

Proposed Industrial Estate, Capitol Park, Barnsley

Transport Assessment

Prepared by: 
David Cleasby
Graduate Consultant

Checked by: 
Mark Romanowski
Senior Consultant

Approved by: 
Stephen Moss
Associate Director

Rev No	Comments	Checked by	Approved by	Date
0	Final	MR	SM	09.06.2016

5th Floor, 2 City Walk, Leeds, LS11 9AR
Telephone: 0113 391 6800 Website: <http://www.aecom.com>

Job No: 60501921

Reference: Transport Assessment

Date Created: June 2016

This document has been prepared by AECOM Limited for the sole use of our client (the "Client") and in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM Limited and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM Limited, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM Limited.

Table of Contents

1	Introduction.....	1
1.1	Introduction.....	1
1.2	Report Purpose.....	2
2	Policy Review.....	4
2.1	Introduction.....	4
2.2	National Policy.....	4
2.3	Regional Policy.....	5
2.4	Local Policy.....	5
3	Baseline Conditions.....	8
3.1	Introduction.....	8
3.2	Site Location.....	8
3.3	Existing Access.....	8
4	Accessibility.....	11
4.1	Introduction.....	11
4.2	Access for Pedestrians.....	11
4.3	Access for Cyclists.....	12
4.4	Public Transport Accessibility.....	13
4.5	Summary.....	16
5	Development Proposals.....	18
5.1	Introduction.....	18
5.2	Proposed Development.....	18
5.3	Proposed Car Parking.....	18
5.4	Proposed Access.....	18
6	Trip Generation and Distribution.....	21
6.1	Introduction.....	21
6.2	Trip Generation.....	21
6.3	Trip Distribution Methodology.....	21
6.4	Trip Distribution.....	21
6.5	Committed Developments.....	21
7	Summary & Conclusions.....	24

Appendices

Appendix A: Figures & Drawings
Appendix B: TRICS Data
Appendix C: Traffic Flow Diagrams

Figures

Figure 1: Site Location Plan	1
Figure 2: Existing Site Access (Capitol Close).....	9
Figure 3: Indicative 1.2km and 2km Walking Isochrones.....	11
Figure 4: Indicative, 5km and 8km Cycling Isochrones.....	12
Figure 5: Cycle Route within the vicinity of the Capitol Close development site.....	13
Figure 6: Local Bus Routes	14
Figure 7: Local Bus Stops and Dodworth Train Station.....	15
Figure 8: Proposed Site Access.....	18
Figure 9: Location of New Access into the Proposed Development.....	19

Tables

Table 1: Suggested Acceptable Walking Distance.....	11
Table 2: Dodworth Road and Whinby Road Accessible Bus Services	14
Table 3: Barnsley Station Rail Services	15
Table 4: Dodworth Railway Station Timetable	16
Table 5: TRICS Vehicle Trip Rates and Vehicle Trip Generation.....	21
Table 6: Vehicle Trip rates for the Taylor Wimpey Site	22
Table 7: Proposed vehicle trip rates for the committed development at Capitol Park.....	22

Introduction



Capabilities on project:
Transportation

1 Introduction

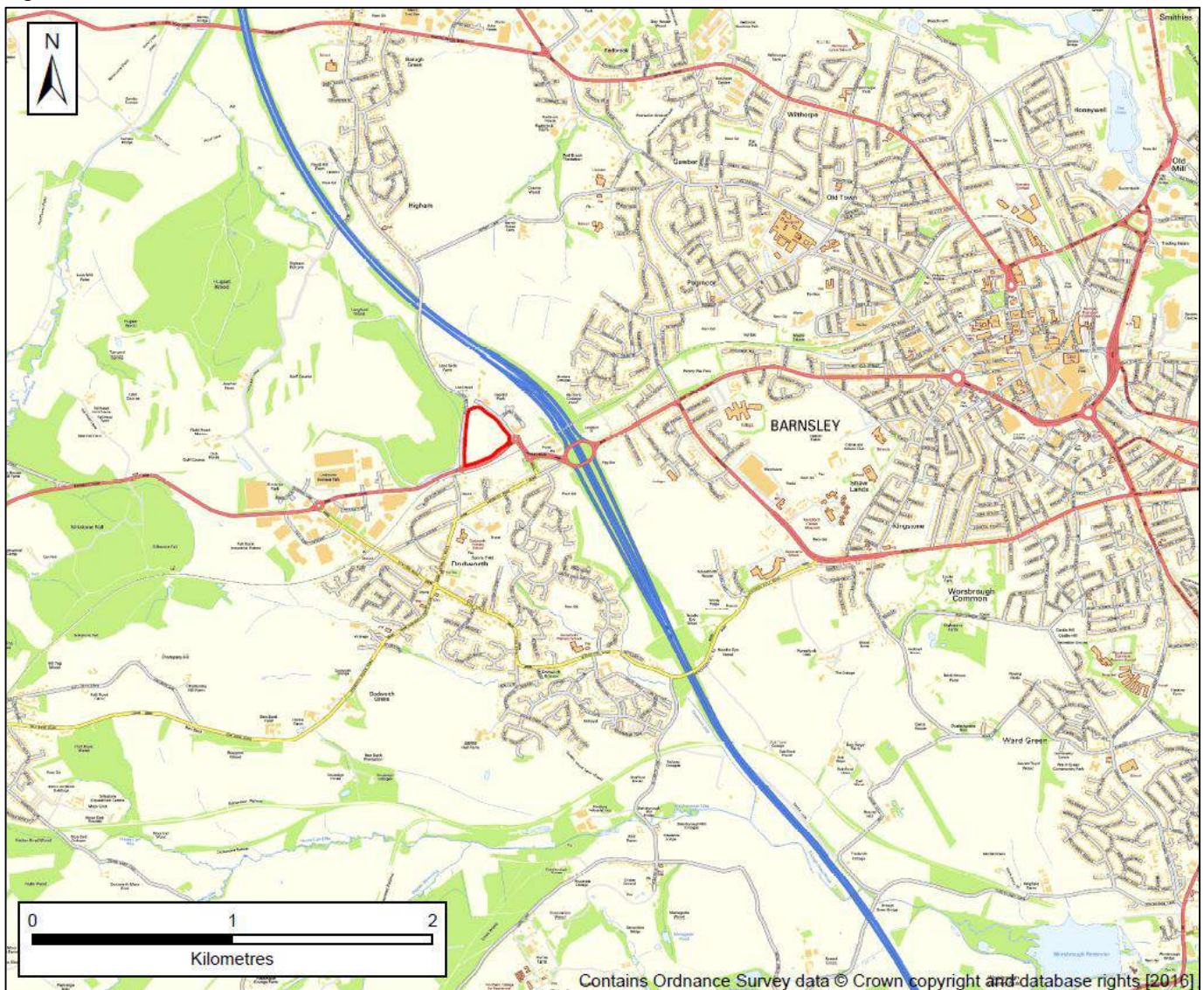
1.1 Introduction

AECOM have produced this Transport Assessment on behalf of the Commercial Development Projects Ltd in support of proposals to develop a new four unit industrial estate within the Capitol Park area of Barnsley.

The proposed site is located in Barnsley, adjacent to Junction 37 of the M1 Motorway, located just off Whinby Road on Capitol Close.

A location plan is provided in **Figure 1**, which shows the site location in the context of the surrounding road network and Barnsley town centre.

Figure 1: Site Location Plan



The proposed development will comprise of four industrial units each varying slightly in size and use. The total gross floor area (GFA) of the site is proposed to 16,499 m² and is split up as follows.

Capabilities on project:
Transportation

- Industrial Unit A – 2554 m² GFA including 232 m² of office space on the first floor;
- Industrial Unit B – 2787 m² GFA including 139m m² of office space on the first floor;
- Industrial Unit C – 6503 m² GFA including 325m² of office space on the ground floor; and
- Industrial Unit D – 4655 m² GFA including 232m² of office space on the ground floor.

The site will provide a total of 297 car parking spaces spread over 4 different sites within the proposed development, of this number there will be 15 disabled parking bays, 5% of the total number of parking bays. The site will be accessible off Capitol Close with the main access travelling north to south through the middle of the site. Access to unit A will be provided with a separate access whilst the remaining units will be served off the main road.

However, at this stage the proposed development is in outline form so the layout of the proposed site could yet change meaning the quantity and configuration of the units could be altered.

The availability of sustainable access options including public transport, cycle routes, pedestrian facilities and parking has also been reviewed within this report.

As part of a separate commission with Barnsley Metropolitan Borough Council (BMBC) AECOM produced an assessment of the impact of the development traffic on the local and strategic highway network, with a detailed VISSIM model of key junctions undertaken as part of the assessment.

1.2 Report Purpose

Following this introductory chapter, this Transport Assessment includes the following:

- Section 2 outlines relevant national and local policy documents;
- Section 3 summarises existing conditions at the proposed development site;
- Section 4 details the accessibility of the development site, identifying sustainable transport modes;
- Section 5 summarises the development proposals;
- Section 6 presents the trip generation and distribution patterns of the proposed site; and
- Section 7 provides a summary and conclusion.

The following appendices are found at the end of the report:

- **Appendix A:** Figures & Drawings
- **Appendix B:** TRICS Data
- **Appendix C:** Traffic Flow Diagrams

Policy Review



Capabilities on project:
Transportation

2 Policy Review

2.1 Introduction

This section of the Transport Assessment sets out the policy context within which the proposal has been developed. National transport and planning policy seeks to support the promotion of accessibility by all travel modes, particularly those sustainable modes. The following documents have been reviewed:

- The Transport White Paper (2011);
- National Planning Policy Framework (2012);
- South Yorkshire Third Local Transport Plan (LTP) (2011 – 2026);
- Barnsley Local Plan; and
- Barnsley care4air initiative.

2.2 National Policy

2.2.1 *The Transport White Paper (2011)*

The January 2011 Transport White Paper: “Creating Growth, Cutting Carbon – Making Sustainable Local Transport Happen” sets out the Government’s vision for a sustainable local transport system. The White Paper acknowledges that transport provision is essential for economic growth if the Government is to improve the economic deficit which it is currently facing. The Paper also recognises however, that the current levels of carbon emissions from transport cannot be sustained if the nation is to meet its national commitments on climate change mitigation as well as creating a safer and cleaner environment in which to live. With this in mind, the Government highlights sustainable transport solutions as a means by which the economy can grow, whilst also bringing about a positive impact on the environment.

Within the Paper, sustainable transport considers more than just public transport, walking and cycling schemes and acknowledges that it is not feasible for some trips to be undertaken by these modes. There is therefore a realisation that the car will continue to be an important mode of transport and a focus should be given to making car travel greener through electric and other low emission vehicles.

The proposed development is considered to accord with the aspirations of the White Paper as it is supported by a range of sustainable transport links, including public transport, public footpaths and cycle routes. The implementation of a Travel Plan will also encourage users of the site to travel sustainably.

2.2.2 *National Planning Policy Framework (NPPF)*

The National Planning Policy Framework (NPPF) which superseded the Planning Policy Guidance Notes in 2012 assessed governed national policy and principles relating to specific aspects of the town planning framework. In replacing the previous guidance notes and remaining a material consideration in planning applications, the NPPF provides a framework for local communities and Authorities to develop relevant local development plans and strategies.

The NPPF has two key themes:

- Providing a greater level of integration and simplification of the planning policies governing new development nationally; and
 - Contributing to the achievement of sustainable development from an economic, social and environmental perspective.
- Chapter 4 ‘Promoting Sustainable Transport’, states that all developments which generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:
- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major public transport infrastructure;
 - Safe and suitable access to the site can be achieved for all people; and
 - Improvements can be undertaken within the transport network that cost effectively limits the significant impacts of the development.

Developments should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

Capabilities on project:
Transportation

2.3 Regional Policy

2.3.1 South Yorkshire Local Transport Plan 2011 – 2026

The Local Transport Plan and the 'Barnsley City Region Transport Strategy' (SCRT) defines the priorities for the transport system for the next 15 years. It includes overarching aims as follows:

- Supporting economic growth;
- Enhancing social inclusion and health;
- Reducing emissions; and
- Maximising safety.

To achieve the overarching aims, the document identifies strategic policies. The most relevant policies for this development are:

- To focus new development along key public transport corridors and in places adjacent to existing services;
- To develop public transport that connects people to jobs and training in both urban and rural areas;
- To develop user-friendly public transport;
- To ensure public transport is accessible to all;
- To reduce carbon emissions;
- To encourage active travel and develop high quality cycling and walking networks;
- To provide information and travel advice for the users of all modes of transport, so that they can make informed travel choices; and
- To encourage safer road use and reduce casualties on the roads.

A series of actions are also mentioned which will support the policies outlined above:

- New links to major regeneration areas will be created to facilitate employment opportunities;
- More travel options will be given to people using a range of public transport enhancements (additional train, tram vehicles, etc.);
- Pedestrian-friendly streets and footpaths will be designed as well as a continuous cycling network. The council will also support car clubs and car sharing schemes, making information about these travel options easy to find; and
- The approach to traffic management in urban centres will acknowledge the importance of parking provision to local businesses, and the vulnerability of local economies to restricted access by car.

This Transport Assessment pays due regard to sustainable access to the site and how this will be promoted to site users to minimise the vehicular impact of the development proposals.

2.4 Local Policy

2.4.1 Barnsley Local Plan –Transport

The Barnsley Local Plan is the first of the planning documents of the Barnsley Local Plan (BLP). The purpose of the BLP is to support the next phases of the city's ongoing regeneration by providing the statutory framework for guiding the spatial pattern of change, and the quality of the environment and forms of design.

The aim of the transport policy is to:

- Reduce transport related green gas house emissions;
- Support sustainable development and the location for growth set out in the core strategy;
- Address cross boundary transport issues;
- Reduce the need to travel, particularly by car;
- Improve direct public transport links with significant places of businesses and employment outside the borough;
- Increasing the feeling of safety and security whilst using public transport, walking and cycling;
- Ensuring that sustainable and inclusive travel is embedded within new development; and
- Reducing the number of people, particularly children, that are killed on the roads.

Capabilities on project:
Transportation

- Reducing the impact of necessary road travel on the environment, the health and safety of the community and the local economy.

There is also the desire to influence travel behaviour, in particular by:

- Encouraging greater take up of walking, cycling and public transport;
- Encourage a healthier lifestyle to help reduce the high levels of obesity and heart disease; and
- Manage car parking provision.

Barnsley's commitment to sustainable travel can be summarised by policy T3 – 'New Development and Sustainable Travel', this can be summarised as follows:

- New development will be expected to: be located and designed to reduce the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists;
- Provide at least the minimum levels of parking for cycles, motorbikes, scooters, mopeds and disabled people, and should not provide more than the maximum number of car parking spaces set out in the relevant Supplementary Planning Document ;
- Provide a transport statement or assessment in line with the thresholds and guidance set out in Department for Transport 'Guidance on Transport Assessments' as published March 2007 (or any subsequent version); and
- Provide a travel plan statement or a travel plan in accordance with the thresholds and guidance set out in Department for Transport 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process' as published April 2009 (or any subsequent version).

Where levels of accessibility through public transport, cycling and walking are unacceptable, Barnsley expect developers to take action or make financial contributions. If it is not possible or appropriate for the minimum amount of parking for cycles motorbikes, scooters and mopeds to be met on site, the developer must provide or contribute towards offsite parking, or improve other forms of travel.

A fundamental goal of Barnsley's Local Plan is to provide for sustainable development and it includes a spatial strategy that reduces the need to travel by promoting growth in sustainable, accessible locations. This policy is about ensuring that sustainable and inclusive travel is embedded within any new development and providing the opportunities for people to change their travel behaviour where travel is necessary. It recognises that the availability of car parking is a key factor affecting whether people choose to travel by car or use a smarter alternative and aims to limit car parking associated with new development whilst providing appropriate facilities for cycles, motorbikes, scooters, mopeds and disabled people. This is balanced with the considerations of highway safety, living conditions and the economy, and the need to provide enough parking so people can use other forms of transport than the car.

2.4.2 BMBC care4air Initiative

This plan contains measures which aim to improve air quality within our AQMAs, as well as maintaining and improving air quality elsewhere.

As traffic emissions are the biggest source of local air pollution, a lot of actions are aimed at transport. These include:

- Making traffic flow better at congested junctions; and
- Promoting eco driving, cycling, and walking.

As can be noted from the sections above, the proposed development site accords both National and Local planning policy guidance.

Baseline Conditions



3 Baseline Conditions

3.1 Introduction

This section of the Transport Assessment sets out the existing site location and provides a summary of the existing highway conditions in the vicinity of the site.

3.2 Site Location

The site is located approximately 3km to the west of Barnsley town centre and will comprise part of the proposed development within the Capitol Park area of Barnsley. The site is located within the cul-de-sac of Capitol Close which is situated to the north of Whinby Road adjacent to junction 37 of the M1 motorway. The site is located within a strategic gateway site on the meaning it is easily accessible from the M1 north and southbound.

The land has no current development on the site, however there has been development on the opposite site with a variety of industrial, light industrial and professional services. The eastern boundary of the site is demarcated by Higham Lane to the north and to the south by Whinby Road.

Capitol Close extends south for approximately 350m onto Whinby Road with an existing pedestrian footway linking Capitol Close and Higham lane to the north. Immediately to the south of the site is a roundabout for traffic entering the site or alternatively taking the first exit to either Higham Lane or Barnsley Road. Whinby Road East is a good single lane carriageway with good quality road surfacing and lighting provision in place with a footway connecting Capitol Close/Whinby Road Roundabout to Higham Lane/Whinby Road Roundabout.

Whinby Rd extends further south for approximately 70m to another roundabout which forms a junction with the B6449 into a nearby housing development onto Barnsley Road. This section has a relatively new road surface with adequate pedestrian footway with full height kerbs spanning the length of the road and the adjacent roundabout. There are also good pedestrian crossing facilities including dropped kerbs and tactile paving, to allow pedestrians to safely cross the road.

Whinby Road extends east for approximately 180m until the signalised Dodworth Roundabout (M1 Junction 37).

The road is in good conditions with good pedestrian footway provision along with lighting provision and an adequate number of crossings with dropped kerbs and tactile paving.

Although the crossings are unsupervised within this area, visibility for pedestrians is generally adequate. The succession of roundabouts within the area will also restrict cars from travelling at excessive speeds. This in combination with the 40mph speed limit stipulated within the area should result in no worsening of existing safety for pedestrians.

3.3 Existing Access

Access to the site will be provided via two separate accesses, one leading into the car park of industrial unit A and the other from Capitol Close that will be dissect the site. One of the accesses is an existing access that is currently fenced off to prevent vehicles accessing the site.

This existing site access is shown in **Figure 2**.

Capabilities on project:
Transportation

Figure 2: Existing Site Access (Capitol Close)



Accessibility



4 Accessibility

4.1 Introduction

This chapter of the Transport Assessment considers the existing provision for sustainable travel to and from the proposed site. The site is well served by a range of sustainable transport links. The figures included within this section of the report can be found in **Appendix A** located at the back of the report.

4.2 Access for Pedestrians

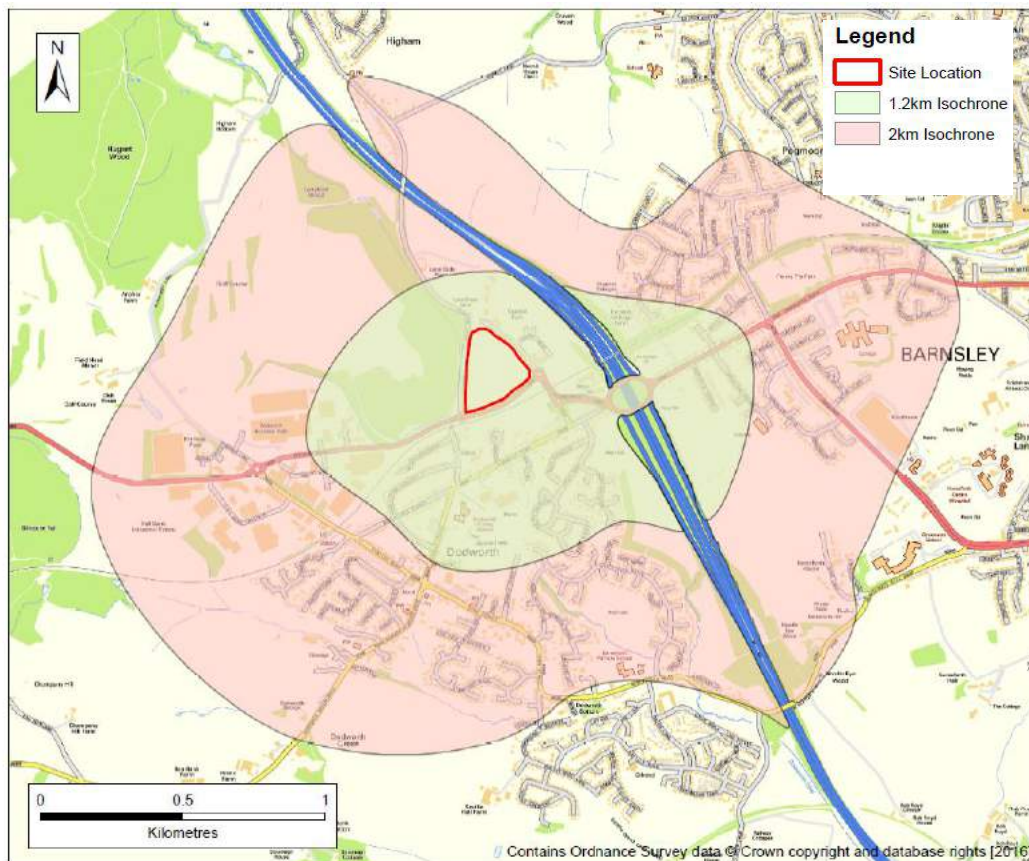
Walking is the most sustainable form of travel due to the positive environmental effects including zero harmful emissions. It also provides distinct health benefits and is the lowest cost form of travel. **Figure 3** illustrates the indicative 1.2km and 2km walking isochrone centred on the site access location.

As indicated in **Table 1**, a distance of 2km considered to be the 'preferred maximum walking distance' for commuting as specified in the Chartered Institution of Highways (CIHT) and Transportation 'Providing for Journeys on Foot' document.

Table 1: Suggested Acceptable Walking Distance

	Commuting
Desirable	500m
Acceptable	1,000m
Preferred maximum	2,000m

Figure 3: Indicative 1.2km and 2km Walking Isochrones



Capabilities on project:
Transportation

Pedestrian Footways along Capitol Close, Whinby Road, through Dodworth Roundabout and then beyond onto Dodworth Road are in very good condition. More specifically within the vicinity of the site there is good footway provision in place along both sides of Capitol Close. This includes dropped kerbs to allow for safe entry across the junction. There is also adequate street lighting provision in place to allow for safe routing at night.

Further down Capitol Close at the roundabout with Whinby Rd there is tactile paving and dropped kerbs in place to allow pedestrians to safely traverse the crossings. All the crossings at this roundabout are unsignalised however there is clear visibility both north and south.

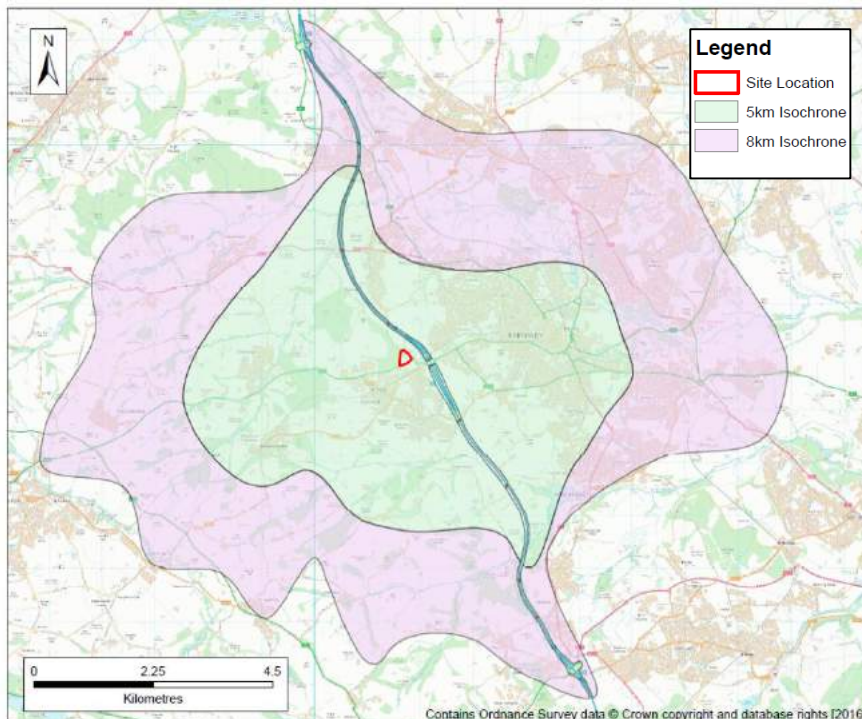
The Whinby Road/B6449 roundabout also has excellent footway provision, dropped kerbs, tactile paving and street lighting provision to allow for safe access for pedestrians crossing through the site. This roundabout also allows for safe crossings for pedestrians wishing to enter the nearby Dodworth housing development along Barnsley Road, as this is the nearest bus stop location to the proposed development site.

Overall the footway provision in place near to and just beyond from the site will allow for safe and easy passage for any potential employee wanting to walk to the site. **Figure 3** indicates there is ample opportunity for any local employee to walk to the site utilising the existing pedestrian facilities instead of using their car.

4.3 Access for Cyclists

Cycling is widely recognised as a sustainable alternative to short car journeys and in particular those of distances less than 8km. Most cycle journeys for non-work purposes and those to rail stations are between 0.5 miles [0.8km] and 2 miles [3.2km], but many cyclists are willing to cycle much further. For work, a distance of 5 miles [8 km] should be assumed. **Figure 4** outlines the indicative 5km and 8km cycling isochrones centred on the site access locations.

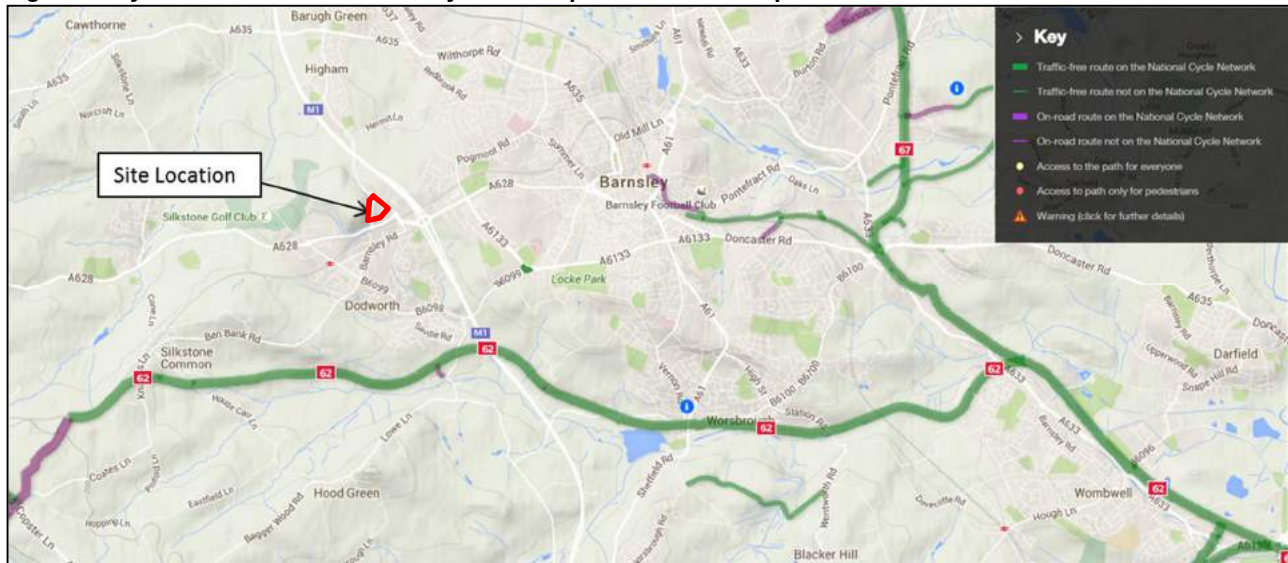
Figure 4: Indicative, 5km and 8km Cycling Isochrones.



Capabilities on project:
Transportation

Cycle routes within the vicinity of the site are as shown in **Figure 5**. The cycle routes shown on the figure have been obtained from sustrans online (link:<http://www.sustrans.org.uk/ncn/map/route/route-62>)

Figure 5: Cycle Route within the vicinity of the Capitol Close development site.



As can be observed from the **Figure 5**, the nearest cycle routes runs parallel to the south of the site with clear access available along Ben Bank Road onto Barnsley Road then up onto Whinby Road to the site.

In addition to the cycle network shown, the road speeds of 40mph, 3.5m carriageway widths and proximity of the site to the surrounding residential areas act to encourage cycling as a feasible alternative to making journeys by car. This can be either as a single mode of transport or a multi modal journey including train journeys as both Dodworth and Barnsley train station are relatively close to the site at 1.2km and 3.5km respectively.

Overall it is deemed the cycling facilities around the site are adequate and would allow employees to safely commute to work.

4.4 Public Transport Accessibility

4.4.1 Buses

The nearest bus stop located to the site is approximately 350m to the south of the Capitol Close site access. This bus stop serves the number 20, 21, 21a and 22 bus stops, details of their destinations and frequency and can be seen below in **Table 2**.

The locations of accessible bus stops from the proposed development site are shown in **Figure 6**. Also shown in **Figure 7** is the 400m walking isochrone surrounding the proposed site. This is the preferred maximum distance people would be expected to walk to a nearby bus stop, as detailed in the CIHT's 'Providing for Journeys on Foot' guidance document.

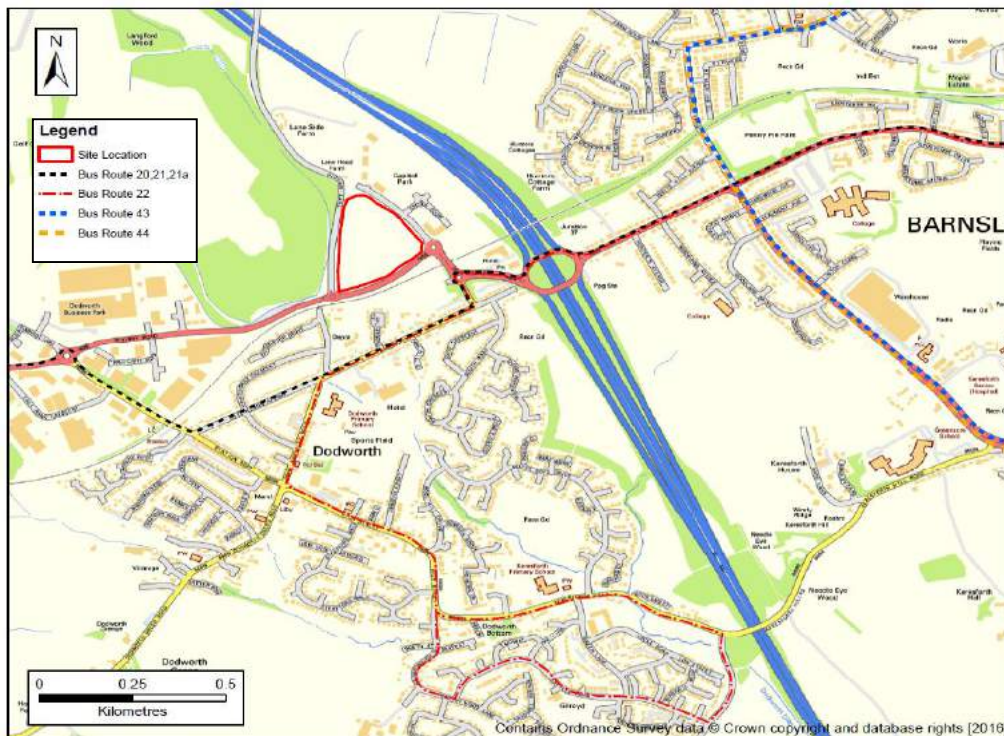
There is one stop within the 400m distance with others on the periphery of this area and also a sufficient amount within 800m of the proposed site.

Capabilities on project:
Transportation

Table 2: Dodworth Road and Whinby Road Accessible Bus Services

Service number	Route	Mon-Fri		Sat		Sun	
		Day	Eve	Day	Eve	Day	Eve
20	Barnsley interchange-Pogmoor-Dodworth-Barnsley Road-Silkstone-Hoylandswaine – Peniston Market Place	2/hr	0	1/hr	0	N/A	N/A
21	Barnsley interchange-Pogmoor-Dodworth-Barnsley Road-Silkstone-Oxspring- Penistone	1/hr	0	1/hr	0	N/A	N/A
21a	Barnsley interchange-Pogmoor-Dodworth-Barnsley Road-Silkstone-Oxspring- Penistone Market Place	0/hr	1/hr	0	1/hr	1/hr	1/hr
22	Barnsley Town Centre - Gilroyd	3/hr	0	3/hr	0	N/A	N/A

Figure 6: Local Bus Routes



In summary, the bus facilities within proximity of the site are adequate, with 1 bus stop within 400m.

4.4.2 Trains

With reference to paragraph 6.16 of the CIHT document 'Planning for Public Transport in Development's it is stated that 'people have been found to be willing to walk about twice as far to or from a station than a bus stop; up to about 800m for rail compared to about 400m for a bus'.

The nearest railway facilities to the proposed development site are located in Dodworth and Barnsley. Dodworth station is located 1.2km to the southwest of the site and Barnsley station is located 3.5km to the east of the site.

Capabilities on project:
Transportation

Dodworth station is therefore just outside the 800m distance people would be willing to walk; however it remains a viable sustainable option.

Both stations could also feasibly facilitate part of a multi-modal journey to / from the proposed site providing access to various destinations.

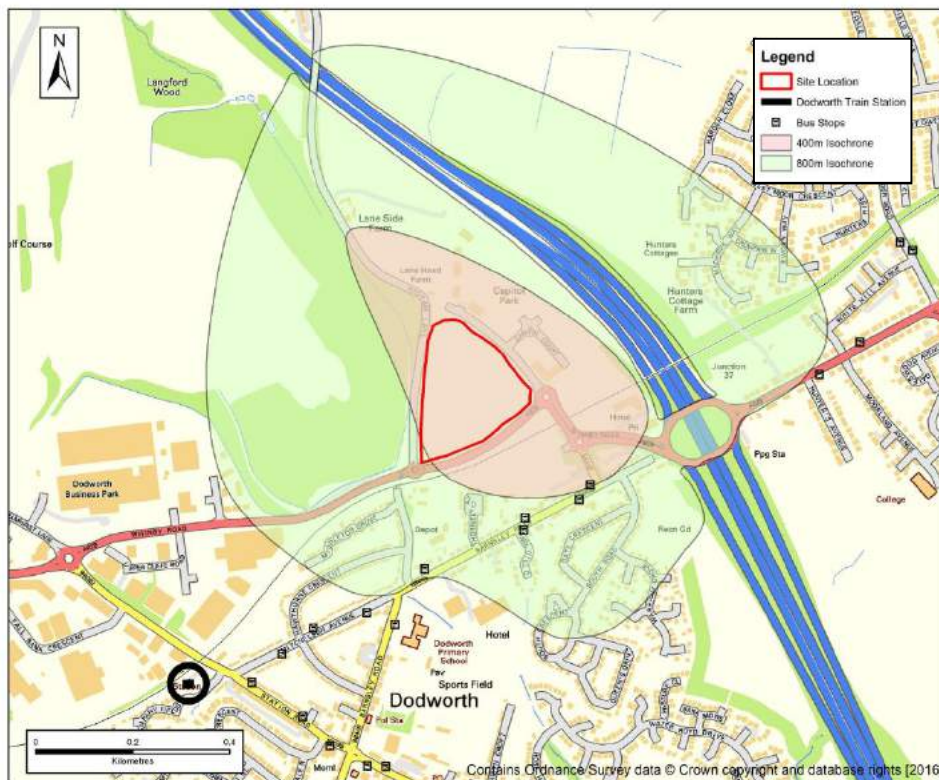
At Barnsley station there are 24 bicycle storage spaces and a bicycle hire facility. The station provides access to a wide range of services on a local, regional and national scale. Some of the main routes which can be accessed from Barnsley Station are summarised in **Table 3** below.

Table 3: Barnsley Station Rail Services

Route (Main Stations)	Mon - Fri	Sat	Sun
Sheffield	4/hr	4/hr	2/hr
Leeds	3/hr	3/hr	2/hr
Nottingham	3/hr	3/hr	2/hr

The journey time excluding any disruptions to Sheffield from Barnsley is 25mins and the journey time to Leeds is 36 minutes.

Figure 7: Local Bus Stops and Dodworth Train Station.



Capabilities on project:
Transportation

Table 4: Dodworth Railway Station Timetable

Route (Main Stations)	Mon - Fri	Sat	Sun
Sheffield	1/hr	1/hr	1/hr
Huddersfield	1/hr	1/hr	1/hr

The journey time between Dodworth station and Sheffield is 36 minutes and to Huddersfield is 40 minutes. Using this information it would be realistic to assume that the train could form part of a multi modal trip to work, using both walking and cycling from Dodworth station or cycling and bus from Barnsley station.

4.5 Summary

This section of the report has shown that the proposed development site is situated in a good location for access by sustainable modes.

The site has good pedestrian and cycling facilities, along with easily accessible bus stops that are in close proximity to the site. Cycling and walking could easily form part of a wider multi model journey to work commute.

Development Proposals



5 Development Proposals

5.1 Introduction

This chapter provides details of the proposed development including access and parking arrangements.

5.2 Proposed Development

The proposed development will comprise of four industrial units varying in size and use. The total gross floor area (GFA) of the site is proposed to 16,499 m² and is split up as follows:

- Industrial Unit A – 2554 m² GFA including 232 m² of office space on the first floor;
- Industrial Unit B – 2787 m² GFA including 139m m² of office space on the first floor;
- Industrial Unit C – 6503 m² GFA including 325m² of office space on the ground floor; and
- Industrial Unit D – 4655 m² GFA including 232m² of office space on the ground floor.

5.3 Proposed Car Parking

The site will provide a total of 297 car parking spaces spread over 4 different sites within the proposed development, of this number there will be 15 disabled parking bays, 5% of the total number of parking bays. The site will be accessible off Capitol Close with the main access road travelling north to south through the middle of the site. Access to Unit A will be provided with a separate access whilst the remaining units will be served off the main road.

5.4 Proposed Access

There will be two proposed accesses to the site; one which will lead into the car park of industrial Unit A, which is an junction stub currently fenced to prevent unauthorised vehicles from entering the site. This is shown in **Figure 8**.

Figure 8: Proposed Site Access



There will also be the creation of a new site access approximately 50m north of the existing site access. The approximate location of this new site access is shown in **Figure 9**.

Capabilities on project:
Transportation

Figure 9: Location of New Access into the Proposed Development



At this stage of the process the proposed development is in outline form so the layout of the proposed site could yet change meaning the quantity and configuration of the units could be altered.

Trip Generation and Distribution



6 Trip Generation and Distribution

6.1 Introduction

This chapter outlines the anticipated traffic generation and distribution of trips as a consequence of the proposed development.

6.2 Trip Generation

To estimate the number of trips associated with the proposed development, the TRICS database (v.7.1.2) has been interrogated to derive weekday AM (08.00-09.00) and PM (17.00-18.00) peak hour vehicle trip rates for sites of a similar size and nature to the development proposals. Sites have been selected based on TRICS land use category 02D – Employment Industrial Estate.

The full outputs from TRICS are contained within **Appendix B** of this report whilst the vehicle trip rates and resultant trip generation are summarised in **Table 5** below. The trip rates are based on a GFA of 16,499m².

Table 5: TRICS Vehicle Trip Rates and Vehicle Trip Generation

Land Use Category	Trips	AM Peak (08.00-09.00)		PM Peak (17.00-18.00)	
		Arrivals	Departures	Arrivals	Departures
Employment – Industrial Estate	Vehicle Trip Rate (per 100m ²)	0.380	0.158	0.169	0.367
	Vehicle Trip Generation	63	26	28	60

6.3 Trip Distribution Methodology

In order to develop a methodology for distributing the proposed trips onto the surrounding highway network, the 2011 Census has been interrogated. The destination of travel to work for people who live in the local area has been considered.

The number of trips to each ward has been expressed as a percentage of the total and then assigned to routes on the highway network to give the vehicle trip distribution to and from the proposed development. Where a choice of routes is available, the proportion of trips using each route has been split, to reflect the likely preferred choice of drive time and drive distance.

6.4 Trip Distribution

The resultant trip distribution is provided below:

- Dodworth Road – 27%;
- M1 (S) – 24%;
- M1 (N) – 14%;
- Barnsley Road – 14%;
- Higham Road – 12%; and
- Whinby Road – 9%.

6.5 Committed Developments

The committed developments that have been included as part of this assessment are as follows:

6.5.1 Taylor Wimpey Site

The proposals are to develop the former site of Kingstone School to provide around 163 dwellings served from a new access junction with Broadway. The traffic distributions have been taken from the Transport Assessment produced by PAH Highway Consultants titled 'Proposed Residential Development on Land off Broadway, Barnsley' dated April 2014.

Capabilities on project:
Transportation

Table 6: Vehicle Trip rates for the Taylor Wimpey Site

Trips	AM Peak (08.00-09.00)		PM Peak (17.00-18.00)	
	Arrivals	Departures	Arrivals	Departures
Vehicle Trip Rate	0.159	0.418	0.390	0.228
Vehicle Trip Generation	30	79	74	43

6.5.2 Capitol Close

BMBC also requested that a potential site adjacent to this site within Capital Close also be included within this Transport Assessment. The trip rates for this were derived from TRICs based on a GFA of 25,000m², this GFA was based on 45% of the proposed site area and the same trip rates were used as before.

Table 7: Proposed vehicle trip rates for the committed development at Capitol Park.

Trips	AM Peak (08.00-09.00)		PM Peak (17.00-18.00)	
	Arrivals	Departures	Arrivals	Departures
Vehicle Trip Rate	0.380	0.158	0.169	0.367
Vehicle Trip Generation	98	41	44	95

Summary & Conclusions



7 Summary & Conclusions

AECOM have been commissioned by Marshall CDP to produce a Transport Assessment in support of the planning application at Capitol Park in Barnsley.

The proposed development will comprise of four industrial units each varying slightly in size and use. The total gross floor area (GFA) of the site is proposed to 16,499 m² however this could be subject to change once the plans have been finalised.

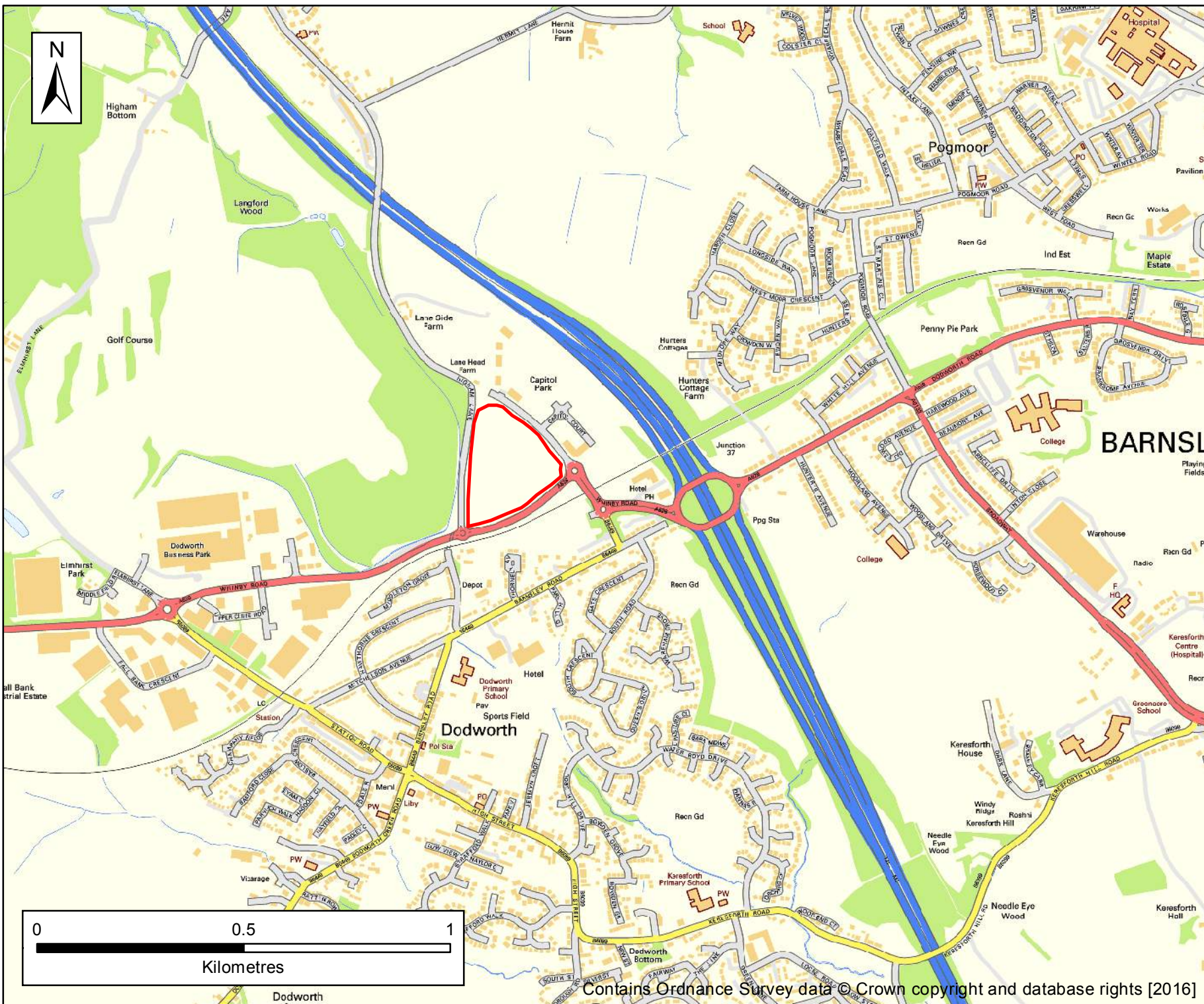
The accessibility to the site has shown good pedestrian and cycling facilities, along with easily accessible bus stops that are in close proximity to the site.

To estimate the number of trips associated with the proposed development, the TRICS database (v.7.1.2) has been interrogated to derive weekday AM (08.00-09.00) and PM (17.00-18.00) peak hour vehicle trip rates for sites of a similar size and nature to the development proposals. Sites have been selected based on TRICS land use category 02D – Employment Industrial Estate.

In order to develop a methodology for distributing the proposed trips onto the surrounding highway network, the 2011 Census has been interrogated using the information related to the destination of travel to work for people who live in the local area being considered when deriving the trip distribution.

The distribution was derived by determining the number of trips to each ward which is then assigned to routes on the highway network to give the vehicle trip distribution to and from the proposed development. Where a choice of routes is available, the proportion of trips using each route has been split, to reflect the likely preferred choice of drive time and drive distance. The results of the trip distribution and generation can be found in **Appendix C** at the end of the report.

Appendix A Figures & Drawings



Legend

Site Location

Title:

Site Location Plan

Project:

Capitol Park
Barnsley

Drawn	DC	Design	DC
Checked	MR	Scale	1:12,101
Approved	SM	Date	06.05.16

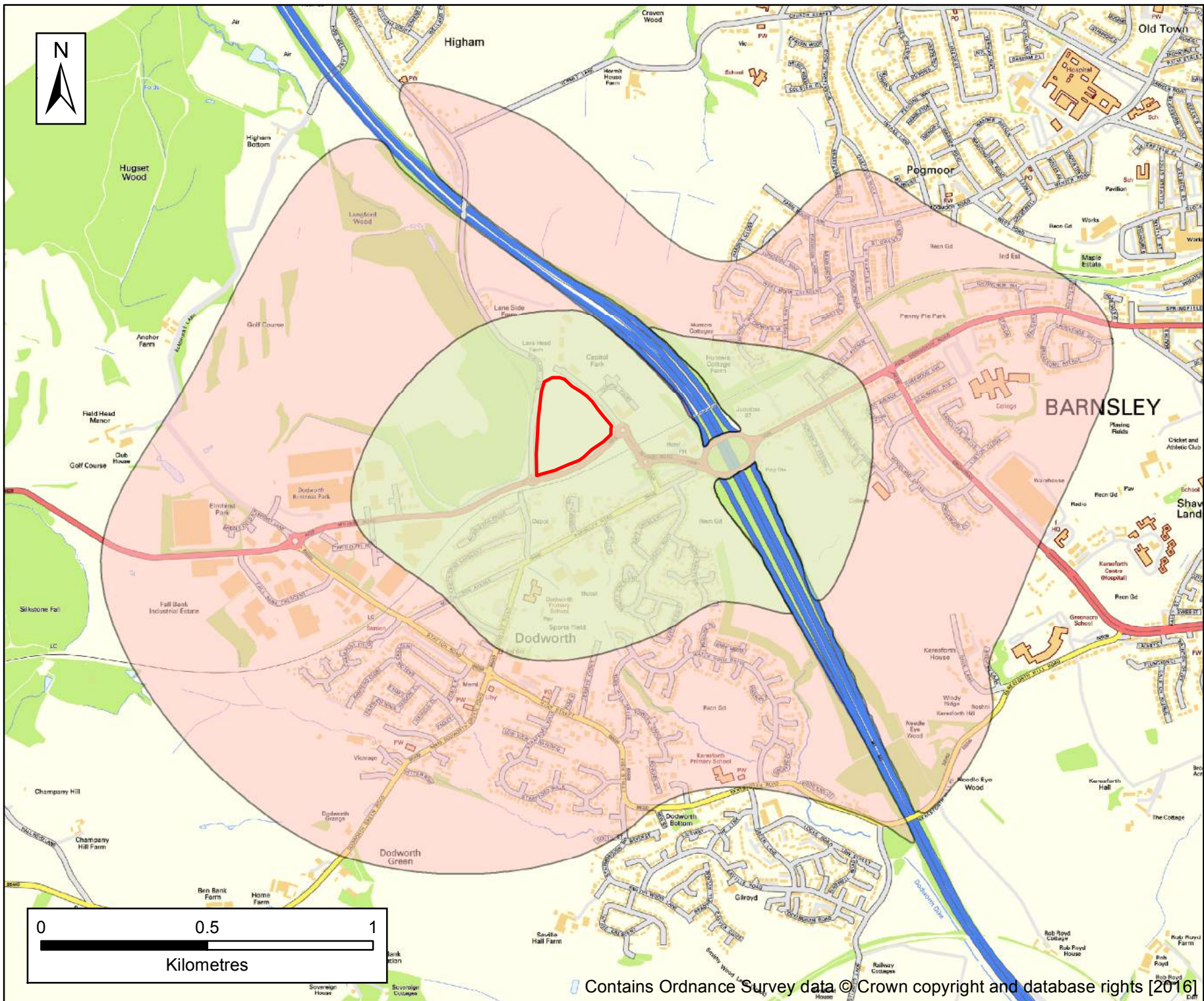
Client:



5th Floor
2 City Walk
Leeds
LS11 9AR

Tel: 0113 391 6800
Fax: 0133 391 6899
www.aecom.com

60501921- 001



Legend

- Site Location
- 1.2km Isochrone
- 2km Isochrone

Title:

Indicative
1.2km and 2km
Walking Isochrones

Project:

Capitol Park
Barnsley

Drawn	DC	Design	DC
Checked	MR	Scale	1:15,000
Approved	SM	Date	06.05.16

Client:

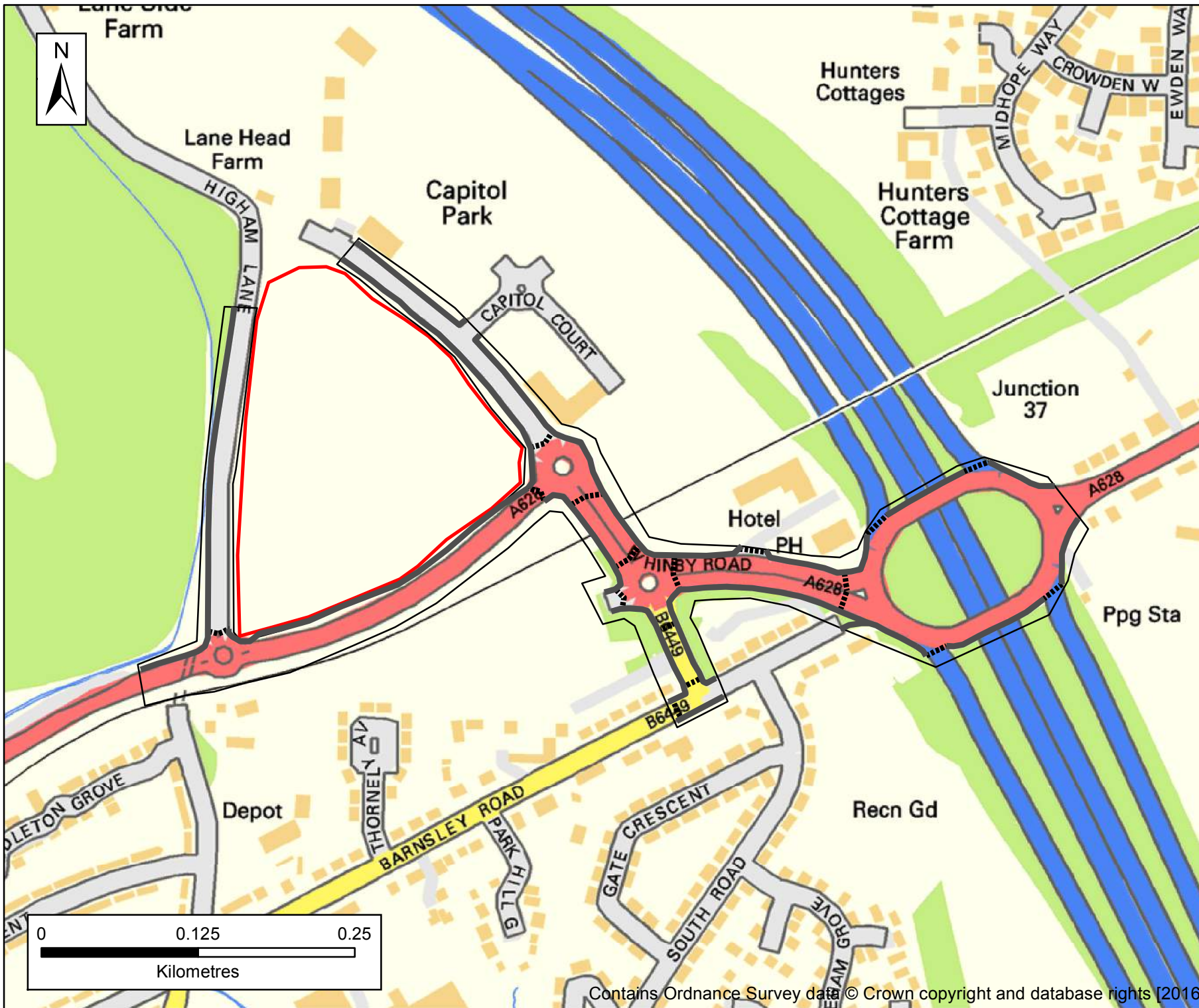


AECOM

5th Floor
2 City Walk
Leeds
LS11 9AR

Tel: 0113 391 6800
Fax: 0133 391 6899
www.aecom.com

60501921-002



- ### Legend
- Footways
 - Study Boundary
 - Pedestrian Crossings
 - Site Location

Title:

Pedestrian Infrastructure

Project:

Capitol Park
Barnsley

Drawn	DC	Design	DC
Checked	MR	Scale	1:4,000
Approved	SM	Date	06.05.16

Client:

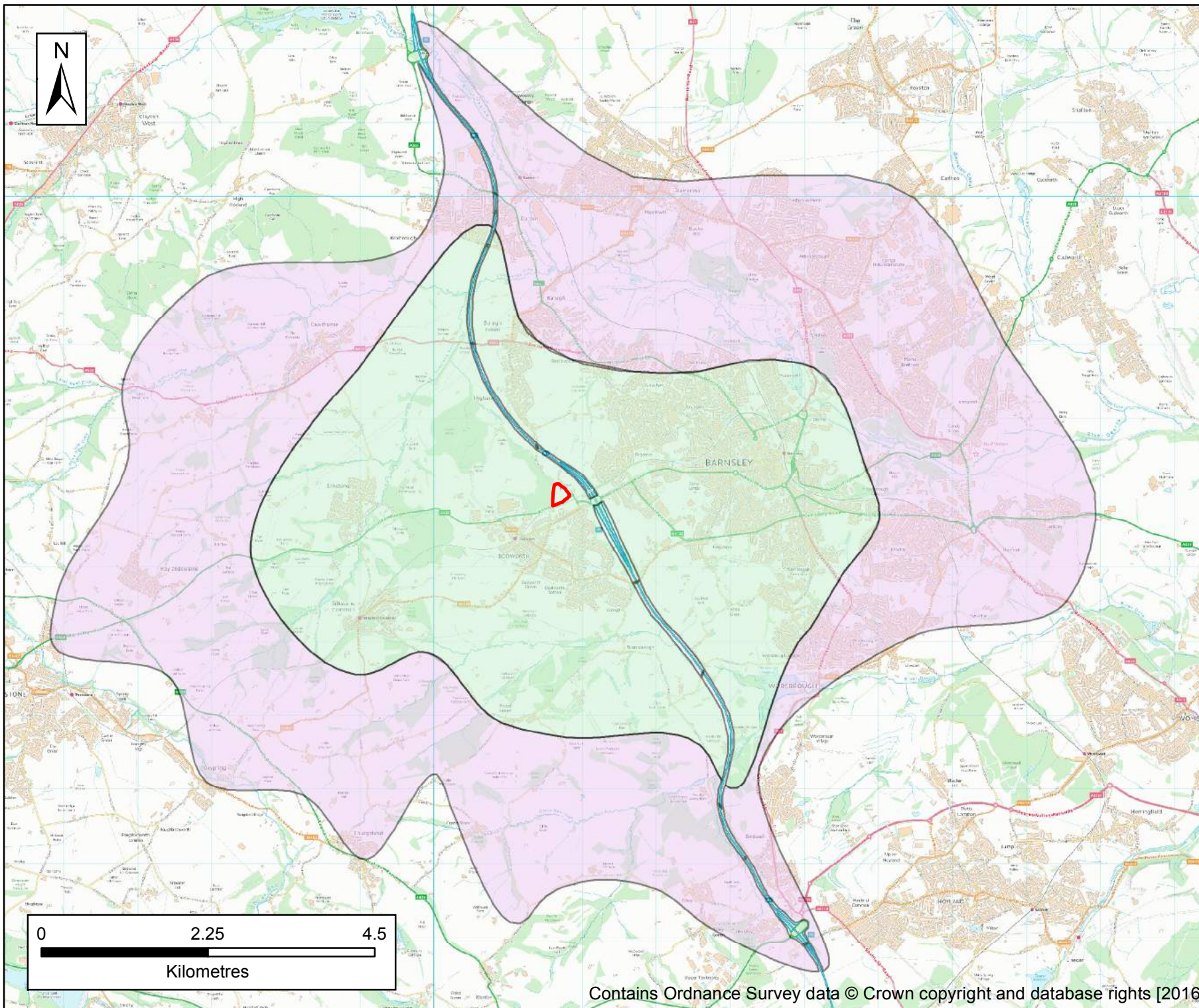



AECOM

5th Floor
2 City Walk
Leeds
LS11 9AR

Tel: 0113 391 6800
Fax: 0133 391 6899
www.aecom.com

60501921-003



Legend

- Site Location
- 5km Isochrone
- 8km Isochrone

Title:

Indicative 5km and
8km Cycling Isochrones

Project:

Capitol Park
Barnsley

Drawn	DC	Design	DC
Checked	MR	Scale	1:67,739
Approved	SM	Date	06.05.16

Client:

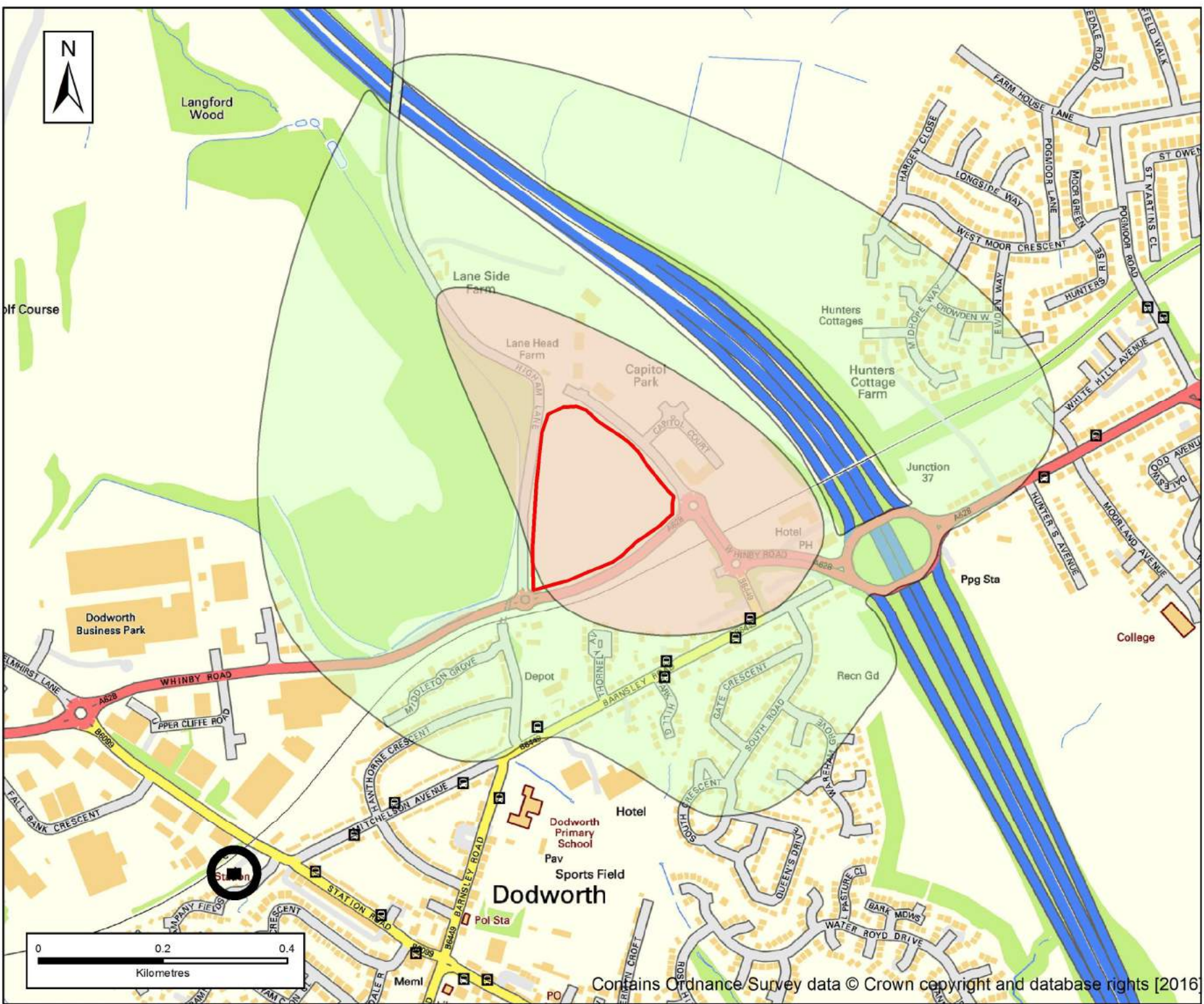


AECOM

5th Floor
2 City Walk
Leeds
LS11 9AR

Tel: 0113 391 6800
Fax: 0133 391 6899
www.aecom.com

60501921 - 004



Legend

- Site Location
- Dodworth Train Station
- Bus Stops
- 400m Isochrone
- 800m Isochrone

Title:
Local Bus Stops
With Indicative 400m and
800m Buffer

Project:
Capitol Park
Barnsley

Drawn	DC	Design	DC
Checked	MR	Scale	1:8,000
Approved	SM	Date	06.05.16

Client:





5th Floor
2 City Walk
Leeds
LS11 9AR

Tel: 0113 391 6800
Fax: 0133 391 6899
www.aecom.com

60501921 - 005



Legend

- Site Location
- Bus Route 20,21,21a
- Bus Route 22
- Bus Route 43
- Bus Route 44

Title:

Bus Routes

Project:

Capitol Park
Barnsley

Drawn	DC	Design	DC
Checked	MR	Scale	
Approved	SM	Date	06.05.16

Client:



AECOM

5th Floor
2 City Walk
Leeds
LS11 9AR

Tel: 0113 391 6800
Fax: 0133 391 6899
www.aecom.com

60501921 - 006

Appendix B TRICS Data

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : D - INDUSTRIAL ESTATE
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
	KC KENT	1 days
05	EAST MIDLANDS	
	NT NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS	
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	2 days
08	NORTH WEST	
	CH CHESHIRE	1 days
09	NORTH	
	CB CUMBRIA	1 days
	TW TYNE & WEAR	1 days
11	SCOTLAND	
	FA FALKIRK	1 days
17	ULSTER (NORTHERN IRELAND)	
	AR ARMAGH	1 days

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

Filtering Stage 2 selection:

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

Parameter: Gross floor area
 Actual Range: 10715 to 27687 (units: sqm)
 Range Selected by User: 8250 to 33000 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/06 to 20/09/13

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

Selected survey days:

Monday	1 days
Tuesday	1 days
Wednesday	3 days
Thursday	3 days
Friday	3 days

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

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	8

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

Selected Location Sub Categories:

Industrial Zone	4
Residential Zone	3
No Sub Category	4

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

Filtering Stage 3 selection:

Use Class:

B1	2 days
B2	8 days
B8	1 days

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

Population within 1 mile:

1,000 or Less	1 days
1,001 to 5,000	2 days
10,001 to 15,000	2 days
15,001 to 20,000	3 days
20,001 to 25,000	1 days
25,001 to 50,000	2 days

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

Population within 5 miles:

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

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

Car ownership within 5 miles:

0.6 to 1.0	8 days
1.1 to 1.5	3 days

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

Travel Plan:

No	11 days
----	---------

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

LIST OF SITES relevant to selection parameters

1	AR-02-D-01	INDUSTRIAL ESTATE	ARMAGH
	HAMILTONSBAWN ROAD		
	ARMAGH		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	11548 sqm	
	Survey date: TUESDAY	08/06/10	Survey Type: MANUAL
2	CB-02-D-04	INDUSTRIAL ESTATE	CUMBRIA
	CARLISLE ROAD		
	BRAMPTON		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	17708 sqm	
	Survey date: WEDNESDAY	16/12/09	Survey Type: MANUAL
3	CH-02-D-02	INDUSTRIAL EST.	CHESHIRE
	MANCHESTER ROAD		
	WINCHAM		
	NORTHWICH		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	22000 sqm	
	Survey date: FRIDAY	15/06/07	Survey Type: MANUAL
4	EX-02-D-01	INDUSTRIAL ESTATE	ESSEX
	OAKWOOD HILL		
	LOUGHTON		
	Edge of Town		
	Industrial Zone		
	Total Gross floor area:	27687 sqm	
	Survey date: THURSDAY	22/11/07	Survey Type: MANUAL
5	FA-02-D-02	INDUSTRIAL ESTATE	FALKIRK
	MAIN STREET		
	GRAHAMSTON		
	FALKIRK		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Gross floor area:	21250 sqm	
	Survey date: THURSDAY	30/05/13	Survey Type: MANUAL
6	KC-02-D-02	INDUSTRIAL ESTATE	KENT
	SOUTHWELL ROAD		
	DEAL		
	Edge of Town		
	Residential Zone		
	Total Gross floor area:	10715 sqm	
	Survey date: WEDNESDAY	28/11/12	Survey Type: MANUAL
7	NT-02-D-01	INDUSTRIAL ESTATE	NOTTINGHAMSHIRE
	B6028 STONEYFORD ROAD		
	STANTON HILL		
	SUTTON-IN-ASHFIELD		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	26400 sqm	
	Survey date: FRIDAY	30/06/06	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	TW-02-D-06	INDUSTRIAL ESTATE	TYNE & WEAR
	NORHAM ROAD		
	WEST CHIRTON		
	NORTH SHIELDS		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	23000 sqm	
	Survey date: THURSDAY	19/10/06	Survey Type: MANUAL
9	WM-02-D-02	INDUSTRIAL ESTATE	WEST MIDLANDS
	DUNLOP WAY		
	BIRMINGHAM		
	Edge of Town		
	Residential Zone		
	Total Gross floor area:	23480 sqm	
	Survey date: WEDNESDAY	07/11/12	Survey Type: MANUAL
10	WY-02-D-02	INDUSTRIAL EST.	WEST YORKSHIRE
	A629 WAKEFIELD ROAD		
	TANDEM		
	HUDDERSFIELD		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	20824 sqm	
	Survey date: MONDAY	11/09/06	Survey Type: MANUAL
11	WY-02-D-03	INDUSTRIAL ESTATE	WEST YORKSHIRE
	ARMLEY ROAD		
	LEEDS		
	Suburban Area (PPS6 Out of Centre)		
	Industrial Zone		
	Total Gross floor area:	24980 sqm	
	Survey date: FRIDAY	20/09/13	Survey Type: MANUAL

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

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	11	20872	0.296	11	20872	0.106	11	20872	0.402
08:00 - 09:00	11	20872	0.380	11	20872	0.158	11	20872	0.538
09:00 - 10:00	11	20872	0.270	11	20872	0.186	11	20872	0.456
10:00 - 11:00	11	20872	0.230	11	20872	0.211	11	20872	0.441
11:00 - 12:00	11	20872	0.232	11	20872	0.244	11	20872	0.476
12:00 - 13:00	11	20872	0.221	11	20872	0.252	11	20872	0.473
13:00 - 14:00	11	20872	0.249	11	20872	0.245	11	20872	0.494
14:00 - 15:00	11	20872	0.219	11	20872	0.223	11	20872	0.442
15:00 - 16:00	11	20872	0.202	11	20872	0.250	11	20872	0.452
16:00 - 17:00	11	20872	0.169	11	20872	0.367	11	20872	0.536
17:00 - 18:00	11	20872	0.098	11	20872	0.358	11	20872	0.456
18:00 - 19:00	11	20872	0.051	11	20872	0.138	11	20872	0.189
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.617			2.738			5.355

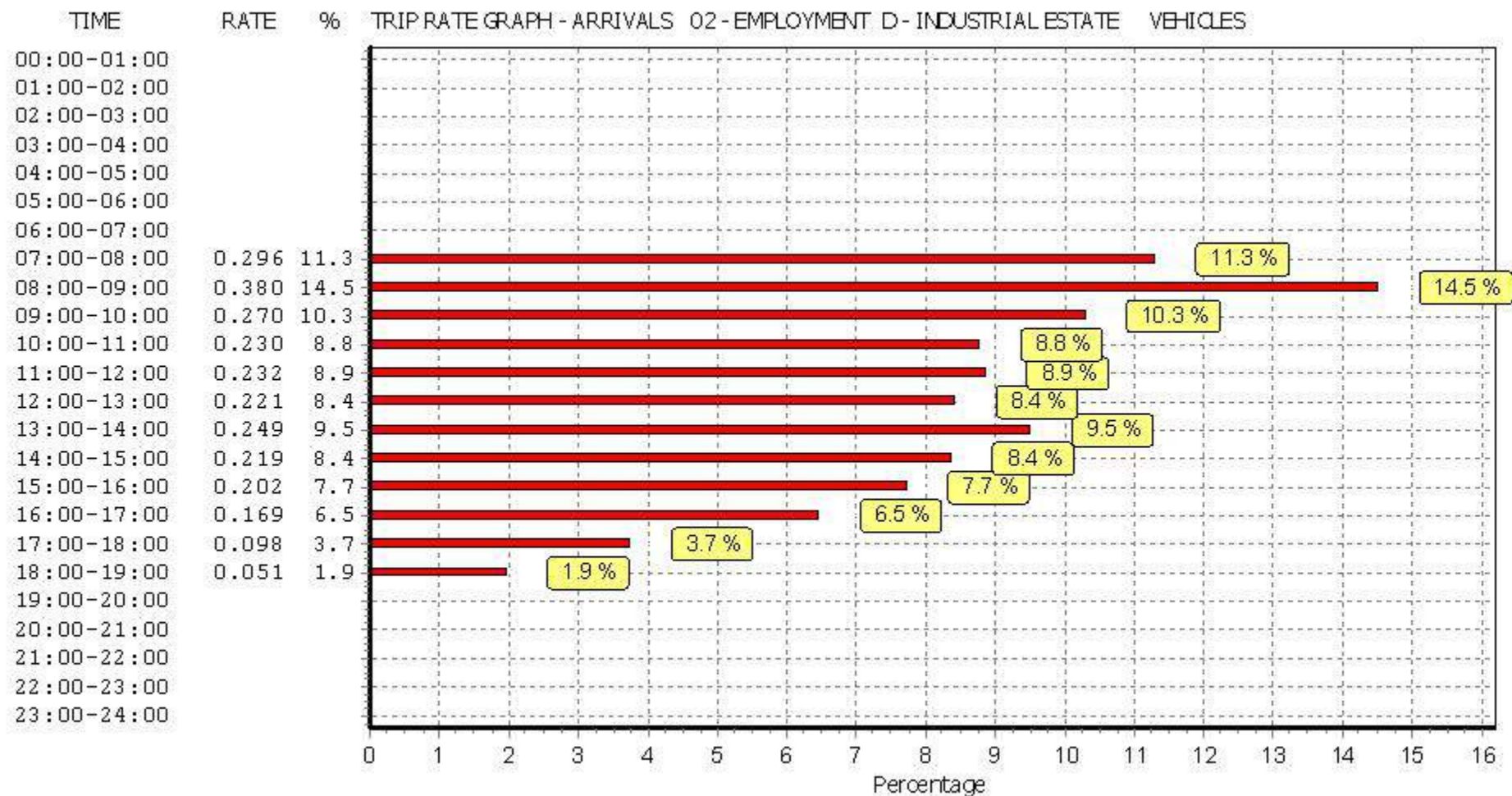
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

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

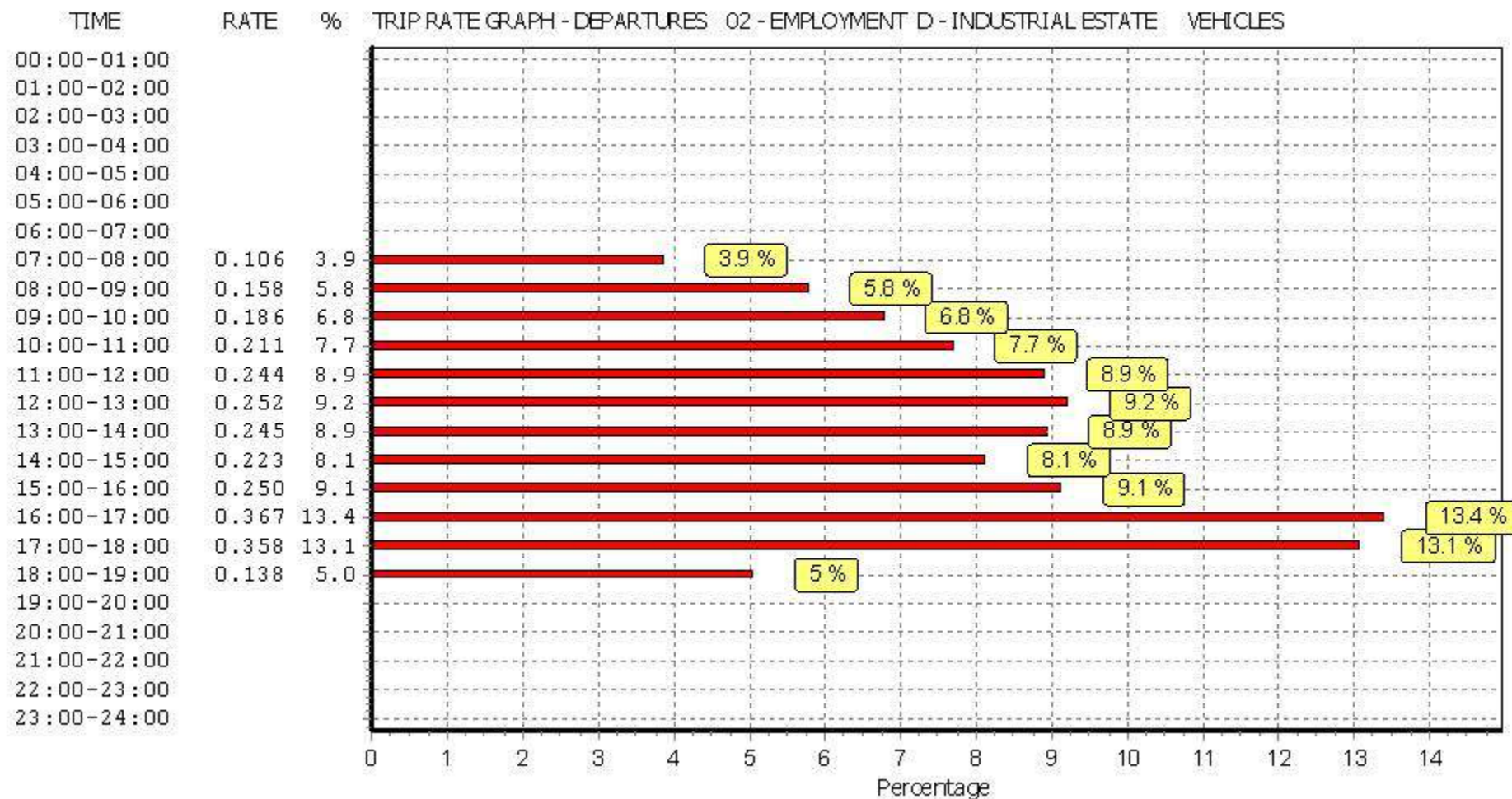
Parameter summary

Trip rate parameter range selected: 10715 - 27687 (units: sqm)
 Survey date range: 01/01/06 - 20/09/13
 Number of weekdays (Monday-Friday): 11
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

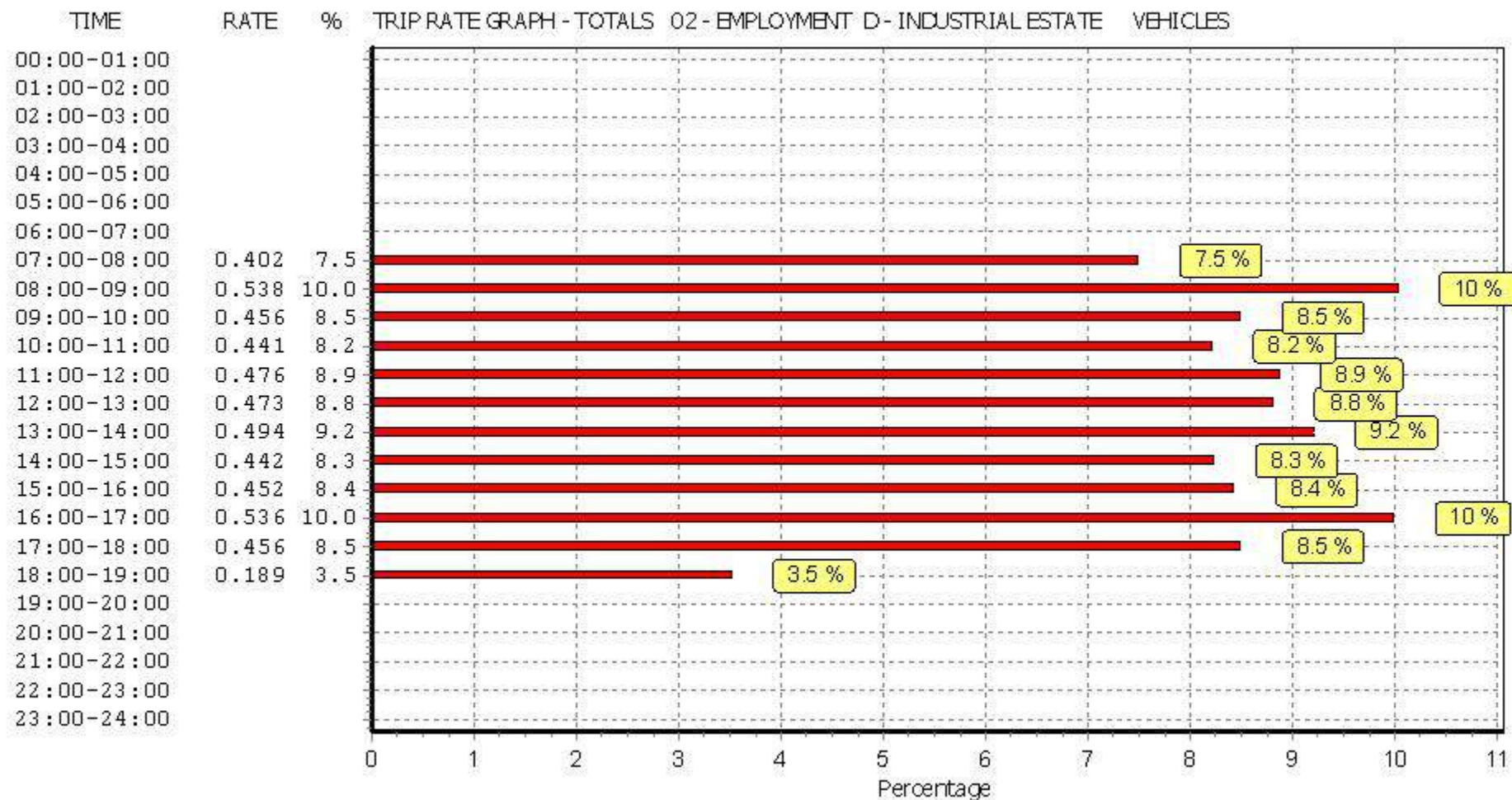
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

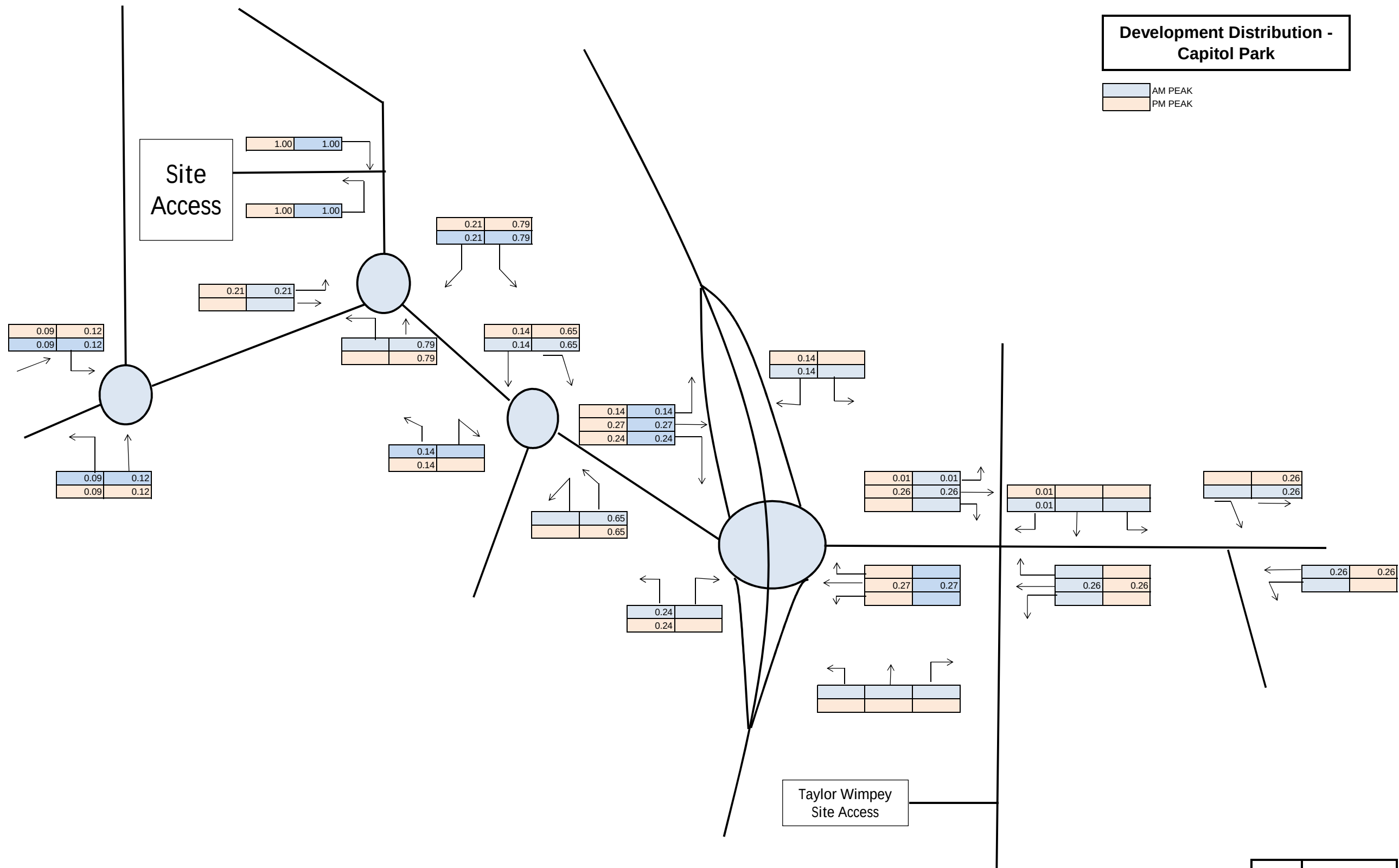


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

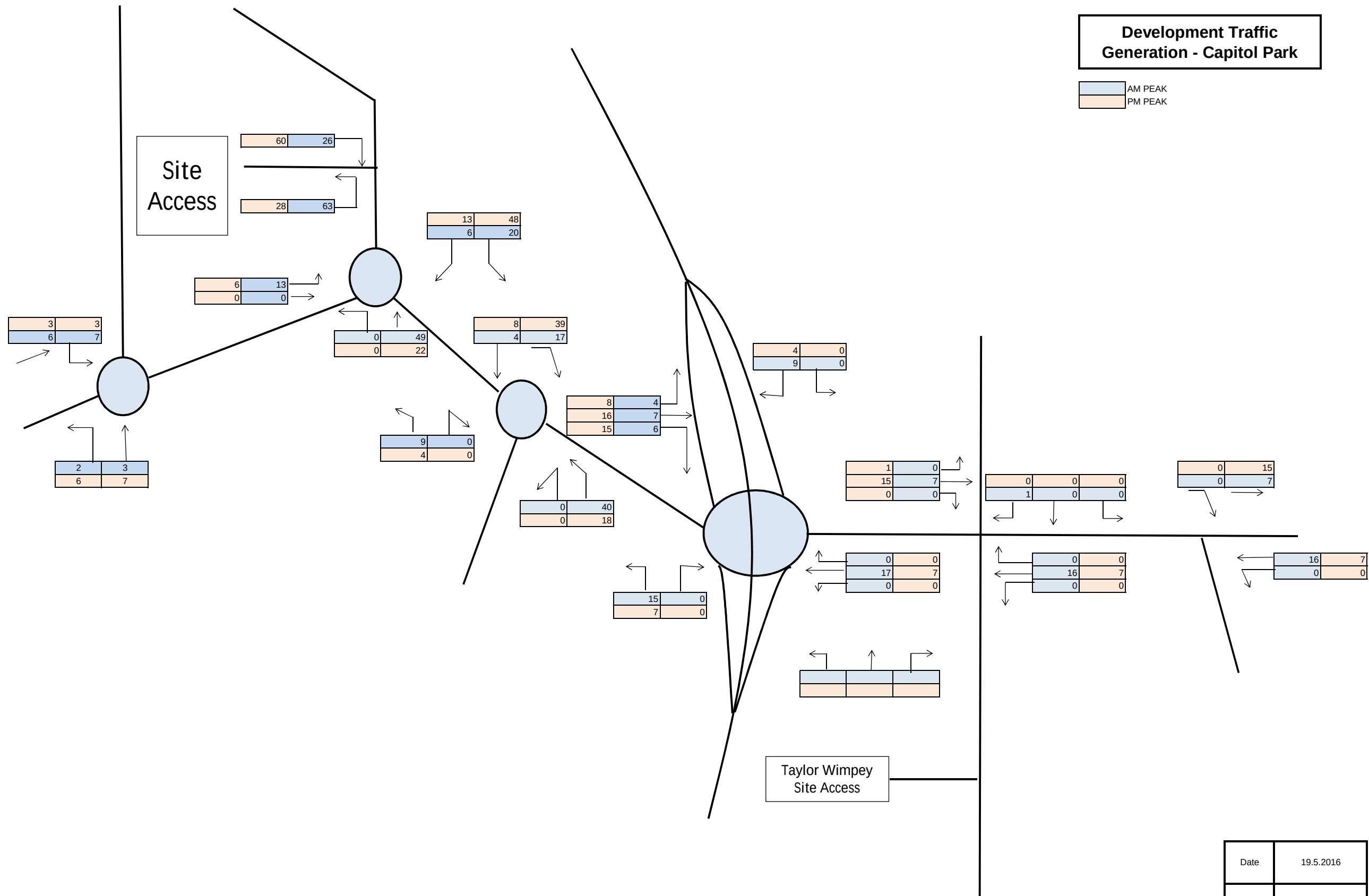


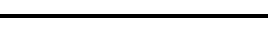
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

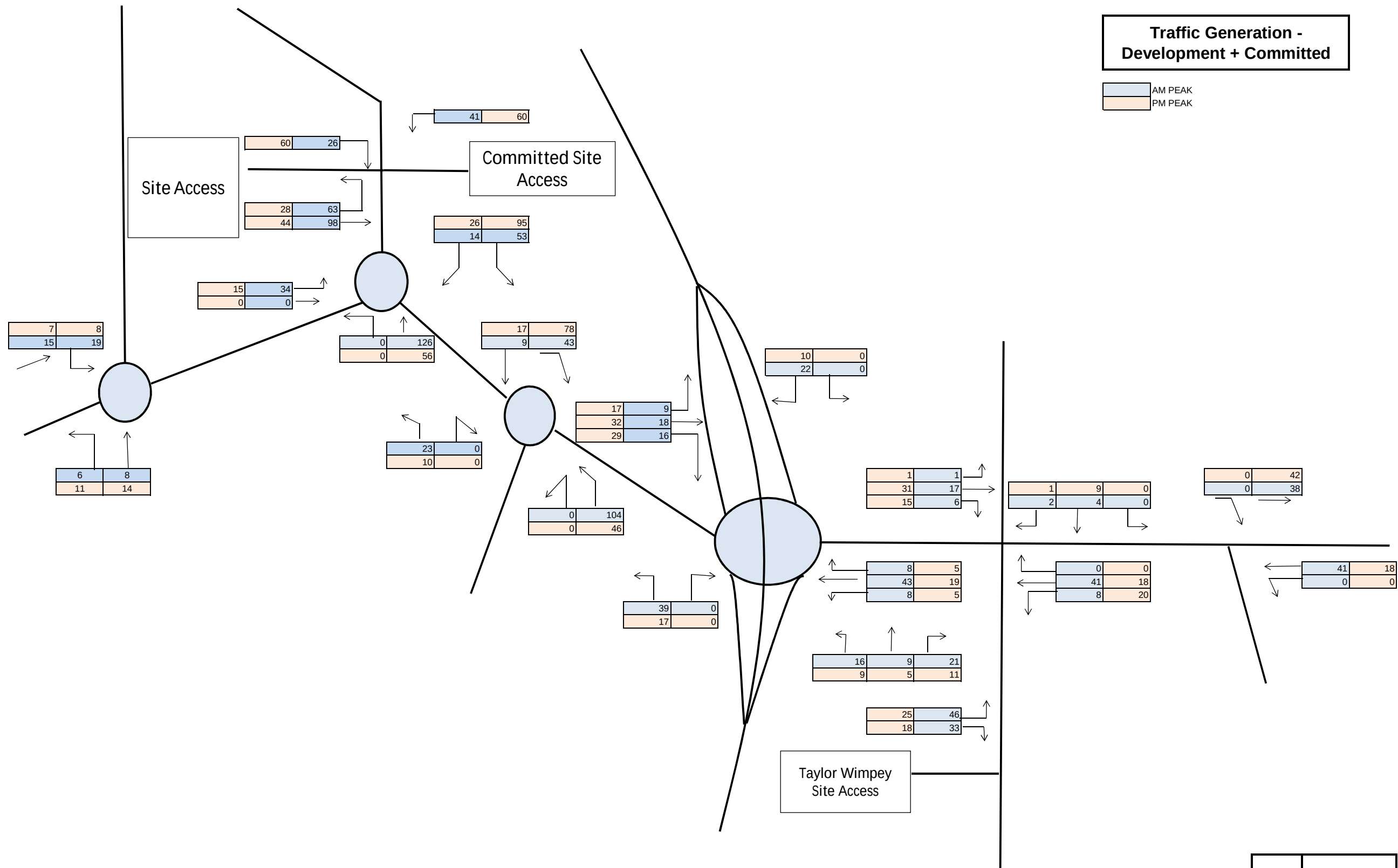
Appendix C Traffic Flow Diagram



						Date	19.5.2016
						Design	DC
Client:	Project	Title		Drawing Number	Revision Number	Ch'd	MR
Marshall CDP	Capitol Park	Capitol Park Trip Distribution		60501921-TD-001	/	App'r'd	SM
F:\PROJECTS\999999Speculative\DEVELOPMENT\Capitol Park Review, Barnsley\Excel							



						Date	19.5.2016
						Design	DC
Client:	Project	Title		Drawing Number	Revision Number	Ch'd	MR
Marshall CDP	Capitol Park	Capitol Park Trip Generation		60501921-TD-002	/	Appr'd	SM
F:\PROJECTS\999999Speculative\DEVELOPMENT\Capitol Park Review, Barnsley\Excel							



					Date	19.5.2016	
					Design	DC	
Client:	Project	Title		Drawing Number	Revision Number	Ch'd	MR
Marshall CDP	Capitol Park	Development + Committed Development Trip Generation		60501921-TD-004	/	App'r'd	SM
				F:\PROJECTS\99999Speculative\DEVELOPMENT\Capitol Park Review, Barnsley\Excel			