30        | 144                      | 164        | 115             | 419        | 1,410             | 0        | 1,669                | 583        | 2,252        |
| <b>18:30-19:00</b> | <b>142</b>               | <b>131</b> | <b>101</b>      | <b>168</b> | <b>5,640</b>      | <b>0</b> | <b>5,884</b>         | <b>299</b> | <b>6,182</b> |
| <b>19:00-19:30</b> | <b>70</b>                | <b>97</b>  | <b>48</b>       | <b>38</b>  | <b>9,400</b>      | <b>0</b> | <b>9,517</b>         | <b>135</b> | <b>9,652</b> |
| 19:30-20:00        | 70                       | 97         | 48              | 38         | 0                 | 0        | 117                  | 135        | 252          |
| 20:00-20:30        | 68                       | 86         | 89              | 50         | 0                 | 24       | 156                  | 160        | 317          |
| 20:30-21:00        | 68                       | 86         | 89              | 50         | 0                 | 24       | 156                  | 160        | 317          |
| 21:00-21:30        | 42                       | 46         | 38              | 53         | 0                 | 24       | 80                   | 123        | 203          |
| 21:30-22:00        | 42                       | 46         | 38              | 53         | 0                 | 24       | 80                   | 123        | 203          |
| 22:00-22:30        | 0                        | 0          | 0               | 66         | 0                 | 58       | 0                    | 124        | 124          |
| 22:30-23:00        | 0                        | 0          | 0               | 66         | 0                 | 23,558   | 0                    | 23,624     | 23,624       |

The impact of the additional movements associated with the Arena is to push the peak evening hour to 18:30-19:30 (notwithstanding the exit of visitors following the end of an Arena event).

## 9.2 Mode Split and Vehicle Occupancy

An assumed mode split has been developed for each of the proposed uses. For the majority of these uses, this is based upon consideration of vehicle trip rates from the TRICS database to estimate the number of vehicle trips generated by each use as a proportion of total person trips.

Existing travel survey data provided by Manchester City Football Club, supported by additional information captured in the transport surveys referred to in Section 2.4 has been used to provide an understanding of existing matchday travel patterns for the Etihad Stadium. The estimated Etihad Stadium mode split has then been used to provide a site-specific estimate of the split across non-car modes.

The resulting estimated mode share for each of the proposed land uses is presented in the table below.

Table 14 - Forecast mode split by proposed development

|                             | Walk | Bus   | Metrolink | Car   | Drop Off | Coach | Taxi | Train* | Total  |
|-----------------------------|------|-------|-----------|-------|----------|-------|------|--------|--------|
| Institute of Sport          | 3.0% | 18.0% | 36.0%     | 43.0% | 0.0%     | 0.0%  | 0.0% | 0.0%   | 100.0% |
| House of Sport              | 2.0% | 13.0% | 26.0%     | 58.0% | 0.0%     | 0.0%  | 0.0% | 0.0%   | 100.0% |
| Student Accommodation       | 5.0% | 28.0% | 55.0%     | 12.0% | 0.0%     | 0.0%  | 0.0% | 0.0%   | 100.0% |
| Office                      | 2.0% | 13.0% | 26.0%     | 58.0% | 0.0%     | 0.0%  | 0.0% | 0.0%   | 100.0% |
| Cinema                      | 1.0% | 6.0%  | 13.0%     | 80.0% | 0.0%     | 0.0%  | 0.0% | 0.0%   | 100.0% |
| Hotel                       | 2.0% | 11.0% | 21.0%     | 66.0% | 0.0%     | 0.0%  | 0.0% | 0.0%   | 100.0% |
| Arena visitors              | 1.4% | 3.2%  | 13.7%     | 57.4% | 2.0%     | 5.1%  | 4.9% | 12.1%  | 100%   |
| Arena staff (event day)     | 8.4% | 3.2%  | 26.3%     | 25.3% | 15.8%    | 0.0%  | 4.2% | 9.3%*  | 100%   |
| Arena staff (non-event day) | 0.0% | 1.7%  | 15.3%     | 68.7% | 3.3%     | 0.0%  | 3.4% | 5.1%*  | 100%   |

\* includes 'train and walk' and 'train and other mode'

Similarly, a combination of the TRICS database, surveys of the Stadium car parks and information from the potential Arena operator has been used to estimate

average vehicle occupancy for each of the uses. The estimated vehicle occupancies that have been assumed are as follows:

- Institute of Sport – 1.24 people per vehicle;
- House of Sport – 1.12 people per vehicle;
- Student accommodation – 1.19 people per vehicle;
- Office – 1.12 people per vehicle;
- Cinema – 2.3 people per vehicle;
- Hotel – 1.3 people per vehicle;
- Arena (visitor) – 2.4 people per vehicle
- Arena staff (event day) – 1.29 people per vehicle; and
- Arena staff (non-event day) – 1.29 people per vehicle.

### 9.3 Trips by Mode

The mode splits and vehicle occupancies set out above have been used to estimate the arrival and departure of people to the various uses by each mode. These are presented in Appendix E.

### 9.4 Egress of Visitors

The assessments related to the Stadium and Arena are focussed on the peak periods of arrival and do not specifically consider the peak departure period. The reasons for this are provided below.

#### 9.4.1 Stadium Event Day

For the Stadium event day, no significant changes are anticipated during the departure period. Movements associated with the Sports and Innovation Zone and the Commercial Zone during the Stadium exit period would be negligible. It is therefore the Stadium arrival period where there would be the greatest potential change compared to the existing situation due to the exit of daytime visitors to the Sports and Innovation Zone and the Commercial Zone in addition to evening arrivals for these uses.

#### 9.4.2 Arena Event Day

For the Arena event day, as with the Stadium, there are likely to be some short-term pressures on the transport networks immediately following the end of an event due to the desire of visitors to depart. As with the Stadium and other large venues across the UK, this is likely to lead to some levels of immediate delay, which will subside over time. It is not appropriate to design the transport infrastructure serving the Etihad Campus to accommodate these short-term peaks, which would be unlikely to affect those not attending an event.

The departure of people from the Arena would be significantly lower in scale than the existing departure movements associated with a Stadium event as the capacity would be less than half that of the Stadium. These Stadium movements are accommodated by the transport networks and it is therefore assumed that the network would be able to cope with the lower movements from the Arena.

### 9.4.3 Coincident Event Day

On the limited number of coincident events, it is considered that the departure of visitors from the Stadium and the Arena would be sufficiently staggered to minimise any coincidence of peak departures. Survey data indicates that peaks on the transport network associated with Stadium events have largely dissipated by 22:30. It is anticipated that a coincident Arena event would end at approximately 23:00, with visitors leaving after this time. It is therefore anticipated that the impact during the infrequent coincident events would be to extend the duration of the departure peak rather than increasing its magnitude.

## 10 Non-Event Day

**ALL FIGURES USED FOR FUTURE FORECASTS AND SUBSEQUENT ANALYSIS WITHIN THIS STRATEGIC TRANSPORT ASSESSMENT ARE INDICATIVE ONLY.**

**DETAILED ANALYSIS WILL BE UNDERTAKEN AND SUBMITTED AS PART OF DEVELOPMENT-SPECIFIC TRANSPORT ASSESSMENTS.**

On the majority of days during the year there would be no event at either the Stadium or the Arena. The dominant trip generating land-use would be the office component of the Commercial Zone and, as such, the bulk of transport movements would occur during the day time with peaks during the traditional morning and evening network peak periods. Evening trips would also be generated by the leisure uses proposed, though the overall volume of movements would be lower in the evening than the daytime (given the relative dominance of the office uses). The overall volume of movements would be significantly lower than existing pre- and post-match movements where there is an evening match at the Stadium.

### 10.1 Assumed Transport Interventions

The transformation of the Etihad Campus and surrounding areas since 2002 has been accompanied by significant investment in transport infrastructure and the site is well served by a range of transport modes. This is an essential component of the success of the area. However, at present, this transport infrastructure is only fully utilised for a few hours on the limited number of days per year on which there is a match or other major event at the Stadium.

The proposed developments within the Sports and Innovation Zone and the Commercial Zone would seek to make better use of this previous significant investment in transport infrastructure on a daily basis. Working with TfGM these developments would seek to develop and deliver dedicated travel plans for businesses at the Etihad Campus, with a particular focus on encouraging public transport use and promoting active travel.

The assessment of this scenario is based on the assumption that the following interventions would be in place:

- Improved connectivity to local communities with pedestrian crossing and footway improvements provided;
- High quality cycle parking provided within the Etihad Campus within strategically located hubs to serve all existing and proposed developments and benefitting from economies of scale. This would be developed as part of a Campus-wide cycle parking strategy;
- Delivery of the cycle safety improvement scheme at the Alan Turing Way/Ashton New Road junction to improve community access to the employment opportunities within the Etihad Campus;

- Working with TfGM to support the delivery of improved bus services to and from the Etihad Campus on a daily basis, in particular consideration of improved orbital connectivity to locations remote from the existing frequent radial services between the City Centre and Ashton-under-Lyne;
- No additional requirement for Metrolink capacity, though additional demand would be generated by the proposed developments to support the currently underutilised services; and
- Management of a ‘critical mass’ of up to approximately 2,000 car parking spaces to serve non-event days. This may involve sharing of spaces between daytime and evening uses. Existing parking spaces lost due to development could be reprovided (if demand at that time required it) and developed to include appropriate provision of electric vehicle charging spaces and infrastructure in line with demand and policy requirements.

## 10.2 Walking and Cycling

The forecast number of walking trips to the Etihad Campus on a non-event day would be considerably lower than those currently experienced on a matchday. As set out in Section 5.1, there is currently good connectivity between the Etihad Campus and the local community with a range of controlled crossings providing safe and convenient access to the Etihad Campus. As set out in Section 5.1.2, there are also a range of potential enhancements to local connectivity proposed that will be delivered as part of the Greater Manchester Mayor’s Challenge Fund.

Improving walking and cycle links to the Etihad Campus to promote sustainable travel for staff will help to make sure that the employment and leisure opportunities created by the new development are accessible to the local community. The improvements could include upgrades to footways and crossing points along key routes between the Etihad Campus and adjacent communities. There may be opportunities to fund some of these improvements through future tranches of the GM Mayor’s Cycling and Walking Challenge Fund. Specific crossing opportunities and routes to and through local communities have already been identified to the east, south and west as part of this programme as set out in Section 5.1.2.

Provision of high quality cycle parking at the Etihad Campus in appropriate volumes to serve the proposed developments as they are delivered will help to develop the Etihad Campus as a hub for cycle use.

Department for Transport funding has been secured for an improvement scheme at the Alan Turing Way/Ashton New Road junction. The proposed improvements would connect the existing segregated provision along Alan Turing Way (linking to National Cycle Route 60 to the north, and the on-road routes along Ashton New Road). Linking these existing routes at this location would help to improve connectivity to the Etihad Campus from the surrounding communities by active travel modes. Whilst this scheme would be likely to have limited impact on Stadium event days, it is considered that this scheme could provide significant benefit to accessibility of the Etihad Campus employment opportunities for local communities.

## 10.3 Public Transport Assessment

### 10.3.1 Buses

The proposed uses would generate a significant increase in the number of people employed at the Etihad Campus on a day-to-day basis and also encourage visitors on a regular basis across the day rather than just for events. It is forecast that this would generate additional, consistent demand to support improved bus services in the area. During the peak hour, it is anticipated that the additional demand generated for bus services may be in the order of 300 passengers per hour.

Whilst the Etihad Campus is currently well served by radial bus services between the City Centre and Ashton-under-Lyne, it is less well served by orbital services and services to destinations beyond these locations. This could limit the potential catchment of the Etihad Campus by bus and restrict the potential for public transport use.

It is anticipated that, as the Sports and Innovation and Commercial Zones are developed, TfGM will work with the Etihad Campus to identify improvements to the bus service network serving the Etihad Campus (in particular orbital services to complement the existing radial services to/from the City Centre) to ensure that employment opportunities created by development at the Etihad Campus are accessible to the wider community across Greater Manchester.

Over time, as the Etihad Campus develops, sufficient demand may support the viability of electric bus services to and from the Campus, improving connectivity and driving sustainable social and economic mobility for the wider area.

### 10.3.2 Metrolink

During the peak *departure* period of 17:00-17:30, it is anticipated that the additional demand for Metrolink services leaving the Etihad Campus may be in the order of 243 passengers. Based on the existing split of passengers boarding at the Etihad Campus at this time, it is estimated that 227 of these would board a Piccadilly-bound tram, with the remaining 16 boarding an Ashton-bound tram.

Based on a six-minute frequency service, there would be five trams in each direction during this 30-minute period. The average additional loading per tram would therefore be 45 passengers westbound towards Piccadilly and three passengers eastbound towards Ashton-under-Lyne.

Existing surveyed tram occupancies during this period were 33 passengers per westbound tram towards Piccadilly and 112 passengers per eastbound tram towards Ashton-under-Lyne. The additional demand generated by the proposed developments would increase these to 78 passengers per westbound tram and 115 passengers per eastbound tram. A single tram unit per service would remain sufficient to accommodate this demand.

Table 15 - Additional Metrolink Demand on non-event day (evening peak departure period 17:00-17:30)

| Service Direction                        | Additional demand over 30 mins | Additional demand generated per tram | Surveyed Flow per tram | Forecast Future Demand per tram |
|------------------------------------------|--------------------------------|--------------------------------------|------------------------|---------------------------------|
| Westbound tram towards Piccadilly        | 227                            | 45                                   | 33                     | 78                              |
| Eastbound tram towards Ashton-under-Lyne | 16                             | 3                                    | 112                    | 115                             |

During the peak *arrival* period of 16:00-16:30, it is anticipated that the additional demand for Metrolink services arriving at the Etihad Campus may be in the order of 107 passengers. Based on the existing split of passengers arriving at the Etihad Campus at this time, it is estimated that 100 of these would alight from an eastbound tram from Piccadilly, with the remaining seven alighting from a westbound tram from Ashton-under-Lyne.

Based on a six-minute frequency service, there would be five trams in each direction during this 30-minute period. The average additional loading per tram would therefore be 22 passengers eastbound from Piccadilly and two passengers westbound from Ashton-under-Lyne.

Existing surveyed tram occupancies during this period were 63 passengers per tram eastbound from Piccadilly and 46 passengers per tram westbound from Ashton-under-Lyne. The additional demand generated by the proposed developments would increase these to 85 passengers per tram eastbound from Piccadilly and 48 passengers per tram westbound from Ashton-under-Lyne. A single tram unit per service would remain sufficient to accommodate this demand.

Table 16 - Additional Metrolink Demand on non-event day (evening peak arrival period 16:00-16:30)

| Service Direction                                | Additional demand over 30 mins | Additional demand generated per tram | Surveyed Flow per tram | Forecast Future Demand per tram |
|--------------------------------------------------|--------------------------------|--------------------------------------|------------------------|---------------------------------|
| Westbound tram from Ashton-under-Lyne Piccadilly | 7                              | 2                                    | 46                     | 48                              |
| Eastbound tram from Piccadilly                   | 100                            | 22                                   | 63                     | 85                              |

The additional numbers of passengers on public transport services to and from the Etihad Campus is unlikely to result in a requirement for additional capacity. However, the additional demand will result in additional patronage to support the

existing services to the area, which are understood to be underutilised outside of matchdays.

## 10.4 Taxi and Drop Off

Limited amounts of taxi and drop off use at the Etihad Campus is forecast on a non-event day. Levels of drop-off and pick-up activity would be significantly below those currently accommodated on a matchday.

The existing on-site car parks would not be fully occupied on non-event days, meaning that space would be available within the existing car park areas for taxi and private car pick up and drop off to take place off the highway. As individual developments come forward, dedicated on-site facilities for these uses may be considered within the forecourt of the buildings (e.g. hotel drop off).

## 10.5 Parking On-Site

Using the forecast arrival and departure profiles, peak parking accumulation on the site for non-event days is estimated to be up to 1,800-2,000 spaces. The majority of this demand would occur during the day, with approximately 200-300 dedicated spaces potentially required for the evening leisure uses. This does not include non-matchday Stadium staff parking. This could require a relatively limited additional provision, though this could easily be accommodated within the existing provision of spaces on the site.

Maximum parking standards for new developments are set out in MCC's Core Strategy. Based on the indicative range of uses proposed for the Etihad Campus, the maximum parking standards would permit up to approximately 2,600 spaces to serve the new developments (excluding the proposed Arena).

The overall demand of up to 1,800-2,000 spaces is therefore well within the permitted maximum standards and could also be accommodated by the existing Etihad Campus Car Parks without a requirement for additional spaces. It may be that the proposed developments would be built on top of existing car parking spaces, which would then become unavailable. As a proportion of these existing spaces would be required for use during event days, it is anticipated that spaces lost to development could be reprovided if demand at that time required it.

## 10.6 Parking Off-Site

Based on the above estimate of on-site parking levels, it is not expected that there would be any demand for off-site parking on non-event days. In any case, the revised resident parking scheme, which is anticipated to operate on all days, would prevent any off-site parking by non-permit holders in the area immediately surrounding the Etihad Campus.

## 10.7 Highway Network Impact

The forecast traffic generation on non-event days would be considerably lower than that currently accommodated by the existing highway network before and

after a Stadium event at the Stadium. The number of parking spaces that would be in use on a non-event day would be lower than a Stadium event day and the peak vehicle flows onto and off the site would be lower.

The peak period of departures from the Campus on a non-event day would, however, coincide with the existing network peak to a greater extent than the current uses on the Campus do. As such, there is likely to be additional pressure placed on the highway network during the evening peak period as a result of the Sports and Innovation and Commercial Zone developments.

In particular, this would result in additional traffic flow through the Ashton New Road/Alan Turing Way and Hulme Hall Lane/Bradford Road junctions that may result in additional localised congestion for a short time during the peak periods. As part of the mitigation required for these developments, local junction improvements may be required in these locations, although it is noted that these are already large junctions that accommodate high traffic volumes on matchdays. As such, it may not be appropriate to provide additional capacity that would only be required for short periods and that may benefit vehicles but could adversely impact upon sustainable transport modes on the network.

The transport assessment(s) that accompany the Sports and Innovation and Commercial Zone developments would identify and agree appropriate local junction improvement works with stakeholders as the details of these developments are refined and planning applications are submitted.

## 11 Stadium Event Day

**ALL FIGURES USED FOR FUTURE FORECASTS AND SUBSEQUENT ANALYSIS WITHIN THIS STRATEGIC TRANSPORT ASSESSMENT ARE INDICATIVE ONLY.**

**DETAILED ANALYSIS WILL BE UNDERTAKEN AND SUBMITTED AS PART OF DEVELOPMENT-SPECIFIC TRANSPORT ASSESSMENTS.**

As set out in Section 4.3.1, the Stadium currently hosts in the order of 30 home matches per season, with a limited number of additional concert events taking place over the summer months. The majority of these matches and events take place at weekends, with approximately 10-15 midweek events per year. The movements associated with the Sports and Innovation and Commercial Zones would be considerably lower at the weekend as the office uses would only generate a very limited number of movements. It is therefore a midweek Stadium event day that represents the worst-case for assessment.

The trip generation for the proposed developments within the Sports and Innovation and Commercial Zones on a Stadium event day is assumed to be as set out in Section 9.1 for the non-Arena event day with no assumed changes in travel behaviours due to the fact that there is a major event at the Stadium.

This is considered to represent a worst-case as, in reality, employees may leave earlier to avoid pre-match arrivals, the cinema may adjust film start times to minimise overlaps with the pre-match supporter arrival period, and trips associated with other leisure uses (in particular the hotel) may be visitors already attending a Stadium event (i.e. the trips would be double counted). These changes to travel behaviours would be proactively encouraged by TfGM working with the Etihad Campus as part of a matchday travel demand management programme.

### 11.1 Assumed Transport Interventions

Based on the travel patterns of the proposed new developments within the Sports and Innovation and Commercial Zones, there is likely to be limited overlap between Stadium event and non-event movements. The forecast peak movements associated with the Sports and Innovation and Commercial Zones during the evening peak would be leaving the Etihad Campus. These movements would therefore predominantly be in the opposite direction to pre-match supporter arrivals.

These movements away from the Etihad Campus would peak at 17:00-17:30, prior to the pre-match build-up, which, based on matchday traffic surveys, peaks between 18:30-19:30. As noted earlier, it is likely that on a match-day, employees at the new development uses would leave even earlier than normal where possible, further separating the time difference between Stadium and non-Stadium movements.

The new proposed evening leisure uses at the Etihad Campus would generate a much smaller travel demand than the daytime uses. In the context of the scale of

match-day supporter arrivals during the pre-match period, these leisure trips would be very small in volume.

It is therefore considered that the committed and emerging measures set out in Section 2.2, in conjunction with the interventions described in 10.1 to support the non-event day scenario would be sufficient to accommodate the additional demands due to the Sports and Innovation and Commercial Zones on a Stadium event day, recognising that midweek events at the Etihad Stadium only take place on a limited number of days per year.

## 11.2 Walking and Cycling

The additional walking trips to the Etihad Campus generated by the Sports and Innovation and Commercial Zones would be considerably lower than those currently accommodated on a matchday. As such, it is not anticipated that the additional pedestrian movements due to the Sports and Innovation and Commercial Zones would be perceptible during a Stadium event.

The proposed cycle safety improvement scheme at the Alan Turing Way/Ashton New Road junction would be likely to have limited impact on Stadium-related movements as it is primarily aimed at enhancing local connectivity and will therefore be used by people cycling to the Etihad Campus for the Sports and Innovation and Commercial Zones. The stated safety benefits are expected to be achieved without significant adverse impact on overall junction capacity for motor vehicles and the works should not, therefore, adversely affect the levels of congestion currently experienced on event days. Indeed, this junction is closed post-match as part of the traffic management measures to protect pedestrian movements away from the Stadium.

## 11.3 Public Transport Assessment

### 11.3.1 Buses

The additional number of bus-based trips related to the Sports and Innovation and Commercial Zones would not be significant in relation to the volume of movements currently accommodated on a Stadium event day. As with other modes, the main bus passenger movements associated with the Sports and Innovation and Commercial Zones would be away from the Etihad Campus in the period of 17:00-17:30.

During the peak hour of build up to the event at the Stadium (18:30-19:30), the forecast number of bus-based passengers associated with the Sports and Innovation and Commercial Zones would be 130 passengers per hour (70 arrivals and 60 departures). Over a one-hour period it is considered that this level of demand would not have an impact on the matchday capacity of buses serving the Etihad Campus.

### 11.3.2 Metrolink

During the evening peak-period, it is anticipated that the additional demand for Metrolink services associated with the Sports and Innovation and Commercial Zones arriving and leaving the Etihad Campus would be as follows. Based on a six-minute frequency service, there would be five trams in each direction during each 30-minute period. The average additional loading per tram is shown in brackets.

Table 17 - Forecast additional Metrolink trips on Stadium event day

|             | Arrivals        |               |                 | Departures    |              |              |
|-------------|-----------------|---------------|-----------------|---------------|--------------|--------------|
|             | From Piccadilly | From Ashton   | Total           | To Piccadilly | To Ashton    | Total        |
| 16:00-16:30 | <b>101 (20)</b> | <b>7 (1)</b>  | <b>107 (21)</b> | 125 (25)      | 3 (1)        | 128 (26)     |
| 16:30-17:00 | <b>101 (20)</b> | <b>0 (0)</b>  | <b>101 (20)</b> | 151 (30)      | 0 (0)        | 151 (30)     |
| 17:00-17:30 | <b>81 (16)</b>  | <b>11 (2)</b> | <b>91 (18)</b>  | 228 (46)      | 16 (3)       | 243 (49)     |
| 17:30-18:00 | <b>68 (14)</b>  | <b>19 (4)</b> | <b>87 (17)</b>  | 181 (36)      | 16 (3)       | 198 (40)     |
| 18:00-18:30 | <b>76 (15)</b>  | <b>25 (5)</b> | <b>101 (20)</b> | 103 (21)      | 32 (6)       | 135 (27)     |
| 18:30-19:00 | <b>74 (15)</b>  | <b>25 (5)</b> | <b>98 (20)</b>  | 71 (14)       | 8 (2)        | 79 (16)      |
| 19:00-19:30 | <b>33 (7)</b>   | <b>7 (1)</b>  | <b>40 (8)</b>   | 47 (9)        | 0 (0)        | 47 (9)       |
| 19:30-20:00 | <b>37 (7)</b>   | <b>3 (1)</b>  | <b>40 (8)</b>   | 37 (7)        | 9 (2)        | 47 (9)       |
| 20:00-20:30 | 46 (9)          | 0 (0)         | 46 (9)          | 14 (3)        | 32 (5)       | 45 (9)       |
| 20:30-21:00 | 46 (9)          | 0 (0)         | 46 (9)          | 45 (9)        | 0 (0)        | 45 (9)       |
| 21:00-21:30 | 28 (6)          | 0 (0)         | 28 (6)          | 22 (4)        | 3 (1)        | 25 (5)       |
| 21:30-22:00 | 28 (6)          | 0 (0)         | 28 (6)          | 25 (5)        | 0 (0)        | 25 (5)       |
| 22:00-22:30 | 0 (0)           | 0 (0)         | 0 (0)           | <b>8 (2)</b>  | <b>0 (0)</b> | <b>8 (2)</b> |
| 22:30-23:00 | 0 (0)           | 0 (0)         | 0 (0)           | <b>0 (0)</b>  | <b>0 (0)</b> | <b>0 (0)</b> |

Only those periods and directions shown in bold would be affected by movements to and from the Stadium (i.e. pre-event arrivals and post-event departures). This

demonstrates that the peak additional number of passengers per tram in any half-hour period due to the Sports and Innovation and Commercial Zones would be in the order of 20 passengers. In the context of existing surveyed matchday loadings of up to 367 passengers per tram and given the existing operation of enhanced Metrolink services on matchdays, it is not anticipated that this level of additional demand would have an impact on the capacity of services to or from the Etihad Campus on a Stadium event day.

The overall level of additional public transport demand associated with the Sports and Innovation and Commercial Zones would not be significant relative to the high volume of existing public transport movements currently accommodated by the network during a Stadium event. Peak public transport movements associated with the Sports and Innovation and Commercial Zones would occur prior to the existing pre-event public transport peaks and would largely be in the opposite direction (i.e. away from the Etihad Campus as Stadium event visitors arrive). As such it is not considered that any additional public transport provision to that which currently operates on a matchday would be required on a Stadium event day.

## 11.4 Coach, Taxi and Drop Off

Limited taxi and drop off activity is forecast associated with the Sports and Innovation and Commercial Zones. As with public transport, these movements would also typically occur prior to the pre-Stadium event transport movement peaks. It is therefore considered that taxis and pick-up/drop-off movements associated with the Sports and Innovation and Commercial Zones would have a negligible impact upon existing transport movements associated with the Stadium.

The overall level of transport movements associated with the Sports and Innovation and Commercial Zones during the peak periods of Stadium event coach, taxi and pick-up/drop-off movements would be low. As such, it is not considered that the coach, taxi and pick-up/drop-off movements associated with a Stadium event would be adversely affected by the Sports and Innovation and Commercial Zones.

## 11.5 Parking On-Site

As set out above, peak parking accumulation on the site associated with the Sports and Innovation and Commercial Zones is estimated to be up to 1,800-2,000 spaces. The majority of this demand would occur during the daytime on a weekday, with a provision of up to approximately 200-300 dedicated spaces required for the evening leisure uses.

It should be noted that the consented Stadium expansion assumes no increase to existing levels of match day parking, with new journeys generated by the Stadium expansion using alternative modes. Surveyed demand for Stadium-related parking is identified as up to 3,000 spaces, which is understood to represent an average figure for the 2018/19 season.

The overall demand for parking on the Etihad Campus during Stadium events with the Sports and Innovation and Commercial Zones in place would be slightly higher than the existing Stadium use due to the additional parking demand generated by these proposed developments. However, daytime parking associated with the proposed new uses would have largely departed prior to the pre-match build up and therefore additional demand in the evening would be limited compared to the existing matchday scenario.

The table below shows the forecast accumulation of the on-site parking within the north car parks and demonstrates the overall demand across uses on a Stadium event day.

Table 18 - Forecast on-site parking accumulation (midweek Stadium event day)

| Time Period | Sports and Innovation and Commercial Zone Parking Accumulation | Stadium Parking Accumulation | Total Parking Accumulation |
|-------------|----------------------------------------------------------------|------------------------------|----------------------------|
| 16:00-16:30 | 1,512                                                          | 557                          | 2,069                      |
| 16:30-17:00 | 1,250                                                          | 746                          | 1,996                      |
| 17:00-17:30 | 773                                                            | 990                          | 1,763                      |
| 17:30-18:00 | 473                                                            | 1,271                        | 1,744                      |
| 18:00-18:30 | 244                                                            | 1,608                        | 1,852                      |
| 18:30-19:00 | 165                                                            | 2,166                        | 2,331                      |
| 19:00-19:30 | 145                                                            | 2,839                        | 2,984                      |
| 19:30-20:00 | 125                                                            | 2,947                        | 3,072                      |
| 20:00-20:30 | 157                                                            | 2,904                        | 3,061                      |
| 20:30-21:00 | 189                                                            | 2,865                        | 3,054                      |
| 21:00-21:30 | 162                                                            | 2,827                        | 2,989                      |
| 21:30-22:00 | 136                                                            | 2,417                        | 2,553                      |
| 22:00-22:30 | 103                                                            | 1,427                        | 1,530                      |
| 22:30-23:00 | 70                                                             | 401                          | 471                        |
| 23:00-23:30 | 52                                                             | 0                            | 52                         |
| 23:30-24:00 | 34                                                             | 0                            | 34                         |

The evening uses of the Sports and Innovation and Commercial Zones may, in theory, require a small number of dedicated spaces during Stadium events, though it is likely that much of the hotel use on a matchday would be by football supporters and that the cinema would typically be less well-used on the small

number of weekday evening matchdays that take place each year. It is therefore considered that any dedicated parking requirements for the Sports and Innovation and Commercial Zones (in addition to the identified provision of up to 3,000 stadium spaces) would be limited.

On balance, it is considered that the existing Etihad Campus Car Park provision would be adequate, enabled by the shared use of spaces across the day to promote efficient and sustainable parking management. The retention of the existing parking levels on the Etihad Campus would also be consistent with the maximum parking standards set by MCC in their Core Strategy and the sustainability objectives of the Strategic Vision.

## 11.6 Parking Off-Site

The operation of the proposed evening uses within the Sports and Innovation and Commercial Zones (e.g. hotel, cinema) on a matchday, combined with the existing demand for on-site stadium parking could increase the demand for off-site parking. However, on a matchday, the Etihad resident parking scheme is already operational and would protect the amenity of local residents. Given the relatively small scale of the trips that would be generated by the Sports and Innovation and Commercial Zones land-uses on a matchday evening in comparison to existing matchday movements, it is not anticipated that any additional off-site parking control measures would be required.

## 11.7 Highway Network Impact

The additional traffic associated with the Sports and Innovation and Commercial Zones would generally be on the highway network outside of the peak periods associated with the arrival of vehicles to the Campus prior to a Stadium event.

Arrivals to the Stadium generally start to be experienced on the network from around 18:30 with flows before this period being largely consistent with non-matchday flows. This could potentially be due to traffic avoiding the area surrounding the Campus by seeking to 're-route', 're-mode' and 're-time' their journeys. As such, the impacts on the highway network during the evening network peak would be largely similar to those described in Section 10.7, as Stadium related traffic during this period would be limited.

Similarly, during the peak period before a Stadium event (i.e. 19:00-20:00), traffic associated with the Sports and Innovation and Commercial Zones would be limited, especially on a Stadium event day, where visitors to these uses would be likely to avoid this period where practical. As such, the impacts on the highway network during the Stadium arrival peak would be largely similar to the existing situation, as Sports and Innovation and Commercial Zone traffic during this period would be limited.

No additional highway mitigation, beyond any works required to accommodate the non-event day as Sports and Innovation and Commercial Zone traffic would be anticipated.

## 12 Arena Event Day

**ALL FIGURES USED FOR FUTURE FORECASTS AND SUBSEQUENT ANALYSIS WITHIN THIS STRATEGIC TRANSPORT ASSESSMENT ARE INDICATIVE ONLY.**

**DETAILED ANALYSIS WILL BE UNDERTAKEN AND SUBMITTED AS PART OF DEVELOPMENT-SPECIFIC TRANSPORT ASSESSMENTS.**

As set out in Section 4.3.1, the Arena is expected to host in the order of between 120 and 180 events per year. As noted above, the movements associated with the Sports and Innovation and Commercial Zones would be considerably lower at the weekend as the office uses would only generate very limited movements. It is therefore a midweek Arena event day that represents the most common and worst-case scenario for assessment.

The trip generation for the proposed developments within the Sports and Innovation and Commercial Zones is assumed to be as set out in Section 9.1 with no assumed changes in travel behaviours due to the fact that there is an event.

This is considered to represent a worst-case as, in reality, employees may leave earlier to avoid pre-event arrivals, the cinema may adjust film start times to minimise overlaps with the pre-event arrival period, and trips associated with other leisure uses (in particular the hotel) may be visitors to the Arena attending an event (i.e. the trips would be double counted). As on a Stadium event day, these travel behaviours would be proactively encouraged by TfGM working with the Etihad Campus as part of the Arena event travel demand management programme.

### 12.1 Assumed Transport Interventions

This scenario has been assessed on the basis of the following interventions being delivered as part of the Arena proposals.

- Enhancements to the walking route(s) between the City Centre and the Etihad Campus. Additional stewarding and management along the route would be evaluated on an event-by-event basis;
- TfGM working alongside the Etihad Campus to plan and operate an enhanced Metrolink service on event days (subject to demand) before and after events;
- To support Metrolink as the primary mode of public transport, the use of shuttle-bus services between the Etihad Campus and the City Centre, as operated after Stadium events and on events elsewhere in the city, such as the Parklife festival;
- Dedicated coach, taxi/private hire and private car pick up and drop off facilities provided for the Arena to ensure that these operations can be managed effectively and efficiently without adverse effects on other modes. Marshalling would be provided to ensure that these are well used and well managed;

- Contribution to the additional cycle parking that will be provided across the Etihad Campus to accommodate increased usage and encourage staff and visitors to cycle;
- Campus car park access and egress improvements to assist with relief of congestion before and after events. This may include the use of intelligent parking solutions to park visitors according to their direction of travel to minimise congestion on entry and exit;
- Amendments to the residents parking scheme such that it operates on all days and potentially across an expanded geographic area; and
- A range of supporting interventions across the areas of technology, digital, incentivisation, advanced planning and direct intervention in travel behaviour for visitors to support the physical measures described above. These would be targeted at event attendees, starting from the point of ticket-purchase to influence travel behaviour towards specific modes depending upon the specific event and the individual needs and circumstances of the visitor.

## 12.2 Walking and Cycling

It is estimated that that approximately 1.5% of people could walk and cycle directly to an arena event from their home address. Applied to a capacity event, this would equate to approximately 350 people walking and cycling to each event. Note that this excludes people walking and cycling to and from other modes.

It is estimated that 10% of football supporters currently walk to the Etihad Campus from public transport nodes outside the immediate Campus (e.g. the main City Centre rail and bus interchanges, other Metrolink lines, Ashburys Station). Were a similar proportion of attendees of an Arena event use this transport mode, this would result in 2,350 people walking to the Etihad Campus from off-site public transport and hotels, primarily from the City Centre.

As the capacity of the Arena is significantly lower than that of the Stadium, these flows would be significantly lower than those currently accommodated on the network before and after events at the Stadium. Even when added to the forecast walking flows generated by the Sports and Innovation and Commercial Zones, the number of walking trips to the Etihad Campus would be considerably lower than those currently accommodated on a matchday.

Notwithstanding this, in order to support the relatively high number of walking trips from the City Centre on a more frequent basis and considering the potential range of event types and audience demographics that may wish to attend events at the Arena, it is considered that enhancements to the walking route(s) between the City Centre and the Etihad Campus should be provided. Based on the surveys undertaken it is considered that key existing routes used by football supporters include Pollard Street, Ashton New Road and the canal towpath. However, there may be other routes that are not currently well-used but could be with appropriate improvements.

Improvements to routes between the Etihad Campus and the City Centre (as defined by Great Ancoats Street) should seek (where appropriate) to link into the

funded schemes that are being delivered within the City Centre, as described in Section 5.2.2. These include the new crossings of Great Ancoats Street, and the new link between Victoria and Piccadilly that is being provided as part of the Mayor's Challenge Fund.

Consideration would need to be given to potential effects of large volumes of pedestrians using routes through residential areas on a more frequent basis. Interventions should therefore be focussed on the existing main routes used to access the Stadium, which are more appropriate for high volume pedestrian flows.

## 12.3 Public Transport Assessment

### 12.3.1 Buses

A shuttle-bus service could transport passengers to and from Arena events at the Etihad Campus from the City Centre. Assuming that a ten-minute frequency service was operated for two hours before and after the event this would be able to transport approximately 960 visitors to and from the Etihad Campus. Equating to approximately 4% of Arena visitors.

It is forecast that 4% of visitors to the Arena could arrive by service bus. Applied to the maximum Arena capacity, this would equate to 940 visitors. The number of bus-based trips generated by the Sports and Innovation and Commercial Zones would not be significant in relation to the volume of movements accessing the Arena. As noted earlier, the main bus passenger movements associated with the Sports and Innovation and Commercial Zones during the evening would be away from the Etihad Campus in the period of 17:00-17:30.

In total, therefore, up to 1,900 visitors could arrive by bus. This would equate to approximately 8% of the additional visitors to the Etihad Campus.

### 12.3.2 Metrolink

The surveys of non-matchday Metrolink usage recorded the numbers of passengers transported between Piccadilly and the Etihad Campus over the period prior to the proposed start of an Arena event.

The proposed Sports and Innovation and Commercial Zones would result in additional demand for Metrolink use. These forecast trips have been added to the surveyed flows in proportion with the existing (surveyed) alighting passengers at the Etihad Campus stop as follows.

Table 19 - Forecast additional Metrolink trips on midweek Arena event day

| Time Period | Non-Matchday Surveyed | Additional forecast passengers from Sports and Innovation and Commercial Zones | Total (excl. Arena) |
|-------------|-----------------------|--------------------------------------------------------------------------------|---------------------|
| 17:30-18:00 | 483                   | 68                                                                             | 551                 |
| 18:00-18:30 | 459                   | 76                                                                             | 535                 |
| 18:30-19:00 | 380                   | 74                                                                             | 454                 |
| 19:00-19:30 | 291                   | 33                                                                             | 324                 |
| 19:30-20:00 | 491                   | 37                                                                             | 528                 |

The Metrolink capacity for a 30-minute period can be estimated on the basis of a six-minute frequency (i.e. five services over a period of 30 minutes) with a tram unit capacity of 200 passengers. Enhanced service tram capacities based on different service patterns would be as follows:

- Single-tram operation – 1,000 passengers;
- Intermittent single-tram/double-tram operation – 1,500 passengers; and
- Double-tram operation – 2,000 passengers.

The number of additional passengers that could be transported from Piccadilly to the Etihad Campus under different tram-operating patterns is as follows.

Table 20 - Forecast available Metrolink capacity on midweek Arena event day

| Time Period                     | Non-Matchday Surveyed | Additional Passengers from Sports and Innovation and Commercial Zones | Total (excl. Arena) | Available capacity with single/single tram operation | Available capacity with single/double tram operation | Available capacity with double/double tram operation |
|---------------------------------|-----------------------|-----------------------------------------------------------------------|---------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|
| 17:30-18:00                     | 483                   | 68                                                                    | 551                 | 449                                                  | 949                                                  | 1449                                                 |
| 18:00-18:30                     | 459                   | 76                                                                    | 535                 | 465                                                  | 965                                                  | 1465                                                 |
| 18:30-19:00                     | 380                   | 74                                                                    | 454                 | 546                                                  | 1046                                                 | 1546                                                 |
| 19:00-19:30                     | 291                   | 33                                                                    | 324                 | 676                                                  | 1176                                                 | 1676                                                 |
| 19:30-20:00                     | 491                   | 37                                                                    | 528                 | 472                                                  | 972                                                  | 1472                                                 |
| <b>Total available capacity</b> |                       |                                                                       |                     | <b>2,608</b>                                         | <b>5,108</b>                                         | <b>7,608</b>                                         |

The same exercise could be applied to Metrolink capacity between Ashton-under-Lyne and the Etihad Campus. However, the availability of car parking at the park and ride sites at Ashton Moss and Ashton West is likely to restrict the ability to achieve the full potential of available Metrolink capacity.

Based on survey data, it is estimated that there were approximately 150 spaces available during the midweek (non-matchday) at Ashton Moss with a further 160 spaces at Ashton West. A total of 310 park and ride spaces are therefore potentially available for Arena use on a midweek non-matchday.

Based on an assumed vehicle occupancy of 2.4 people per vehicle, this number of spaces would potentially accommodate 744 additional passengers by fully utilising the existing parking capacity.

The total number of additional passengers that could be transported to the Etihad Campus by Metrolink under different tram-operating patterns is therefore calculated by adding these 744 passengers to the available capacity in the table above as follows:

- Single-tram operation – 3,352 passengers
- Intermittent single-tram/double-tram operation – 5,852 passengers; and

- Double-tram operation – 8,352 passengers

Assuming that TfGM continued to operate only a single-tram service on a non-matchday, then approximately 3,300 Arena visitors could be transported to the Etihad Campus by Metrolink over this 2.5 hour period. However, if an enhanced service with every other service as a double unit were operated, then this would increase the available Metrolink capacity to approximately 5,800 passengers. This is consistent with the level of enhanced service that TfGM currently aims to operate on a matchday. TfGM has confirmed that they would consider operating further enhanced services before and after an Arena event, subject to their operational experience demonstrating that the demand for Metrolink travel to/from the Arena requires enhancement.

In summary, the assessment assumes the following numbers of additional people could be transported to the Etihad Campus directly using public transport:

- 960 people by shuttle bus;
- 940 people by service buses; and
- Either 3,400 people by the existing non-matchday Metrolink service pattern or 5,800 people via an enhanced Metrolink service similar to that operated on matchdays.

In total, this could enable up to approximately 7,700 additional people to arrive at the Etihad Campus directly using public transport. This represents approximately 33% of the additional people expected to arrive for a capacity Arena event.

## 12.4 Coach, Taxi and Drop Off

It is estimated that approximately 5% of Arena visitors would arrive by coach, with dedicated coach boarding and alighting facilities provided within the Etihad Campus as part of the Arena development. Applied to a capacity event, this would equate to approximately 1,200 people arriving by coach. Based on an assumed capacity of 50 passengers, this equates to approximately 24 coaches per event. This is significantly fewer coaches than the number accommodated on a matchday at the Stadium

It is estimated that 5% of Arena visitors will arrive by taxi, with facilities being provided at the Etihad Campus. Applied to a capacity event, this would equate to approximately 1,200 people arriving by taxi. Based on an assumed capacity of 2.4 passengers per taxi, this equates to approximately 500 taxis per event.

It is estimated that 2% of Arena visitors will be dropped off/picked up, with facilities being provided at the Etihad Campus. Applied to a capacity event, this would equate to approximately 470 people being picked up/dropped-off. Based on an assumed capacity of 2.4 passengers per vehicle, this equates to approximately 200 vehicles per event.

Limited amounts of taxi and drop off use is forecast associated with the Sports and Innovation and Commercial Zones. As with public transport, these movements would typically occur prior to the pre-event transport peak periods. It is therefore considered that the movement of taxis and pick-up/drop-off associated

with the Sports and Innovation and Commercial Zones would have a negligible impact upon transport movements associated with the Arena.

The level of transport movements associated with the Sports and Innovation and Commercial Zones during the peak period of coach, taxi and pick-up/drop-off movements associated with a Stadium event would be low. As such, it is not considered that the coach, taxi and pick-up/drop-off movements associated with an Arena event would be adversely affected by transport movements in the Sports and Innovation and Commercial Zones.

## 12.5 Parking On-Site

In this scenario, up to 3,000 on-site parking spaces would be made available for the use of the Arena. This is consistent with the average utilisation of the car parks by the Stadium on matchdays. It is assumed that a proportion of these spaces would be allocated to hospitality guests and disabled parking.

Based on an assumed capacity of 2.4 passengers per vehicle (as advised by the Arena operator and supported by matchday surveys), the overall on-site parking numbers equates to approximately 7,200 people. This represents approximately 31% of the visitors expected for a capacity Arena event.

As set out above, peak parking accumulation on the site associated with the Sports and Innovation and Commercial Zones is estimated to be up to 1,800-2,000 spaces. The majority of this demand would occur during the daytime on a weekday, with up to approximately 200-300 dedicated spaces required for the evening leisure uses.

The table below shows the forecast accumulation of the on-site parking within the north car parks and demonstrates the overall demand across uses on an Arena event day.

Table 21 - Forecast on-site parking accumulation (midweek Arena event day)

| Time Period | Sports and Innovation and Commercial Zone Parking Accumulation | Arena Parking Accumulation | Total Parking Accumulation |
|-------------|----------------------------------------------------------------|----------------------------|----------------------------|
| 16:00-16:30 | 1,512                                                          | 0                          | 1,512                      |
| 16:30-17:00 | 1,250                                                          | 0                          | 1,250                      |
| 17:00-17:30 | 773                                                            | 0                          | 773                        |
| 17:30-18:00 | 473                                                            | 900                        | 1,373                      |
| 18:00-18:30 | 244                                                            | 1,080                      | 1,324                      |
| 18:30-19:00 | 165                                                            | 1,800                      | 1,965                      |
| 19:00-19:30 | 145                                                            | 3,000                      | 3,145                      |
| 19:30-20:00 | 125                                                            | 3,000                      | 3,125                      |
| 20:00-20:30 | 157                                                            | 3,000                      | 3,157                      |
| 20:30-21:00 | 189                                                            | 3,000                      | 3,189                      |
| 21:00-21:30 | 162                                                            | 3,000                      | 3,162                      |
| 21:30-22:00 | 136                                                            | 3,000                      | 3,136                      |
| 22:00-22:30 | 103                                                            | 3,000                      | 3,103                      |
| 22:30-23:00 | 70                                                             | 0                          | 70                         |
| 23:00-23:30 | 52                                                             | 0                          | 52                         |
| 23:30-24:00 | 34                                                             | 0                          | 34                         |

The evening leisure uses could, in theory, require a small number of dedicated spaces, though it is likely that much of the hotel use on an Arena event day would be by Arena visitors. It is therefore considered that any dedicated parking requirements for the Sports and Innovation and Commercial Zones during the evening would be limited and could be met by the existing parking provision on the site.

There may be greater potential for overlaps in parking demand between the Sports and Innovation and Commercial Zones and a midweek matinee event at the Arena. Although such events would be less frequent than evening events or weekend matinees, there would be an overlap with demand for parking by office uses. On these limited occasions, there may be a requirement to restrict the number of Arena spaces to ensure that sufficient spaces are available for the Sports and Innovation and Commercial Zones. Given that matinee events would be lower capacity than evening events, this could be managed as part of the overall Campus parking strategy.

On balance, it is considered that the existing Etihad Campus Car Park provision, enabled by the shared use of spaces across the day to promote efficient and sustainable parking management, would be adequate to serve the Arena. The retention of existing parking levels on the Etihad Campus would also be consistent with the maximum parking standards set by MCC in their Core Strategy and the sustainability objectives of the Strategic Vision.

## 12.6 Parking Off-Site

The above modes of transport would account for approximately 87% of the additional trips generated by an Arena event. The remaining 13% of additional trips would be likely to arrive by car, but, due to the limited availability of on-site parking, would be required to park off-site.

The residents parking scheme, which would operate on all days, would prevent these vehicles from parking in the area immediately surrounding the Etihad Campus. Although the details of any revised resident parking scheme are to be determined, it is anticipated that the residents parking scheme would prevent these vehicles from parking within an approximate 20-minute walking distance from the site. There would therefore be no reason for these vehicles to enter the area surrounding the Etihad Campus.

Based on an assumed capacity of 2.4 passengers per vehicle, the forecast number of people arriving by car and parking off-site is approximately 3,000, which equates to approximately 1,300 vehicles. There is a significant existing parking stock within the eastern part of the City Centre. The existing City Centre off-street parking stock largely serves commuter parking, which, at the time of an evening Arena event, would have departed to a significant extent. There is therefore potential for existing off-street parking stock within the City Centre to serve the Arena, supported by the proposals to significantly enhance walking routes between the City Centre and the Etihad Campus. As such, it is considered that this scenario could be delivered without the need for additional on- or off-site parking to be provided.

Large amounts of off-street commercial parking facilities are currently made available for Stadium-related parking within the area surrounding the Etihad Campus (i.e. commercial and educational facility parking that is not used in the evening/weekend, undeveloped/derelict land). Within a radius of approximately 800m from the centre of Campus there are an estimated 1,500 off-street parking spaces. This includes parking at the National Cycling Centre and sites to the east, south and west of the Etihad Campus. The majority of this parking is operated by

private businesses who are responding to the commercial opportunity presented by events at the Stadium.

It is considered reasonable to assume that private businesses may see a similar commercial opportunity arising from events at the Arena. It is not within the control of the Etihad Campus as to whether these businesses would seek to operate in a similar way as they do on matchdays. However, it is noted that the Arena would not be reliant on these spaces given the on-site provision, supplemented by the additional parking located within Manchester City Centre, which is within a walkable distance of the Etihad Campus. Any off-site car parks operated by third parties may be required to obtain their own planning consent if they intended to operate on a non-matchday.

## 12.7 Highway Network Impact

The overall on-site parking provision for the Arena would be consistent with the existing average on-site parking levels accommodated during a Stadium event (c.3,000 vehicles). However, the maximum on-site parking levels currently accommodated during a Stadium event are higher (c. 3,500 vehicles). The number of vehicles expected to park off-site for an Arena event would be significantly lower than that for a Stadium event as the overall capacity would be less than half that of the Stadium.

The traffic volumes on the wider highway network associated with an Arena event are likely to be considerably lower than those currently accommodated by the local network before and after a Stadium event. As such, the overall impact on the wider highway network would be lower than that on a Stadium event day as described in Section 11.7.

Peak arrivals to the Arena are forecast to be experienced on the network between 18:30 and 19:30. As such, the impacts on the local highway network during the evening network peak between 16:00-18:00 would be similar to that described in Section 10.7, as Arena related traffic during this period would be limited.

Similarly, during the peak period before an Arena event (i.e. 18:30-19:30), traffic associated with the Sports and Innovation and Commercial Zones would be limited, especially on an Arena event day, where visitors to these uses would be likely to avoid this period where practical. As such, the impacts on the highway network during the Arena arrival peak would not be significantly affected by Sports and Innovation and Commercial Zone traffic, which would be limited during this period.

No additional highway mitigation, beyond any works required to accommodate the non-event day as Sports and Innovation and Commercial Zone traffic would be anticipated.

## 13 Coincident Event Day

**ALL FIGURES USED FOR FUTURE FORECASTS AND SUBSEQUENT ANALYSIS WITHIN THIS STRATEGIC TRANSPORT ASSESSMENT ARE INDICATIVE ONLY.**

**DETAILED ANALYSIS WILL BE UNDERTAKEN AND SUBMITTED AS PART OF DEVELOPMENT-SPECIFIC TRANSPORT ASSESSMENTS.**

As set out in Section 4.3, coincident event days at the Stadium and the Arena would occur infrequently. Truly coincident events (i.e. those with shared arrival and departures times not just those taking place on the same day) would only be expected to happen during midweek evening periods.

A weekday is likely to represent the worst case in assessment terms due to the potential interaction with higher background traffic movements, and a reduced ability to stagger match/event start and end times in the evening compared to a weekend. As such, this scenario has been assessed on the basis of a midweek coincident event.

### 13.1 Assumed Transport Interventions

It should be noted, as set out in Section 4.3.1 that such coincidences would be infrequent, and a special operational plan would be implemented at the Etihad Campus on these limited occasions. This scenario has been assessed on the basis of the following interventions being delivered during coincident events.

- A comprehensive and targeted communication strategy to encourage attendees to use sustainable transport modes to access the Etihad Campus including:
  - advising that there is a match and an event on the same day and promoting a range of travel demand management options (i.e. 're-route', 're-mode' and 're-time' journeys);
  - incentivisation offers to re-route', 're-mode' and 're-time' journeys (e.g. encourage early arrivals including the use of potential incentive offers);
  - advising that, unless pre-booked, no parking is available on-site or in the vicinity of the Etihad Campus and that there is a residents parking scheme in operation;
  - pre-booked parking (which will be limited to 500 spaces for coincident events) will not be released until shortly before event date – with encouragement to book alternative travel arrangements in advance instead such as public transport well in advance; and
  - promotion and advice on park and ride options that are available locally and across Greater Manchester;
- Co-ordinated planning and event management between Campus organisations as part of an operational plan to minimise overlap between arrival and departure of events. There will be an opportunity to adjust stage times at the Arena to achieve this and a strategy to advise attendees of these changes in advance to influence arrival times;

- A ‘special event operational plan’ to deliver enhanced levels of public transport capacity between the City Centre and the Etihad Campus. This would be delivered in collaboration with TfGM to ensure that every possible Metrolink service was operated by a double-unit with the frequency and the duration of shuttle-bus services arranged with operators to capture any remaining expected demand;
- Additional levels of management and stewarding along the existing walking route(s) between the City Centre and the Etihad Campus;
- Frequent demand-led bus-based park and ride/shuttle buses operating to the City Centre and potentially to other public transport interchanges such as Central Park Metrolink stop (providing connectivity to the Oldham line and Park and Ride facility at Hollinwood) and Queens Road Metrolink stop (providing connectivity to the Bury line and further Park and Ride facilities);
- Amendments to the residents parking scheme such that it operates on all days and across an expanded geographic area; and
- Working with TfGM to develop and promote integrated ticket packages that include sustainable and public transport travel.

## 13.2 Walking and Cycling

It is assumed that approximately 1.5% of people could walk and cycle directly to an event from their home address. Applied to a capacity event, this would equate to approximately 350 people walking and cycling to each event. Note that this excludes people walking and cycling to and from other modes.

It is estimated that 10% of football supporters currently walk to the Etihad Campus from public transport nodes outside the immediate Campus (e.g. the main City Centre rail and bus interchanges, other Metrolink lines, Ashburys Station). Given the anticipated demographics of attendees of the Arena and the potentially higher number of visitors who may be staying overnight in the City Centre, it is considered that this could be increased to 20% for coincident events through a comprehensive and targeted communication strategy as described above. This would result in 4,700 additional people walking to the Etihad Campus from off-site public transport and hotels, primarily from the City Centre.

## 13.3 Public Transport Assessment

### 13.3.1 Buses

A shuttle-bus service could transport passengers to and from the Etihad Campus from the City Centre. Assuming that a ten-minute frequency service was operated for two hours before and after the event this would be able to transport approximately 960 visitors to the Etihad Campus.

It is estimated that 4% of visitors to the Arena could arrive by service bus. Applied to the maximum evening capacity, this would equate to 940 visitors arriving by service bus.

In total, therefore, up to 1,900 visitors could arrive by bus. This would equate to approximately 8% of the additional visitors to the Etihad Campus.

### 13.3.2 Metrolink

The surveys of matchday Metrolink usage demonstrate the numbers of passengers transported between Piccadilly and the Etihad Campus over the period prior to kick-off.

The consented Stadium expansion would result in additional matchday demand for Metrolink use. It is estimated that an additional 1,500 passengers may seek to travel from Piccadilly to the Etihad Campus using Metrolink. These trips have been added to the surveyed flows in proportion to the existing alighting numbers at the Etihad Campus stop between 18:00 and 20:00 as follows.

Table 22 - Forecast additional Metrolink trips on midweek Stadium event day due to consented expansion

| Time Period | Matchday Surveyed | Additional Passengers following Stadium Expansion | Future Baseline |
|-------------|-------------------|---------------------------------------------------|-----------------|
| 17:30-18:00 | 797               | 0                                                 | 797             |
| 18:00-18:30 | 1,047             | 305                                               | 1,352           |
| 18:30-19:00 | 1,095             | 329                                               | 1,424           |
| 19:00-19:30 | 1,833             | 553                                               | 2,386           |
| 19:30-20:00 | 1,059             | 313                                               | 1,372           |

The Metrolink capacity for a 30-minute period can be estimated on the basis of a six-minute frequency (i.e. five services over a period of 30 minutes) with a tram unit capacity of 200 passengers. Enhanced service tram capacities based on different service patterns would be as follows:

- Intermittent single-tram/double-tram operation – 1,500 passengers; and
- Double-tram operation – 2,000 passengers.

The number of additional passengers that could be transported from Piccadilly to the Etihad Campus under different tram-operating patterns is as follows.

Table 23 - Forecast available Metrolink capacity on coincident midweek Stadium and Arena event day

| Time Period                     | Matchday Surveyed Passengers | Additional Passengers following Stadium Expansion | Future Baseline Passenger Numbers | Available capacity with single/double tram operation | Available capacity with double/double tram operation |
|---------------------------------|------------------------------|---------------------------------------------------|-----------------------------------|------------------------------------------------------|------------------------------------------------------|
| 17:30-18:00                     | 797                          | 116                                               | 913                               | 587                                                  | 1,087                                                |
| 18:00-18:30                     | 1,047                        | 229                                               | 1,276                             | 224                                                  | 724                                                  |
| 18:30-19:00                     | 1,095                        | 273                                               | 1,368                             | 132                                                  | 632                                                  |
| 19:00-19:30                     | 1,833                        | 573                                               | 2,406                             | 0                                                    | 0                                                    |
| 19:30-20:00                     | 1,059                        | 309                                               | 1,368                             | 132                                                  | 632                                                  |
| <b>Total available capacity</b> |                              |                                                   |                                   | <b>1,075</b>                                         | <b>3,075</b>                                         |

The same exercise could be applied to Metrolink capacity between Ashton-under-Lyne and the Etihad Campus. However, the availability of car parking at the park and ride sites at Ashton Moss and Ashton West is likely to restrict the ability to achieve the full potential of available Metrolink capacity.

Based on survey data, it is estimated that there were approximately 40 spaces available during the midweek match at Ashton Moss with a further 120 spaces at Ashton West. A total of 160 park and ride spaces are therefore potentially available for additional use on a midweek matchday. The numbers surveyed on a Saturday were broadly consistent with these numbers.

Based on an assumed vehicle occupancy of 2.4 people per vehicle, this number of spaces would potentially accommodate 384 additional passengers by fully utilising the existing parking capacity. This would be constant across all days and all tram operating patterns.

The total number of additional passengers that could be transported to the Etihad Campus by Metrolink under different tram-operating patterns is therefore as follows:

- Intermittent single-tram/double-tram operation – 1,459 passengers; and
- Double-tram operation – 3,459 passengers

Assuming that TfGM were able to deliver an enhanced 6-minute frequency double-tram service on the infrequent occasions that there was a co-incident event, then approximately 3,400 additional passengers could be transported to the Etihad Campus by Metrolink.

If this were not feasible, then the minimum level of service expected on the Metrolink would be that every other service was a double unit. This is the planned level of enhanced service that TfGM already operates on a matchday.

The Etihad Campus would work alongside TfGM to try to maximise the likelihood of a 6-minute frequency double-tram service as part of the special event operational plan for the Etihad Campus. In the event that this could not be achieved, then it may be necessary to operate additional shuttle bus services to and from the City Centre.

In order to make up the shortfall, the shuttle bus frequency assumed above (i.e. one every 10-minutes) could be doubled to a five-minute frequency service and operated over a period of three hours before the event. A service of this nature would be able to transport approximately 1,920 additional visitors to the Etihad Campus.

In summary, the assessment assumes the following numbers of additional people could be transported to the Etihad Campus directly using public transport:

- 960 people by shuttle bus;
- 940 people by service buses; and
- 3,400 people by an enhanced Metrolink service or a combination of enhanced Metrolink and additional shuttle buses.

In total, this would enable approximately 5,300 additional people to arrive at the Etihad Campus directly using public transport. This represents approximately 23% of the additional people expected to arrive for a coincident event.

## 13.4 Coach, Taxi and Drop Off

It is estimated that approximately 5% of all visitors could arrive by coach, with additional coach loading and unloading facilities being provided within the Etihad Campus as part of the new development. Applied to a capacity event, this would equate to approximately 1,200 people arriving by coach. Based on an assumed capacity of 50 passengers, this equates to approximately 24 coaches per event.

It is estimated that a further 5% of all visitors could arrive by taxi, with facilities being provided at the Etihad Campus as part of the new development. Applied to a capacity event, this would equate to approximately 1,200 people arriving by taxi. Based on an assumed capacity of 2.4 passengers per taxi, this equates to approximately 500 taxis per event.

It is estimated that a further 2% of all visitors could be dropped off/picked up, with facilities being provided at the Etihad Campus as part of the new development. Applied to a capacity event, this would equate to approximately 470 people being picked up/dropped-off. Based on an assumed capacity of 2.4 passengers per vehicle, this equates to approximately 200 vehicles per event.

## 13.5 Parking On-Site

In this scenario, up to 500 on-site parking spaces would be made available for the use of the Arena. It is assumed that these would be allocated to hospitality guests and disabled parking. Based on an assumed capacity of 2.4 passengers per vehicle, this equates to approximately 1,200 people. This represents approximately 5% of the additional people expected for a coincident event.

The remaining on-site parking (up to c.3,000 spaces) would be retained for football use. This is consistent with the average use of on-site parking for matches during the 2018/19 season.

## 13.6 Parking Off-Site

The above modes of transport would account for approximately 61% of the additional trips generated by a coincident event. The remaining 39% of additional trips to the Etihad Campus would be likely to arrive by car and, due to the limited availability of on-site parking, would be required to park off-site.

The residents parking scheme, which would operate on all days, would prevent these vehicles from parking in the area immediately surrounding the Etihad Campus. It is anticipated that the residents parking scheme would prevent these vehicles from parking within an approximate 20-minute walking distance from the site. There would therefore be no reason for these vehicles to enter the area surrounding the Etihad Campus.

On a matchday, it is considered that the existing informal off-site spaces surrounding the Etihad Campus would already effectively be fully utilised and would not be available to accommodate additional demand. It is considered that additional off-site parking within the immediate vicinity of the Etihad Campus could not be accommodated without significantly worsening the existing matchday traffic congestion. No such additional parking is therefore proposed within this scenario.

Park and walk solutions outside of the immediate Stadium vicinity would therefore be required. As demonstrated in the other scenarios above, additional off-site parking is not required on non-match days, Stadium event days or Arena event days. Given the infrequent nature of a coincident event occurring and in order to promote sustainable travel to the Etihad Campus, it is considered that additional parking should not be provided just for these infrequent coincident events.

Based on an assumed capacity of 2.4 passengers per vehicle, the forecast number of people arriving by car and parking off-site equates to approximately 3,800 vehicles. Large amounts of commercial parking facilities are located within Manchester City Centre, which is within a walkable distance of the Etihad Campus. A significant proportion of these spaces would become available prior to the arrival of Campus event visitors (i.e. as city commuters depart). Park and walk from the City Centre is therefore considered to be a viable option, particularly when supported by proposals to significantly enhance walking routes between the City Centre and the Etihad Campus.

In particular, there is a significant existing parking stock within the eastern part of the City Centre. The existing City Centre off-street parking stock largely serves commuter parking, which, at the time of an evening event, would have departed to a significant extent. There is therefore potential for existing off-street parking stock within the City Centre to serve the Etihad Campus on the limited number of occasions that there is both a match and an arena event occurring simultaneously.

## 13.7 Highway Network Impact

In this scenario, an additional 500 vehicles will access the area surrounding the Etihad Campus compared to the Stadium event day in order to park on-site. There would be no additional off-site parking in the area surrounding the Etihad Campus and therefore it is only the additional 500 vehicles that would potentially impact upon the local highway network surrounding the Etihad Campus. It should be noted that this total of 3,500 vehicles (i.e. 3,000 Stadium vehicles and 500 Arena visitors) would be similar to the maximum number of vehicles currently accommodated both on-site and on the external highway network during the 2018/19 season.

The vehicles that will park on-site associated with the Arena are likely to be hospitality guests and disabled parking. It is anticipated that the majority of hospitality guests would arrive well in advance of the start of the event as part of their hospitality package. It is therefore not considered likely that these trips would be on the local network during the Stadium arrival peak period of 18:30-19:30. As such, the overall number of vehicles parking on site would be no greater than the maximum number accommodated during the 2018/19 season but could potentially be spread over a longer time period than if the car park were used solely for Stadium use.

It is therefore concluded that the on-site parking would not result in any additional impact on the network when compared to the Stadium Event Day scenario, as the Arena hospitality trips would occur outside of the peak period of arrivals on the site.

Peak arrivals to both the Stadium and the Arena are forecast to be experienced on the network from between 18:30 and 19:30. As such, the impacts on the local highway network during the evening network peak between 16:00-18:00 would be largely similar to that described in Section 10.7, as Stadium and Arena related traffic during this period would be limited.

Similarly, during the peak period before a Stadium and Arena event (i.e. 18:30-19:30), traffic associated with the Sports and Innovation and Commercial Zones would be limited, especially on a coincident Stadium and Arena event day, where visitors to these uses would be likely to avoid this period where practical. As such, the impacts on the highway network during the combined Stadium and Arena arrival peak would not be significantly affected by Sports and Innovation and Commercial Zone traffic, which would be limited during this period.

No additional highway mitigation, beyond any works required to accommodate the non-event day as Sports and Innovation and Commercial Zone traffic would be anticipated.

## 14 Conclusion

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The transformation of the Etihad Campus and surrounding areas since 2002 has been accompanied by significant investment in transport infrastructure, which is an essential component of the success of the area. However, at present, this infrastructure is only fully utilised for a few hours on the limited number of days per year on which there is a match or other major event. The proposed future development of the Campus would therefore seek to make use of this previous investment in transport infrastructure on a more frequent basis.

The potential interventions set out in this transport assessment would provide year-round benefits to both visitors to the Campus and the wider community. The interventions identified could largely be delivered within the control of the Campus businesses/operators, though support from key stakeholders such as MCC and TfGM would also be important and necessary. It should be noted that strong and supportive relationships between these organisations are already in place.

On the limited number of occasions that a Stadium match/event would be coincident with an event at the proposed Arena, there would be a requirement for additional transport interventions. As such, a 'special event operational plan' is likely to be required. The special event operational plan would seek to minimise additional vehicle movements within the immediate area. Working with stakeholders, additional public transport capacity could be required at least on a temporary basis as part of the special event operational plan. This could be supported by additional measures.

It is also noted that, in addition to events at the Campus, other large events could also be taking place at other locations across Manchester (and Greater Manchester) that could have cumulative transport impacts, particularly within the city centre. These events could include major sporting events, music concerts, and other public events. At a city-wide scale the impacts of the additional development proposed at the Campus would be relatively small in scale compared to other major events, particularly at locations remote from the Campus itself, such as the city centre.

There will be a need to co-ordinate the planning and management of such events at a city-wide level to ensure that any cumulative effects are anticipated, managed and mitigated appropriately. There are already established processes and procedures in place to undertake such co-ordination, and the continuing development of these will be an important part of the management of Manchester's future growth as a major visitor destination. The Campus should be a key stakeholder within this process.

As individual developments come forward, transport assessments will be prepared on the behalf of the operators of these developments by the associated design teams. These transport assessments will identify specific interventions associated with each development and would demonstrate that these interventions satisfactorily mitigate any potential transport impacts during its construction and operation. The transport assessments for each development will be prepared in consultation with key stakeholders including MCC and TfGM to support any associated planning applications.

This transport assessment concludes that the future development of the Etihad Campus is supported by a wider strategy to manage the movement of people and goods to, from and through the area. If delivered and managed effectively, this would support the sustainable future development of the Etihad Campus in line with a range of Greater Manchester and MCC strategies and policies including the Eastlands Regeneration Framework, the Greater Manchester Transport Strategy 2040 and the MCC Core Strategy.

## Appendix A

### Frequency of Coincident Events

## A1 Frequency of Stadium Matches

In order to understand the likely frequency of a coincident event at the Stadium and the proposed Arena, historic data has been reviewed to understand the number of home games at the Etihad Stadium over the past 3 seasons.

| Month     | Day      | Season       |                   |                   |
|-----------|----------|--------------|-------------------|-------------------|
|           |          | 2016/17      | 2017/18           | 2018/19           |
| August    | Midweek  | 1 (Wed)      | 1 (Mon)           | 0                 |
|           | Saturday | 1            | 0                 | 0                 |
|           | Sunday   | 1            | 0                 | 1                 |
| September | Midweek  | 1 (Wed)      | 1 (Tue)           | 1 (Wed)           |
|           | Saturday | 1            | 2                 | 3                 |
|           | Sunday   | 0            | 0                 | 0                 |
| October   | Midweek  | 0            | 2 (Tue, Tue)      | 0                 |
|           | Saturday | 1            | 2                 | 1                 |
|           | Sunday   | 1            | 0                 | 0                 |
| November  | Midweek  | 1 (Tue)      | 2 (Tue, Wed)      | 2 (Thu, Wed)      |
|           | Saturday | 1            | 0                 | 0                 |
|           | Sunday   | 0            | 1                 | 2                 |
| December  | Midweek  | 2 (Tue, Wed) | 0                 | 1 (Wed)           |
|           | Saturday | 1            | 2                 | 3                 |
|           | Sunday   | 1            | 1                 | 0                 |
| January   | Midweek  | 1 (Mon)      | 3 (Tue, Tue, Wed) | 3 (Thu, Wed, Mon) |
|           | Saturday | 1            | 2                 | 1                 |
|           | Sunday   | 0            | 0                 | 1                 |
| February  | Midweek  | 1 (Tue)      | 0                 | 1 (Wed)           |
|           | Saturday | 0            | 1                 | 0                 |
|           | Sunday   | 1            | 0                 | 2                 |
| March     | Midweek  | 2 (Wed, Wed) | 1 (Wed)           | 1 (Tue)           |
|           | Saturday | 0            | 0                 | 1                 |
|           | Sunday   | 1            | 1                 | 0                 |
| April     | Midweek  | 1 (Thu)      | 1 (Tue)           | 2 (Wed, Wed)      |
|           | Saturday | 1            | 1                 | 1                 |
|           | Sunday   | 0            | 1                 | 0                 |
| May       | Midweek  | 1 (Tue)      | 1 (Wed)           | 1 (Mon)           |
|           | Saturday | 2            | 0                 | 0                 |
|           | Sunday   | 0            | 1                 | 0                 |

| Month | Day      | Season  |         |         |
|-------|----------|---------|---------|---------|
|       |          | 2016/17 | 2017/18 | 2018/19 |
| Total | Midweek  | 11      | 12      | 12      |
|       | Saturday | 9       | 10      | 10      |
|       | Sunday   | 5       | 5       | 7       |
|       | Total    | 25      | 27      | 29      |

It should be noted that the number of home games is partly dependent upon the extent of the club's success in cup competitions and upon whether they are drawn at home or away (for domestic cup competitions). Given the club's recent success in cup competitions, the number of home games above is considered to represent the upper end of the number of potential home games in a season.

The data shows a relatively consistent split between the number of games on each day. There is an average of approximately one game per month midweek and one game per month on a Saturday. Sunday games are less common, and average less than one per month.

The maximum number of games per month either midweek or at the weekend is 3 (for both midweek and weekend games). However, it is demonstrated above that this frequency is unusual, occurring only four times in the last three years.

Further analysis of the midweek games demonstrates that the expected average games per month during the season is as follows:

| Day       | Total Games | Days During 3 Seasons* | Proportion of Days on which there is a game |
|-----------|-------------|------------------------|---------------------------------------------|
| Monday    | 4           | 120                    | 3%                                          |
| Tuesday   | 12          | 120                    | 10%                                         |
| Wednesday | 16          | 120                    | 13%                                         |
| Thursday  | 3           | 120                    | 3%                                          |
| Friday    | 0           | 120                    | 0%                                          |
| Saturday  | 29          | 120                    | 24%                                         |
| Sunday    | 17          | 120                    | 14%                                         |

\* Based on a 40-week season

## A2 Arena Event Frequency

It is anticipated that an arena would typically hold 120-180 event day per year. This would provide an average of 10-15 events per month. Assuming 14% of these were Thursday events, 25% were Friday events, 25% were Saturday events, 12% were Sunday events and the remaining weekdays were equally split (i.e. 8% per day Monday-Wednesday) this would result in average frequencies below.

Table 24 - Forecast proportion of days when there is an Arena event (120 events per year)

| Day       | Total Events | Days During 12 months | Proportion of Days on which there is an event |
|-----------|--------------|-----------------------|-----------------------------------------------|
| Monday    | 10           | 52                    | 18%                                           |
| Tuesday   | 10           | 52                    | 18%                                           |
| Wednesday | 10           | 52                    | 18%                                           |
| Thursday  | 17           | 52                    | 32%                                           |
| Friday    | 30           | 52                    | 58%                                           |
| Saturday  | 30           | 52                    | 58%                                           |
| Sunday    | 15           | 52                    | 28%                                           |

Table 25 - Forecast proportion of days when there is an Arena event (180 events per year)

| Day       | Total Events | Days During 12 months | Proportion of Days on which there is an event |
|-----------|--------------|-----------------------|-----------------------------------------------|
| Monday    | 14           | 52                    | 28%                                           |
| Tuesday   | 14           | 52                    | 28%                                           |
| Wednesday | 14           | 52                    | 28%                                           |
| Thursday  | 25           | 52                    | 48%                                           |
| Friday    | 45           | 52                    | 86%                                           |
| Saturday  | 45           | 52                    | 86%                                           |
| Sunday    | 22           | 52                    | 41%                                           |

## A3 Coincident Event Probability

The likelihood of a coincident event on any day of the week can then be forecast using the above tables. This is presented below:

Table 26 - Forecast number of coincident events (120 events per year)

| Day       | Likelihood of Stadium Event (S) | Likelihood of Arena Event (A) | Combined Likelihood (C = A x S) | Days During Season (D) | Expected Coincident Events on this day per year (E = C x D) |
|-----------|---------------------------------|-------------------------------|---------------------------------|------------------------|-------------------------------------------------------------|
| Monday    | 3%                              | 18%                           | 1%                              | 40                     | 0.2                                                         |
| Tuesday   | 10%                             | 18%                           | 2%                              | 40                     | 0.7                                                         |
| Wednesday | 13%                             | 18%                           | 3%                              | 40                     | 1.0                                                         |
| Thursday  | 3%                              | 32%                           | 1%                              | 40                     | 0.3                                                         |
| Friday    | 0%                              | 58%                           | 0%                              | 40                     | 0                                                           |
| Saturday  | 24%                             | 58%                           | 14%                             | 40                     | 5.6                                                         |
| Sunday    | 14%                             | 28%                           | 4%                              | 40                     | 1.6                                                         |

Table 27 - Forecast number of coincident events (180 events per year)

| Day       | Likelihood of Stadium Event (S) | Likelihood of Arena Event (A) | Combined Likelihood (C = A x S) | Days During Season (D) | Expected Coincident Events on this day per year (E = C x D) |
|-----------|---------------------------------|-------------------------------|---------------------------------|------------------------|-------------------------------------------------------------|
| Monday    | 3%                              | 28%                           | 1%                              | 40                     | 0.4                                                         |
| Tuesday   | 10%                             | 28%                           | 3%                              | 40                     | 1.1                                                         |
| Wednesday | 13%                             | 28%                           | 4%                              | 40                     | 1.5                                                         |
| Thursday  | 3%                              | 48%                           | 1%                              | 40                     | 0.5                                                         |
| Friday    | 0%                              | 86%                           | 0%                              | 40                     | 0                                                           |
| Saturday  | 24%                             | 86%                           | 21%                             | 40                     | 8.3                                                         |
| Sunday    | 14%                             | 41%                           | 6%                              | 40                     | 2.3                                                         |

It is therefore anticipated that there would be an average of 10-15 coincident events per year. Of these, there would be approximately 2-4 coincident events anticipated during a midweek evening, 6-9 coincident events on a Saturday and 2-3 coincident events on a Sunday.

This is based upon a 120-180 Arena events per year and a typical average of 10-15 Arena events per month. It is expected that there would be a greater frequency of Arena events between September and December, with potentially up to 20 events per month at the busiest period (for both the 120 and 180 events per annum scenarios). It may be estimated, therefore, that the likelihood of an arena event on any one day during the September-December period would be higher.

During this busier 4-month period, it is estimated that a coincident event would occur approximately 3-4 times (i.e. around one a month) on a Saturday and once on a Sunday. A coincident event during a midweek evening would be anticipated once or twice during this period.

It is therefore anticipated that (prior to any of the proposed forward planning/co-ordination) there would be a coincident event on 10-15 days per year on average (i.e. approximately once a month). A coincident event is more likely between September and December, during the football season when Arena event frequencies are higher. However, even during this busy period, coincident events would only be anticipated at a peak rate of twice a month, with most of these being on Saturdays.

## Appendix B

### Survey Specifications

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 18 February 2019

**Job No/Ref**

## 1 General Requirements

Surveys are to be undertaken for the following fixtures/dates (dates and times subject to change):

- Vs West Ham United – Wednesday 27<sup>th</sup> February (20:00)
- Vs Schalke 04 – Tuesday 12<sup>th</sup> March (20:00)
- Vs Tottenham Hotspur – Saturday 20<sup>th</sup> April (15:00)

Ove Arup and Partners (Arup) has prepared the following scoping document that sets out the surveys required and the format of outputs to be delivered.

Tenderers should provide an itemised price for each of the six survey types required as follows:

1. Junction surveys
2. Metrolink surveys
3. Bus surveys
4. Pedestrian surveys
5. On-street parking surveys
6. Car Park Entry/Exit Surveys

In addition to an itemised price, tenderers should provide:

- Method statements for each survey;
- Risk assessments and any other additional health and safety information considered relevant;
- Confirmation of their availability to undertake the surveys on the dates above,
- Confirmation of the dates on which the processed survey data will be returned; and
- Examples of similar commissions undertaken within the last 3 years.

The successful tenderer will be responsible for obtaining any relevant consents required from third parties to undertake the surveys. The club will assist in obtaining any necessary internal approvals/notices.

Prices should be provided for all three matches listed above for each date. The intention is to undertake all of the survey types listed above on the 27<sup>th</sup> February. The scope of the surveys on the following dates may be amended following these surveys. The club reserves the right to amend the scope of surveys for the Schalke 04 or Tottenham Hotspur fixture up to 10 days prior to the survey, with appropriate adjustments to the survey cost to be agreed.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 18 February 2019

**Job No/Ref**

## 2 Scope of Surveys Required

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### 2.1 Junction Surveys

#### Survey Type

Classified turning counts and queue length surveys.

#### Locations

- A. A62 Oldham Road / A6010 Hulme Hall Lane (signalised crossroads/gyratory);
- B. A6010 Hulme Hall Lane / Bradford Road / A6010 Alan Turing Way / Briscoe Lane (signalised staggered crossroads);
- C. A6010 Alan Turing Way / Gate 2 car park access (signalised T-junction);
- D. A662 Ashton New Road / A6010 Alan Turing Way (signalised crossroads);
- E. A635 Ashton Old Road / A6010 Alan Turing Way (signalised crossroads);
- F. A57 Hyde Road / A6010 Pottery Lane (signalised crossroads);
- G. A6010 Kirkmanshulme Lane / A6 Stockport Road / St John's Road (signalised crossroads);
- H. A635 Pin Mill Brow / Ashton Old Road / Fairfield Street (3 signalised junctions);
- I. A665 Great Ancoats Street / Every Street (signalised T-junction);
- J. A665 Great Ancoats Street / Pollard Street (signalised T-junction)
- K. A665 Great Ancoats Street / Old Mill Street / Store Street (signalised crossroads);
- L. A665 Great Ancoats Street / A62 Oldham Road (signalised crossroads);
- M. A662 Ashton New Road / Rowntree Street (priority T-junction);
- N. A663 Broadway / M60 (signalised junction);
- O. A62 Oldham Road / A663 Broadway (signalised T-junction);
- P. A662 Ashton Road / A635 Manchester Road / Lumb Lane (2 signalised junctions); and
- Q. A635 Manchester Road / A6140 (signalised crossroads).

**Job No/Ref**

Figure 1: Junction Survey Locations (A-Q)

## Date and Time

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 12:00-19:00\*

\* assuming 15:00 kick-off. Should kick off time change, then times to be adjusted accordingly.

## Survey Outputs

Fully classified turning counts for all movements at each of the above locations. Turning counts should be captured and presented for 15-minute intervals and provided in excel spreadsheet format.

Pedestrian crossing movements should be captured on all junction arms and presented in a similar format.

Spot checks of queue lengths to be undertaken at 5-minute intervals, on the minute i.e. 07:00, 07:05 etc. For signalised junction, queues are to be recorded at the end of the red signal.

**Job No/Ref**

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

## 2.2 On-street Parking Surveys

## Survey Type

Parking beat surveys of presence of on-street car parking.

## Locations

1. Bradford Road/Varley Street/Ridgeway Street/Butler Street
2. Greenside Street/Victoria Street/Parkhouse Street/Meech Street
3. Ten Acres Lane/Briscoe Lane/Scotland Hall Road/Riverpark Road/Bank Street/Fairclough Street/Archer Street/Stuart Street/Gibbon Street

The approximate extent of the roads to be surveyed is shown in Figure 2.



Figure 2: Parking Beat Survey Area

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 18 February 2019

**Job No/Ref**

### **Date and Time**

Parking beats to be undertaken of the survey area every 30 minutes.

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 12:00-19:00\*

\* assuming 15:00 kick-off. Should kick off time change, then times to be adjusted accordingly.

### **Survey Outputs**

Estimate of the available supply of unrestricted parking spaces on each side of the carriageway in each section of road specified, along with the amount of restricted carriageway (e.g. single yellow line).

Occupancy levels on a street-by-street basis for each side of the carriageway, for every half-hour period.

## **2.3 Metrolink Surveys**

### **Survey Type**

Boarding/alighting survey of Metrolink services on the Eccles/Media City to Ashton-under Lyne line.

### **Locations**

All stops between Piccadilly and Ashton-under Lyne.

### **Date and Time**

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 12:00-19:00\*

\* assuming 15:00 kick-off. Should kick off time change, then times to be adjusted accordingly.

### **Survey Outputs**

Number of boarding/alighting passengers at each stop on a 'by tram' basis. To be provided in a spreadsheet format.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 18 February 2019

**Job No/Ref**

## **2.4 Bus Surveys**

### **Survey Type**

Boarding survey of buses on the Ashton New Road after match. Note that post-match special services operate towards Manchester.

### **Locations**

Ashton New Road / City of Manchester Stadium stop adjacent to South Stand (near Mercedes garage) bus stop.

### **Date and Time**

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 21:00-23:00

Weekend game – 16:30-18:30\*

\* assuming 15:00 kick-off. Should kick off time change, then times to be adjusted accordingly.

### **Survey Outputs**

Number of passengers boarding each bus.

Departure time of each bus

No. of queueing passengers at the stop recorded on a 5 minute interval

To be provided in a spreadsheet format.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 18 February 2019

**Job No/Ref**

## 2.5 Car Park Entry/Exit Surveys

### Survey Type

Fully classified vehicular in/out counts (either by ATC or manual/camera count).

### Locations

1. Ashton West Metrolink Park and Ride
2. Ashton Moss Metrolink Park and Ride

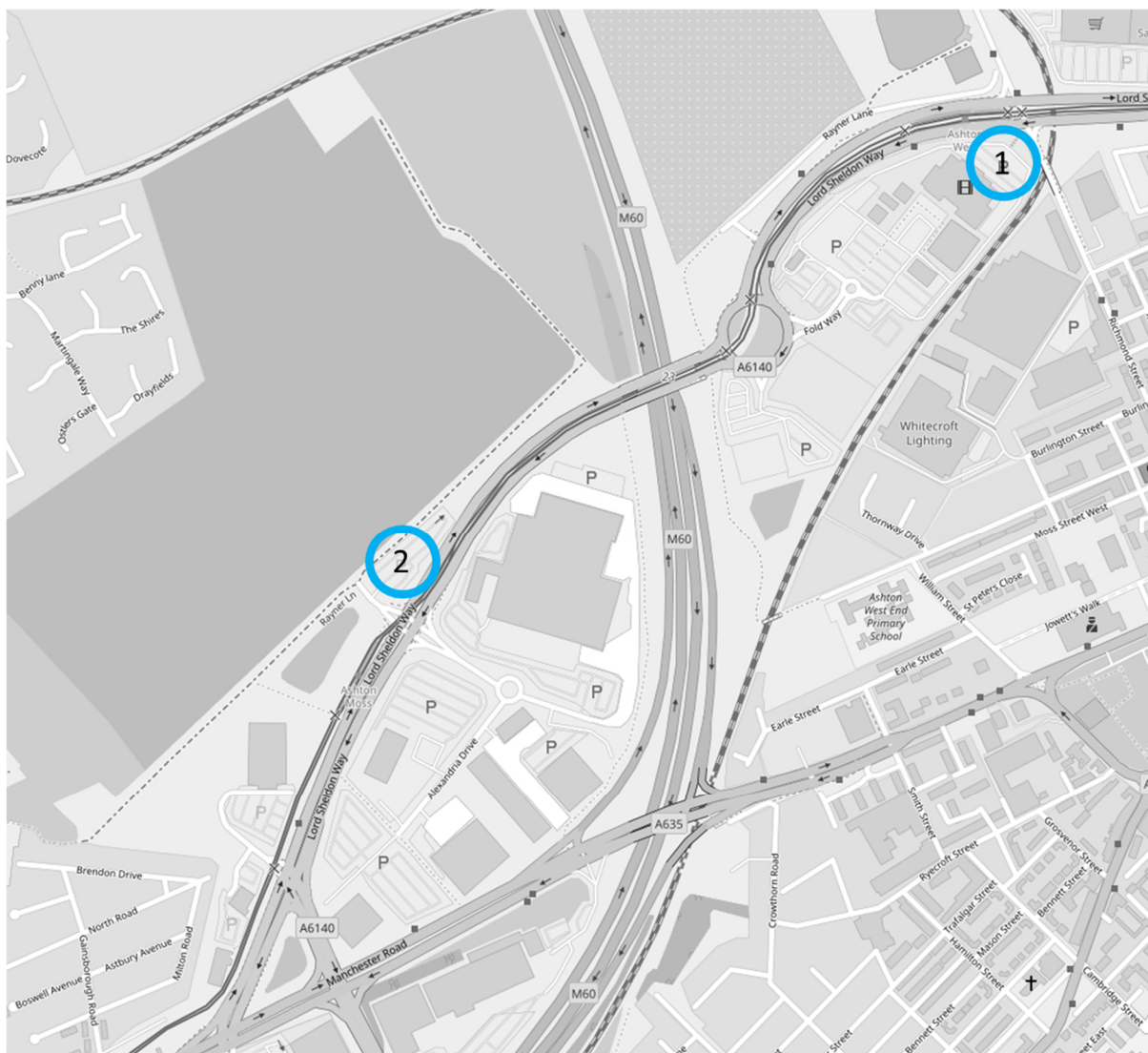


*Figure 3: Parking Survey Locations (1&2)*

### Date and Time

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 12:00-19:00\*

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 18 February 2019

**Job No/Ref**

\* assuming 15:00 kick-off. Should kick off time change, then times to be adjusted accordingly.

## Survey Outputs

Fully classified two-way entry and exit flows at each of the above locations.

Flows should be captured and presented for 15 minute intervals and provided in excel spreadsheet format.

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

## 2.6 Pedestrian Surveys

### Survey Type

Pedestrian counts at specified locations.

### Locations

1. Pollard Street (between Munday Street and Carruthers Street);
2. Ashton Canal Towpath (at Carruthers Street);
3. Pedestrian footbridge over junction of Ashton New Road/Alan Turing Way
4. Footbridge over Joe Mercer Way



Figure 4: Pedestrian Survey Locations (1-4)

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 18 February 2019

**Job No/Ref**

### **Date and Time**

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 12:00-19:00\*

\* assuming 15:00 kick-off. Should kick off time change, then times to be adjusted accordingly.

### **Survey Outputs**

Pedestrian count at each location, separated into direction of travel. Counts should be captured and presented for 15-minute intervals and provided in excel spreadsheet format.

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

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**Subject** Etihad Campus – Traffic Survey Specification

**Date** 12 April 2019

**Job No/Ref**

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## 1 General Requirements

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Surveys are to be undertaken for the following fixtures/dates (dates and times subject to change):

- Vs West Ham United – Wednesday 27<sup>th</sup> February (20:00) – already completed
- Vs Schalke 04 – Tuesday 12<sup>th</sup> March (20:00) – no longer required
- Vs Tottenham Hotspur – Saturday 20<sup>th</sup> April (12:30)

Ove Arup and Partners (Arup) has prepared the following scoping document that sets out the surveys required and the format of outputs to be delivered.

Tenderers should provide an itemised price for each of the six survey types required as follows:

1. Junction surveys
2. Metrolink surveys
3. Bus surveys
4. Pedestrian surveys
5. On-street parking surveys
6. Car Park Entry/Exit Surveys

In addition to an itemised price, tenderers should provide:

- Method statements for each survey;
- Risk assessments and any other additional health and safety information considered relevant;
- Confirmation of their availability to undertake the surveys on the dates above,
- Confirmation of the dates on which the processed survey data will be returned; and
- Examples of similar commissions undertaken within the last 3 years.

The successful tenderer will be responsible for obtaining any relevant consents required from third parties to undertake the surveys. The club will assist in obtaining any necessary internal approvals/notices.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 12 April 2019

**Job No/Ref**

## **2 Scope of Surveys Required**

---

### **2.1 Junction Surveys**

#### **Survey Type**

Classified turning counts and queue length surveys.

#### **Locations**

- A. A62 Oldham Road / A6010 Hulme Hall Lane (signalised crossroads/gyratory);
- B. A6010 Hulme Hall Lane / Bradford Road / A6010 Alan Turing Way / Briscoe Lane (signalised staggered crossroads);
- C. A6010 Alan Turing Way / Gate 2 car park access (signalised T-junction);
- D. A662 Ashton New Road / A6010 Alan Turing Way (signalised crossroads);
- E. A635 Ashton Old Road / A6010 Alan Turing Way (signalised crossroads);
- F. A57 Hyde Road / A6010 Pottery Lane (signalised crossroads);
- G. A6010 Kirkmanshulme Lane / A6 Stockport Road / St John's Road (signalised crossroads);
- H. A635 Pin Mill Brow / Ashton Old Road / Fairfield Street (3 signalised junctions);
- I. A665 Great Ancoats Street / Every Street (signalised T-junction);
- J. A665 Great Ancoats Street / Pollard Street (signalised T-junction)
- K. A665 Great Ancoats Street / Old Mill Street / Store Street (signalised crossroads);
- L. A665 Great Ancoats Street / A62 Oldham Road (signalised crossroads);
- M. A662 Ashton New Road / Rowntree Street (priority T-junction);
- N. A663 Broadway / M60 (signalised junction);
- O. A62 Oldham Road / A663 Broadway (signalised T-junction);
- P. A662 Ashton Road / A635 Manchester Road / Lumb Lane (2 signalised junctions); and
- Q. A635 Manchester Road / A6140 (signalised crossroads).

**Job No/Ref**

*Figure 1: Junction Survey Locations (A-Q)*

## Date and Time

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 10:00-17:00

\* assuming 12:30 kick-off. Should kick off time change, then times to be adjusted accordingly.

## Survey Outputs

Fully classified turning counts for all movements at each of the above locations. Turning counts should be captured and presented for 15-minute intervals and provided in excel spreadsheet format.

Pedestrian crossing movements should be captured on all junction arms and presented in a similar format.

Spot checks of queue lengths to be undertaken at 5-minute intervals, on the minute i.e. 07:00, 07:05 etc. For signalised junction, queues are to be recorded at the end of the red signal.

**Job No/Ref**

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

## 2.2 On-street Parking Surveys

## Survey Type

Parking beat surveys of presence of on-street car parking.

## Locations

1. Bradford Road/Varley Street/Ridgeway Street/Butler Street
2. Greenside Street/Victoria Street/Parkhouse Street/Meech Street
3. Ten Acres Lane/Briscoe Lane/Scotland Hall Road/Riverpark Road/Bank Street/Fairclough Street/Archer Street/Stuart Street/Gibbon Street

The approximate extent of the roads to be surveyed is shown in Figure 2.



Figure 2: Parking Beat Survey Area

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 12 April 2019

**Job No/Ref**

### **Date and Time**

Parking beats to be undertaken of the survey area every 30 minutes.

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 10:00-17:00

\* assuming 12:30 kick-off. Should kick off time change, then times to be adjusted accordingly.

### **Survey Outputs**

Estimate of the available supply of unrestricted parking spaces on each side of the carriageway in each section of road specified, along with the amount of restricted carriageway (e.g. single yellow line).

Occupancy levels on a street-by-street basis for each side of the carriageway, for every half-hour period.

## **2.3 Metrolink Surveys**

### **Survey Type**

Boarding/alighting survey of Metrolink services on the Eccles/Media City to Ashton-under Lyne line.

### **Locations**

All stops between Piccadilly and Ashton-under Lyne.

### **Date and Time**

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 10:00-17:00

\* assuming 12:30 kick-off. Should kick off time change, then times to be adjusted accordingly.

### **Survey Outputs**

Number of boarding/alighting passengers at each stop on a 'by tram' basis. To be provided in a spreadsheet format.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 12 April 2019

**Job No/Ref**

## **2.4 Bus Surveys**

### **Survey Type**

Boarding survey of buses on the Ashton New Road after match. Note that post-match special services operate towards Manchester.

### **Locations**

Ashton New Road / City of Manchester Stadium stop adjacent to South Stand (near Mercedes garage) bus stop.

### **Date and Time**

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 21:00-23:00

Weekend game – 14:00-16:00

\* assuming 12:30 kick-off. Should kick off time change, then times to be adjusted accordingly.

### **Survey Outputs**

Number of passengers boarding each bus.

Departure time of each bus

No. of queueing passengers at the stop recorded on a 5 minute interval

To be provided in a spreadsheet format.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 12 April 2019

**Job No/Ref**

## 2.5 Car Park Entry/Exit Surveys

### Survey Type

Fully classified vehicular in/out counts (either by ATC or manual/camera count).

### Locations

1. Ashton West Metrolink Park and Ride
2. Ashton Moss Metrolink Park and Ride

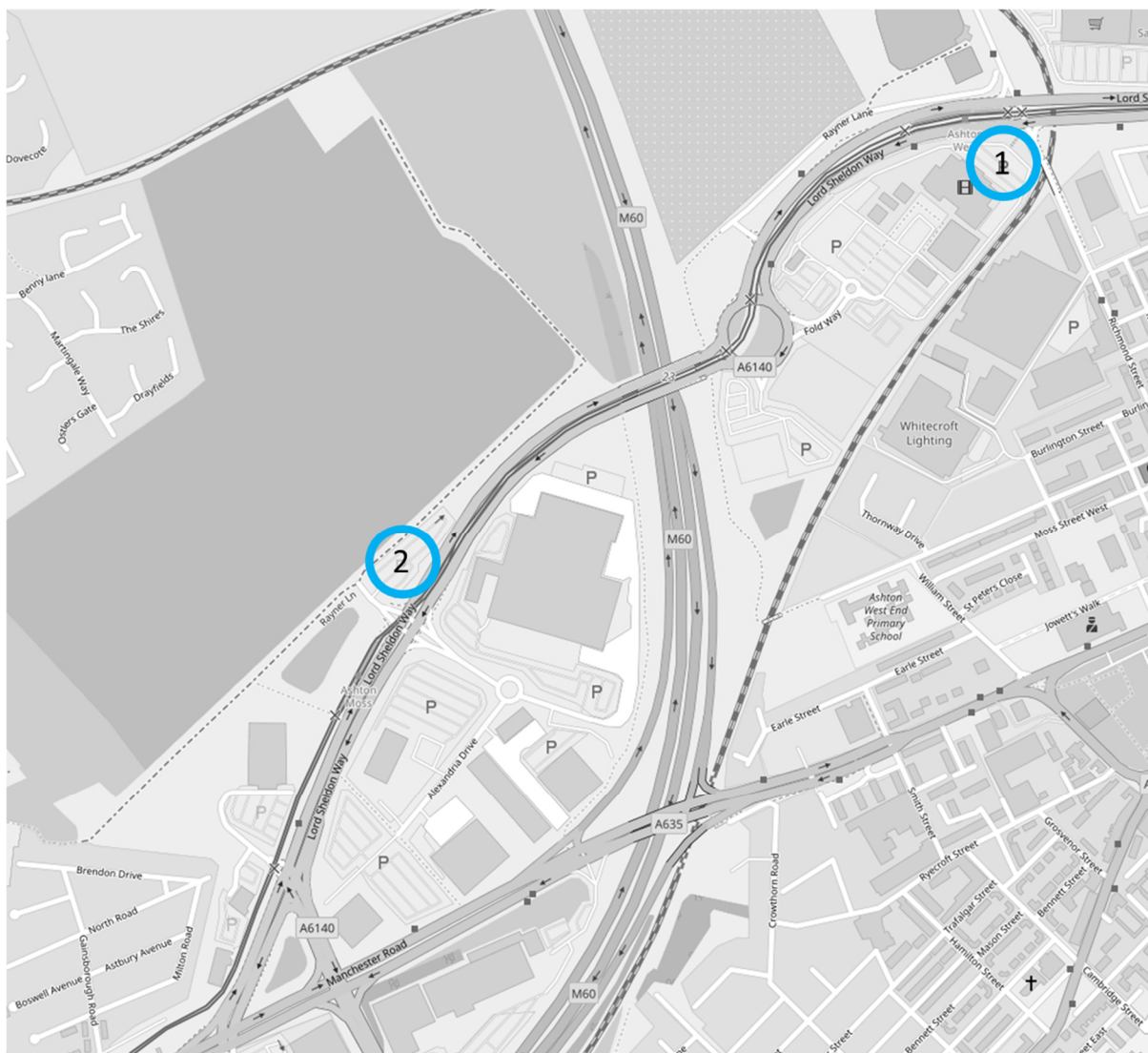


*Figure 3: Parking Survey Locations (1&2)*

### Date and Time

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 10:00-17:00

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 12 April 2019

**Job No/Ref**

\* assuming 12:30 kick-off. Should kick off time change, then times to be adjusted accordingly.

## Survey Outputs

Fully classified two-way entry and exit flows at each of the above locations.

Flows should be captured and presented for 15 minute intervals and provided in excel spreadsheet format.

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

## 2.6 Pedestrian Surveys

### Survey Type

Pedestrian counts at specified locations.

### Locations

1. Pollard Street (between Munday Street and Carruthers Street);
2. Ashton Canal Towpath (at Carruthers Street);
3. Pedestrian footbridge over junction of Ashton New Road/Alan Turing Way
4. Footbridge over Joe Mercer Way



*Figure 4: Pedestrian Survey Locations (1-4)*

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 12 April 2019

**Job No/Ref**

### **Date and Time**

Surveys to be undertaken on the days set out above for the following times.

Midweek games – 16:00-23:00

Weekend game – 10:00-17:00

\* assuming 12:30 kick-off. Should kick off time change, then times to be adjusted accordingly.

### **Survey Outputs**

Pedestrian count at each location, separated into direction of travel. Counts should be captured and presented for 15-minute intervals and provided in excel spreadsheet format.

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

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## 3 Potential Changes for Tottenham Hotspur Survey

### 3.1 Junction Surveys

Please could you provide a fee estimate for adding the following surveys:

R. Alan Turing Way / Gibbon Street

S. Grey Mare Lane / Albert Street

T. Phillips Park Road/New Viaduct Street



For the surveys at:

- A6010 Alan Turing Way / Gate 2 car park access (survey location C)
- A662 Ashton New Road / Rowsley Street (survey location M); and
- Alan Turing Way / Gibbon Street (survey location R – Asda)

Please could you provide an estimate of the number of vehicles within the car parks at the start and end of the survey.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 12 April 2019

**Job No/Ref**

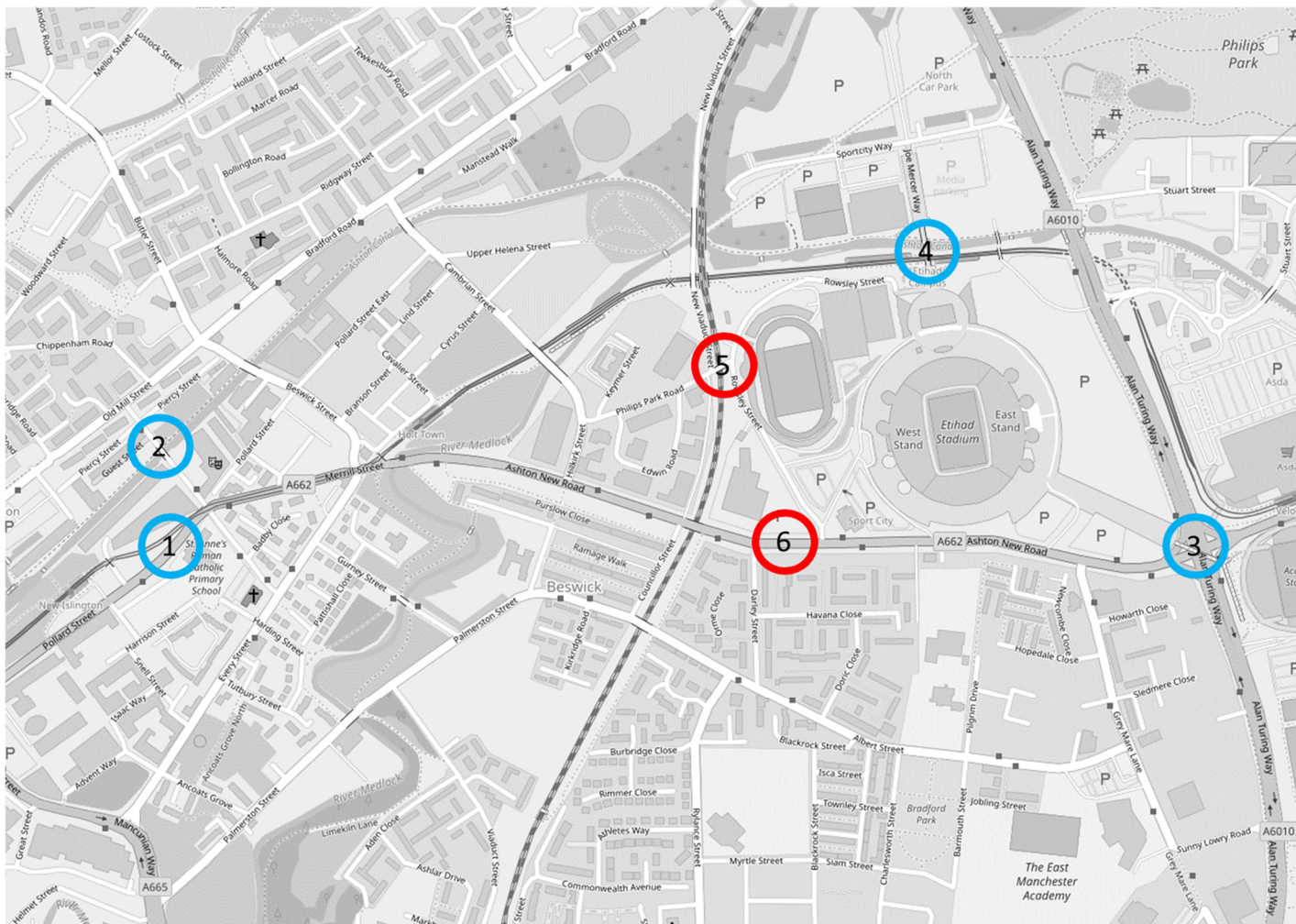
## 3.2 Car Park Entry/Exit Surveys

Please could you provide the number of vehicles within the car park at the start and end of the survey.

## 3.3 Pedestrian Surveys

Please could you provide a fee estimate for adding the following surveys:

5. Rowsley Street (as it crosses the rail line)
  6. Ashton New Road (between Darley Street and Rowsley Street)
- Ashburys Station (to the south of map below on A6010 Pottery Lane) (entry/exit count)



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**Subject** Etihad Campus – Traffic Survey Specification

**Date** 26 April 2019

**Job No/Ref**

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## 1 General Requirements

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Surveys are to be undertaken for the following fixture: (date and time subject to change):

- Vs Leicester City – Monday 6<sup>th</sup> May (20:00 kick off)

Ove Arup and Partners (Arup) has prepared the following scoping document that sets out the surveys required and the format of outputs to be delivered.

Tenderers should provide an itemised price for each of the five survey types required as follows:

1. Junction surveys
2. Bus surveys
3. Pedestrian surveys
4. On-street parking surveys
5. Off-street parking surveys

In addition to an itemised price, tenderers should provide:

- Method statements for each survey;
- Risk assessments and any other additional health and safety information considered relevant;
- Confirmation of their availability to undertake the surveys on the date above,
- Confirmation of the dates on which the processed survey data will be returned; and
- Examples of similar commissions undertaken within the last 3 years.

The successful tenderer will be responsible for obtaining any relevant consents required from third parties to undertake the surveys. The club will assist in obtaining any necessary internal approvals/notices.

## 2 Scope of Surveys Required

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### 2.1 Junction Surveys

#### Survey Type

Classified turning counts and queue length surveys.

#### Locations

- A. A6010 Alan Turing Way / Gate 2 car park access (signalised T-junction);
- B. Alan Turing Way / Gibbon Street (signalised crossroads);
- C. A662 Ashton New Road / A6010 Alan Turing Way (signalised crossroads);
- D. Grey Mare Lane / Albert Street (priority T-junction);
- E. Phillips Park Road / New Viaduct Street (priority T-junction);

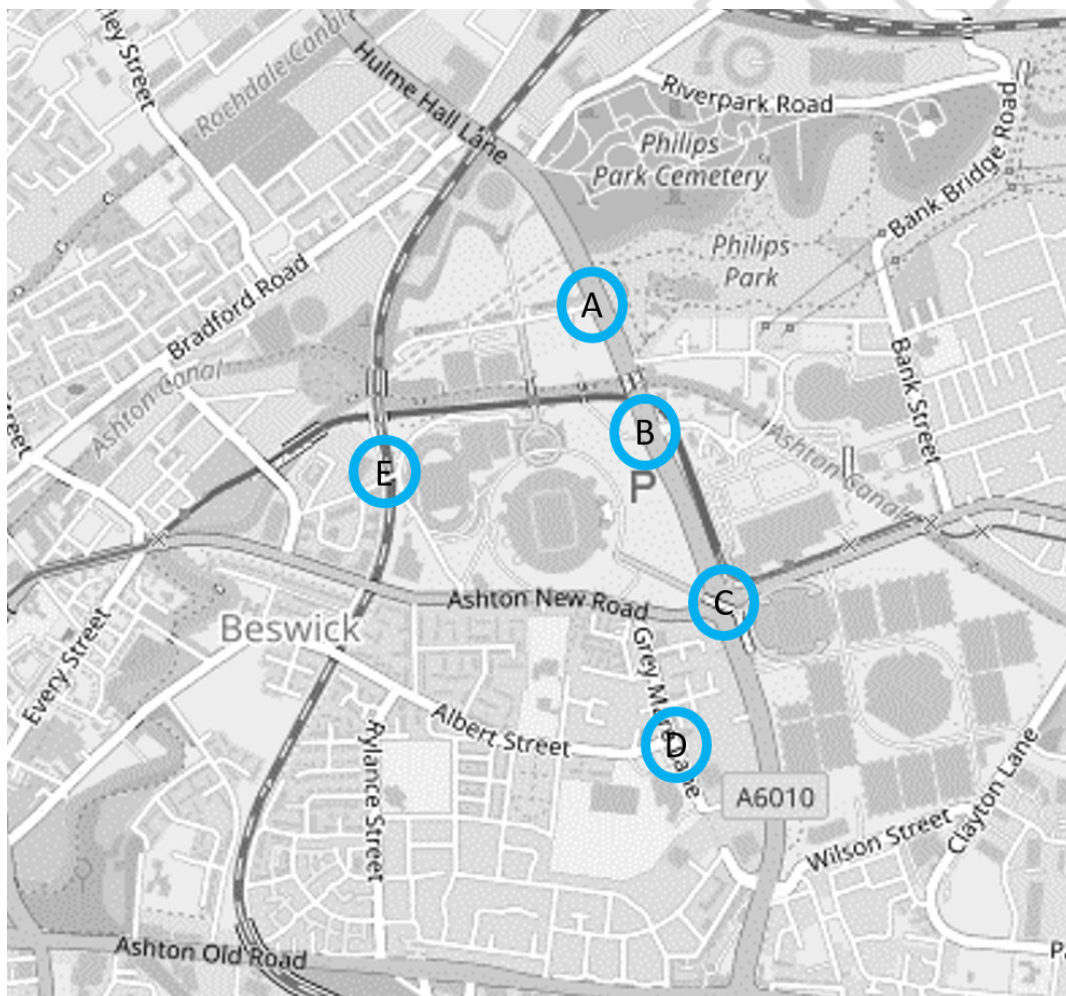


*Figure 1: Junction Survey Locations (A-E)*

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 26 April 2019

**Job No/Ref**

## **Time**

Surveys to be undertaken from 16:00-23:00.

## **Survey Outputs**

Fully classified turning counts for all movements at each of the above locations. Turning counts should be captured and presented for 15-minute intervals and provided in excel spreadsheet format.

Pedestrian crossing movements should be captured on all junction arms and presented in a similar format.

Spot checks of queue lengths to be undertaken at 5-minute intervals, on the minute i.e. 16:00, 16:05 etc. For signalised junction, queues are to be recorded at the end of the red signal.

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

For the surveys at:

- A6010 Alan Turing Way / Gate 2 car park access (survey location A); and
- Alan Turing Way / Gibbon Street (survey location B – Asda)

Please could you provide an estimate of the number of vehicles within the car parks at the start and end of the survey.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 26 April 2019

**Job No/Ref**

## 2.2 On-street Parking Surveys

### Survey Type

Parking beat surveys of presence of on-street car parking.

### Locations

The approximate extent of the roads to be surveyed are shown within the **blue areas** in Figure 2.

Roads within the CPZ (red areas) are not to be included within the on-street survey as they are within the matchday controlled parking zone.

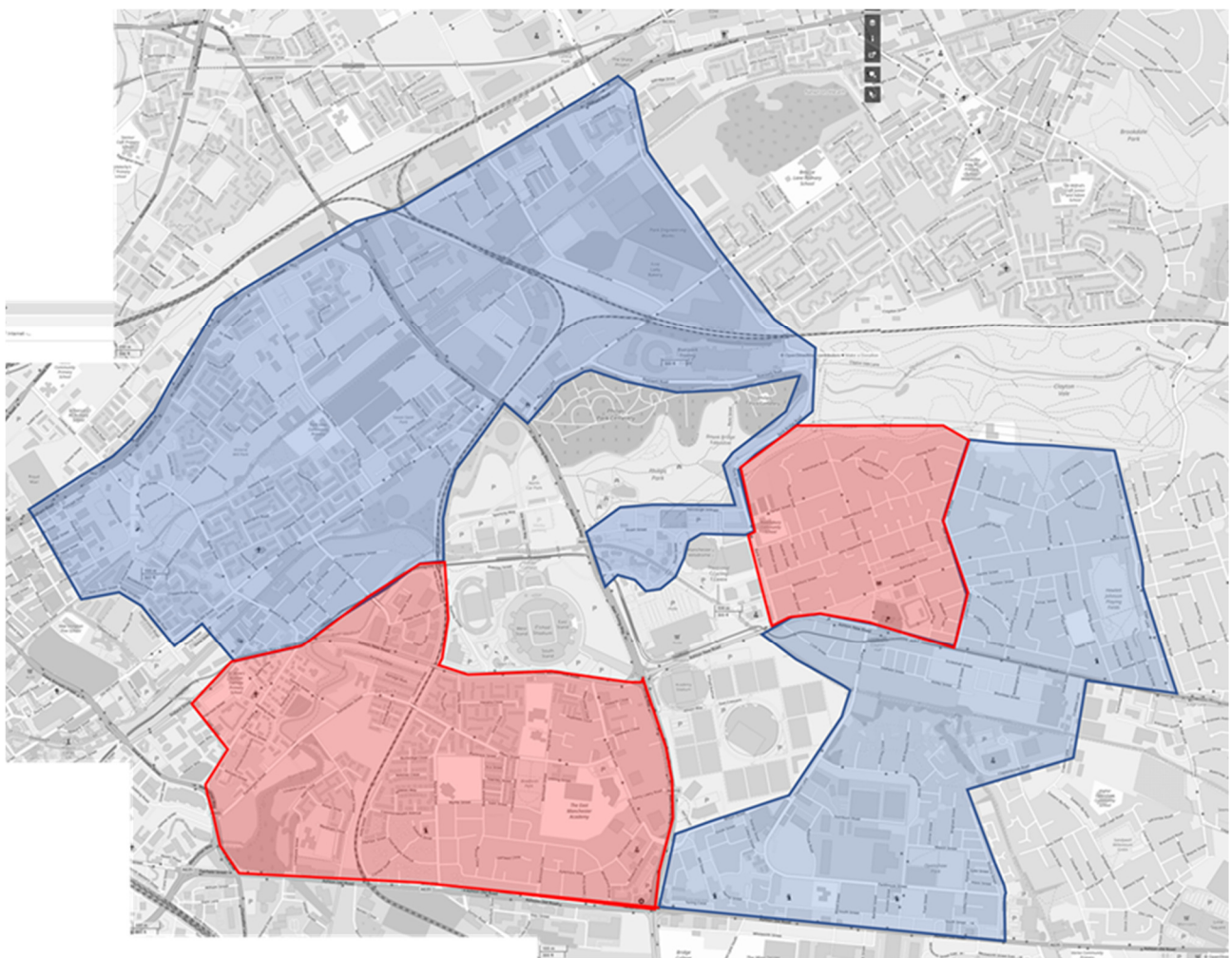


*Figure 2: Parking Beat Survey Areas (Blue Only) / Off-Street Parking Survey Areas (Blue and Red)*

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 26 April 2019

**Job No/Ref**

### **Time**

Two parking counts to be undertaken of the survey area, the first at 18:00 and a second at 21:00.

### **Survey Outputs**

Estimate of the available supply of unrestricted parking spaces on each side of the carriageway in each section of road specified, along with the amount of restricted carriageway (e.g. single yellow line).

Occupancy levels on a street-by-street basis for each side of the carriageway for each count.

## **2.3 Off-street Parking Surveys**

### **Survey Type**

Parking counts of off-street car parks.

### **Locations**

Please identify any off-street car parking related to the football match within the survey area. The approximate extent of the area to be surveyed is shown within the **blue and red areas** combined in Figure 2.

### **Time**

A single count to be undertaken at each identified off-street parking location during match i.e. between 20:30-21:30.

### **Survey Outputs**

Brief description of each identified location

Estimate of the available supply of parking spaces at each location.

Approximate count of parked vehicles at each location.

Please note approximate time of count for each location.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 26 April 2019

**Job No/Ref**

## 2.4 Bus Surveys

### Survey Type

Alighting survey of all service buses stopping at specified stops before match.

### Locations

1. WB bus stop on Ashton New Road, opposite Velopark tram stop;
2. WB bus stop on Ashton New Road, west of junction with Alan Turing Way;
3. EB bus stop on Ashton New Road, east of junction with Rowsley Street;
4. SB bus stop on Alan Turing Way, adjacent to McDonalds / Asda;
5. NB bus stop on Alan Turing Way, north of junction with Ashton New Road;
6. NB bus stop on Alan Turing Way, south of junction with Ashton New Road; and
7. SB bus stop on Alan Turing Way, south of junction with Ashton New Road.

### Time

Surveys to be undertaken between 16:00-20:30.

### Survey Outputs

Number of passengers alighting each bus.

Arrival time of each bus.

Service number of each bus.

Size of each bus (i.e. single/double decker).

Record any services that do not stop (i.e. no passengers alighting at stop).

To be provided in a spreadsheet format.

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 26 April 2019

**Job No/Ref**

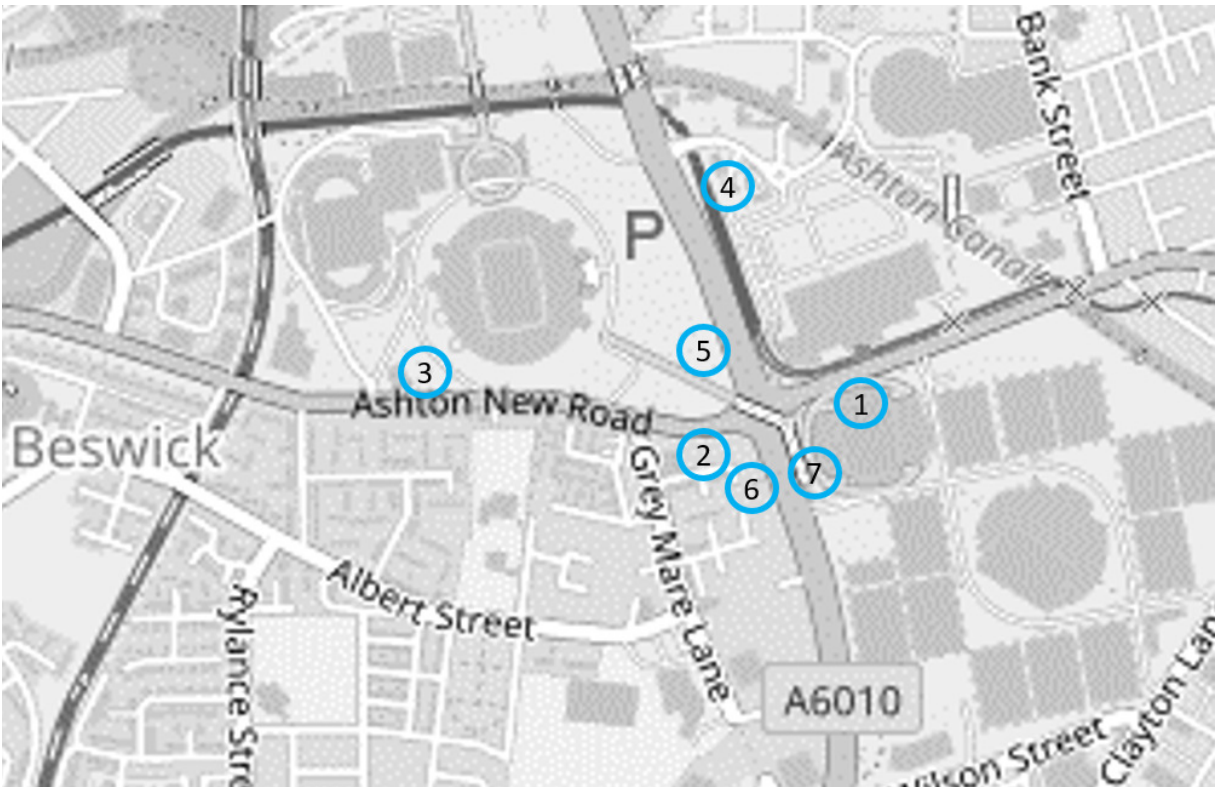


*Figure 3: Bus alighting survey locations*

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 26 April 2019

**Job No/Ref**

## 2.5 Pedestrian Surveys

### Survey Type

Pedestrian counts at specified locations.

### Locations

1. Pollard Street (between Munday Street and Carruthers Street);
2. Footbridge over Joe Mercer Way;
3. Pedestrian footbridge over junction of Ashton New Road/Alan Turing Way;
4. Ashton New Road (between Darley Street and Rowsley Street);
5. Rowsley Street (as it crosses the rail line);
6. Travis Street (as it passes beneath the railway arches);
7. Great Ancoats Street / Every Street;
8. Great Ancoats Street / Pollard Street; and
9. Great Ancoats Street / Store Street / Old Mill Street.

For 7-9 pedestrian crossing movements should be captured on all junction arms.



*Figure 4: Pedestrian Survey Locations (1-9)*

**Subject** Etihad Campus – Traffic Survey Specification

**Date** 26 April 2019

**Job No/Ref**

### **Time**

Surveys to be undertaken between 16:00-23:00.

### **Survey Outputs**

Pedestrian count at each location, separated into direction of travel. Counts should be captured and presented for 15-minute intervals and provided in excel spreadsheet format.

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

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**Subject** Etihad Campus – Survey Specification

**Date** 21 October 2019

**Job No/Ref** 267262-00

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## 1 General Requirements

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Ove Arup and Partners (Arup) has prepared the following scoping document that sets out the surveys required and the format of outputs to be delivered.

Tenderers should provide an itemised price for each of the survey types required as follows:

1. Junction surveys
2. ATC surveys
3. Metrolink surveys
4. Car park entry/exit surveys

In addition to an itemised price, tenderers should provide:

- Method statements for each survey type;
- Risk assessments and any other additional health and safety information considered relevant;
- Confirmation of their availability to undertake the survey within the specified timescales; and
- Confirmation of the dates on which the processed survey data will be returned (maximum 10 days processing time).

The successful tenderer will be responsible for obtaining any relevant consents required from third parties to undertake the surveys. The club will assist in obtaining any necessary internal approvals/notices.

**Subject** Etihad Campus – Survey Specification

**Date** 21 October 2019

**Job No/Ref** 267262-00

## **2 Scope of Surveys Required**

---

### **2.1 Junction Surveys**

#### **Survey Type**

Classified turning counts and queue length surveys.

#### **Locations**

- A. A62 Oldham Road / A6010 Hulme Hall Lane (signalised crossroads/gyratory);
- B. A6010 Hulme Hall Lane / Bradford Road / A6010 Alan Turing Way / Briscoe Lane (signalised staggered crossroads);
- C. A6010 Alan Turing Way / Gate 2 car park access (signalised T-junction);
- D. A662 Ashton New Road / A6010 Alan Turing Way (signalised crossroads);
- E. A635 Ashton Old Road / A6010 Alan Turing Way (signalised crossroads);
- F. A57 Hyde Road / A6010 Pottery Lane (signalised crossroads);
- G. A6010 Kirkmanshulme Lane / A6 Stockport Road / St John's Road (signalised crossroads);
- H. A635 Pin Mill Brow / Ashton Old Road / Fairfield Street (3 signalised junctions);
- I. A665 Great Ancoats Street / Every Street (signalised T-junction);
- J. A665 Great Ancoats Street / Pollard Street (signalised T-junction)
- K. A665 Great Ancoats Street / Old Mill Street / Store Street (signalised crossroads);
- L. A665 Great Ancoats Street / A62 Oldham Road (signalised crossroads);
- M. A662 Ashton New Road / Rowsley Street (priority T-junction);
- N. A663 Broadway / M60 (signalised junction);
- O. A62 Oldham Road / A663 Broadway (signalised T-junction);
- P. A662 Ashton Road / A635 Manchester Road / Lumb Lane (2 signalised junctions);
- Q. A635 Manchester Road / A6140 (signalised crossroads);
- R. Alan Turing Way / Gibbon Street (signalised crossroads);
- S. Grey Mare Lane / Albert Street (priority T-junction); and
- T. Phillips Park Road / New Viaduct Street (priority T-junction).

**Subject** Etihad Campus – Survey Specification

**Date** 21 October 2019

**Job No/Ref** 267262-00



*Figure 1: Junction Survey Locations (A-T)*

For the surveys at:

- A6010 Alan Turing Way / Gate 2 car park access (survey location C);
- A662 Ashton New Road / Rowsley Street (survey location M); and
- Alan Turing Way / Gibbon Street (survey location R – Asda);

Please could you provide an estimate of the number of vehicles within the car parks at the start and end of the survey.

### **Date and Time**

Surveys are to be undertaken on the following dates/times:

- Neutral weekday (w/c 4<sup>th</sup> November) – 16:00-23:00
- Saturday, no major matches / events scheduled at Etihad Campus – 10:00-17:00

### **Survey Outputs**

Fully classified turning counts for all movements at each of the above locations. Turning counts should be captured and presented for 15-minute intervals and provided in excel spreadsheet format.

**Subject** Etihad Campus – Survey Specification

**Date** 21 October 2019

**Job No/Ref** 267262-00

Pedestrian crossing movements should be captured on all junction arms and presented in a similar format.

Spot checks of queue lengths to be undertaken at 5-minute intervals, on the minute i.e. 07:00, 07:05 etc. For signalised junction, queues are to be recorded at the end of the red signal.

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

## 2.2 ATC Surveys

### Survey Type

Hourly two-way link counts.

### Locations

- i) A6010 Queens Road
- ii) A62 Oldham Road (East)
- iii) A6010 Hulme Hall Lane
- iv) A62 Oldham Road (West)



Figure 2: ATC Locations (i-iv)

**Subject** Etihad Campus – Survey Specification

**Date** 21 October 2019

**Job No/Ref** 267262-00

- v) Bradford Road
- vi) Briscoe Lane
- vii) Stuart Street
- viii) Gibbon Street
- ix) A6010 Alan Turing Way (North)
- x) A662 Ashton New Road (East)
- xi) A6010 Alan Turing Way (South)
- xii) A662 Ashton New Road (West)
- xiii) A6010 Alan Turing Way (North)
- xiv) A662 Ashton Old Road (East)
- xv) A6010 Pottery Lane
- xvi) A662 Ashton Old Road (West)
- xvii) Welcomb Street

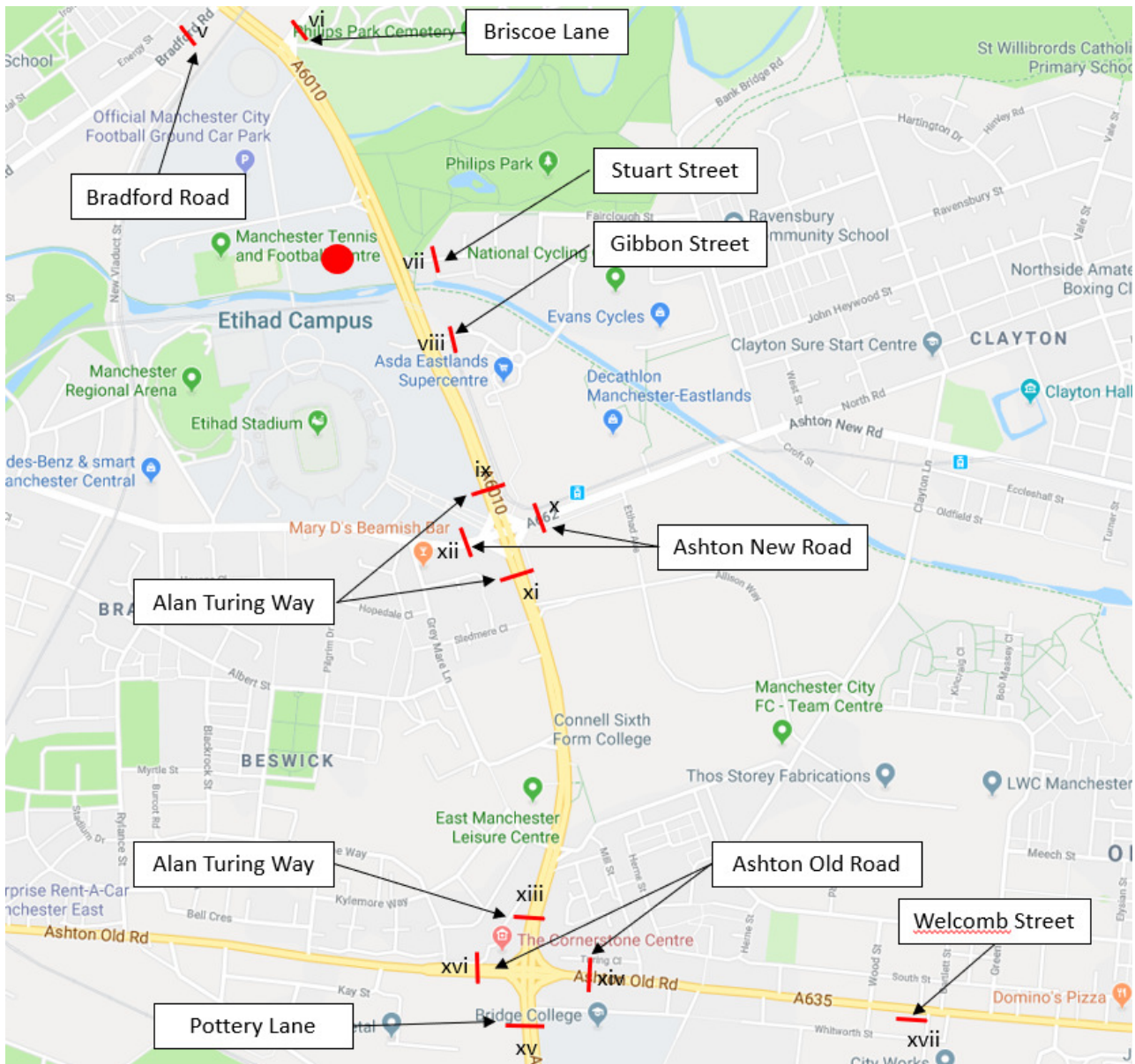


*Figure 3: ATC Locations (v-xvii)*

- xviii) Oldham Road (East)
- xix) A662 Ashton New Road (East)
- xx) A635 Ashton Old Road (East)
- xxi) A6010 Pottery Lane
- xxii) A635 Ashton Old Road (West)
- xxiii) A662 Pollard Street
- xxiv) Oldham Road (West)
- xxv) A6010 Queens Road

**Subject** Etihad Campus – Survey Specification

**Date** 21 October 2019

**Job No/Ref** 267262-00

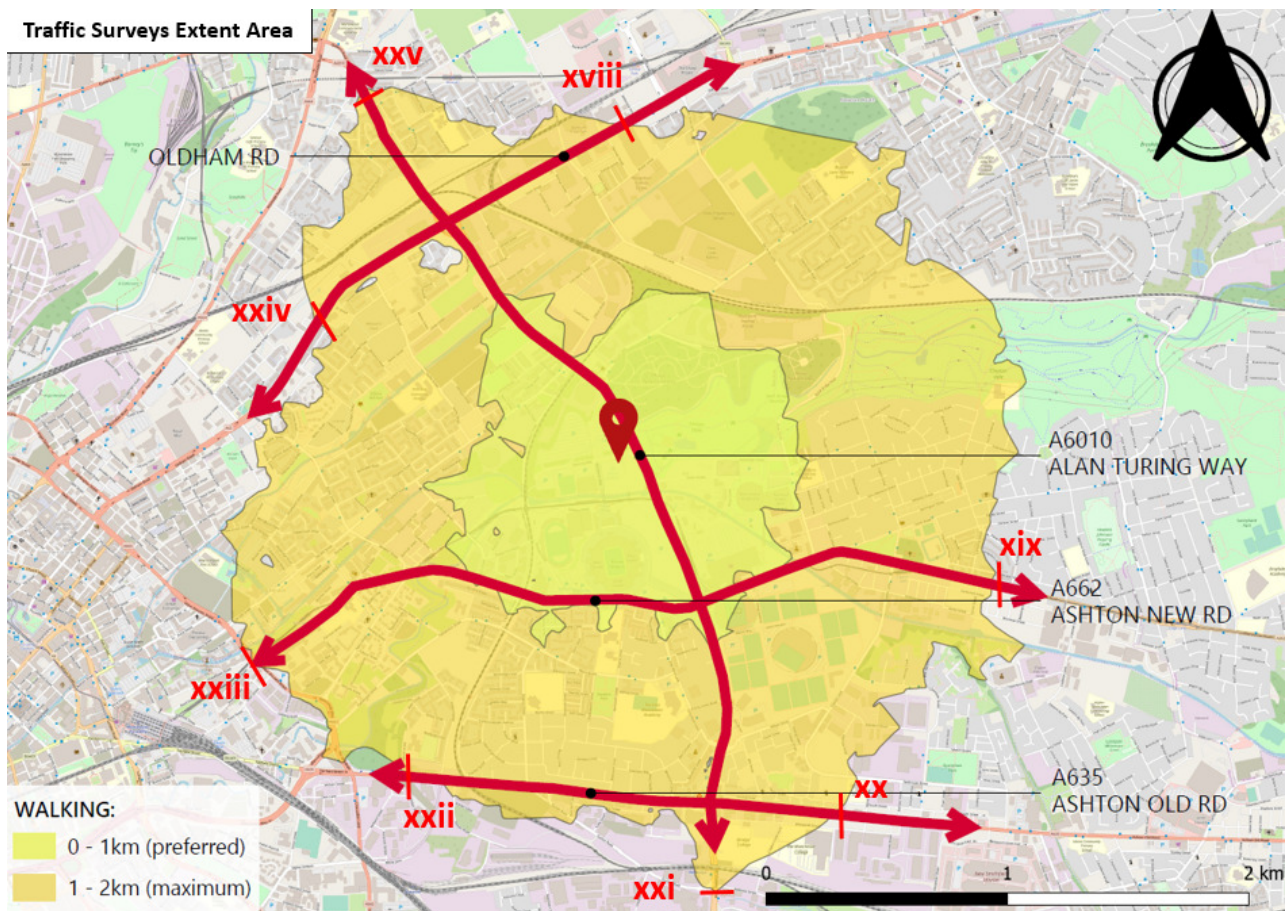


Figure 4: ATC Locations (xviii-xxv)

## Date and Time

Surveys are to be undertaken on the following dates/times:

- 24-hour ATC (00:00-00:00) – Tuesday 29<sup>th</sup> October;
- 8-day ATC from Saturday 2<sup>nd</sup> – Saturday 9<sup>th</sup> November (**inclusive of both Saturdays**); and
- 24-hour ATC (00:00-00:00) – Tuesday 26<sup>th</sup> November.

## Survey Outputs

Fully classified two-way link counts at each of the above locations. Link counts should be captured and presented for hourly intervals and provided in excel spreadsheet format.

**Subject** Etihad Campus – Survey Specification

**Date** 21 October 2019

**Job No/Ref** 267262-00

## **2.3 Metrolink Surveys**

### **Survey Type**

Boarding/alighting survey of Metrolink services on the Eccles/Media City to Ashton-under Lyne line.

### **Locations**

All stops between Piccadilly and Ashton-under Lyne.

### **Date and Time**

Surveys are to be undertaken on the following dates/times:

- Neutral weekday (w/c 4<sup>th</sup> November) – 16:00-23:00
- Saturday, no major matches / events scheduled at Etihad Campus – 10:00-17:00

### **Survey Outputs**

Number of boarding/alighting passengers at each stop on a ‘by tram’ basis. To be provided in a spreadsheet format.

**Subject** Etihad Campus – Survey Specification

**Date** 21 October 2019

**Job No/Ref** 267262-00

## 2.4 Car Park Entry/Exit Surveys

### Survey Type

Fully classified vehicular in/out counts (either by ATC or manual/camera count).

### Locations

1. Ashton West Metrolink Park and Ride; and
2. Ashton Moss Metrolink Park and Ride.

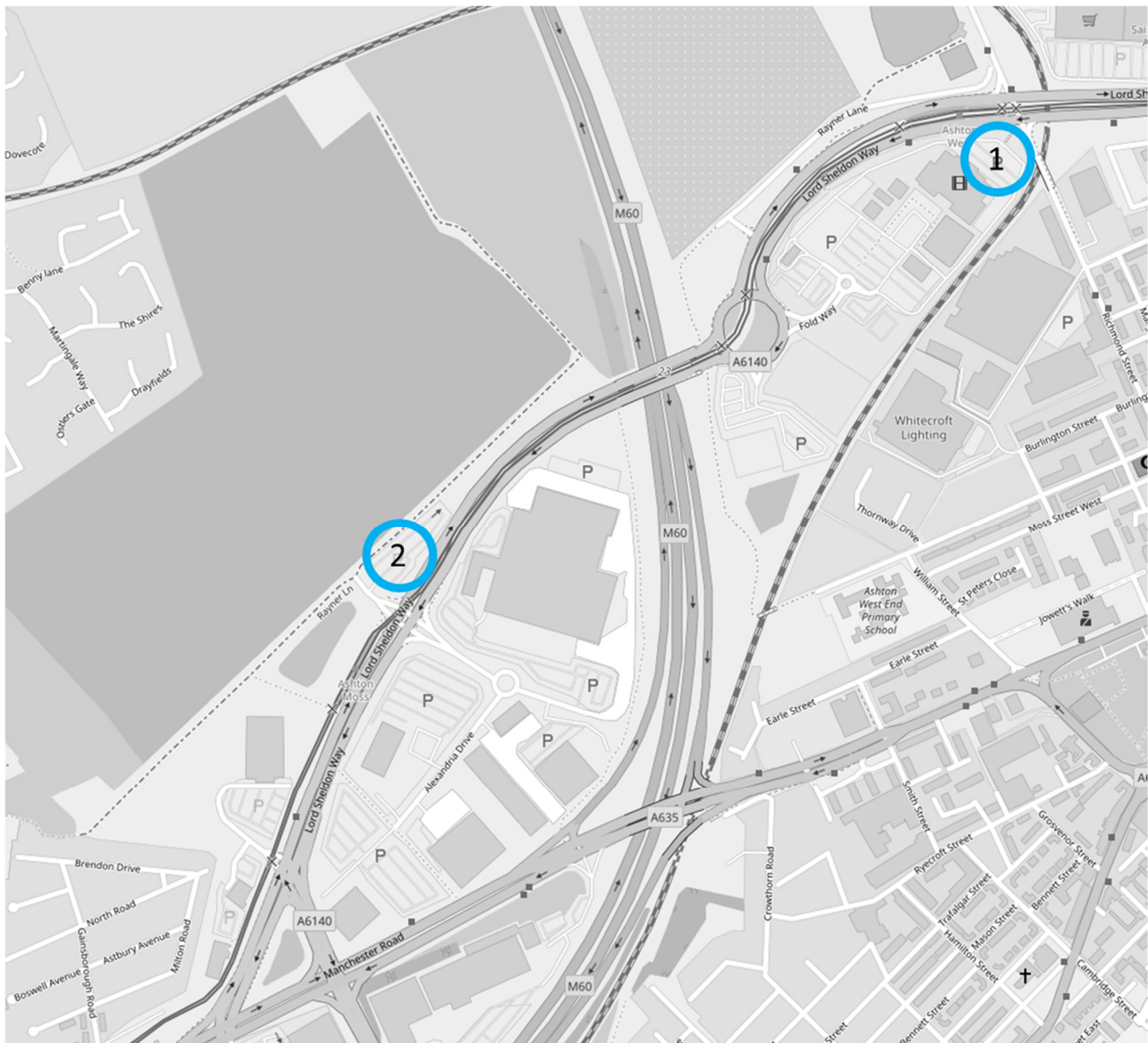


*Figure 5: Parking Survey Locations (1&2)*

**Subject** Etihad Campus – Survey Specification

**Date** 21 October 2019

**Job No/Ref** 267262-00

### **Date and Time**

Surveys are to be undertaken on the following dates/times:

- Neutral weekday (w/c 4<sup>th</sup> November) – 16:00-23:00
- Saturday, no major matches / events scheduled at Etihad Campus – 10:00-17:00

### **Survey Outputs**

Fully classified two-way entry and exit flows at each of the above locations.

Count of the number of vehicles within the car park at the start and end of the survey.

Flows should be captured and presented for 15-minute intervals and provided in excel spreadsheet format.

If cameras are used to capture the data, your quotations should include the provision of video footage (on a hard drive).

## Appendix C

### Metrolink Survey Data

## Midweek Matchday Metrolink Boarders and Alighters

| Time Period   | 16:00:00 to 16:30:00 |          |                    | 16:30:00 to 17:00:00 |          |                    | 17:00:00 to 17:30:00 |          |                    | 17:30:00 to 18:00:00 |          |                    | 18:00:00 to 18:30:00 |          |                    | 18:30:00 to 19:00:00 |          |                    | 19:00:00 to 19:30:00 |          |                    | 19:30:00 to 20:00:00 |          |                    | 20:00:00 to 20:30:00 |          |                    | 20:30:00 to 21:00:00 |          |                    | 21:00:00 to 21:30:00 |          |                    | 21:30:00 to 22:00:00 |          |                    | 22:00:00 to 22:30:00 |          |                    | 22:30:00 to 23:00:00 |    |   |    |    |    |    |    |    |    |     |     |     |   |    |     |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
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| Eastbound     | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram |                      |    |   |    |    |    |    |    |    |    |     |     |     |   |    |     |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Piccadilly    |                      |          | 262                | 52                   |          |                    |                      |          | 585                | 117                  |          |                    | 797                  | 159      |                    |                      |          | 1047               | 209                  |          |                    | 1383                 | 367      |                    |                      | 1095     | 212                |                      |          | 123                | 25                   |          |                    | 117                  | 23       |                    |                      | 164      | 33                 |                      |    |   |    |    |    |    |    |    |    |     |     |     |   |    |     |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| New Islington | 27                   | 7        | 242                | 42                   | 50       | 12                 | 521                  | 104      | 52                 | 22                   | 555      | 111                | 61                   | 23       | 5                  | 146                  | 33       | 2                  | 5                    | 146      | 33                 | 2                    | 5        | 146                | 33                   | 2        | 5                  | 146                  | 33       | 2                  | 5                    | 146      | 33                 | 2                    | 5        | 146                | 33                   | 2        | 5                  | 146                  | 33 |   |    |    |    |    |    |    |    |     |     |     |   |    |     |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Holt Town     | 9                    | 4        | 237                | 47                   | 27       | 7                  | 501                  | 100      | 12                 | 555                  | 111      | 61                 | 23                   | 5        | 146                | 33                   | 2        | 5                  | 146                  | 33       | 2                  | 5                    | 146      | 33                 | 2                    | 5        | 146                | 33                   | 2        | 5                  | 146                  | 33       | 2                  | 5                    | 146      | 33                 | 2                    | 5        | 146                | 33                   |    |   |    |    |    |    |    |    |    |     |     |     |   |    |     |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Ethad Campus  | 86                   | 0        | 151                | 30                   | 175      | 5                  | 331                  | 66       | 206                | 12                   | 347      | 69                 | 336                  | 1        | 358                | 72                   | 664      | 3                  | 333                  | 67       | 790                | 1                    | 281      | 56                 | 1658                 | 0        | 142                | 28                   | 896      | 1                  | 124                  | 25       | 64                 | 6                    | 88       | 18                 | 19                   | 10       | 77                 | 15                   | 24 | 2 | 68 | 14 | 0  | 82 | 78 | 16 | 10 | 585 | 575 | 115 | 6 | 60 | 198 | 40 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |
| Velopark      | 16                   | 11       | 146                | 29                   | 79       | 14                 | 266                  | 53       | 53                 | 17                   | 311      | 62                 | 85                   | 16       | 289                | 58                   | 67       | 11                 | 277                  | 55       | 58                 | 11                   | 234      | 47                 | 57                   | 13       | 98                 | 20                   | 48       | 10                 | 86                   | 17       | 13                 | 4                    | 79       | 16                 | 63                   | 4        | 7                  | 77                   | 15 | 9 | 7  | 66 | 13 | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0 | 0  | 0   | 0  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  |

| Time Period       | 16:00:00 to 16:30:00 |          |                    | 16:30:00 to 17:00:00 |          |                    | 17:00:00 to 17:30:00 |          |                    | 17:30:00 to 18:00:00 |          |                    | 18:00:00 to 18:30:00 |          |                    | 18:30:00 to 19:00:00 |          |                    | 19:00:00 to 19:30:00 |          |                    | 19:30:00 to 20:00:00 |          |                    | 20:00:00 to 20:30:00 |          |                    | 20:30:00 to 21:00:00 |          |                    | 21:00:00 to 21:30:00 |          |                    | 21:30:00 to 22:00:00 |          |                    | 22:00:00 to 22:30:00 |          |                    | 22:30:00 to 23:00:00 |   |    |    |     |    |   |   |    |     |    |   |    |   |    |    |
|-------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|---|----|----|-----|----|---|---|----|-----|----|---|----|---|----|----|
| Westbound         | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram |                      |   |    |    |     |    |   |   |    |     |    |   |    |   |    |    |
| Ashton-under-Lyne |                      | 88       | 88                 | 18                   |          | 69                 | 69                   | 14       |                    | 83                   | 83       | 17                 |                      | 68       | 68                 | 14                   |          | 82                 | 82                   | 16       |                    | 131                  | 131      | 26                 |                      | 10       | 10                 | 2                    |          | 11                 | 11                   | 2        |                    | 21                   | 21       | 4                  |                      | 19       | 19                 | 4                    |   | 21 | 21 | 4   |    |   |   |    |     |    |   |    |   |    |    |
| Ashdon West       | 5                    |          | 8                  | 89                   | 18       |                    | 8                    | 25       | 86                 | 17                   |          | 8                  | 21                   | 59       | 12                 |                      | 3        | 38                 | 98                   | 20       |                    | 0                    | 11       | 142                | 28                   |          | 5                  | 1                    | 6        | 1                  |                      | 5        | 14                 | 20                   |          | 1                  | 5                    | 23       | 5                  |                      | 0 | 3  | 30 | 6   |    |   |   |    |     |    |   |    |   |    |    |
| Ashdon Moss       |                      | 5        | 11                 | 95                   | 19       |                    | 2                    | 16       | 100                | 20                   |          | 0                  | 68                   | 131      | 26                 |                      | 4        | 100                | 20                   | 2        |                    | 2                    | 22       | 59                 | 12                   |          | 4                  | 7                    | 1        | 23                 | 5                    |          | 0                  | 29                   | 6        |                    | 0                    | 29       | 6                  |                      | 0 | 29 | 6  |     |    |   |   |    |     |    |   |    |   |    |    |
| Audenshaw         |                      | 5        | 11                 | 101                  | 20       |                    | 18                   | 14       | 96                 | 19                   |          | 6                  | 11                   | 98       | 20                 |                      | 7        | 15                 | 136                  | 31       |                    | 7                    | 13       | 128                | 26                   |          | 7                  | 15                   | 156      | 31                 |                      | 2        | 7                  | 12                   | 2        |                    | 0                    | 1        | 23                 | 5                    |   | 0  | 23 | 5   |    |   |   |    |     |    |   |    |   |    |    |
| Droydsden         |                      | 20       | 6                  | 87                   | 17       |                    | 19                   | 18       | 95                 | 19                   |          | 8                  | 21                   | 111      | 22                 |                      | 16       | 29                 | 90                   | 18       |                    | 18                   | 19       | 144                | 29                   |          | 9                  | 11                   | 188      | 38                 |                      | 4        | 69                 | 193                  | 39       |                    | 17                   | 7        | 146                | 31                   |   | 2  | 17 | 3   | 9  | 2 |   | 17 | 3   | 9  | 2 |    |   |    |    |
| Cemetery Road     |                      | 4        | 6                  | 89                   | 18       |                    | 10                   | 7        | 92                 | 18                   |          | 12                 | 3                    | 102      | 20                 |                      | 9        | 10                 | 91                   | 18       |                    | 2                    | 13       | 155                | 31                   |          | 0                  | 12                   | 200      | 40                 |                      | 9        | 13                 | 197                  | 39       |                    | 0                    | 0        | 146                | 29                   |   | 0  | 0  | 146 | 29 |   | 0 | 0  | 146 | 29 |   |    |   |    |    |
| Edge Lane         |                      | 18       | 27                 | 98                   | 20       |                    | 23                   | 18       | 87                 | 17                   |          | 14                 | 19                   | 107      | 21                 |                      | 14       | 22                 | 99                   | 20       |                    | 17                   | 24       | 162                | 32                   |          | 8                  | 28                   | 220      | 44                 |                      | 9        | 33                 | 220                  | 44       |                    | 12                   | 35       | 169                | 34                   |   | 1  | 5  | 15  | 3  |   | 7 | 9  | 11  | 2  |   | 7  | 9 | 11 | 2  |
| Clayton Hall      |                      | 17       | 17                 | 98                   | 20       |                    | 6                    | 17       | 98                 | 20                   |          | 13                 | 19                   | 113      | 23                 |                      | 11       | 12                 | 100                  | 20       |                    | 10                   | 26       | 185                | 37                   |          | 6                  | 9                    | 18       | 4                  |                      | 6        | 13                 | 3                    |          | 4                  | 7                    | 6        | 13                 |                      | 4 | 7  | 6  | 13  |    | 4 | 7 | 6  | 13  |    |   |    |   |    |    |
| Velopark          |                      | 13       | 64                 | 149                  | 30       |                    | 10                   | 33       | 121                | 24                   |          | 19                 | 45                   | 139      | 28                 |                      | 30       | 44                 | 118                  | 30       |                    | 19                   | 45       | 139                | 28                   |          | 30                 | 44                   | 118      | 30                 |                      | 19       | 45                 | 139                  | 28       |                    | 30                   | 44       | 118                | 30                   |   | 19 | 45 | 139 | 28 |   |   |    |     |    |   |    |   |    |    |
| Ethad Campus      |                      | 20       | 44                 | 173                  | 35       |                    | 31                   | 29       | 119                | 24                   |          | 14                 | 26                   | 151      | 30                 |                      | 22       | 13                 | 109                  | 22       |                    | 59                   | 28       | 168                | 37                   |          | 6                  | 122                  | 7        | 8                  |                      | 8        | 18                 | 48                   | 20       |                    | 13                   | 13       | 12                 | 2                    |   | 5  | 11 | 54  | 11 |   | 1 | 5  | 42  | 8  |   | 10 | 6 | 68 | 14 |
| Holt Town         |                      | 6        | 14                 | 181                  | 36       |                    | 5                    | 14       | 128                | 26                   |          | 7                  | 25                   | 169      | 34                 |                      | 2        | 19                 | 126                  | 25       |                    | 1                    | 37       | 153                | 31                   |          | 1                  | 9                    | 86       | 17                 |                      | 2        | 8                  | 37                   | 7        |                    | 1                    | 13       | 12                 | 2                    |   | 5  | 11 | 54  | 11 |   | 1 | 5  | 42  | 8  |   | 10 | 6 | 68 | 14 |
| New Islington     |                      | 9        | 33                 | 205                  | 41       |                    | 9                    | 55       | 174                | 35                   |          | 16                 | 54                   | 207      | 41                 |                      | 8        | 54                 | 172                  | 34       |                    | 10                   | 43       | 186                | 37                   |          | 6                  | 35                   | 115      | 23                 |                      | 0        | 41                 | 78                   | 16       |                    | 3                    | 18       | 27                 | 5                    |   | 6  | 12 | 60  | 12 |   | 4 | 10 | 48  | 10 |   | 3  | 7 | 72 | 14 |

## Saturday Matchday Metrolink Boarders and Alighters

| Time Period   | 10:00:00 to 10:30:00 |          |                    | 10:30:00 to 11:00:00 |          |                    | 11:00:00 to 11:30:00 |          |                    | 11:30:00 to 12:00:00 |          |                    | 12:00:00 to 12:30:00 |          |                    | 12:30:00 to 13:00:00 |          |                    | 13:00:00 to 13:30:00 |          |                    | 13:30:00 to 14:00:00 |          |                    | 14:00:00 to 14:30:00 |          |                    | 14:30:00 to 15:00:00 |          |                    | 15:00:00 to 15:30:00 |          |                    | 15:30:00 to 16:00:00 |          |                    | 16:00:00 to 16:30:00 |          |                    | 16:30:00 to 17:00:00 |     |    |    |   |    |     |    |    |    |     |     |    |    |    |     |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |  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| Eastbound     | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram |                      |     |    |    |   |    |     |    |    |    |     |     |    |    |    |     |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    | 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| Piccadilly    |                      |          | 532                | 532                  | 106      | 770                | 770                  | 154      |                    |                      | 796      | 870                | 174                  |          |                    | 649                  | 907      | 181                |                      |          | 241                | 635                  | 127      |                    |                      | 123      | 212                | 42                   |          |                    | 108                  | 188      | 37                 |                      |          | 76                 | 160                  | 32       |                    |                      | 92  | 92 | 30 |   |    | 6   |    |    | 27 | 240 | 48  |    |    | 27 | 250 | 50  |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |    |   |    |     |    |      |
| New Islington | 9                    | 5        | 538                | 106                  | 12       | 760                | 154                  | 2        | 4                  | 1515                 | 313      | 6                  | 2                    | 903      | 8                  | 2                    | 1058     | 212                | 4                    | 2        | 228                | 46                   | 22       | 6                  | 10                   | 238      | 46                 | 22                   | 6        | 10                 | 238                  | 46       | 22                 | 6                    | 10       | 238                | 46                   | 22       | 6                  | 10                   | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6  | 10  | 238 | 46 | 22 | 6  | 10  | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22 | 6 | 10 | 238 | 46 | 22</ |

| Time Period       | 10:00:00 to 10:30:00 |          |                    | 10:30:00 to 11:00:00 |          |                    | 11:00:00 to 11:30:00 |          |                    | 11:30:00 to 12:00:00 |          |                    | 12:00:00 to 12:30:00 |          |                    | 12:30:00 to 13:00:00 |          |                    | 13:00:00 to 13:30:00 |          |                    | 13:30:00 to 14:00:00 |          |                    | 14:00:00 to 14:30:00 |          |                    | 14:30:00 to 15:00:00 |          |                    | 15:00:00 to 15:30:00 |          |                    | 15:30:00 to 16:00:00 |          |                    | 16:00:00 to 16:30:00 |          |                    | 16:30:00 to 17:00:00 |          |                    |     |     |     |    |     |     |     |     |     |     |     |    |     |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
|-------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|-----|---|---|-----|
| Westbound         | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram |     |     |     |    |     |     |     |     |     |     |     |    |     |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Ashton-under-Lyne |                      | 52       | 52                 | 10                   |          | 87                 | 87                   | 17       |                    | 97                   | 97       | 19                 |                      | 109      | 109                | 22                   |          | 85                 | 85                   | 17       |                    | 101                  | 101      | 20                 |                      | 78       | 78                 | 16                   |          | 92                 | 92                   | 18       |                    | 54                   | 54       | 11                 |                      | 65       | 65                 | 13                   |          | 33                 | 33  | 7   |     | 1  | 1   | 26  |     |     |     |     |     |    |     |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Ashton West       | 3                    | 18       | 67                 | 13                   | 5        | 36                 | 118                  | 24       | 2                  | 48                   | 143      | 29                 | 2                    | 72       | 179                | 36                   | 8        | 24                 | 101                  | 20       | 6                  | 27                   | 99       | 20                 | 8                    | 20       | 104                | 21                   | 5        | 18                 | 67                   | 13       | 11                 | 21                   | 75       | 15                 | 3                    | 32       | 62                 | 12                   | 1        | 13                 | 77  | 15  | 5   | 10 | 99  | 20  | 12  | 4   | 123 | 25  |     |    |     |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Ashton Moss       | 5                    | 45       | 107                | 23                   | 3        | 60                 | 175                  | 32       | 7                  | 185                  | 37       | 4                  | 56                   | 231      | 42                 | 12                   | 15       | 120                | 24                   | 15       | 17                 | 118                  | 22       | 11                 | 21                   | 116      | 107                | 21                   | 1        | 61                 | 61                   | 12       | 3                  | 16                   | 118      | 25                 | 5                    | 13       | 107                | 21                   | 7        | 1                  | 128 | 26  |     |    |     |     |     |     |     |     |     |    |     |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Audenshaw         | 0                    | 8        | 115                | 23                   | 5        | 16                 | 186                  | 37       | 6                  | 35                   | 214      | 43                 | 9                    | 54       | 276                | 55                   | 4        | 21                 | 135                  | 27       | 2                  | 85                   | 27       | 2                  | 20                   | 126      | 15                 | 8                    | 25       | 137                | 31                   | 4        | 18                 | 88                   | 18       | 16                 | 15                   | 85       | 16                 | 4                    | 62       | 12                 | 13  | 12  | 80  | 17 | 7   | 15  | 9   | 122 | 7   |     |     |    |     |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Droydsden         | 16                   | 8        | 107                | 21                   | 8        | 18                 | 196                  | 39       | 5                  | 27                   | 236      | 47                 | 7                    | 35       | 304                | 61                   | 9        | 22                 | 148                  | 30       | 17                 | 24                   | 106      | 21                 | 12                   | 19       | 133                | 27                   | 8        | 24                 | 153                  | 31       | 7                  | 14                   | 95       | 19                 | 20                   | 12       | 77                 | 15                   | 5        | 16                 | 73  | 15  | 8   | 10 | 107 | 21  | 8   | 20  | 134 | 27  |     |    |     |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Cemetery Road     | 2                    | 7        | 112                | 22                   | 5        | 16                 | 207                  | 41       | 3                  | 36                   | 269      | 54                 | 12                   | 36       | 328                | 66                   | 6        | 24                 | 166                  | 33       | 9                  | 17                   | 114      | 23                 | 14                   | 13       | 132                | 26                   | 8        | 19                 | 164                  | 33       | 6                  | 15                   | 104      | 21                 | 1                    | 10       | 86                 | 17                   | 3        | 11                 | 81  | 16  | 8   | 23 | 116 | 23  | 5   | 7   | 109 | 22  | 6   | 16 | 144 | 29  |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Edge Lane         | 2                    | 16       | 126                | 25                   | 7        | 29                 | 229                  | 46       | 4                  | 25                   | 290      | 58                 | 11                   | 52       | 369                | 74                   | 3        | 26                 | 189                  | 38       | 7                  | 18                   | 125      | 25                 | 5                    | 8        | 135                | 27                   | 19       | 26                 | 171                  | 34       | 15                 | 12                   | 101      | 20                 | 17                   | 13       | 82                 | 16                   | 8        | 10                 | 83  | 17  | 26  | 15 | 105 | 21  | 2   | 16  | 123 | 25  | 11  | 12 | 145 | 29  |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Clayton Hall      | 5                    | 27       | 148                | 30                   | 21       | 25                 | 269                  | 54       | 2                  | 20                   | 287      | 57                 | 15                   | 43       | 217                | 43                   | 2        | 14                 | 137                  | 27       | 3                  | 24                   | 159      | 29                 | 3                    | 24       | 192                | 38                   | 13       | 15                 | 103                  | 21       | 16                 | 114                  | 180      | 36                 | 6                    | 116      | 193                | 38                   | 7        | 67                 | 165 | 33  | 7   | 25 | 141 | 27  | 7   | 22  | 160 | 32  |     |    |     |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Velopark          | 32                   | 9        | 125                | 23                   | 27       | 18                 | 138                  | 26       | 45                 | 58                   | 23       | 234                | 47                   | 123      | 32                 | 296                  | 59       | 23                 | 24                   | 112      | 22                 | 16                   | 18       | 139                | 27                   | 3        | 24                 | 192                  | 38       | 10                 | 17                   | 127      | 23                 | 20                   | 42       | 180                | 36                   | 4        | 17                 | 20                   | 159      | 37                 | 32  | 6   | 168 | 34 | 11  | 199 | 38  | 7   | 26  | 160 | 32  |    |     |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |     |   |   |     |
| Ethad Campus      | 12                   | 12       | 119                | 24                   | 52       | 9                  | 183                  | 37       | 117                | 21                   | 138      | 28                 | 260                  | 36       | 4                  | 72                   | 143      | 126                | 13                   | 23       | 232                | 45                   | 0        | 105                | 22                   | 5        | 11                 | 117                  | 23       | 0                  | 685                  | 37       | 0                  | 109                  | 24       | 543                | 96                   | 172      | 54                 | 86                   | 172      | 54                 | 0   | 385 | 497 | 8  | 0   | 335 | 497 | 8   | 0   | 335 | 497 | 8  | 0   | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 | 497 | 8 | 0 | 335 |

## Midweek Non-matchday Metrolink Boarders and Alighters

| Time Period       | 16:00:00 to 16:30:00 |          |                    | 16:30:00 to 17:00:00 |          |                    | 17:00:00 to 17:30:00 |          |                    | 17:30:00 to 18:00:00 |          |                    | 18:00:00 to 18:30:00 |          |                    | 18:30:00 to 19:00:00 |          |                    | 19:00:00 to 19:30:00 |          |                    | 19:30:00 to 20:00:00 |          |                    | 20:00:00 to 20:30:00 |          |                    | 20:30:00 to 21:00:00 |          |                    | 21:00:00 to 21:30:00 |          |                    | 21:30:00 to 22:00:00 |          |                    | 22:00:00 to 22:30:00 |          |                    | 22:30:00 to 23:00:00 |     |    |     |    |
|-------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|-----|----|-----|----|
| Eastbound         | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram |                      |     |    |     |    |
| Piccadilly        | 316                  | 316      | 63                 | 703                  | 703      | 141                | 602                  | 602      | 120                | 483                  | 483      | 97                 | 459                  | 459      | 92                 | 380                  | 380      | 76                 | 291                  | 291      | 58                 | 491                  | 491      | 98                 | 103                  | 103      | 21                 | 188                  | 188      | 38                 | 122                  | 122      | 24                 | 41                   | 98       | 20                 | 42                   | 103      | 21                 |                      |     |    |     |    |
| New Islington     | 10                   | 2        | 10                 | 10                   | 6        | 699                | 140                  | 14       | 14                 | 9                    | 4        | 478                | 100                  | 14       | 14                 | 5                    | 2        | 699                | 140                  | 20       | 5                  | 2                    | 699      | 140                | 20                   | 5        | 2                  | 699                  | 140      | 20                 | 5                    | 2        | 699                | 140                  | 20       | 5                  | 2                    | 699      | 140                | 20                   |     |    |     |    |
| Holt Town         | 10                   | 2        | 300                | 60                   | 6        | 695                | 139                  | 5        | 572                | 114                  | 4        | 473                | 95                   | 14       | 3                  | 358                  | 72       | 15                 | 5                    | 271      | 54                 | 5                    | 2        | 485                | 97                   | 4        | 1                  | 97                   | 19       | 2                  | 188                  | 38       | 3                  | 1                    | 118      | 24                 | 2                    | 3        | 73                 | 15                   | 90  | 18 |     |    |
| Ethad Campus      | 15                   | 1        | 286                | 57                   | 28       | 0                  | 667                  | 133      | 15                 | 2                    | 559      | 112                | 14                   | 2        | 461                | 92                   | 6        | 6                  | 453                  | 91       | 3                  | 1                    | 356      | 71                 | 5                    | 0        | 266                | 53                   | 11       | 9                  | 475                  | 95       | 8                  | 7                    | 96       | 19                 | 3                    | 0        | 185                | 37                   | 1   | 1  | 118 | 24 |
| Velopark          | 31                   | 33       | 288                | 58                   | 43       | 7                  | 631                  | 126      | 44                 | 14                   | 529      | 106                | 43                   | 6        | 424                | 85                   | 6        | 15                 | 424                  | 85       | 32                 | 20                   | 344      | 69                 | 20                   | 10       | 256                | 51                   | 12       | 9                  | 472                  | 94       | 7                  | 4                    | 93       | 19                 | 13                   | 0        | 172                | 34                   | 9   | 4  | 113 | 23 |
| Clayton Hall      | 27                   | 10       | 271                | 54                   | 21       | 14                 | 624                  | 125      | 11                 | 7                    | 525      | 105                | 37                   | 2        | 389                | 78                   | 16       | 1                  | 401                  | 80       | 19                 | 6                    | 331      | 66                 | 17                   | 2        | 241                | 48                   | 19       | 2                  | 441                  | 88       | 17                 | 2                    | 441      | 88                 | 17                   | 2        | 441                | 88                   | 17  |    |     |    |
| Edge Lane         | 38                   | 16       | 249                | 50                   | 45       | 5                  | 584                  | 117      | 53                 | 9                    | 481      | 96                 | 72                   | 11       | 328                | 53                   | 11       | 328                | 53                   | 11       | 328                | 53                   | 11       | 328                | 53                   | 11       | 328                | 53                   | 11       | 328                | 53                   | 11       | 328                | 53                   | 11       | 328                | 53                   | 11       | 328                | 53                   | 11  |    |     |    |
| Cemetery Road     | 25                   | 4        | 228                | 46                   | 19       | 15                 | 580                  | 116      | 18                 | 4                    | 467      | 93                 | 33                   | 10       | 305                | 61                   | 26       | 5                  | 340                  | 66       | 12                 | 3                    | 303      | 61                 | 5                    | 3        | 400                | 86                   | 2        | 3                  | 78                   | 16       | 6                  | 1                    | 148      | 30                 | 8                    | 1        | 40                 | 8                    | 5   | 0  | 61  | 12 |
| Droydsden         | 26                   | 10       | 212                | 42                   | 36       | 16                 | 560                  | 112      | 40                 | 13                   | 440      | 88                 | 34                   | 8        | 279                | 56                   | 28       | 4                  | 332                  | 66       | 22                 | 5                    | 286      | 57                 | 16                   | 4        | 332                | 66                   | 22       | 5                  | 286                  | 57       | 16                 | 4                    | 332      | 66                 | 22                   | 5        | 286                | 57                   | 16  |    |     |    |
| Audenshaw         | 21                   | 6        | 197                | 39                   | 18       | 7                  | 549                  | 110      | 22                 | 3                    | 421      | 84                 | 20                   | 3        | 262                | 52                   | 27       | 0                  | 305                  | 61       | 23                 | 3                    | 275      | 55                 | 11                   | 0        | 210                | 42                   | 5        | 1                  | 428                  | 84       | 8                  | 2                    | 68       | 14                 | 1                    | 4        | 145                | 29                   | 6   | 1  | 85  | 17 |
| Ashton Moss       | 8                    | 5        | 194                | 39                   | 21       | 4                  | 532                  | 106      | 23                 | 3                    | 401      | 80                 | 24                   | 0        | 238                | 48                   | 31       | 0                  | 411                  | 83       | 26                 | 2                    | 266      | 58                 | 18                   | 0        | 238                | 48                   | 31       | 0                  | 411                  | 83       | 26                 | 2                    | 266      | 58                 | 18                   | 0        | 411                | 83                   | 26  |    |     |    |
| Ashton West       | 38                   | 1        | 167                | 34                   | 34       | 4                  | 426                  | 85       | 31                 | 0                    | 270      | 74                 | 3                    | 6        | 211                | 42                   | 50       | 1                  | 266                  | 53       | 35                 | 0                    | 241      | 48                 | 1                    | 0        | 401                | 80                   | 6        | 241                | 48                   | 1        | 0                  | 401                  | 80       | 6                  | 241                  | 48       | 1                  | 0                    | 401 | 80 | 6   |    |
| Ashton-under-Lyne | 71                   | 96       | 19                 | 76                   | 426      | 85                 | 34                   | 336      | 67                 | 55                   | 156      | 31                 | 73                   | 193      | 39                 | 53                   | 188      | 38                 | 50                   | 139      | 28                 | 35                   | 366      | 73                 | 19                   | 45       | 9                  | 17                   | 139      | 28                 | 35                   | 366      | 73                 | 19                   | 45       | 9                  | 17                   | 139      | 28                 | 35                   |     |    |     |    |

| Time Period       | 16:00:00 to 16:30:00 |          |                    | 16:30:00 to 17:00:00 |          |                    | 17:00:00 to 17:30:00 |          |                    | 17:30:00 to 18:00:00 |          |                    | 18:00:00 to 18:30:00 |          |                    | 18:30:00 to 19:00:00 |          |                    | 19:00:00 to 19:30:00 |          |                    | 19:30:00 to 20:00:00 |          |                    | 20:00:00 to 20:30:00 |          |                    | 20:30:00 to 21:00:00 |          |                    | 21:00:00 to 21:30:00 |          |                    | 21:30:00 to 22:00:00 |          |                    | 22:00:00 to 22:30:00 |          |                    | 22:30:00 to 23:00:00 |   |    |    |    |   |  |   |   |   |   |
|-------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|---|----|----|----|---|--|---|---|---|---|
| Westbound         | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram |                      |   |    |    |    |   |  |   |   |   |   |
| Ashton-under-Lyne |                      | 77       | 92                 | 18                   |          | 91                 | 91                   | 18       |                    |                      |          |                    |                      |          |                    |                      |          |                    |                      |          |                    |                      |          |                    |                      |          |                    |                      |          |                    |                      |          |                    |                      |          |                    |                      |          |                    |                      |   |    |    |    |   |  |   |   |   |   |
| Ashton West       | 2                    | 17       | 77                 | 15                   |          | 9                  | 9                    | 91       | 18                 |                      | 4        | 66                 | 68                   | 16       |                    | 4                    | 7        | 54                 | 10                   |          | 6                  | 14                   | 55       | 11                 |                      | 6        | 2                  | 1                    | 28       | 6                  |                      | 2        | 4                  | 12                   | 2        |                    | 0                    | 8        | 19                 | 4                    |   | 1  | 5  | 5  | 1 |  |   |   |   |   |
| Ashton Moss       | 8                    | 11       | 95                 | 19                   |          | 3                  | 9                    | 97       | 19                 |                      | 16       | 8                  | 93                   | 17       |                    | 3                    | 13       | 64                 | 13                   |          | 2                  | 8                    | 70       | 30                 |                      | 3        | 1                  | 0                    | 21       | 9                  | 1                    | 12       | 20                 |                      | 4        | 0                  | 4                    | 20       | 3                  |                      | 1 | 5  | 5  | 1  |   |  |   |   |   |   |
| Audenshaw         | 8                    | 12       | 99                 | 20                   |          | 9                  | 20                   | 108      | 22                 |                      | 9        | 14                 | 88                   | 18       |                    | 5                    | 9        | 68                 | 14                   |          | 5                  | 12                   | 77       | 15                 |                      | 0        | 5                  | 35                   | 7        |                    | 0                    | 3        | 12                 | 2                    |          | 3                  | 1                    | 0        | 19                 | 4                    |   | 1  | 0  | 2  | 0 |  |   |   |   |   |
| Droydsden         | 11                   | 18       | 106                | 21                   |          | 7                  | 11                   | 112      | 22                 |                      | 9        | 12                 | 91                   | 18       |                    | 5                    | 11       | 74                 | 15                   |          | 5                  | 5                    | 77       | 15                 |                      | 2        | 3                  | 48                   | 10       |                    | 3                    | 1        | 33                 | 7                    |          | 4                  | 3                    | 3        | 19                 | 4                    |   | 0  | 3  | 5  | 1 |  |   |   |   |   |
| Cemetery Road     | 5                    | 8        | 109                | 22                   |          | 15                 | 17                   | 114      | 23                 |                      | 7        | 16                 | 100                  | 20       |                    | 7                    | 13       | 80                 | 16                   |          | 4                  | 10                   | 83       | 17                 |                      | 1        | 11                 | 58                   | 12       |                    | 2                    | 6        | 37                 | 7                    |          | 1                  | 1                    | 15       | 3                  |                      | 2 | 0  | 1  | 20 | 4 |  | 0 | 0 | 5 | 1 |
| Edge Lane         | 30                   | 25       | 104                | 21                   |          | 22                 | 19                   | 111      | 22                 |                      | 26       | 16                 | 90                   | 18       |                    | 23                   | 9        | 66                 | 13                   |          | 31                 | 32                   | 84       | 17                 |                      | 11       | 18                 | 65                   | 13       |                    | 11                   | 10       | 36                 | 7                    |          | 10                 | 8                    | 61       | 8                  |                      | 6 | 1  | 4  | 8  | 2 |  |   |   |   |   |
| Clayton Hall      | 6                    | 13       | 111                | 22                   |          | 11                 | 18                   | 118      | 24                 |                      | 16       | 26                 | 100                  | 20       |                    | 13                   | 22       | 75                 | 15                   |          | 6                  | 12                   | 90       | 18                 |                      | 2        | 14                 | 77                   | 15       |                    | 6                    | 4        | 34                 | 7                    |          | 4                  | 4                    | 19       | 4                  |                      | 3 | 8  | 17 | 3  |   |  |   |   |   |   |
| Velopark          | 4                    | 79       | 186                | 37                   |          | 15                 | 56                   | 159      | 32                 |                      | 14       | 20                 | 106                  | 21       |                    | 20                   | 38       | 93                 | 12                   |          | 15                 | 56                   | 159      | 38                 |                      | 22       | 6                  | 10                   | 28       |                    | 2                    | 12       | 24                 | 2                    |          | 6                  | 16                   | 5        |                    | 2                    | 4 | 32 | 0  |    |   |  |   |   |   |   |
| Ethad Campus      | 1                    | 43       | 228                | 46                   |          | 0                  | 27                   | 186      | 37                 |                      | 2        | 29                 | 133                  | 27       |                    | 4                    | 22       | 111                | 22                   |          | 2                  | 19                   | 117      | 10                 |                      | 1        | 9                  | 92                   | 18       |                    | 1                    | 10       | 50                 |                      | 10       | 1                  | 4                    | 14       | 3                  |                      | 0 | 3  | 25 | 5  |   |  |   |   |   |   |
| Holt Town         | 10                   | 25       | 243                | 49                   |          | 10                 | 51                   | 227      | 45                 |                      | 8        | 24                 | 149                  | 30       |                    | 4                    | 10       | 117                | 23                   |          | 6                  | 13                   | 124      | 25                 |                      | 2        | 4                  | 94                   | 19       |                    | 0                    | 4        | 54                 | 11                   |          | 3                  | 14                   | 25       | 5                  |                      | 0 | 1  | 26 | 5  |   |  |   |   |   |   |
| New Islington     | 10                   | 25       | 243                | 49                   |          | 10                 | 51                   | 227      | 45                 |                      | 8        | 24                 | 149                  | 30       |                    | 4                    | 10       | 117                | 23                   |          | 6                  | 13                   | 124      | 25                 |                      | 2        | 4                  | 96                   | 19       |                    | 0                    | 4        | 58                 | 12                   |          | 3                  | 14                   | 36       | 7                  |                      | 0 | 1  | 27 | 5  |   |  |   |   |   |   |

## Saturday Non-matchday Metrolink Boarders and Alighters

| Time Period   | 10:00:00 to 10:30:00 |          |                    | 10:30:00 to 11:00:00 |          |                    | 11:00:00 to 11:30:00 |          |                    | 11:30:00 to 12:00:00 |          |                    | 12:00:00 to 12:30:00 |          |                    | 12:30:00 to 13:00:00 |          |                    | 13:00:00 to 13:30:00 |          |                    | 13:30:00 to 14:00:00 |          |                    | 14:00:00 to 14:30:00 |          |                    | 14:30:00 to 15:00:00 |          |                    | 15:00:00 to 15:30:00 |          |                    | 15:30:00 to 16:00:00 |          |                    | 16:00:00 to 16:30:00 |          |                    | 16:30:00 to 17:00:00 |    |     |     |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     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|---------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----------|--------------------|----------------------|----|-----|-----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-----|----|-----|----|---|-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| Eastbound     | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram | Alighters            | Boarders | Occupancy Per Tram |                      |    |     |     |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     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   |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |
| Piccadilly    |                      | 261      | 261                | 52                   |          | 146                | 146                  | 146      | 29                 |                      | 214      | 214                | 43                   |          | 212                | 212                  | 42       |                    | 187                  | 187      | 37                 |                      | 296      | 296                | 59                   |          | 236                | 236                  | 47       |                    | 128                  | 128      | 41                 |                      | 342      | 342                | 68                   |          | 86                 | 226                  | 45 |     | 189 | 235 | 47 |   | 50  | 62 | 25  | 51 |   | 62  | 63 | 199 | 40 |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |     |    |   |     |    |
| New Islington | 8                    | 3        | 256                | 51                   | 16       | 9                  | 139                  | 28       | 24                 | 4                    | 194      | 39                 | 19                   | 6        | 199                | 23                   | 15       | 156                | 30                   | 54       | 7                  | 209                  | 42       | 130                | 26                   | 4        | 209                | 42                   | 130      | 26                 | 4                    | 209      | 42                 | 130                  | 26       | 4                  | 209                  | 42       | 130                | 26                   | 4  | 209 | 42  | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 | 130 | 26 | 4 | 209 | 42 |

## Appendix D

### Forecast Trip Generation

## Institute of Sport Trip Rates

TRICS 7.6.1

Trip Rate Para Number of students

TRIP RATE for Land Use 04 - EDUCATION/C - COLLEGE/UNIVERSITY

Calculation Factor: 1 STUDENT

Count Type: TOTAL PEOPLE

| Time Range        | ARRIVALS    |                |              | DEPARTURES  |                |              | TOTALS      |                |              |
|-------------------|-------------|----------------|--------------|-------------|----------------|--------------|-------------|----------------|--------------|
|                   | No.<br>Days | Ave.<br>STUDEN | Trip<br>Rate | No.<br>Days | Ave.<br>STUDEN | Trip<br>Rate | No.<br>Days | Ave.<br>STUDEN | Trip<br>Rate |
| 00:00-01:00       |             |                |              |             |                |              |             |                |              |
| 01:00-02:00       |             |                |              |             |                |              |             |                |              |
| 02:00-03:00       |             |                |              |             |                |              |             |                |              |
| 03:00-04:00       |             |                |              |             |                |              |             |                |              |
| 04:00-05:00       |             |                |              |             |                |              |             |                |              |
| 05:00-06:00       |             |                |              |             |                |              |             |                |              |
| 06:00-07:00       |             |                |              |             |                |              |             |                |              |
| 07:00-08:00       | 8           | 2502           | 0.026        | 8           | 2502           | 0.008        | 8           | 2502           | 0.034        |
| 08:00-09:00       | 8           | 2502           | 0.143        | 8           | 2502           | 0.028        | 8           | 2502           | 0.171        |
| 09:00-10:00       | 8           | 2502           | 0.126        | 8           | 2502           | 0.037        | 8           | 2502           | 0.163        |
| 10:00-11:00       | 8           | 2502           | 0.083        | 8           | 2502           | 0.043        | 8           | 2502           | 0.126        |
| 11:00-12:00       | 8           | 2502           | 0.076        | 8           | 2502           | 0.059        | 8           | 2502           | 0.135        |
| 12:00-13:00       | 8           | 2502           | 0.077        | 8           | 2502           | 0.087        | 8           | 2502           | 0.164        |
| 13:00-14:00       | 8           | 2502           | 0.078        | 8           | 2502           | 0.074        | 8           | 2502           | 0.152        |
| 14:00-15:00       | 8           | 2502           | 0.059        | 8           | 2502           | 0.09         | 8           | 2502           | 0.149        |
| 15:00-16:00       | 8           | 2502           | 0.053        | 8           | 2502           | 0.089        | 8           | 2502           | 0.142        |
| 16:00-17:00       | 8           | 2502           | 0.043        | 8           | 2502           | 0.123        | 8           | 2502           | 0.166        |
| 17:00-18:00       | 8           | 2502           | 0.044        | 8           | 2502           | 0.091        | 8           | 2502           | 0.135        |
| 18:00-19:00       | 7           | 2756           | 0.042        | 7           | 2756           | 0.053        | 7           | 2756           | 0.095        |
| 19:00-20:00       | 6           | 2966           | 0.031        | 6           | 2966           | 0.059        | 6           | 2966           | 0.09         |
| 20:00-21:00       | 6           | 2966           | 0.018        | 6           | 2966           | 0.045        | 6           | 2966           | 0.063        |
| 21:00-22:00       | 6           | 2966           | 0.012        | 6           | 2966           | 0.028        | 6           | 2966           | 0.04         |
| 22:00-23:00       |             |                |              |             |                |              |             |                |              |
| 23:00-24:00       |             |                |              |             |                |              |             |                |              |
| Daily Trip Rates: |             |                | 0.911        |             |                | 0.914        |             |                | 1.825        |

## House of Sport Trip Rates

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

Calculation Factor: 100 sqm

Count Type: TOTAL PEOPLE

| Time Range        | ARRIVALS |          |           | DEPARTURES |          |           | TOTALS   |          |           |
|-------------------|----------|----------|-----------|------------|----------|-----------|----------|----------|-----------|
|                   | No. Days | Ave. GFA | Trip Rate | No. Days   | Ave. GFA | Trip Rate | No. Days | Ave. GFA | Trip Rate |
| 00:00-00:30       |          |          |           |            |          |           |          |          |           |
| 00:30-01:00       |          |          |           |            |          |           |          |          |           |
| 01:00-01:30       |          |          |           |            |          |           |          |          |           |
| 01:30-02:00       |          |          |           |            |          |           |          |          |           |
| 02:00-02:30       |          |          |           |            |          |           |          |          |           |
| 02:30-03:00       |          |          |           |            |          |           |          |          |           |
| 03:00-03:30       |          |          |           |            |          |           |          |          |           |
| 03:30-04:00       |          |          |           |            |          |           |          |          |           |
| 04:00-04:30       |          |          |           |            |          |           |          |          |           |
| 04:30-05:00       |          |          |           |            |          |           |          |          |           |
| 05:00-05:30       |          |          |           |            |          |           |          |          |           |
| 05:30-06:00       |          |          |           |            |          |           |          |          |           |
| 06:00-06:30       |          |          |           |            |          |           |          |          |           |
| 06:30-07:00       |          |          |           |            |          |           |          |          |           |
| 07:00-07:30       | 17       | 4255     | 0.209     | 17         | 4255     | 0.021     | 17       | 4255     | 0.23      |
| 07:30-08:00       | 17       | 4255     | 0.929     | 17         | 4255     | 0.055     | 17       | 4255     | 0.984     |
| 08:00-08:30       | 17       | 4255     | 1.295     | 17         | 4255     | 0.086     | 17       | 4255     | 1.381     |
| 08:30-09:00       | 17       | 4255     | 1.728     | 17         | 4255     | 0.104     | 17       | 4255     | 1.832     |
| 09:00-09:30       | 17       | 4255     | 1.168     | 17         | 4255     | 0.159     | 17       | 4255     | 1.327     |
| 09:30-10:00       | 17       | 4255     | 0.646     | 17         | 4255     | 0.232     | 17       | 4255     | 0.878     |
| 10:00-10:30       | 17       | 4255     | 0.366     | 17         | 4255     | 0.242     | 17       | 4255     | 0.608     |
| 10:30-11:00       | 17       | 4255     | 0.33      | 17         | 4255     | 0.232     | 17       | 4255     | 0.562     |
| 11:00-11:30       | 17       | 4255     | 0.271     | 17         | 4255     | 0.213     | 17       | 4255     | 0.484     |
| 11:30-12:00       | 17       | 4255     | 0.297     | 17         | 4255     | 0.256     | 17       | 4255     | 0.553     |
| 12:00-12:30       | 17       | 4255     | 0.397     | 17         | 4255     | 0.788     | 17       | 4255     | 1.185     |
| 12:30-13:00       | 17       | 4255     | 0.607     | 17         | 4255     | 0.806     | 17       | 4255     | 1.413     |
| 13:00-13:30       | 17       | 4255     | 0.675     | 17         | 4255     | 0.727     | 17       | 4255     | 1.402     |
| 13:30-14:00       | 17       | 4255     | 0.691     | 17         | 4255     | 0.459     | 17       | 4255     | 1.15      |
| 14:00-14:30       | 17       | 4255     | 0.517     | 17         | 4255     | 0.366     | 17       | 4255     | 0.883     |
| 14:30-15:00       | 17       | 4255     | 0.289     | 17         | 4255     | 0.371     | 17       | 4255     | 0.66      |
| 15:00-15:30       | 17       | 4255     | 0.229     | 17         | 4255     | 0.315     | 17       | 4255     | 0.544     |
| 15:30-16:00       | 17       | 4255     | 0.199     | 17         | 4255     | 0.386     | 17       | 4255     | 0.585     |
| 16:00-16:30       | 17       | 4255     | 0.18      | 17         | 4255     | 0.679     | 17       | 4255     | 0.859     |
| 16:30-17:00       | 17       | 4255     | 0.184     | 17         | 4255     | 0.838     | 17       | 4255     | 1.022     |
| 17:00-17:30       | 17       | 4255     | 0.14      | 17         | 4255     | 1.682     | 17       | 4255     | 1.822     |
| 17:30-18:00       | 17       | 4255     | 0.05      | 17         | 4255     | 1.024     | 17       | 4255     | 1.074     |
| 18:00-18:30       | 17       | 4255     | 0.041     | 17         | 4255     | 0.788     | 17       | 4255     | 0.829     |
| 18:30-19:00       | 17       | 4255     | 0.011     | 17         | 4255     | 0.246     | 17       | 4255     | 0.257     |
| 19:00-19:30       |          |          |           |            |          |           |          |          |           |
| 19:30-20:00       |          |          |           |            |          |           |          |          |           |
| 20:00-20:30       |          |          |           |            |          |           |          |          |           |
| 20:30-21:00       |          |          |           |            |          |           |          |          |           |
| 21:00-21:30       |          |          |           |            |          |           |          |          |           |
| 21:30-22:00       |          |          |           |            |          |           |          |          |           |
| 22:00-22:30       |          |          |           |            |          |           |          |          |           |
| 22:30-23:00       |          |          |           |            |          |           |          |          |           |
| 23:00-23:30       |          |          |           |            |          |           |          |          |           |
| 23:30-24:00       |          |          |           |            |          |           |          |          |           |
| Daily Trip Rates: |          |          | 11.449    |            |          | 11.075    |          |          | 22.524    |

## Student Accomodation Trip Rates

TRICS 7.6.1

Trip Rate Paramete Number of residents

TRIP RATE for Land Use 03 - RESIDENTIAL/G - STUDENT ACCOMMODATION

Calculation Factor: 1 RESIDE

Count Type: TOTAL PEOPLE

| Time Range        | ARRIVALS    |                |              | DEPARTURES  |                |              | TOTALS      |                |              |
|-------------------|-------------|----------------|--------------|-------------|----------------|--------------|-------------|----------------|--------------|
|                   | No.<br>Days | Ave.<br>RESIDE | Trip<br>Rate | No.<br>Days | Ave.<br>RESIDE | Trip<br>Rate | No.<br>Days | Ave.<br>RESIDE | Trip<br>Rate |
| 00:00-01:00       |             |                |              |             |                |              |             |                |              |
| 01:00-02:00       |             |                |              |             |                |              |             |                |              |
| 02:00-03:00       |             |                |              |             |                |              |             |                |              |
| 03:00-04:00       |             |                |              |             |                |              |             |                |              |
| 04:00-05:00       |             |                |              |             |                |              |             |                |              |
| 05:00-06:00       |             |                |              |             |                |              |             |                |              |
| 06:00-07:00       | 1           | 241            | 0            | 1           | 241            | 0            | 1           | 241            | 0            |
| 07:00-08:00       | 5           | 201            | 0.005        | 5           | 201            | 0.011        | 5           | 201            | 0.016        |
| 08:00-09:00       | 5           | 201            | 0.012        | 5           | 201            | 0.155        | 5           | 201            | 0.167        |
| 09:00-10:00       | 5           | 201            | 0.023        | 5           | 201            | 0.096        | 5           | 201            | 0.119        |
| 10:00-11:00       | 5           | 201            | 0.055        | 5           | 201            | 0.116        | 5           | 201            | 0.171        |
| 11:00-12:00       | 5           | 201            | 0.08         | 5           | 201            | 0.119        | 5           | 201            | 0.199        |
| 12:00-13:00       | 5           | 201            | 0.086        | 5           | 201            | 0.09         | 5           | 201            | 0.176        |
| 13:00-14:00       | 5           | 201            | 0.118        | 5           | 201            | 0.117        | 5           | 201            | 0.235        |
| 14:00-15:00       | 5           | 201            | 0.111        | 5           | 201            | 0.126        | 5           | 201            | 0.237        |
| 15:00-16:00       | 5           | 201            | 0.136        | 5           | 201            | 0.128        | 5           | 201            | 0.264        |
| 16:00-17:00       | 5           | 201            | 0.203        | 5           | 201            | 0.07         | 5           | 201            | 0.273        |
| 17:00-18:00       | 5           | 201            | 0.167        | 5           | 201            | 0.117        | 5           | 201            | 0.284        |
| 18:00-19:00       | 5           | 201            | 0.195        | 5           | 201            | 0.121        | 5           | 201            | 0.316        |
| 19:00-20:00       | 4           | 224            | 0.074        | 4           | 224            | 0.069        | 4           | 224            | 0.143        |
| 20:00-21:00       | 4           | 224            | 0.098        | 4           | 224            | 0.078        | 4           | 224            | 0.176        |
| 21:00-22:00       | 3           | 202            | 0.059        | 3           | 202            | 0.033        | 3           | 202            | 0.092        |
| 22:00-23:00       |             |                |              |             |                |              |             |                |              |
| 23:00-24:00       |             |                |              |             |                |              |             |                |              |
| Daily Trip Rates: |             |                | 1.422        |             |                | 1.446        |             |                | 2.868        |

## Office Trip Rates

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

Calculation Factor: 100 sqm

Count Type: TOTAL PEOPLE

| Time Range        | ARRIVALS |          |           | DEPARTURES |          |           | TOTALS   |          |           |
|-------------------|----------|----------|-----------|------------|----------|-----------|----------|----------|-----------|
|                   | No. Days | Ave. GFA | Trip Rate | No. Days   | Ave. GFA | Trip Rate | No. Days | Ave. GFA | Trip Rate |
| 00:00-00:30       |          |          |           |            |          |           |          |          |           |
| 00:30-01:00       |          |          |           |            |          |           |          |          |           |
| 01:00-01:30       |          |          |           |            |          |           |          |          |           |
| 01:30-02:00       |          |          |           |            |          |           |          |          |           |
| 02:00-02:30       |          |          |           |            |          |           |          |          |           |
| 02:30-03:00       |          |          |           |            |          |           |          |          |           |
| 03:00-03:30       |          |          |           |            |          |           |          |          |           |
| 03:30-04:00       |          |          |           |            |          |           |          |          |           |
| 04:00-04:30       |          |          |           |            |          |           |          |          |           |
| 04:30-05:00       |          |          |           |            |          |           |          |          |           |
| 05:00-05:30       |          |          |           |            |          |           |          |          |           |
| 05:30-06:00       |          |          |           |            |          |           |          |          |           |
| 06:00-06:30       |          |          |           |            |          |           |          |          |           |
| 06:30-07:00       |          |          |           |            |          |           |          |          |           |
| 07:00-07:30       | 17       | 4255     | 0.209     | 17         | 4255     | 0.021     | 17       | 4255     | 0.23      |
| 07:30-08:00       | 17       | 4255     | 0.929     | 17         | 4255     | 0.055     | 17       | 4255     | 0.984     |
| 08:00-08:30       | 17       | 4255     | 1.295     | 17         | 4255     | 0.086     | 17       | 4255     | 1.381     |
| 08:30-09:00       | 17       | 4255     | 1.728     | 17         | 4255     | 0.104     | 17       | 4255     | 1.832     |
| 09:00-09:30       | 17       | 4255     | 1.168     | 17         | 4255     | 0.159     | 17       | 4255     | 1.327     |
| 09:30-10:00       | 17       | 4255     | 0.646     | 17         | 4255     | 0.232     | 17       | 4255     | 0.878     |
| 10:00-10:30       | 17       | 4255     | 0.366     | 17         | 4255     | 0.242     | 17       | 4255     | 0.608     |
| 10:30-11:00       | 17       | 4255     | 0.33      | 17         | 4255     | 0.232     | 17       | 4255     | 0.562     |
| 11:00-11:30       | 17       | 4255     | 0.271     | 17         | 4255     | 0.213     | 17       | 4255     | 0.484     |
| 11:30-12:00       | 17       | 4255     | 0.297     | 17         | 4255     | 0.256     | 17       | 4255     | 0.553     |
| 12:00-12:30       | 17       | 4255     | 0.397     | 17         | 4255     | 0.788     | 17       | 4255     | 1.185     |
| 12:30-13:00       | 17       | 4255     | 0.607     | 17         | 4255     | 0.806     | 17       | 4255     | 1.413     |
| 13:00-13:30       | 17       | 4255     | 0.675     | 17         | 4255     | 0.727     | 17       | 4255     | 1.402     |
| 13:30-14:00       | 17       | 4255     | 0.691     | 17         | 4255     | 0.459     | 17       | 4255     | 1.15      |
| 14:00-14:30       | 17       | 4255     | 0.517     | 17         | 4255     | 0.366     | 17       | 4255     | 0.883     |
| 14:30-15:00       | 17       | 4255     | 0.289     | 17         | 4255     | 0.371     | 17       | 4255     | 0.66      |
| 15:00-15:30       | 17       | 4255     | 0.229     | 17         | 4255     | 0.315     | 17       | 4255     | 0.544     |
| 15:30-16:00       | 17       | 4255     | 0.199     | 17         | 4255     | 0.386     | 17       | 4255     | 0.585     |
| 16:00-16:30       | 17       | 4255     | 0.18      | 17         | 4255     | 0.679     | 17       | 4255     | 0.859     |
| 16:30-17:00       | 17       | 4255     | 0.184     | 17         | 4255     | 0.838     | 17       | 4255     | 1.022     |
| 17:00-17:30       | 17       | 4255     | 0.14      | 17         | 4255     | 1.682     | 17       | 4255     | 1.822     |
| 17:30-18:00       | 17       | 4255     | 0.05      | 17         | 4255     | 1.024     | 17       | 4255     | 1.074     |
| 18:00-18:30       | 17       | 4255     | 0.041     | 17         | 4255     | 0.788     | 17       | 4255     | 0.829     |
| 18:30-19:00       | 17       | 4255     | 0.011     | 17         | 4255     | 0.246     | 17       | 4255     | 0.257     |
| 19:00-19:30       |          |          |           |            |          |           |          |          |           |
| 19:30-20:00       |          |          |           |            |          |           |          |          |           |
| 20:00-20:30       |          |          |           |            |          |           |          |          |           |
| 20:30-21:00       |          |          |           |            |          |           |          |          |           |
| 21:00-21:30       |          |          |           |            |          |           |          |          |           |
| 21:30-22:00       |          |          |           |            |          |           |          |          |           |
| 22:00-22:30       |          |          |           |            |          |           |          |          |           |
| 22:30-23:00       |          |          |           |            |          |           |          |          |           |
| 23:00-23:30       |          |          |           |            |          |           |          |          |           |
| 23:30-24:00       |          |          |           |            |          |           |          |          |           |
| Daily Trip Rates: |          |          | 11.449    |            |          | 11.075    |          |          | 22.524    |

## Cinema Trip Rates

TRICS 7.6.1

Trip Rate Para Number of seats

TRIP RATE for Land Use 07 - LEISURE/A - MULTIPLEX CINEMAS

Calculation Factor: 1 SEATS

Count Type: TOTAL PEOPLE

| Time Range        | ARRIVALS    |               |              |             | DEPARTURES    |              |             |               | TOTALS       |       |
|-------------------|-------------|---------------|--------------|-------------|---------------|--------------|-------------|---------------|--------------|-------|
|                   | No.<br>Days | Ave.<br>SEATS | Trip<br>Rate | No.<br>Days | Ave.<br>SEATS | Trip<br>Rate | No.<br>Days | Ave.<br>SEATS | Trip<br>Rate |       |
| 00:00-01:00       | 1           | 2125          |              | 0           | 1             | 2125         | 0.002       | 1             | 2125         | 0.002 |
| 01:00-02:00       |             |               |              |             |               |              |             |               |              |       |
| 02:00-03:00       |             |               |              |             |               |              |             |               |              |       |
| 03:00-04:00       |             |               |              |             |               |              |             |               |              |       |
| 04:00-05:00       |             |               |              |             |               |              |             |               |              |       |
| 05:00-06:00       |             |               |              |             |               |              |             |               |              |       |
| 06:00-07:00       |             |               |              |             |               |              |             |               |              |       |
| 07:00-08:00       |             |               |              |             |               |              |             |               |              |       |
| 08:00-09:00       |             |               |              |             |               |              |             |               |              |       |
| 09:00-10:00       | 1           | 2125          | 0.035        |             | 1             | 2125         | 0.001       | 1             | 2125         | 0.036 |
| 10:00-11:00       | 1           | 2125          | 0.01         |             | 1             | 2125         | 0.002       | 1             | 2125         | 0.012 |
| 11:00-12:00       | 1           | 2125          | 0.016        |             | 1             | 2125         | 0.037       | 1             | 2125         | 0.053 |
| 12:00-13:00       | 1           | 2125          | 0.037        |             | 1             | 2125         | 0.019       | 1             | 2125         | 0.056 |
| 13:00-14:00       | 1           | 2125          | 0.019        |             | 1             | 2125         | 0.009       | 1             | 2125         | 0.028 |
| 14:00-15:00       | 1           | 2125          | 0.029        |             | 1             | 2125         | 0.018       | 1             | 2125         | 0.047 |
| 15:00-16:00       | 1           | 2125          | 0.029        |             | 1             | 2125         | 0.041       | 1             | 2125         | 0.07  |
| 16:00-17:00       | 1           | 2125          | 0.008        |             | 1             | 2125         | 0.008       | 1             | 2125         | 0.016 |
| 17:00-18:00       | 1           | 2125          | 0.042        |             | 1             | 2125         | 0.033       | 1             | 2125         | 0.075 |
| 18:00-19:00       | 1           | 2125          | 0.066        |             | 1             | 2125         | 0.025       | 1             | 2125         | 0.091 |
| 19:00-20:00       | 1           | 2125          | 0.019        |             | 1             | 2125         | 0.012       | 1             | 2125         | 0.031 |
| 20:00-21:00       | 1           | 2125          | 0.083        |             | 1             | 2125         | 0.043       | 1             | 2125         | 0.126 |
| 21:00-22:00       | 1           | 2125          | 0.021        |             | 1             | 2125         | 0.057       | 1             | 2125         | 0.078 |
| 22:00-23:00       | 1           | 2125          | 0            |             | 1             | 2125         | 0.088       | 1             | 2125         | 0.088 |
| 23:00-24:00       | 1           | 2125          | 0            |             | 1             | 2125         | 0.017       | 1             | 2125         | 0.017 |
| Daily Trip Rates: |             |               | 0.414        |             |               |              | 0.412       |               |              | 0.826 |

## Hotel Trip Rates

TRICS 7.6.1

Trip Rate Par: Number of bedrooms

TRIP RATE for FOOD & DRINK/A - HOTELS

Calculation Factor: 1 BEDRMS

Count Type: TOTAL PEOPLE

| Time Range        | ARRIVALS    |                |              | DEPARTURES  |                |              | TOTALS      |                |              |
|-------------------|-------------|----------------|--------------|-------------|----------------|--------------|-------------|----------------|--------------|
|                   | No.<br>Days | Ave.<br>BEDRMS | Trip<br>Rate | No.<br>Days | Ave.<br>BEDRMS | Trip<br>Rate | No.<br>Days | Ave.<br>BEDRMS | Trip<br>Rate |
| 00:00-01:00       |             |                |              |             |                |              |             |                |              |
| 01:00-02:00       |             |                |              |             |                |              |             |                |              |
| 02:00-03:00       |             |                |              |             |                |              |             |                |              |
| 03:00-04:00       |             |                |              |             |                |              |             |                |              |
| 04:00-05:00       |             |                |              |             |                |              |             |                |              |
| 05:00-06:00       |             |                |              |             |                |              |             |                |              |
| 06:00-07:00       |             |                |              |             |                |              |             |                |              |
| 07:00-08:00       | 14          | 119            | 0.098        | 14          | 119            | 0.197        | 14          | 119            | 0.295        |
| 08:00-09:00       | 14          | 119            | 0.184        | 14          | 119            | 0.362        | 14          | 119            | 0.546        |
| 09:00-10:00       | 14          | 119            | 0.231        | 14          | 119            | 0.248        | 14          | 119            | 0.479        |
| 10:00-11:00       | 14          | 119            | 0.193        | 14          | 119            | 0.204        | 14          | 119            | 0.397        |
| 11:00-12:00       | 14          | 119            | 0.092        | 14          | 119            | 0.171        | 14          | 119            | 0.263        |
| 12:00-13:00       | 14          | 119            | 0.189        | 14          | 119            | 0.137        | 14          | 119            | 0.326        |
| 13:00-14:00       | 14          | 119            | 0.198        | 14          | 119            | 0.184        | 14          | 119            | 0.382        |
| 14:00-15:00       | 14          | 119            | 0.172        | 14          | 119            | 0.163        | 14          | 119            | 0.335        |
| 15:00-16:00       | 14          | 119            | 0.195        | 14          | 119            | 0.195        | 14          | 119            | 0.39         |
| 16:00-17:00       | 14          | 119            | 0.242        | 14          | 119            | 0.209        | 14          | 119            | 0.451        |
| 17:00-18:00       | 14          | 119            | 0.278        | 14          | 119            | 0.196        | 14          | 119            | 0.474        |
| 18:00-19:00       | 14          | 119            | 0.312        | 14          | 119            | 0.23         | 14          | 119            | 0.542        |
| 19:00-20:00       | 14          | 119            | 0.223        | 14          | 119            | 0.195        | 14          | 119            | 0.418        |
| 20:00-21:00       | 14          | 119            | 0.175        | 14          | 119            | 0.119        | 14          | 119            | 0.294        |
| 21:00-22:00       | 14          | 119            | 0.145        | 14          | 119            | 0.069        | 14          | 119            | 0.214        |
| 22:00-23:00       |             |                |              |             |                |              |             |                |              |
| 23:00-24:00       |             |                |              |             |                |              |             |                |              |
| Daily Trip Rates: |             |                | 2.927        |             |                | 2.879        |             |                | 5.806        |

# Institute of Sport Person Trips

Students

2104

| Time Range  | Person trips |             |
|-------------|--------------|-------------|
|             | Arr          | Dep         |
| 00:00-00:30 | 0            | 0           |
| 00:30-01:00 | 0            | 0           |
| 01:00-01:30 | 0            | 0           |
| 01:30-02:00 | 0            | 0           |
| 02:00-02:30 | 0            | 0           |
| 02:30-03:00 | 0            | 0           |
| 03:00-03:30 | 0            | 0           |
| 03:30-04:00 | 0            | 0           |
| 04:00-04:30 | 0            | 0           |
| 04:30-05:00 | 0            | 0           |
| 05:00-05:30 | 0            | 0           |
| 05:30-06:00 | 0            | 0           |
| 06:00-06:30 | 0            | 0           |
| 06:30-07:00 | 0            | 0           |
| 07:00-07:30 | 27           | 8           |
| 07:30-08:00 | 27           | 8           |
| 08:00-08:30 | 150          | 29          |
| 08:30-09:00 | 150          | 29          |
| 09:00-09:30 | 133          | 39          |
| 09:30-10:00 | 133          | 39          |
| 10:00-10:30 | 87           | 45          |
| 10:30-11:00 | 87           | 45          |
| 11:00-11:30 | 80           | 62          |
| 11:30-12:00 | 80           | 62          |
| 12:00-12:30 | 81           | 92          |
| 12:30-13:00 | 81           | 92          |
| 13:00-13:30 | 82           | 78          |
| 13:30-14:00 | 82           | 78          |
| 14:00-14:30 | 62           | 95          |
| 14:30-15:00 | 62           | 95          |
| 15:00-15:30 | 56           | 94          |
| 15:30-16:00 | 56           | 94          |
| 16:00-16:30 | 45           | 129         |
| 16:30-17:00 | 45           | 129         |
| 17:00-17:30 | 46           | 96          |
| 17:30-18:00 | 46           | 96          |
| 18:00-18:30 | 44           | 56          |
| 18:30-19:00 | 44           | 56          |
| 19:00-19:30 | 33           | 62          |
| 19:30-20:00 | 33           | 62          |
| 20:00-20:30 | 19           | 47          |
| 20:30-21:00 | 19           | 47          |
| 21:00-21:30 | 13           | 29          |
| 21:30-22:00 | 13           | 29          |
| 22:00-22:30 | 0            | 0           |
| 22:30-23:00 | 0            | 0           |
| 23:00-23:30 | 0            | 0           |
| 23:30-24:00 | 0            | 0           |
|             | <b>1917</b>  | <b>1923</b> |

## House of Sport Person Trips

6,000 sq.m

Multiplier 60

| Time Range  | Person trips |            |
|-------------|--------------|------------|
|             | Arr          | Dep        |
| 00:00-00:30 | 0            | 0          |
| 00:30-01:00 | 0            | 0          |
| 01:00-01:30 | 0            | 0          |
| 01:30-02:00 | 0            | 0          |
| 02:00-02:30 | 0            | 0          |
| 02:30-03:00 | 0            | 0          |
| 03:00-03:30 | 0            | 0          |
| 03:30-04:00 | 0            | 0          |
| 04:00-04:30 | 0            | 0          |
| 04:30-05:00 | 0            | 0          |
| 05:00-05:30 | 0            | 0          |
| 05:30-06:00 | 0            | 0          |
| 06:00-06:30 | 0            | 0          |
| 06:30-07:00 | 0            | 0          |
| 07:00-07:30 | 13           | 1          |
| 07:30-08:00 | 56           | 3          |
| 08:00-08:30 | 78           | 5          |
| 08:30-09:00 | 104          | 6          |
| 09:00-09:30 | 70           | 10         |
| 09:30-10:00 | 39           | 14         |
| 10:00-10:30 | 22           | 15         |
| 10:30-11:00 | 20           | 14         |
| 11:00-11:30 | 16           | 13         |
| 11:30-12:00 | 18           | 15         |
| 12:00-12:30 | 24           | 47         |
| 12:30-13:00 | 36           | 48         |
| 13:00-13:30 | 41           | 44         |
| 13:30-14:00 | 41           | 28         |
| 14:00-14:30 | 31           | 22         |
| 14:30-15:00 | 17           | 22         |
| 15:00-15:30 | 14           | 19         |
| 15:30-16:00 | 12           | 23         |
| 16:00-16:30 | 11           | 41         |
| 16:30-17:00 | 11           | 50         |
| 17:00-17:30 | 8            | 101        |
| 17:30-18:00 | 3            | 61         |
| 18:00-18:30 | 2            | 47         |
| 18:30-19:00 | 1            | 15         |
| 19:00-19:30 | 0            | 0          |
| 19:30-20:00 | 0            | 0          |
| 20:00-20:30 | 0            | 0          |
| 20:30-21:00 | 0            | 0          |
| 21:00-21:30 | 0            | 0          |
| 21:30-22:00 | 0            | 0          |
| 22:00-22:30 | 0            | 0          |
| 22:30-23:00 | 0            | 0          |
| 23:00-23:30 | 0            | 0          |
| 23:30-24:00 | 0            | 0          |
|             | <b>687</b>   | <b>665</b> |

## Student Accomodation Person Trips

Beds

1000

|             | Person trips |             |
|-------------|--------------|-------------|
| Time Range  | Arr          | Dep         |
| 00:00-00:30 | 0            | 0           |
| 00:30-01:00 | 0            | 0           |
| 01:00-01:30 | 0            | 0           |
| 01:30-02:00 | 0            | 0           |
| 02:00-02:30 | 0            | 0           |
| 02:30-03:00 | 0            | 0           |
| 03:00-03:30 | 0            | 0           |
| 03:30-04:00 | 0            | 0           |
| 04:00-04:30 | 0            | 0           |
| 04:30-05:00 | 0            | 0           |
| 05:00-05:30 | 0            | 0           |
| 05:30-06:00 | 0            | 0           |
| 06:00-06:30 | 0            | 0           |
| 06:30-07:00 | 0            | 0           |
| 07:00-07:30 | 3            | 6           |
| 07:30-08:00 | 3            | 6           |
| 08:00-08:30 | 6            | 78          |
| 08:30-09:00 | 6            | 78          |
| 09:00-09:30 | 12           | 48          |
| 09:30-10:00 | 12           | 48          |
| 10:00-10:30 | 28           | 58          |
| 10:30-11:00 | 28           | 58          |
| 11:00-11:30 | 40           | 60          |
| 11:30-12:00 | 40           | 60          |
| 12:00-12:30 | 43           | 45          |
| 12:30-13:00 | 43           | 45          |
| 13:00-13:30 | 59           | 59          |
| 13:30-14:00 | 59           | 59          |
| 14:00-14:30 | 56           | 63          |
| 14:30-15:00 | 56           | 63          |
| 15:00-15:30 | 68           | 64          |
| 15:30-16:00 | 68           | 64          |
| 16:00-16:30 | 102          | 35          |
| 16:30-17:00 | 102          | 35          |
| 17:00-17:30 | 84           | 59          |
| 17:30-18:00 | 84           | 59          |
| 18:00-18:30 | 98           | 61          |
| 18:30-19:00 | 98           | 61          |
| 19:00-19:30 | 37           | 35          |
| 19:30-20:00 | 37           | 35          |
| 20:00-20:30 | 49           | 39          |
| 20:30-21:00 | 49           | 39          |
| 21:00-21:30 | 30           | 17          |
| 21:30-22:00 | 30           | 17          |
| 22:00-22:30 | 0            | 0           |
| 22:30-23:00 | 0            | 0           |
| 23:00-23:30 | 0            | 0           |
| 23:30-24:00 | 0            | 0           |
|             | <b>1422</b>  | <b>1446</b> |

## Office Person Trips

46,450 sq.m

Multiplier 465

| Time Range  | Person trips |             |
|-------------|--------------|-------------|
|             | Arr          | Dep         |
| 00:00-00:30 | 0            | 0           |
| 00:30-01:00 | 0            | 0           |
| 01:00-01:30 | 0            | 0           |
| 01:30-02:00 | 0            | 0           |
| 02:00-02:30 | 0            | 0           |
| 02:30-03:00 | 0            | 0           |
| 03:00-03:30 | 0            | 0           |
| 03:30-04:00 | 0            | 0           |
| 04:00-04:30 | 0            | 0           |
| 04:30-05:00 | 0            | 0           |
| 05:00-05:30 | 0            | 0           |
| 05:30-06:00 | 0            | 0           |
| 06:00-06:30 | 0            | 0           |
| 06:30-07:00 | 0            | 0           |
| 07:00-07:30 | 97           | 10          |
| 07:30-08:00 | 432          | 26          |
| 08:00-08:30 | 602          | 40          |
| 08:30-09:00 | 803          | 48          |
| 09:00-09:30 | 543          | 74          |
| 09:30-10:00 | 300          | 108         |
| 10:00-10:30 | 170          | 112         |
| 10:30-11:00 | 153          | 108         |
| 11:00-11:30 | 126          | 99          |
| 11:30-12:00 | 138          | 119         |
| 12:00-12:30 | 184          | 366         |
| 12:30-13:00 | 282          | 374         |
| 13:00-13:30 | 314          | 338         |
| 13:30-14:00 | 321          | 213         |
| 14:00-14:30 | 240          | 170         |
| 14:30-15:00 | 134          | 172         |
| 15:00-15:30 | 106          | 146         |
| 15:30-16:00 | 92           | 179         |
| 16:00-16:30 | 84           | 315         |
| 16:30-17:00 | 85           | 389         |
| 17:00-17:30 | 65           | 781         |
| 17:30-18:00 | 23           | 476         |
| 18:00-18:30 | 19           | 366         |
| 18:30-19:00 | 5            | 114         |
| 19:00-19:30 | 0            | 0           |
| 19:30-20:00 | 0            | 0           |
| 20:00-20:30 | 0            | 0           |
| 20:30-21:00 | 0            | 0           |
| 21:00-21:30 | 0            | 0           |
| 21:30-22:00 | 0            | 0           |
| 22:00-22:30 | 0            | 0           |
| 22:30-23:00 | 0            | 0           |
| 23:00-23:30 | 0            | 0           |
| 23:30-24:00 | 0            | 0           |
|             | <b>5318</b>  | <b>5144</b> |

## Cinema Person Trips

10 screens

150 seats/screen

Multiplier

1500

|             | Person trips |            |
|-------------|--------------|------------|
| Time Range  | Arr          | Dep        |
| 00:00-00:30 | 0            | 2          |
| 00:30-01:00 | 0            | 2          |
| 01:00-01:30 | 0            | 0          |
| 01:30-02:00 | 0            | 0          |
| 02:00-02:30 | 0            | 0          |
| 02:30-03:00 | 0            | 0          |
| 03:00-03:30 | 0            | 0          |
| 03:30-04:00 | 0            | 0          |
| 04:00-04:30 | 0            | 0          |
| 04:30-05:00 | 0            | 0          |
| 05:00-05:30 | 0            | 0          |
| 05:30-06:00 | 0            | 0          |
| 06:00-06:30 | 0            | 0          |
| 06:30-07:00 | 0            | 0          |
| 07:00-07:30 | 0            | 0          |
| 07:30-08:00 | 0            | 0          |
| 08:00-08:30 | 0            | 0          |
| 08:30-09:00 | 0            | 0          |
| 09:00-09:30 | 26           | 1          |
| 09:30-10:00 | 26           | 1          |
| 10:00-10:30 | 8            | 2          |
| 10:30-11:00 | 8            | 2          |
| 11:00-11:30 | 12           | 28         |
| 11:30-12:00 | 12           | 28         |
| 12:00-12:30 | 28           | 14         |
| 12:30-13:00 | 28           | 14         |
| 13:00-13:30 | 14           | 7          |
| 13:30-14:00 | 14           | 7          |
| 14:00-14:30 | 22           | 14         |
| 14:30-15:00 | 22           | 14         |
| 15:00-15:30 | 22           | 31         |
| 15:30-16:00 | 22           | 31         |
| 16:00-16:30 | 6            | 6          |
| 16:30-17:00 | 6            | 6          |
| 17:00-17:30 | 32           | 25         |
| 17:30-18:00 | 32           | 25         |
| 18:00-18:30 | 50           | 19         |
| 18:30-19:00 | 50           | 19         |
| 19:00-19:30 | 14           | 9          |
| 19:30-20:00 | 14           | 9          |
| 20:00-20:30 | 62           | 32         |
| 20:30-21:00 | 62           | 32         |
| 21:00-21:30 | 16           | 43         |
| 21:30-22:00 | 16           | 43         |
| 22:00-22:30 | 0            | 66         |
| 22:30-23:00 | 0            | 66         |
| 23:00-23:30 | 0            | 13         |
| 23:30-24:00 | 0            | 13         |
|             | <b>621</b>   | <b>618</b> |

## Hotel Person Trips

Rooms

300

|             | Person trips |            |
|-------------|--------------|------------|
| Time Range  | Arr          | Dep        |
| 00:00-00:30 | 0            | 0          |
| 00:30-01:00 | 0            | 0          |
| 01:00-01:30 | 0            | 0          |
| 01:30-02:00 | 0            | 0          |
| 02:00-02:30 | 0            | 0          |
| 02:30-03:00 | 0            | 0          |
| 03:00-03:30 | 0            | 0          |
| 03:30-04:00 | 0            | 0          |
| 04:00-04:30 | 0            | 0          |
| 04:30-05:00 | 0            | 0          |
| 05:00-05:30 | 0            | 0          |
| 05:30-06:00 | 0            | 0          |
| 06:00-06:30 | 0            | 0          |
| 06:30-07:00 | 0            | 0          |
| 07:00-07:30 | 15           | 30         |
| 07:30-08:00 | 15           | 30         |
| 08:00-08:30 | 28           | 54         |
| 08:30-09:00 | 28           | 54         |
| 09:00-09:30 | 35           | 37         |
| 09:30-10:00 | 35           | 37         |
| 10:00-10:30 | 29           | 31         |
| 10:30-11:00 | 29           | 31         |
| 11:00-11:30 | 14           | 26         |
| 11:30-12:00 | 14           | 26         |
| 12:00-12:30 | 28           | 21         |
| 12:30-13:00 | 28           | 21         |
| 13:00-13:30 | 30           | 28         |
| 13:30-14:00 | 30           | 28         |
| 14:00-14:30 | 26           | 24         |
| 14:30-15:00 | 26           | 24         |
| 15:00-15:30 | 29           | 29         |
| 15:30-16:00 | 29           | 29         |
| 16:00-16:30 | 36           | 31         |
| 16:30-17:00 | 36           | 31         |
| 17:00-17:30 | 42           | 29         |
| 17:30-18:00 | 42           | 29         |
| 18:00-18:30 | 47           | 35         |
| 18:30-19:00 | 47           | 35         |
| 19:00-19:30 | 33           | 29         |
| 19:30-20:00 | 33           | 29         |
| 20:00-20:30 | 26           | 18         |
| 20:30-21:00 | 26           | 18         |
| 21:00-21:30 | 22           | 10         |
| 21:30-22:00 | 22           | 10         |
| 22:00-22:30 | 0            | 0          |
| 22:30-23:00 | 0            | 0          |
| 23:00-23:30 | 0            | 0          |
| 23:30-24:00 | 0            | 0          |
|             | <b>878</b>   | <b>864</b> |

## Appendix E

### Trip Generation by Mode

**Person Trips - No Event at Arena**

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (non-event day) |            | Combined (non-event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-----------------------|------------|--------------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals              | Departures | Arrivals                 | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 2          | 0                     | 0          | 0                        | 2          |
| 00:30-01:00 | 0                        | 0          | 0               | 2          | 0                     | 0          | 0                        | 2          |
| 01:00-01:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 01:30-02:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 07:00-07:30 | 42                       | 15         | 112             | 39         | 3                     | 0          | 157                      | 54         |
| 07:30-08:00 | 86                       | 17         | 446             | 55         | 3                     | 0          | 535                      | 72         |
| 08:00-08:30 | 234                      | 112        | 629             | 94         | 17                    | 0          | 880                      | 206        |
| 08:30-09:00 | 260                      | 113        | 830             | 103        | 17                    | 0          | 1107                     | 216        |
| 09:00-09:30 | 214                      | 96         | 603             | 112        | 15                    | 0          | 833                      | 208        |
| 09:30-10:00 | 183                      | 101        | 361             | 146        | 15                    | 0          | 559                      | 247        |
| 10:00-10:30 | 137                      | 118        | 206             | 145        | 0                     | 0          | 343                      | 262        |
| 10:30-11:00 | 135                      | 117        | 190             | 140        | 0                     | 0          | 324                      | 257        |
| 11:00-11:30 | 136                      | 134        | 152             | 152        | 0                     | 0          | 288                      | 287        |
| 11:30-12:00 | 138                      | 137        | 164             | 172        | 0                     | 0          | 302                      | 309        |
| 12:00-12:30 | 148                      | 184        | 241             | 401        | 0                     | 0          | 388                      | 585        |
| 12:30-13:00 | 160                      | 185        | 338             | 409        | 0                     | 0          | 498                      | 594        |
| 13:00-13:30 | 182                      | 180        | 357             | 372        | 0                     | 0          | 539                      | 552        |
| 13:30-14:00 | 183                      | 164        | 365             | 248        | 0                     | 0          | 547                      | 411        |
| 14:00-14:30 | 149                      | 180        | 288             | 208        | 0                     | 0          | 436                      | 388        |
| 14:30-15:00 | 135                      | 180        | 182             | 210        | 0                     | 0          | 317                      | 390        |
| 15:00-15:30 | 137                      | 177        | 157             | 206        | 0                     | 0          | 295                      | 383        |
| 15:30-16:00 | 136                      | 181        | 143             | 239        | 0                     | 0          | 279                      | 420        |
| 16:00-16:30 | 158                      | 205        | 126             | 353        | 0                     | 8          | 283                      | 566        |
| 16:30-17:00 | 158                      | 215        | 128             | 427        | 0                     | 9          | 286                      | 650        |
| 17:00-17:30 | 138                      | 255        | 138             | 835        | 0                     | 16         | 276                      | 1107       |
| 17:30-18:00 | 133                      | 216        | 96              | 530        | 0                     | 16         | 229                      | 761        |
| 18:00-18:30 | 144                      | 164        | 115             | 419        | 0                     | 11         | 259                      | 594        |
| 18:30-19:00 | 142                      | 131        | 101             | 168        | 0                     | 10         | 244                      | 309        |
| 19:00-19:30 | 70                       | 97         | 48              | 38         | 0                     | 0          | 117                      | 135        |
| 19:30-20:00 | 70                       | 97         | 48              | 38         | 0                     | 0          | 117                      | 135        |
| 20:00-20:30 | 68                       | 86         | 89              | 50         | 0                     | 0          | 156                      | 136        |
| 20:30-21:00 | 68                       | 86         | 89              | 50         | 0                     | 0          | 156                      | 136        |
| 21:00-21:30 | 42                       | 46         | 38              | 53         | 0                     | 0          | 80                       | 99         |
| 21:30-22:00 | 42                       | 46         | 38              | 53         | 0                     | 0          | 80                       | 99         |
| 22:00-22:30 | 0                        | 0          | 0               | 66         | 0                     | 0          | 0                        | 66         |
| 22:30-23:00 | 0                        | 0          | 0               | 66         | 0                     | 0          | 0                        | 66         |
| 23:00-23:30 | 0                        | 0          | 0               | 13         | 0                     | 0          | 0                        | 13         |
| 23:30-24:00 | 0                        | 0          | 0               | 13         | 0                     | 0          | 0                        | 13         |

**Person Trips - Event at Arena**

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (event weekday) |            | Combined (event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-----------------------|------------|----------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals              | Departures | Arrivals             | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 2          | 0                     | 43         | 0                    | 44         |
| 00:30-01:00 | 0                        | 0          | 0               | 2          | 0                     | 43         | 0                    | 44         |
| 01:00-01:30 | 0                        | 0          | 0               | 0          | 0                     | 25         | 0                    | 25         |
| 01:30-02:00 | 0                        | 0          | 0               | 0          | 0                     | 25         | 0                    | 25         |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                     | 8          | 0                    | 8          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                     | 8          | 0                    | 8          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                    | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                    | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                    | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                    | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                    | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                    | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 6                     | 0          | 6                    | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 6                     | 0          | 6                    | 0          |
| 07:00-07:30 | 42                       | 15         | 112             | 39         | 6                     | 0          | 161                  | 54         |
| 07:30-08:00 | 86                       | 17         | 446             | 55         | 6                     | 0          | 538                  | 72         |
| 08:00-08:30 | 234                      | 112        | 629             | 94         | 6                     | 0          | 870                  | 206        |
| 08:30-09:00 | 260                      | 113        | 830             | 103        | 6                     | 0          | 1097                 | 216        |
| 09:00-09:30 | 214                      | 96         | 603             | 112        | 6                     | 0          | 824                  | 208        |
| 09:30-10:00 | 183                      | 101        | 361             | 146        | 6                     | 0          | 550                  | 247        |
| 10:00-10:30 | 137                      | 118        | 206             | 145        | 13                    | 0          | 356                  | 262        |
| 10:30-11:00 | 135                      | 117        | 190             | 140        | 13                    | 0          | 338                  | 257        |
| 11:00-11:30 | 136                      | 134        | 152             | 152        | 13                    | 0          | 301                  | 287        |
| 11:30-12:00 | 138                      | 137        | 164             | 172        | 1188                  | 0          | 1490                 | 309        |
| 12:00-12:30 | 148                      | 184        | 241             | 401        | 1190                  | 0          | 1578                 | 585        |
| 12:30-13:00 | 160                      | 185        | 338             | 409        | 4715                  | 0          | 5213                 | 594        |
| 13:00-13:30 | 182                      | 180        | 357             | 372        | 4715                  | 0          | 5254                 | 552        |
| 13:30-14:00 | 183                      | 164        | 365             | 248        | 15                    | 0          | 562                  | 411        |
| 14:00-14:30 | 149                      | 180        | 288             | 208        | 68                    | 0          | 504                  | 388        |
| 14:30-15:00 | 135                      | 180        | 182             | 210        | 68                    | 0          | 384                  | 390        |
| 15:00-15:30 | 137                      | 177        | 157             | 206        | 120                   | 0          | 415                  | 383        |
| 15:30-16:00 | 136                      | 181        | 143             | 239        | 120                   | 0          | 399                  | 420        |
| 16:00-16:30 | 158                      | 205        | 126             | 353        | 115                   | 0          | 398                  | 558        |
| 16:30-17:00 | 158                      | 215        | 128             | 427        | 115                   | 11750      | 401                  | 12391      |
| 17:00-17:30 | 138                      | 255        | 138             | 835        | 0                     | 0          | 276                  | 1091       |
| 17:30-18:00 | 133                      | 216        | 96              | 530        | 7050                  | 0          | 7279                 | 745        |
| 18:00-18:30 | 144                      | 164        | 115             | 419        | 1410                  | 0          | 1669                 | 583        |
| 18:30-19:00 | 142                      | 131        | 101             | 168        | 5640                  | 0          | 5884                 | 299        |
| 19:00-19:30 | 70                       | 97         | 48              | 38         | 9400                  | 0          | 9517                 | 135        |
| 19:30-20:00 | 70                       | 97         | 48              | 38         | 0                     | 0          | 117                  | 135        |
| 20:00-20:30 | 68                       | 86         | 89              | 50         | 0                     | 24         | 156                  | 160        |
| 20:30-21:00 | 68                       | 86         | 89              | 50         | 0                     | 24         | 156                  | 160        |
| 21:00-21:30 | 42                       | 46         | 38              | 53         | 0                     | 24         | 80                   | 123        |
| 21:30-22:00 | 42                       | 46         | 38              | 53         | 0                     | 24         | 80                   | 123        |
| 22:00-22:30 | 0                        | 0          | 0               | 66         | 0                     | 58         | 0                    | 124        |
| 22:30-23:00 | 0                        | 0          | 0               | 66         | 0                     | 23558      | 0                    | 23624      |
| 23:00-23:30 | 0                        | 0          | 0               | 13         | 0                     | 205        | 0                    | 217        |
| 23:30-24:00 | 0                        | 0          | 0               | 13         | 0                     | 205        | 0                    | 217        |

## Walking Trips - No Event at Arena

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (non-event day) |            | Combined (non-event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-----------------------|------------|--------------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals              | Departures | Arrivals                 | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 00:30-01:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 01:00-01:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 01:30-02:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 07:00-07:30 | 1                        | 0          | 1               | 0          | 0                     | 0          | 2                        | 1          |
| 07:30-08:00 | 1                        | 0          | 5               | 0          | 0                     | 0          | 6                        | 1          |
| 08:00-08:30 | 5                        | 5          | 9               | 1          | 0                     | 0          | 15                       | 7          |
| 08:30-09:00 | 6                        | 5          | 15              | 2          | 0                     | 0          | 21                       | 7          |
| 09:00-09:30 | 5                        | 4          | 11              | 2          | 0                     | 0          | 16                       | 6          |
| 09:30-10:00 | 5                        | 4          | 7               | 2          | 0                     | 0          | 12                       | 6          |
| 10:00-10:30 | 4                        | 4          | 4               | 3          | 0                     | 0          | 8                        | 7          |
| 10:30-11:00 | 4                        | 4          | 4               | 3          | 0                     | 0          | 8                        | 8          |
| 11:00-11:30 | 5                        | 5          | 3               | 3          | 0                     | 0          | 8                        | 8          |
| 11:30-12:00 | 5                        | 5          | 3               | 4          | 0                     | 0          | 7                        | 9          |
| 12:00-12:30 | 5                        | 7          | 6               | 14         | 0                     | 0          | 12                       | 20         |
| 12:30-13:00 | 6                        | 7          | 10              | 14         | 0                     | 0          | 16                       | 21         |
| 13:00-13:30 | 7                        | 7          | 12              | 13         | 0                     | 0          | 19                       | 20         |
| 13:30-14:00 | 7                        | 6          | 12              | 7          | 0                     | 0          | 19                       | 14         |
| 14:00-14:30 | 6                        | 7          | 9               | 5          | 0                     | 0          | 15                       | 12         |
| 14:30-15:00 | 6                        | 6          | 5               | 4          | 0                     | 0          | 11                       | 11         |
| 15:00-15:30 | 5                        | 6          | 4               | 4          | 0                     | 0          | 9                        | 9          |
| 15:30-16:00 | 5                        | 6          | 3               | 4          | 0                     | 0          | 8                        | 10         |
| 16:00-16:30 | 7                        | 6          | 2               | 5          | 0                     | 0          | 9                        | 11         |
| 16:30-17:00 | 7                        | 6          | 2               | 6          | 0                     | 0          | 8                        | 13         |
| 17:00-17:30 | 6                        | 7          | 2               | 13         | 0                     | 0          | 8                        | 20         |
| 17:30-18:00 | 6                        | 6          | 2               | 10         | 0                     | 0          | 7                        | 17         |
| 18:00-18:30 | 6                        | 5          | 2               | 6          | 0                     | 0          | 8                        | 11         |
| 18:30-19:00 | 6                        | 5          | 2               | 2          | 0                     | 0          | 8                        | 7          |
| 19:00-19:30 | 3                        | 3          | 1               | 1          | 0                     | 0          | 3                        | 4          |
| 19:30-20:00 | 3                        | 3          | 1               | 1          | 0                     | 0          | 3                        | 4          |
| 20:00-20:30 | 3                        | 3          | 1               | 1          | 0                     | 0          | 4                        | 4          |
| 20:30-21:00 | 3                        | 3          | 1               | 1          | 0                     | 0          | 4                        | 4          |
| 21:00-21:30 | 2                        | 1          | 1               | 1          | 0                     | 0          | 2                        | 2          |
| 21:30-22:00 | 2                        | 1          | 1               | 1          | 0                     | 0          | 2                        | 2          |
| 22:00-22:30 | 0                        | 0          | 0               | 1          | 0                     | 0          | 0                        | 1          |
| 22:30-23:00 | 0                        | 0          | 0               | 1          | 0                     | 0          | 0                        | 1          |
| 23:00-23:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 23:30-24:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |

## Walking Trips - Event at Arena

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (event day) |            | Combined (event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-------------------|------------|----------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals          | Departures | Arrivals             | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 0          | 0                 | 6          | 0                    | 6          |
| 00:30-01:00 | 0                        | 0          | 0               | 0          | 0                 | 6          | 0                    | 6          |
| 01:00-01:30 | 0                        | 0          | 0               | 0          | 0                 | 3          | 0                    | 3          |
| 01:30-02:00 | 0                        | 0          | 0               | 0          | 0                 | 3          | 0                    | 3          |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                 | 1          | 0                    | 1          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                 | 1          | 0                    | 1          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 1                 | 0          | 1                    | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 1                 | 0          | 1                    | 0          |
| 07:00-07:30 | 1                        | 0          | 1               | 0          | 1                 | 0          | 3                    | 1          |
| 07:30-08:00 | 1                        | 0          | 5               | 0          | 1                 | 0          | 7                    | 1          |
| 08:00-08:30 | 5                        | 5          | 9               | 1          | 1                 | 0          | 15                   | 7          |
| 08:30-09:00 | 6                        | 5          | 15              | 2          | 1                 | 0          | 21                   | 7          |
| 09:00-09:30 | 5                        | 4          | 11              | 2          | 1                 | 0          | 17                   | 6          |
| 09:30-10:00 | 5                        | 4          | 7               | 2          | 1                 | 0          | 12                   | 6          |
| 10:00-10:30 | 4                        | 4          | 4               | 3          | 2                 | 0          | 10                   | 7          |
| 10:30-11:00 | 4                        | 4          | 4               | 3          | 2                 | 0          | 10                   | 8          |
| 11:00-11:30 | 5                        | 5          | 3               | 3          | 2                 | 0          | 9                    | 8          |
| 11:30-12:00 | 5                        | 5          | 3               | 4          | 78                | 0          | 85                   | 9          |
| 12:00-12:30 | 5                        | 7          | 6               | 14         | 78                | 0          | 90                   | 20         |
| 12:30-13:00 | 6                        | 7          | 10              | 14         | 308               | 0          | 323                  | 21         |
| 13:00-13:30 | 7                        | 7          | 12              | 13         | 308               | 0          | 326                  | 20         |
| 13:30-14:00 | 7                        | 6          | 12              | 7          | 2                 | 0          | 21                   | 14         |
| 14:00-14:30 | 6                        | 7          | 9               | 5          | 9                 | 0          | 24                   | 12         |
| 14:30-15:00 | 6                        | 6          | 5               | 4          | 9                 | 0          | 20                   | 11         |
| 15:00-15:30 | 5                        | 6          | 4               | 4          | 16                | 0          | 25                   | 9          |
| 15:30-16:00 | 5                        | 6          | 3               | 4          | 16                | 0          | 25                   | 10         |
| 16:00-16:30 | 7                        | 6          | 2               | 5          | 16                | 0          | 25                   | 11         |
| 16:30-17:00 | 7                        | 6          | 2               | 6          | 16                | 764        | 24                   | 776        |
| 17:00-17:30 | 6                        | 7          | 2               | 13         | 0                 | 0          | 8                    | 20         |
| 17:30-18:00 | 6                        | 6          | 2               | 10         | 458               | 0          | 466                  | 16         |
| 18:00-18:30 | 6                        | 5          | 2               | 6          | 92                | 0          | 100                  | 11         |
| 18:30-19:00 | 6                        | 5          | 2               | 2          | 367               | 0          | 375                  | 6          |
| 19:00-19:30 | 3                        | 3          | 1               | 1          | 611               | 0          | 614                  | 4          |
| 19:30-20:00 | 3                        | 3          | 1               | 1          | 0                 | 0          | 3                    | 4          |
| 20:00-20:30 | 3                        | 3          | 1               | 1          | 0                 | 3          | 4                    | 7          |
| 20:30-21:00 | 3                        | 3          | 1               | 1          | 0                 | 3          | 4                    | 7          |
| 21:00-21:30 | 2                        | 1          | 1               | 1          | 0                 | 3          | 2                    | 5          |
| 21:30-22:00 | 2                        | 1          | 1               | 1          | 0                 | 3          | 2                    | 5          |
| 22:00-22:30 | 0                        | 0          | 0               | 1          | 0                 | 8          | 0                    | 9          |
| 22:30-23:00 | 0                        | 0          | 0               | 1          | 0                 | 1535       | 0                    | 1536       |
| 23:00-23:30 | 0                        | 0          | 0               | 0          | 0                 | 28         | 0                    | 28         |
| 23:30-24:00 | 0                        | 0          | 0               | 0          | 0                 | 28         | 0                    | 28         |

Bus Trips - No Event at Arena

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (non-event day) |            | Combined (non-event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-----------------------|------------|--------------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals              | Departures | Arrivals                 | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 00:30-01:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 01:00-01:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 01:30-02:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 07:00-07:30 | 4                        | 3          | 8               | 2          | 0                     | 0          | 12                       | 5          |
| 07:30-08:00 | 7                        | 3          | 29              | 3          | 0                     | 0          | 35                       | 5          |
| 08:00-08:30 | 31                       | 30         | 55              | 9          | 0                     | 0          | 86                       | 39         |
| 08:30-09:00 | 35                       | 30         | 87              | 9          | 0                     | 0          | 123                      | 39         |
| 09:00-09:30 | 31                       | 23         | 66              | 10         | 0                     | 0          | 97                       | 34         |
| 09:30-10:00 | 28                       | 24         | 40              | 14         | 0                     | 0          | 68                       | 38         |
| 10:00-10:30 | 25                       | 26         | 25              | 16         | 0                     | 0          | 50                       | 42         |
| 10:30-11:00 | 25                       | 27         | 24              | 18         | 0                     | 0          | 49                       | 45         |
| 11:00-11:30 | 27                       | 29         | 18              | 19         | 0                     | 0          | 45                       | 47         |
| 11:30-12:00 | 27                       | 30         | 16              | 24         | 0                     | 0          | 43                       | 53         |
| 12:00-12:30 | 33                       | 41         | 39              | 82         | 0                     | 0          | 71                       | 123        |
| 12:30-13:00 | 35                       | 42         | 58              | 86         | 0                     | 0          | 94                       | 127        |
| 13:00-13:30 | 41                       | 42         | 71              | 78         | 0                     | 0          | 112                      | 120        |
| 13:30-14:00 | 41                       | 38         | 71              | 44         | 0                     | 0          | 112                      | 81         |
| 14:00-14:30 | 36                       | 39         | 52              | 32         | 0                     | 0          | 88                       | 71         |
| 14:30-15:00 | 33                       | 39         | 30              | 26         | 0                     | 0          | 63                       | 65         |
| 15:00-15:30 | 31                       | 36         | 21              | 21         | 0                     | 0          | 52                       | 57         |
| 15:30-16:00 | 31                       | 36         | 19              | 24         | 0                     | 0          | 50                       | 60         |
| 16:00-16:30 | 40                       | 36         | 14              | 28         | 0                     | 0          | 54                       | 64         |
| 16:30-17:00 | 40                       | 37         | 11              | 38         | 0                     | 0          | 50                       | 75         |
| 17:00-17:30 | 35                       | 40         | 11              | 81         | 0                     | 0          | 46                       | 121        |
| 17:30-18:00 | 35                       | 37         | 9               | 60         | 0                     | 0          | 44                       | 98         |
| 18:00-18:30 | 38                       | 30         | 13              | 36         | 0                     | 0          | 51                       | 67         |
| 18:30-19:00 | 38                       | 27         | 11              | 12         | 0                     | 0          | 49                       | 39         |
| 19:00-19:30 | 16                       | 19         | 4               | 4          | 0                     | 0          | 20                       | 23         |
| 19:30-20:00 | 16                       | 19         | 4               | 4          | 0                     | 0          | 20                       | 23         |
| 20:00-20:30 | 16                       | 18         | 7               | 5          | 0                     | 0          | 23                       | 23         |
| 20:30-21:00 | 16                       | 18         | 7               | 5          | 0                     | 0          | 23                       | 23         |
| 21:00-21:30 | 10                       | 9          | 4               | 4          | 0                     | 0          | 14                       | 13         |
| 21:30-22:00 | 10                       | 9          | 4               | 4          | 0                     | 0          | 14                       | 13         |
| 22:00-22:30 | 0                        | 0          | 0               | 4          | 0                     | 0          | 0                        | 4          |
| 22:30-23:00 | 0                        | 0          | 0               | 4          | 0                     | 0          | 0                        | 4          |
| 23:00-23:30 | 0                        | 0          | 0               | 1          | 0                     | 0          | 0                        | 1          |
| 23:30-24:00 | 0                        | 0          | 0               | 1          | 0                     | 0          | 0                        | 1          |

Bus Trips - Event at Arena

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (event day) |            | Combined (event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-------------------|------------|----------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals          | Departures | Arrivals             | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 0          | 0                 | 1          | 0                    | 1          |
| 00:30-01:00 | 0                        | 0          | 0               | 0          | 0                 | 1          | 0                    | 1          |
| 01:00-01:30 | 0                        | 0          | 0               | 0          | 0                 | 1          | 0                    | 1          |
| 01:30-02:00 | 0                        | 0          | 0               | 0          | 0                 | 1          | 0                    | 1          |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 07:00-07:30 | 4                        | 3          | 8               | 2          | 0                 | 0          | 12                   | 5          |
| 07:30-08:00 | 7                        | 3          | 29              | 3          | 0                 | 0          | 36                   | 5          |
| 08:00-08:30 | 31                       | 30         | 55              | 9          | 0                 | 0          | 86                   | 39         |
| 08:30-09:00 | 35                       | 30         | 87              | 9          | 0                 | 0          | 123                  | 39         |
| 09:00-09:30 | 31                       | 23         | 66              | 10         | 0                 | 0          | 97                   | 34         |
| 09:30-10:00 | 28                       | 24         | 40              | 14         | 0                 | 0          | 68                   | 38         |
| 10:00-10:30 | 25                       | 26         | 25              | 16         | 0                 | 0          | 51                   | 42         |
| 10:30-11:00 | 25                       | 27         | 24              | 18         | 0                 | 0          | 50                   | 45         |
| 11:00-11:30 | 27                       | 29         | 18              | 19         | 0                 | 0          | 46                   | 47         |
| 11:30-12:00 | 27                       | 30         | 16              | 24         | 38                | 0          | 81                   | 53         |
| 12:00-12:30 | 33                       | 41         | 39              | 82         | 38                | 0          | 109                  | 123        |
| 12:30-13:00 | 35                       | 42         | 58              | 86         | 151               | 0          | 245                  | 127        |
| 13:00-13:30 | 41                       | 42         | 71              | 78         | 151               | 0          | 263                  | 120        |
| 13:30-14:00 | 41                       | 38         | 71              | 44         | 0                 | 0          | 113                  | 81         |
| 14:00-14:30 | 36                       | 39         | 52              | 32         | 2                 | 0          | 90                   | 71         |
| 14:30-15:00 | 33                       | 39         | 30              | 26         | 2                 | 0          | 66                   | 65         |
| 15:00-15:30 | 31                       | 36         | 21              | 21         | 4                 | 0          | 56                   | 57         |
| 15:30-16:00 | 31                       | 36         | 19              | 24         | 4                 | 0          | 54                   | 60         |
| 16:00-16:30 | 40                       | 36         | 14              | 28         | 4                 | 0          | 57                   | 63         |
| 16:30-17:00 | 40                       | 37         | 11              | 38         | 4                 | 376        | 54                   | 451        |
| 17:00-17:30 | 35                       | 40         | 11              | 81         | 0                 | 0          | 46                   | 121        |
| 17:30-18:00 | 35                       | 37         | 9               | 60         | 226               | 0          | 269                  | 98         |
| 18:00-18:30 | 38                       | 30         | 13              | 36         | 45                | 0          | 96                   | 67         |
| 18:30-19:00 | 38                       | 27         | 11              | 12         | 180               | 0          | 230                  | 39         |
| 19:00-19:30 | 16                       | 19         | 4               | 4          | 301               | 0          | 321                  | 23         |
| 19:30-20:00 | 16                       | 19         | 4               | 4          | 0                 | 0          | 20                   | 23         |
| 20:00-20:30 | 16                       | 18         | 7               | 5          | 0                 | 1          | 23                   | 23         |
| 20:30-21:00 | 16                       | 18         | 7               | 5          | 0                 | 1          | 23                   | 23         |
| 21:00-21:30 | 10                       | 9          | 4               | 4          | 0                 | 1          | 14                   | 13         |
| 21:30-22:00 | 10                       | 9          | 4               | 4          | 0                 | 1          | 14                   | 13         |
| 22:00-22:30 | 0                        | 0          | 0               | 4          | 0                 | 2          | 0                    | 6          |
| 22:30-23:00 | 0                        | 0          | 0               | 4          | 0                 | 754        | 0                    | 758        |
| 23:00-23:30 | 0                        | 0          | 0               | 1          | 0                 | 7          | 0                    | 7          |
| 23:30-24:00 | 0                        | 0          | 0               | 1          | 0                 | 7          | 0                    | 7          |

Metrolink Trips - No Event at Arena

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (non-event day) |            | Combined (non-event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-----------------------|------------|--------------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals              | Departures | Arrivals                 | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 00:30-01:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 01:00-01:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 01:30-02:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 07:00-07:30 | 8                        | 5          | 17              | 5          | 0                     | 0          | 25                       | 10         |
| 07:30-08:00 | 13                       | 5          | 58              | 5          | 0                     | 0          | 71                       | 10         |
| 08:00-08:30 | 62                       | 60         | 110             | 18         | 3                     | 0          | 174                      | 78         |
| 08:30-09:00 | 70                       | 61         | 175             | 18         | 3                     | 0          | 247                      | 79         |
| 09:00-09:30 | 62                       | 47         | 132             | 20         | 2                     | 0          | 196                      | 67         |
| 09:30-10:00 | 55                       | 48         | 81              | 28         | 2                     | 0          | 138                      | 75         |
| 10:00-10:30 | 51                       | 53         | 50              | 32         | 0                     | 0          | 101                      | 84         |
| 10:30-11:00 | 50                       | 53         | 48              | 37         | 0                     | 0          | 99                       | 90         |
| 11:00-11:30 | 55                       | 58         | 36              | 37         | 0                     | 0          | 91                       | 95         |
| 11:30-12:00 | 54                       | 59         | 33              | 47         | 0                     | 0          | 87                       | 106        |
| 12:00-12:30 | 66                       | 82         | 77              | 163        | 0                     | 0          | 143                      | 245        |
| 12:30-13:00 | 71                       | 83         | 117             | 172        | 0                     | 0          | 187                      | 255        |
| 13:00-13:30 | 83                       | 85         | 141             | 156        | 0                     | 0          | 224                      | 240        |
| 13:30-14:00 | 83                       | 76         | 142             | 87         | 0                     | 0          | 225                      | 163        |
| 14:00-14:30 | 73                       | 79         | 104             | 63         | 0                     | 0          | 176                      | 142        |
| 14:30-15:00 | 67                       | 77         | 60              | 53         | 0                     | 0          | 127                      | 130        |
| 15:00-15:30 | 63                       | 71         | 42              | 42         | 0                     | 0          | 105                      | 114        |
| 15:30-16:00 | 62                       | 72         | 37              | 48         | 0                     | 0          | 100                      | 120        |
| 16:00-16:30 | 80                       | 72         | 27              | 55         | 30                    |            | 137                      | 127        |
| 16:30-17:00 | 79                       | 74         | 22              | 75         | 30                    |            | 131                      | 149        |
| 17:00-17:30 | 69                       | 80         | 22              | 161        | 0                     | 2          | 91                       | 243        |
| 17:30-18:00 | 69                       | 75         | 18              | 121        | 0                     | 2          | 87                       | 198        |
| 18:00-18:30 | 76                       | 61         | 26              | 73         | 0                     | 2          | 101                      | 135        |
| 18:30-19:00 | 76                       | 54         | 23              | 23         | 0                     | 2          | 98                       | 79         |
| 19:00-19:30 | 31                       | 38         | 9               | 9          | 0                     | 0          | 40                       | 47         |
| 19:30-20:00 | 31                       | 38         | 9               | 9          | 0                     | 0          | 40                       | 47         |
| 20:00-20:30 | 32                       | 35         | 15              | 10         | 0                     | 0          | 46                       | 45         |
| 20:30-21:00 | 32                       | 35         | 15              | 10         | 0                     | 0          | 46                       | 45         |
| 21:00-21:30 | 20                       | 18         | 9               | 7          | 0                     | 0          | 28                       | 25         |
| 21:30-22:00 | 20                       | 18         | 9               | 7          | 0                     | 0          | 28                       | 25         |
| 22:00-22:30 | 0                        | 0          | 0               | 8          | 0                     | 0          | 0                        | 8          |
| 22:30-23:00 | 0                        | 0          | 0               | 8          | 0                     | 0          | 0                        | 8          |
| 23:00-23:30 | 0                        | 0          | 0               | 2          | 0                     | 0          | 0                        | 2          |
| 23:30-24:00 | 0                        | 0          | 0               | 2          | 0                     | 0          | 0                        | 2          |

Metrolink Trips - Event at Arena

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (event day) |            | Combined (event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-------------------|------------|----------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals          | Departures | Arrivals             | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 0          | 0                 | 11         | 0                    | 11         |
| 00:30-01:00 | 0                        | 0          | 0               | 0          | 0                 | 11         | 0                    | 11         |
| 01:00-01:30 | 0                        | 0          | 0               | 0          | 0                 | 7          | 0                    | 7          |
| 01:30-02:00 | 0                        | 0          | 0               | 0          | 0                 | 7          | 0                    | 7          |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                 | 2          | 0                    | 2          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                 | 2          | 0                    | 2          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 2                 | 0          | 2                    | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 2                 | 0          | 2                    | 0          |
| 07:00-07:30 | 8                        | 5          | 17              | 5          | 2                 | 0          | 26                   | 10         |
| 07:30-08:00 | 13                       | 5          | 58              | 5          | 2                 | 0          | 72                   | 10         |
| 08:00-08:30 | 62                       | 60         | 110             | 18         | 2                 | 0          | 173                  | 78         |
| 08:30-09:00 | 70                       | 61         | 175             | 18         | 2                 | 0          | 246                  | 79         |
| 09:00-09:30 | 62                       | 47         | 132             | 20         | 2                 | 0          | 195                  | 67         |
| 09:30-10:00 | 55                       | 48         | 81              | 28         | 2                 | 0          | 138                  | 75         |
| 10:00-10:30 | 51                       | 53         | 50              | 32         | 3                 | 0          | 104                  | 84         |
| 10:30-11:00 | 50                       | 53         | 48              | 37         | 3                 | 0          | 102                  | 90         |
| 11:00-11:30 | 55                       | 58         | 36              | 37         | 3                 | 0          | 94                   | 95         |
| 11:30-12:00 | 54                       | 59         | 33              | 47         | 164               | 0          | 251                  | 106        |
| 12:00-12:30 | 66                       | 82         | 77              | 163        | 165               | 0          | 308                  | 245        |
| 12:30-13:00 | 71                       | 83         | 117             | 172        | 648               | 0          | 835                  | 255        |
| 13:00-13:30 | 83                       | 85         | 141             | 156        | 648               | 0          | 872                  | 240        |
| 13:30-14:00 | 83                       | 76         | 142             | 87         | 4                 | 0          | 229                  | 163        |
| 14:00-14:30 | 73                       | 79         | 104             | 63         | 18                | 0          | 194                  | 142        |
| 14:30-15:00 | 67                       | 77         | 60              | 53         | 18                | 0          | 144                  | 130        |
| 15:00-15:30 | 63                       | 71         | 42              | 42         | 32                | 0          | 137                  | 114        |
| 15:30-16:00 | 62                       | 72         | 37              | 48         | 32                | 0          | 131                  | 120        |
| 16:00-16:30 | 80                       | 72         | 27              | 55         | 30                | 0          | 138                  | 127        |
| 16:30-17:00 | 79                       | 74         | 22              | 75         | 30                | 1610       | 131                  | 1759       |
| 17:00-17:30 | 69                       | 80         | 22              | 161        | 0                 | 0          | 91                   | 241        |
| 17:30-18:00 | 69                       | 75         | 18              | 121        | 966               | 0          | 1053                 | 195        |
| 18:00-18:30 | 76                       | 61         | 26              | 73         | 193               | 0          | 295                  | 133        |
| 18:30-19:00 | 76                       | 54         | 23              | 23         | 773               | 0          | 871                  | 78         |
| 19:00-19:30 | 31                       | 38         | 9               | 9          | 1288              | 0          | 1328                 | 47         |
| 19:30-20:00 | 31                       | 38         | 9               | 9          | 0                 | 0          | 40                   | 47         |
| 20:00-20:30 | 32                       | 35         | 15              | 10         | 0                 | 6          | 46                   | 52         |
| 20:30-21:00 | 32                       | 35         | 15              | 10         | 0                 | 6          | 46                   | 52         |
| 21:00-21:30 | 20                       | 18         | 9               | 7          | 0                 | 6          | 28                   | 31         |
| 21:30-22:00 | 20                       | 18         | 9               | 7          | 0                 | 6          | 28                   | 31         |
| 22:00-22:30 | 0                        | 0          | 0               | 8          | 0                 | 15         | 0                    | 23         |
| 22:30-23:00 | 0                        | 0          | 0               | 8          | 0                 | 3235       | 0                    | 3243       |
| 23:00-23:30 | 0                        | 0          | 0               | 2          | 0                 | 54         | 0                    | 55         |
| 23:30-24:00 | 0                        | 0          | 0               | 2          | 0                 | 54         | 0                    | 55         |

Vehicle Trips - No Event at Arena

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (non-event day) |            | Combined (non-event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-----------------------|------------|--------------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals              | Departures | Arrivals                 | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 30         | 0                     | 0          | 0                        | 30         |
| 00:30-01:00 | 0                        | 0          | 0               | 30         | 0                     | 0          | 0                        | 30         |
| 01:00-01:30 | 0                        | 0          | 0               | 14         | 0                     | 0          | 0                        | 14         |
| 01:30-02:00 | 0                        | 0          | 0               | 14         | 0                     | 0          | 0                        | 14         |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 0                     | 0          | 0                        | 0          |
| 07:00-07:30 | 26                       | 7          | 80              | 29         | 2                     | 0          | 109                      | 36         |
| 07:30-08:00 | 58                       | 13         | 322             | 79         | 2                     | 0          | 382                      | 92         |
| 08:00-08:30 | 116                      | 24         | 411             | 85         | 11                    | 0          | 538                      | 110        |
| 08:30-09:00 | 127                      | 24         | 497             | 88         | 11                    | 0          | 635                      | 112        |
| 09:00-09:30 | 95                       | 24         | 349             | 78         | 10                    | 0          | 454                      | 102        |
| 09:30-10:00 | 76                       | 26         | 205             | 93         | 10                    | 0          | 292                      | 119        |
| 10:00-10:30 | 46                       | 29         | 110             | 84         | 0                     | 0          | 155                      | 113        |
| 10:30-11:00 | 44                       | 28         | 98              | 76         | 0                     | 0          | 142                      | 104        |
| 11:00-11:30 | 41                       | 37         | 80              | 73         | 0                     | 0          | 121                      | 110        |
| 11:30-12:00 | 43                       | 37         | 97              | 73         | 0                     | 0          | 140                      | 110        |
| 12:00-12:30 | 36                       | 44         | 108             | 119        | 0                     | 0          | 144                      | 163        |
| 12:30-13:00 | 40                       | 43         | 134             | 116        | 0                     | 0          | 173                      | 159        |
| 13:00-13:30 | 38                       | 38         | 116             | 112        | 0                     | 0          | 154                      | 150        |
| 13:30-14:00 | 38                       | 37         | 116             | 106        | 0                     | 0          | 154                      | 144        |
| 14:00-14:30 | 30                       | 44         | 99              | 94         | 0                     | 0          | 128                      | 139        |
| 14:30-15:00 | 27                       | 47         | 77              | 113        | 0                     | 0          | 104                      | 160        |
| 15:00-15:30 | 30                       | 50         | 81              | 115        | 0                     | 0          | 112                      | 164        |
| 15:30-16:00 | 30                       | 52         | 78              | 132        | 0                     | 0          | 107                      | 184        |
| 16:00-16:30 | 31                       | 77         | 73              | 239        | 0                     | 5          | 104                      | 321        |
| 16:30-17:00 | 32                       | 82         | 76              | 281        | 0                     | 6          | 108                      | 369        |
| 17:00-17:30 | 24                       | 103        | 93              | 481        | 0                     | 11         | 118                      | 595        |
| 17:30-18:00 | 21                       | 79         | 66              | 296        | 0                     | 11         | 86                       | 386        |
| 18:00-18:30 | 20                       | 55         | 71              | 258        | 0                     | 7          | 91                       | 320        |
| 18:30-19:00 | 19                       | 36         | 62              | 117        | 0                     | 7          | 81                       | 160        |
| 19:00-19:30 | 16                       | 27         | 27              | 36         | 0                     | 0          | 43                       | 63         |
| 19:30-20:00 | 16                       | 27         | 27              | 36         | 0                     | 0          | 43                       | 63         |
| 20:00-20:30 | 14                       | 21         | 60              | 22         | 0                     | 0          | 75                       | 43         |
| 20:30-21:00 | 14                       | 21         | 60              | 22         | 0                     | 0          | 75                       | 43         |
| 21:00-21:30 | 7                        | 17         | 20              | 37         | 0                     | 0          | 27                       | 54         |
| 21:30-22:00 | 7                        | 17         | 20              | 37         | 0                     | 0          | 27                       | 54         |
| 22:00-22:30 | 0                        | 0          | 0               | 33         | 0                     | 0          | 0                        | 33         |
| 22:30-23:00 | 0                        | 0          | 0               | 33         | 0                     | 0          | 0                        | 33         |
| 23:00-23:30 | 0                        | 0          | 0               | 18         | 0                     | 0          | 0                        | 18         |
| 23:30-24:00 | 0                        | 0          | 0               | 18         | 0                     | 0          | 0                        | 18         |

Vehicle Trips - Event at Arena

|             | Sports & Innovation Zone |            | Commercial Zone |            | Arena (event day) |            | Combined (event day) |            |
|-------------|--------------------------|------------|-----------------|------------|-------------------|------------|----------------------|------------|
| Time Range  | Arrivals                 | Departures | Arrivals        | Departures | Arrivals          | Departures | Arrivals             | Departures |
| 00:00-00:30 | 0                        | 0          | 0               | 30         | 0                 | 8          | 0                    | 38         |
| 00:30-01:00 | 0                        | 0          | 0               | 30         | 0                 | 8          | 0                    | 38         |
| 01:00-01:30 | 0                        | 0          | 0               | 14         | 0                 | 5          | 0                    | 19         |
| 01:30-02:00 | 0                        | 0          | 0               | 14         | 0                 | 5          | 0                    | 19         |
| 02:00-02:30 | 0                        | 0          | 0               | 0          | 0                 | 1          | 0                    | 1          |
| 02:30-03:00 | 0                        | 0          | 0               | 0          | 0                 | 1          | 0                    | 1          |
| 03:00-03:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 03:30-04:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 04:00-04:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 04:30-05:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 05:00-05:30 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 05:30-06:00 | 0                        | 0          | 0               | 0          | 0                 | 0          | 0                    | 0          |
| 06:00-06:30 | 0                        | 0          | 0               | 0          | 1                 | 0          | 1                    | 0          |
| 06:30-07:00 | 0                        | 0          | 0               | 0          | 1                 | 0          | 1                    | 0          |
| 07:00-07:30 | 26                       | 7          | 80              | 29         | 1                 | 0          | 108                  | 36         |
| 07:30-08:00 | 58                       | 13         | 322             | 79         | 1                 | 0          | 381                  | 92         |
| 08:00-08:30 | 116                      | 24         | 411             | 85         | 1                 | 0          | 528                  | 110        |
| 08:30-09:00 | 127                      | 24         | 497             | 88         | 1                 | 0          | 625                  | 112        |
| 09:00-09:30 | 95                       | 24         | 349             | 78         | 1                 | 0          | 445                  | 102        |
| 09:30-10:00 | 76                       | 26         | 205             | 93         | 1                 | 0          | 283                  | 119        |
| 10:00-10:30 | 46                       | 29         | 110             | 84         | 3                 | 0          | 158                  | 113        |
| 10:30-11:00 | 44                       | 28         | 98              | 76         | 3                 | 0          | 145                  | 104        |
| 11:00-11:30 | 41                       | 37         | 80              | 73         | 3                 | 0          | 124                  | 110        |
| 11:30-12:00 | 43                       | 37         | 97              | 73         | 284               | 0          | 423                  | 110        |
| 12:00-12:30 | 36                       | 44         | 108             | 119        | 284               | 0          | 428                  | 163        |
| 12:30-13:00 | 40                       | 43         | 134             | 116        | 1127              | 0          | 1300                 | 159        |
| 13:00-13:30 | 38                       | 38         | 116             | 112        | 1127              | 0          | 1281                 | 150        |
| 13:30-14:00 | 38                       | 37         | 116             | 106        | 3                 | 0          | 157                  | 144        |
| 14:00-14:30 | 30                       | 44         | 99              | 94         | 13                | 0          | 142                  | 139        |
| 14:30-15:00 | 27                       | 47         | 77              | 113        | 13                | 0          | 117                  | 160        |
| 15:00-15:30 | 30                       | 50         | 81              | 115        | 24                | 0          | 135                  | 164        |
| 15:30-16:00 | 30                       | 52         | 78              | 132        | 24                | 0          | 131                  | 184        |
| 16:00-16:30 | 31                       | 77         | 73              | 239        | 23                | 0          | 126                  | 316        |
| 16:30-17:00 | 32                       | 82         | 76              | 281        | 23                | 2810       | 130                  | 3173       |
| 17:00-17:30 | 24                       | 103        | 93              | 481        | 0                 | 0          | 118                  | 584        |
| 17:30-18:00 | 21                       | 79         | 66              | 296        | 1686              | 0          | 1772                 | 375        |
| 18:00-18:30 | 20                       | 55         | 71              | 258        | 337               | 0          | 428                  | 313        |
| 18:30-19:00 | 19                       | 36         | 62              | 117        | 1349              | 0          | 1430                 | 153        |
| 19:00-19:30 | 16                       | 27         | 27              | 36         | 2248              | 0          | 2291                 | 63         |
| 19:30-20:00 | 16                       | 27         | 27              | 36         | 0                 | 0          | 43                   | 63         |
| 20:00-20:30 | 14                       | 21         | 60              | 22         | 0                 | 5          | 75                   | 48         |
| 20:30-21:00 | 14                       | 21         | 60              | 22         | 0                 | 5          | 75                   | 48         |
| 21:00-21:30 | 7                        | 17         | 20              | 37         | 0                 | 5          | 27                   | 58         |
| 21:30-22:00 | 7                        | 17         | 20              | 37         | 0                 | 5          | 27                   | 58         |
| 22:00-22:30 | 0                        | 0          | 0               | 33         | 0                 | 11         | 0                    | 44         |
| 22:30-23:00 | 0                        | 0          | 0               | 33         | 0                 | 5632       | 0                    | 5665       |
| 23:00-23:30 | 0                        | 0          | 0               | 18         | 0                 | 40         | 0                    | 58         |
| 23:30-24:00 | 0                        | 0          | 0               | 18         | 0                 | 40         | 0                    | 58         |