Land to North of Cadeby Road, Site Ref 929
Highway Feasibility Report

Curtins Ref: 076941-CUR-00-XX-RP-TP-001-V02-HFR
Revision: Final
Issue Date: 01 September 2020

Client Name: Richard and Michelle Lewis (Site Owners)
Control Sheet

This report has been prepared for the sole benefit, use, and information for the client. The liability of Curtins with respect to the information contained in the report will not extend to any third party.

<table>
<thead>
<tr>
<th>Author</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jonathan Ashcroft</td>
<td></td>
<td>01 September 2020</td>
</tr>
<tr>
<td>BSc (Hons) LLM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior Transport Planner</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reviewed</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shazad Khan</td>
<td></td>
<td>01 September 2020</td>
</tr>
<tr>
<td>BA MA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Head of Transport Planning Yorkshire and North East</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Authorised</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alex Vogt</td>
<td></td>
<td>01 September 2020</td>
</tr>
<tr>
<td>BSc (Hons) MSc MCIHT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Director of Transport Planning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Table of Contents

1.0 Introduction ...................................................................................................................................... 1  
1.1 Background ........................................................................................................................................ 1  
1.2 Purpose and Scope of This Report .................................................................................................... 1  
1.3 Structure of the Report ....................................................................................................................... 2  

2.0 Site Location and Highway Layout ................................................................................................. 3  
2.1 Site Location ....................................................................................................................................... 3  
2.2 Existing Use ....................................................................................................................................... 3  
2.3 Surrounding Highway Network ........................................................................................................... 4  
2.4 Highway Boundary Data .................................................................................................................... 5  
2.5 Highway Operation ............................................................................................................................. 5  
2.6 Highway Safety .................................................................................................................................. 7  

3.0 Potential Residential Development ................................................................................................ 9  
3.1 General ............................................................................................................................................... 9  
3.2 Potential Site Access Strategy ........................................................................................................... 9  
3.3 Site Layout ....................................................................................................................................... 10  

4.0 Accessibility by Sustainable Modes of Travel ............................................................................ 11  
4.1 Introduction ....................................................................................................................................... 11  
4.2 Pedestrian Accessibility .................................................................................................................... 11  
4.3 Accessibility by Cycle ....................................................................................................................... 12  
4.4 Accessibility by Public Transport ................................................................................................... 13  
4.5 Summary .......................................................................................................................................... 15  

5.0 Traffic Forecasting and Highway Impact ..................................................................................... 16  
5.1 Introduction ....................................................................................................................................... 16  
5.2 Forecast Highway Impact ................................................................................................................. 17  

6.0 Summary and Conclusions ........................................................................................................... 18  
6.1 Summary .......................................................................................................................................... 18  
6.2 Conclusions ...................................................................................................................................... 19  

Tables

Table 4.1 – CIHT Suggested Acceptable Walking Distances ............................................................ 11
Table 4.2 – Summary of Bus Service Frequencies from Melton Road and Cadeby Road ................ 14

Drawings

Drawing 076941-CUR-XX-00-DR-TP-75001-P01 – Potential Site Access Arrangement

Appendices

Appendix A – Doncaster Council Cycle Map
Appendix B – TRICS Report
1.0 Introduction

1.1 Background

1.1.1 Curtins have been commissioned by Richard and Michelle Lewis (site owners) to provide traffic and transportation advice for a potential residential development of up to approximately 95 homes on land to the north of Cadeby Road, Sprotbrough, Doncaster.

1.1.2 Curtins have been asked to consider potential access options for the site, assess the accessibility of the site in terms of sustainable transport modes and to consider the potential impact of a potential housing development on the surrounding area from a traffic and transportation perspective. Curtins understand that the site in question is currently a draft housing allocation within the emerging Doncaster Local Plan (under site ref: 929).

1.1.3 The information presented in this report is also being used by Savills, who have been commissioned by Richard and Michelle Lewis (site owners) to assist in the creation of a masterplan to help determine feasibility, deliverability and sustainability of the site proposals.

1.2 Purpose and Scope of This Report

1.2.1 This Highways Feasibility Report has been prepared to assist Richard and Michelle Lewis (site owners) on deciding whether a residential development is feasible at this location. This report considers the deliverability of the development proposals and their potential impact on the surrounding area from a traffic and transportation perspective, as well as including a review of the accessibility of the development for pedestrians, cyclists and users of public transport.

1.2.2 On this basis, this report contains the following:

- A description of the highway network in the vicinity of the site;
- A review of the accident record in the immediate vicinity of the site for a three-year period;
- A summary of the potential development proposals, including reference to potential access options and car/cycle parking provisions;
- A review of accessibility by all sustainable modes of travel;
- Information regarding traffic generation and trip rates; and,
- Commentary on the highway impact associated with the potential development proposals.
1.3 Structure of the Report

1.3.1 Following this introduction, Section 2 of the report provides a comprehensive description of the existing site and its location. This includes the local highway network and facilities for pedestrians, cyclists and public transport users.

1.3.2 Section 2 also reviews the local area in terms of highways safety by way of obtaining records of accidents adjacent to the site over the most recent three-year period available.

1.3.3 The potential residential development is discussed in Section 3, including the suitable parking provision and access arrangements.

1.3.4 The accessibility of the site by sustainable modes of travel is assessed in Section 4.

1.3.5 Section 5 outlines the traffic forecasting methodology used to establish the likely traffic generation associated with the potential development.

1.3.6 The report is summarised and concluded in Section 6.
2.0 Site Location and Highway Layout

2.1 Site Location

2.1.1 The potential development site is located off Melton Road in Sprotbrough, approximately 4km west of Doncaster. The site extends to 2.85 hectares of predominately undeveloped grassland, however there are some existing farm buildings located in the southern extents of the site. The site is bounded to the north by Melton Road, to the east by a park and residential properties fronting onto Melton Road, to the south by residential properties fronting onto Cadeby Road and Cadeby Road itself, and to the west by agricultural land.

2.1.2 The site location is shown below on Figure 2.1:

![Figure 2.1 – Site Location Plan (Source: Google Earth 2020)](image)

2.2 Existing Use

2.2.1 The site predominately comprises undeveloped land secured by fencing and hedgerows around the perimeter. Gated access points are available on the northern and southern borders of the site.
2.2.2 Vehicular access to the site from the local highway network can currently be gained from the above locations. The existing northern access is in the form of a farm gate (approximately 3m wide), adjacent to this is a separate gated pedestrian access point. Similarly, the southern vehicular access point is in the form of a farm gate (approximately 3m wide) which provides access to the existing farm buildings on site.

2.3 Surrounding Highway Network

Melton Road

2.3.1 Melton Road extends for approximately 4km from its priority junction with Challenger Drive in the east and its staggered priority junction arrangement with Sheep Lane/Cadeby Lane in the west. For the entirety, Melton Road is marked as a single carriageway road, approximately 7m in total width. At the western end of the site frontage the existing speed limit changes from a 30mph zone in the east to a 50mph zone in the west.

2.3.2 The road is street lit and there is a good standard of existing pedestrian infrastructure along Melton Road. East of the site, in the direction of Sprotbrough, there are footways on both sides of the road, occasionally separated by grass verge.

Cadeby Road

2.3.3 From its crossroad arrangement with Cadeby Lane, Garden Lane and Hollow Gate, Cadeby Road runs in an easterly direction towards Sprotbrough, before terminating at the priority junction with New Lane. For the most part, Cadeby Road is marked as a single carriageway road and is subject to a 60mph speed limit, however this reduces to 20/30mph when passing through residential areas and the adjacent educational facilities. At these locations’ footway is also provided on at least one side of the carriageway.

New Lane

2.3.4 From its priority junction with Melton Road in the north, New Lane runs south for approximately 230m before terminating at the junction with Cadeby Road. For the entirety of its length, New Lane is marked as a single carriageway road and is subject to a 30mph speed limit. Footway is provided alongside the eastern side of the carriageway, with occasional sections also provided on the western side.

2.3.5 There are bus stop facilities along New Lane, the closest of which is located east of the development and within an 180m walk from the site’s frontage on Melton Road. The bus stop is in a simple flag and pole arrangement and includes timetable information. Section 4 of this report discusses the bus services available from this stop, and others in the surrounding area, in greater detail.
2.4 Highway Boundary Data

2.4.1 Highway boundary data has been obtained from Doncaster Council (DC) for the local highway network, with a particular focus on Melton Road and Cadeby Road as they pass the site frontage. Reference should be made to Figures 2.2 and 2.3 below for extracts of these plans. The highway maintained by DC is shown as yellow and brown, with the differing colours denoting hierarchy of road.

![Figure 2.2](image2.2.png)
Figure 2.2 – Highway Boundary Data (Melton Road) – Doncaster Council Records

![Figure 2.3](image2.3.png)
Figure 2.3 – Highway Boundary Data (Cadeby Road) – Doncaster Council Records

2.5 Highway Operation

2.5.1 A high-level review of the local highway network described above has been undertaken utilising Google Traffic, a feature available on Google Maps. Google Traffic works by analysing the GPS-determined locations of mobile phone users and calculating their speed along a length of road (in relation to the prevailing speed limit) and their subsequent congestion times at junctions.
2.5.2 Within Google, Traffic users can access historical data to present the “typical traffic” conditions for an area based on the time of day and day of the week. A coloured overlay appears on top of the road with ‘green’ representing a normal speed of traffic, ‘yellow’ representing slower traffic and ‘red/dark red’ indicating congestion.

2.5.3 A review of both the AM and PM peak hours in Sprotbrough, on a Tuesday, Wednesday and Thursday demonstrates that large section of the local highway is ‘green’ or ‘yellow’, with no instances of ‘red/dark red’ recorded. Therefore, there are no particularly problematic locations that suggest congestion occurs, nor give rise to any material concerns at this stage.

2.5.4 Figures 2.4 and 2.5 below illustrate typical weekday traffic in Sprotbrough, based on Google Traffic data, during the traditional AM and PM peak hours.

**Figure 2.4** – Typical AM Peak Traffic (Tuesday 8:30am) in Sprotbrough (Google Traffic)
2.5.5 Figures 2.4 and 2.5 show that during the typical weekday peak hours traffic conditions in Sprotbrough, there are no instances of ‘dark red’ or ‘congested’ traffic at any of the nearby junctions. Section 4 of this report considers traffic generation associated with the potential development and any potential highway impact on the local network.

2.6 Highway Safety

2.6.1 An assessment of Personal Injury Accident (PIA) data from the most recently available three-year period has been undertaken (2016 to 2019 inclusive) using the online Crashmap resource. Figure 2.6 overleaf illustrates the area examined.
2.6.2 The records show that there have been 2 recorded collisions in the study area during the three-year assessment period, none of which have occurred in the immediate vicinity of the site. One of the recorded accidents on the highway network resulted in slight severity injuries, with the other resulting in serious severity injuries. No fatal accidents were recorded.

2.6.3 There is nothing to suggest an existing safety issue from the accident plot above. There are no accident clusters or specific junctions that require further investigation. Indeed, the accident record is considered to be enviable.

2.6.4 Following a review of the accident records and local highway network, it is not considered that there is an existing safety issue that is likely to be exacerbated by the potential residential development.
3.0 Potential Residential Development

3.1 General

3.1.1 The report considers a potential residential development of circa 95 dwellings with associated parking and access, as well as considering deliverability of the site from a traffic and transportation perspective.

3.2 Potential Site Access Strategy

3.2.1 Suitable access for vehicles, pedestrians and cyclists to the potential residential development can be provided from the local highway network surrounding the site. A suitable access option has been developed for the site which has been described in the below subsections.

Vehicular Option

3.2.2 A vehicular access for the potential development can readily be provided directly from Melton Road. In the form of a new priority junction arrangement. Drawing 076941-CUR-XX-00-DR-TP-75001-P01 to the rear of this report shows this access option, which is located approximately 30m west of the nearest dwelling on the southern side of the carriageway and accords with relevant design standards for priority junctions.

3.2.3 Within these works a new 5.5m wide carriageway can be provided into the development side along with 2m footways on both sides of the road. Dropped kerbs and tactile paving can be provided in the vicinity of the junction bellmouth to assist pedestrians in crossing the access road. This footway can continue eastward along the site frontage on Melton Road and connect the site with the existing pedestrian provisions on the southern side of the road. No third-party land or legal processes are necessary to bring this option forward.

3.2.4 Visibility splays in accordance with the existing 30 mph speed limit (2.4m x 43m) can be provided in both directions in line with the prevailing standards found within the Department for Transport’s (DfT) Manual for Streets Guidance.

3.2.5 A detailed swept path assessment has been undertaken on the potential vehicle access to ensure that the site can be suitably accessed by service, emergency and large HGV vehicles.

3.2.6 A single point of vehicular access is considered entirely suitable to serve the entire potential development of up to circa 95 dwellings. As noted in the previous chapter, there are no pre-existing material congestion issues around Sprotbrough, and moreover, the relevant highway guidance is clear on this issue.

3.2.7 The Manual for Streets (MfS) 2007, indicates at para 6.7.3 that:
“The length of cul-de-sacs or the number of dwellings have been used by local authorities as criteria for limiting the size of a development served by a single access route. Authorities have often argued that the larger the site, the more likely it is that a single access could be blocked for whatever reason. The fire services adopt a less numbers-driven approach and consider each application based on a risk assessment for the site, and response time requirements.”

3.2.8 There is therefore no reason to believe that a single point of access cannot serve the entire site satisfactory from a highway safety, capacity or design standard perspective. Secondary access points can be implemented to serve the site for pedestrian, cyclist and emergency vehicles, where appropriate.

3.3 Site Layout

3.3.1 Within the potential development site, a layout can be developed with appropriate on-site vehicle and cycle parking provided. The number of spaces will be determined in accordance with DC’s parking guidance. Lower levels of parking may be encouraged, in conjunction with the adequate support for alternative modes being in place.

3.3.2 The internal layout for the potential residential development will be designed in accordance with the principles found with MfS and DC’s local design guidance. The site layout will ensure multiple, direct and convenient connections for pedestrians and cyclists, to support the creation of a sustainable development site.

3.3.3 Curtins understand, as part of the wider site masterplan, there may be the potential to link footpaths and cycleways on the site to those found in the adjacent public parks.

3.3.4 Within the road layout, suitable space can be provided for larger turning vehicles, catering in particular to servicing, refuse and emergency vehicles. The appropriate design requirements of emergency and other service vehicles (as set out in Section 6.7 and 6.8 MfS) can be met.
4.0 Accessibility by Sustainable Modes of Travel

4.1 Introduction

4.1.1 A key element of national, regional and local policy is to ensure that new developments are located in areas where alternative modes of travel are available. It is important to ensure that developments are not isolated but are located close to complementary land uses. This supports the aims of integrating planning and transport, providing more sustainable transport choices, and reducing overall travel and car use.

4.1.2 The accessibility of the site is considered in this context for the following modes of travel:

- Pedestrian Accessibility;
- Accessibility by Cycle; and,
- Accessibility by Public Transport.

4.2 Pedestrian Accessibility

4.2.1 Research has indicated that acceptable walking distances depend on a number of factors, including the quality of the development, the type of amenity offered, the surrounding area, and other local facilities. The Chartered Institution for Highways and Transportation (CIHT) document entitled ‘Providing for Journeys on Foot’ suggests walking distances which are relevant to this potential residential development. These are reproduced in Table 4.1.

<table>
<thead>
<tr>
<th></th>
<th>Town Centres (m)</th>
<th>Commuting/School/Sightseeing (m)</th>
<th>Elsewhere/Local Services (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desirable</td>
<td>200</td>
<td>500</td>
<td>400</td>
</tr>
<tr>
<td>Acceptable</td>
<td>400</td>
<td>1,000</td>
<td>800</td>
</tr>
<tr>
<td>Preferred Maximum</td>
<td>800</td>
<td>2,000</td>
<td>1,200</td>
</tr>
</tbody>
</table>

Table 4.1 – CIHT Suggested Acceptable Walking Distances

4.2.2 To assist in summarising the accessibility of the site by foot, an indicative pedestrian catchment plan has been produced. Plan 76941-CUR-00-XX-DR-D-06001-V01 shows distances of 500m, 1,000m and 2,000m which are termed ‘Desirable’, ‘Acceptable’ and the ‘Preferred Maximum’ by the CIHT for other trips.

4.2.3 There are several destinations within the vicinity of the site that prospective residents could travel to and from on foot. The pedestrian and cycle infrastructure on the site would link directly with the existing infrastructure on the surrounding streets.
4.2.4 The entirety of Sprotbrough is within the CIHTs recommended walking distances. Facilities in Sprotbrough include a local shop, post office, several public houses and places of worship, cafes as well as a number of leisure and recreational facilities.

4.2.5 In terms of educational facilities, Sprotbrough Copley Junior School and Sprotbrough Orchard Infant School are located south of the site, both within an approximate 5-minute walk and accessible via the existing footways provisions.

4.2.6 There are two bus stops located within a 400m walk of the site, which are located on Melton Road and Cadeby Road. The public transport section of this Chapter discusses the bus services available from these stops in greater detail.

4.3 **Accessibility by Cycle**

4.3.1 In order to assist in assessing the accessibility of the site by cycle an 8km cycle catchment for the site has been considered. The 8km cycling distance refers to a recommendation by Cycling England in the document 'Integrating Cycling into Development Proposals' (2009).

4.3.2 **Plan 76941-CUR-00-XX-DR-D-06002-V01** presents an 8km cycle catchment for the site. This distance equates to a journey time of around 40 minutes, while cycling at a speed of 12kph. The catchment extends as far as Woodlands in the north, Mexborough to the west, New Edlington in the south and Wheatley Hills to the east.

4.3.3 Of the immediate roads surrounding the site, a number are recommended/ signed routes for cycling. Reference should be made to **Appendix A** which is an extract of DC's Cycle Map, which details a number of the local routes available. An extract of this plan is also shown below at **Figure 4.1** for ease of reference.
4.3.4 National Cycle Network (NCN) Route 62 is located approximately 500m south of the potential development site, accessible from the advisory cycle routes along New Lane, Cadeby Road and Nursery Lane.

4.3.5 NCN Route 62 connects Fleetwood on the Fylde region of Lancashire with Selby in North Yorkshire. It forms the west and central sections of The Trans Pennine Trail which is a long-distance path running from coast to coast across northern England. Locally, NCN Route 62 connects the site with Doncaster in the east and Springfield to the west.

4.3.6 All of the previously described retail, leisure and employment opportunities found within an accessible walk distance, can be reached within 10-minute cycle journey. The 8km catchment covers the entirety Doncaster, particularly those facilities located within the town centre. Conisbrough and New Edlington villages also provide further opportunities more local to those found in Doncaster.

4.3.7 In summary, it is considered that cycling is a realistic mode of travel for future residents at the potential development site.

4.4 Accessibility by Public Transport

4.4.1 The site is well situated to take advantage of existing public transport infrastructure within the surrounding area. Plan 76941-CUR-00-XX-DR-D-06003-V01 demonstrates the areas accessible via public transport within 10, 20 and 30 minutes of the site. Accessibility by bus and rail are considered further below.

Figure 4.1 – Extract of DC’s Cycle Map (Sprotbrough)
Bus Accessibility

4.4.2 Guidance from the Chartered Institution of Highways and Transportation (CIHT) document ‘Guidelines for Planning for Public Transport in Development’ indicates that ideally, a bus stop should be located within 300m from a new development and preferably no more than 400m.

4.4.3 As detailed above the nearest bus stops to the site are located on Melton Road and Cadeby Road and situated within the CIHT’s 400m walk distance threshold. Both stops are in the form of a flag and pole arrangements and include timetable information.

4.4.4 **Table 4.2** details the regular and frequent services that call at the stops on Melton Road and Cadeby Road, and their associated frequencies:

<table>
<thead>
<tr>
<th>Bus Service</th>
<th>Route</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mon – Fri</td>
</tr>
<tr>
<td>49</td>
<td>Sprotbrough – Doncaster Circular</td>
<td>30 mins</td>
</tr>
<tr>
<td>219</td>
<td>Barnsley Interchange – Doncaster Interchange</td>
<td>60 mins</td>
</tr>
</tbody>
</table>

*Table 4.2 – Summary of Bus Service Frequencies from Melton Road and Cadeby Road*

4.4.5 The above table demonstrates that the area is well served by frequent bus services, which connects the potential development to local areas such as Doncaster and Barnsley, as well as to a number of the local retail and employment opportunities found local towns and villages.

Rail

4.4.6 Doncaster Railway Station is located approximately 4km from the site. Doncaster bus interchange is located immediately adjacent to the railway station and is served by the no.219 bus which runs local to the site.

4.4.7 Doncaster Railway Station is managed by London North Eastern Railway. It is a major passenger interchange between the main line, Cross Country Route and local services running across the North of England. It is also the point for which London North Eastern Railway services branching off to Leeds diverge from the main route continuing north towards Edinburgh. The station is equipped with car and cycle parking provisions, CCTV, shelters, toilets and real time timetable information.

4.4.8 Doncaster Railway Station offers services to Newcastle, Reading, London, York, Scarborough, Lincoln, Leeds, Hull and many other local settlements.
4.5 Summary

4.5.1 A number of local retail, leisure and employment areas are accessible from the site on foot. The whole of Doncaster and several outlying towns and villages can be reached within an accessible bike ride. The local area is also well served by frequent bus and rail routes, providing excellent connections to a range of employment and leisure areas which residents consider beyond a reasonable walk or cycle ride. Overall, the accessibility of the site by non-car modes of transport is considered to be very high.
5.0 Traffic Forecasting and Highway Impact

5.1 Introduction

5.1.1 The following section of the report details the potential trip generation associated with the site.

5.1.2 The TRICS database (v.7.7.2) has been interrogated for surveys for residential developments. TRICS is the industry recognised tool for calculating the anticipated future trip demand of a proposed development. The database contains multi-modal surveys of varying land uses in multiple destinations across the UK, including residential uses.

5.1.3 The applied TRICS selection criteria for the potential residential development is set out below. The full TRICS outputs are included within Appendix B to the rear of this report.

- TRICS category “Residential – Houses Privately Owned”.
- UK sites only (excluding Greater London and Ireland);
- Suburban sites;
- Selection adjusted to consider surrounding area population characteristics;
- Surveys for sites between 20 – 200 dwellings;
- Only weekday surveys were included; and,
- Only the most recent surveys were included for each site.

5.1.4 A total of 21 sites remained in the data set. After reviewing the data, the following peak hours were obtained:

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

5.1.5 The trip rates and subsequent vehicular trips associated with the potential 95 residential dwellings are provided in Table 5.2. All trips rates are per one dwelling:

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Arrivals</th>
<th></th>
<th>Departures</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trip Rate</td>
<td>Trips</td>
<td>Trip Rate</td>
<td>Trips</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vehicles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekday AM Peak Hour 08:00 to 09:00</td>
<td>0.116</td>
<td>11</td>
<td>0.369</td>
<td>35</td>
</tr>
<tr>
<td>Weekday PM Peak Hour 17:00 to 18:00</td>
<td>0.345</td>
<td>33</td>
<td>0.179</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Car Passengers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weekday AM Peak Hour 08:00 to 09:00</td>
<td>0.014</td>
<td>1</td>
<td>0.146</td>
<td>14</td>
</tr>
<tr>
<td>Weekday PM Peak Hour 17:00 to 18:00</td>
<td>0.128</td>
<td>12</td>
<td>0.065</td>
<td>6</td>
</tr>
<tr>
<td>Cyclists</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------------</td>
<td>------------------</td>
<td>------------------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>Weekday AM Peak Hour</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08:00 to 09:00</td>
<td>0.001</td>
<td>0</td>
<td>0.028</td>
<td>3</td>
</tr>
<tr>
<td><strong>Weekday PM Peak Hour</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:00 to 18:00</td>
<td>0.019</td>
<td>2</td>
<td>0.006</td>
<td>1</td>
</tr>
<tr>
<td><strong>Pedestrians</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weekday AM Peak Hour</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08:00 to 09:00</td>
<td>0.070</td>
<td>7</td>
<td>0.231</td>
<td>22</td>
</tr>
<tr>
<td><strong>Weekday PM Peak Hour</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:00 to 18:00</td>
<td>0.087</td>
<td>8</td>
<td>0.044</td>
<td>4</td>
</tr>
<tr>
<td><strong>Public Transport Users</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weekday AM Peak Hour</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08:00 to 09:00</td>
<td>0.003</td>
<td>0</td>
<td>0.047</td>
<td>4</td>
</tr>
<tr>
<td><strong>Weekday PM Peak Hour</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:00 to 18:00</td>
<td>0.028</td>
<td>3</td>
<td>0.004</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 5.1 – Potential Residential Development Trip Rates (Trip Rates are Per Dwelling – 95 Dwellings)

5.1.6 The above table demonstrates the proposed development would generate approximately 46-50 two-way vehicle trips in both the AM and PM peak hours.

5.2 Forecast Highway Impact

5.2.1 The methodology and subsequent trip rates put forward at Tables 5.1 above are considered realistic for a site in this location.

5.2.2 It is not considered that the potential development would have a material impact on the surrounding highway network. An initial high-level review (Section 2.5) suggests that the local highway network operates well during peak hours. As a result, off-site junction capacity does not therefore present a material concern in the context the site’s potential for a residential development at this stage.
6.0 Summary and Conclusions

6.1 Summary

6.1.1 Curtins have been commissioned by Richard and Michelle Lewis (site owners) to provide traffic and transportation advice for a potential residential development of up to approximately 90 homes on land to the north of Cadeby Road, Sprotbrough, Doncaster.

6.1.2 Curtins have been asked to consider potential access options for the site, assess the accessibility of the site in terms of sustainable transport modes and to consider the potential impact of a potential housing development on the surrounding area from a traffic and transportation perspective. The site in question is currently a draft housing allocation within the emerging Doncaster Local Plan (under site ref: 929).

6.1.3 The information presented in this report is also being used by Savills, who have been commissioned by Richard and Michelle Lewis (site owners) to assist in the creation of a masterplan to help determine feasibility, deliverability and sustainability of the site proposals.

6.1.4 No accidents have been recorded in the immediate vicinity of the existing site access during the three-year assessment period. There is nothing to suggest an existing safety issue and the accident record is considered to be enviable.

6.1.5 Suitable access for vehicles, pedestrians and cyclists to the potential residential development can all be provided from the local highway network surrounding the site. A site access strategy has been put forward for the potential development, which includes a vehicular access option, directly from Melton Road. The junction has been designed in accordance with relevant design standards.

6.1.6 The internal layout of the site will be designed to conform to the guidance outlined in local design guidance, MfS and MfS2, including consideration of suitable parking provision, circulation and refuse vehicle access.

6.1.7 The site can be considered to be accessible by sustainable modes of travel. There are existing bicycle and pedestrian facilities in the vicinity of the site, and the development would be well situated to take advantage of the bus facilities within the surrounding area. In the event of a future planning application at the site, and if deemed necessary to make the development acceptable in planning terms, consideration could be given to enhancing/reinforcing the local public transport services and infrastructure.

6.1.8 It is not considered that a potential development would have a material impact on the surrounding highway network. An initial high-level review suggests that the local highway network operates well
during peak hours. As a result, off-site junction capacity does not therefore present a material concern in the context the site’s potential for a residential development at this stage.

6.2 Conclusions

6.2.1 Based on the above, it is considered that the potential residential development is deliverable from a traffic and transportation perspective.
Drawings
Plans
### Project Details

**Project:** MELTON ROAD - SPROTBROUGH

**Drq Title:** ACCESSIBILITY

**Status:** PRELIMINARY

**Drawn By:** JM  **Checked By:** JA

**Designed By:** JM  **Date:** 01/09/20

**Scale:** NTS

### Drawing Information

<table>
<thead>
<tr>
<th>Project No</th>
<th>Zone</th>
<th>Level</th>
<th>Type</th>
<th>Discipline</th>
<th>Category / Number</th>
<th>Rev</th>
</tr>
</thead>
<tbody>
<tr>
<td>76941 - CUR - 00 - XX - DR - TP - 06002 - P01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Key

- **Site**
- **Cycle Catchment:** 8000m

---

**Contains OS data © Crown copyright [and database right] [2020]**
Project: MELTON ROAD - SPROTBROUGH

Drg Title: ACCESSIBILITY
INDICATIVE PUBLIC
TRANSPORT CATCHMENT

Status: PRELIMINARY

Drawn By: JM  Checked By: JA
Designed By: JM  Date: 01/09/20

Scale: NTS

Project No: 76941  CUR - 00 - XX - DR - TP - 06003 - P01

Originator:  Zone:  Level:  Type:  Discipline:  Category / Number:

76941  CUR - 00 - XX - DR - TP - 06003 - P01

Scale: NTS

Drawn By: JM  Checked By: JA
Designed By: JM  Date: 01/09/20

Contains OS data © Crown copyright (and database right) (2020)
Appendix A – Doncaster Council Cycle Map
Appendix B – TRICS Output
TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use: 03 - RESIDENTIAL
Category: A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES

Selected regions and areas:

02 SOUTH EAST
HC HAMPSHIRE 1 days
KC KENT 1 days
WS WEST SUSSEX 1 days

03 SOUTH WEST
DV DEVON 3 days
WL WILTSHIRE 1 days

04 EAST ANGLIA
CA CAMBRIDGESHIRE 1 days
NF NORFOLK 2 days
SF SUFFOLK 1 days

05 EAST MIDLANDS
LN LINCOLNSHIRE 1 days

07 YORKSHIRE & NORTH LINCOLNSHIRE
NY NORTH YORKSHIRE 2 days
SY SOUTH YORKSHIRE 1 days

08 NORTH WEST
CH CHESHIRE 1 days

09 NORTH
DH DURHAM 1 days

10 WALES
PS - POWYS 1 days

11 SCOTLAND
FA FALKIRK 2 days
HI HIGHLAND 1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
Actual Range: 21 to 161 (units: )
Range Selected by User: 20 to 200 (units: )

Parking Spaces Range: All Surveys Included
Parking Spaces per Dwelling Range: All Surveys Included
Bedrooms per Dwelling Range: All Surveys Included
Percentage of dwellings privately owned: All Surveys Included
Public Transport Provision:
Selection by: Include all surveys
Date Range: 01/01/12 to 19/11/19

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 6 days
Tuesday 4 days
Wednesday 5 days
Thursday 5 days
Friday 1 days

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

Selected survey types:
Manual count 21 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 undertaking using machines.

Selected Locations:
Suburban Area (PPS6 Out of Centre)
This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

**Selected Location Sub Categories:**
- Residential Zone

21

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

**Secondary Filtering selection:**

**Use Class:**
- C3

21 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:**

<table>
<thead>
<tr>
<th>Population Range</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,001 to 5,000</td>
<td>1</td>
</tr>
<tr>
<td>5,001 to 10,000</td>
<td>6</td>
</tr>
<tr>
<td>10,001 to 15,000</td>
<td>4</td>
</tr>
<tr>
<td>15,001 to 20,000</td>
<td>4</td>
</tr>
<tr>
<td>20,001 to 25,000</td>
<td>3</td>
</tr>
<tr>
<td>25,001 to 50,000</td>
<td>3</td>
</tr>
</tbody>
</table>

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

**Population within 5 miles:**

<table>
<thead>
<tr>
<th>Population Range</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,001 to 25,000</td>
<td>3</td>
</tr>
<tr>
<td>25,001 to 50,000</td>
<td>1</td>
</tr>
<tr>
<td>50,001 to 75,000</td>
<td>3</td>
</tr>
<tr>
<td>75,001 to 100,000</td>
<td>5</td>
</tr>
<tr>
<td>100,001 to 125,000</td>
<td>1</td>
</tr>
<tr>
<td>125,001 to 250,000</td>
<td>7</td>
</tr>
<tr>
<td>250,001 to 500,000</td>
<td>1</td>
</tr>
</tbody>
</table>

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

**Car ownership within 5 miles:**

<table>
<thead>
<tr>
<th>Car Ownership Range</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 to 1.0</td>
<td>6</td>
</tr>
<tr>
<td>1.1 to 1.5</td>
<td>15</td>
</tr>
</tbody>
</table>

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:**

<table>
<thead>
<tr>
<th>Travel Plan</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>4</td>
</tr>
<tr>
<td>No</td>
<td>17</td>
</tr>
</tbody>
</table>

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

**PTAL Rating:**

<table>
<thead>
<tr>
<th>PTAL Rating</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>No PTAL Present</td>
<td>21</td>
</tr>
</tbody>
</table>

This data displays the number of selected surveys with PTAL Ratings.
# LIST OF SITES relevant to selection parameters

1. **CA-03-A-05**  
   **DETACHED HOUSES**  
   EASTFIELD ROAD  
   PETERBOROUGH  
   Suburban Area (PPS6 Out of Centre)  
   Residential Zone  
   Total No of Dwellings: 28  
   Survey date: **MONDAY 17/10/16**  
   Survey Type: MANUAL  

2. **CH-03-A-11**  
   **TOWN HOUSES**  
   LONDON ROAD  
   NORTHWICH  
   LEFTWICH  
   Suburban Area (PPS6 Out of Centre)  
   Residential Zone  
   Total No of Dwellings: 24  
   Survey date: **THURSDAY 06/06/19**  
   Survey Type: MANUAL  

3. **DH-03-A-01**  
   **SEMI DETACHED**  
   GREENFIELDS ROAD  
   BISHOP AUCKLAND  
   Suburban Area (PPS6 Out of Centre)  
   Residential Zone  
   Total No of Dwellings: 50  
   Survey date: **TUESDAY 28/03/17**  
   Survey Type: MANUAL  

4. **DV-03-A-01**  
   **TERRACED HOUSES**  
   BRONSHILL ROAD  
   TORQUAY  
   Suburban Area (PPS6 Out of Centre)  
   Residential Zone  
   Total No of Dwellings: 37  
   Survey date: **WEDNESDAY 30/09/15**  
   Survey Type: MANUAL  

5. **DV-03-A-02**  
   **HOUSES & BUNGALOWS**  
   MILLHEAD ROAD  
   HONITON  
   Suburban Area (PPS6 Out of Centre)  
   Residential Zone  
   Total No of Dwellings: 116  
   Survey date: **FRIDAY 25/09/15**  
   Survey Type: MANUAL  

6. **DV-03-A-03**  
   **TERRACED & SEMI DETACHED**  
   LOWER BRAND LANE  
   HONITON  
   Suburban Area (PPS6 Out of Centre)  
   Residential Zone  
   Total No of Dwellings: 70  
   Survey date: **MONDAY 28/09/15**  
   Survey Type: MANUAL  

7. **FA-03-A-01**  
   **SEMI-DETACHED/TERRACED**  
   MANDELA AVENUE  
   FALKIRK  
   Suburban Area (PPS6 Out of Centre)  
   Residential Zone  
   Total No of Dwellings: 37  
   Survey date: **THURSDAY 30/05/13**  
   Survey Type: MANUAL  

8. **FA-03-A-02**  
   **MIXED HOUSES**  
   ROSEBANK AVENUE & SPRINGFIELD DRIVE  
   FALKIRK  
   Suburban Area (PPS6 Out of Centre)  
   Residential Zone  
   Total No of Dwellings: 161  
   Survey date: **WEDNESDAY 29/05/13**  
   Survey Type: MANUAL
LIST OF SITES relevant to selection parameters (Cont.)

9  HC-03-A-23  HOUSES & FLATS  HAMPSHIRE  
  CANADA WAY  
  LIPHOOK  
  Suburban Area (PPS6 Out of Centre)  
  Residential Zone  
  Total No of Dwellings: 62  
  Survey date: TUESDAY 19/11/19  
  Survey Type: MANUAL

10  HI-03-A-14  SEMI-DETACHED & TERRACED  HIGHLAND  
  KING BRUDE ROAD  
  INVERNESS  
  SCORGUIE  
  Suburban Area (PPS6 Out of Centre)  
  Residential Zone  
  Total No of Dwellings: 40  
  Survey date: WEDNESDAY 23/03/16  
  Survey Type: MANUAL

11  KC-03-A-03  MIXED HOUSES & FLATS  KENT  
  HYTHE ROAD  
  ASHFORD  
  WILLESBOROUGH  
  Suburban Area (PPS6 Out of Centre)  
  Residential Zone  
  Total No of Dwellings: 51  
  Survey date: THURSDAY 14/07/16  
  Survey Type: MANUAL

12  LN-03-A-03  SEMI DETACHED  LINCOLNSHIRE  
  ROOKERY LANE  
  LINCOLN  
  BOULTHAM  
  Suburban Area (PPS6 Out of Centre)  
  Residential Zone  
  Total No of Dwellings: 22  
  Survey date: TUESDAY 18/09/12  
  Survey Type: MANUAL

13  NF-03-A-01  SEMI DET. & BUNGALOWS  NORFOLK  
  YARMOUTH ROAD  
  CAISTER-ON-SEA  
  Suburban Area (PPS6 Out of Centre)  
  Residential Zone  
  Total No of Dwellings: 27  
  Survey date: TUESDAY 16/10/12  
  Survey Type: MANUAL

14  NF-03-A-02  HOUSES & FLATS  NORFOLK  
  DEREHAM ROAD  
  NORWICH  
  Suburban Area (PPS6 Out of Centre)  
  Residential Zone  
  Total No of Dwellings: 98  
  Survey date: MONDAY 22/10/12  
  Survey Type: MANUAL

15  NY-03-A-08  TERRACED HOUSES  NORTH YORKSHIRE  
  NICHOLAS STREET  
  YORK  
  Suburban Area (PPS6 Out of Centre)  
  Residential Zone  
  Total No of Dwellings: 21  
  Survey date: MONDAY 16/09/13  
  Survey Type: MANUAL

16  NY-03-A-09  MIXED HOUSING  NORTH YORKSHIRE  
  GRAMMAR SCHOOL LANE  
  NORTHALLENTON  
  Suburban Area (PPS6 Out of Centre)  
  Residential Zone  
  Total No of Dwellings: 52  
  Survey date: MONDAY 16/09/13  
  Survey Type: MANUAL
<table>
<thead>
<tr>
<th>No.</th>
<th>Site Reference</th>
<th>Type of Houses</th>
<th>Location</th>
<th>Suburban Area</th>
<th>Residential Zone</th>
<th>Total No of Dwellings</th>
<th>Survey Date</th>
<th>Survey Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>PS-03-A-02</td>
<td>DETACHED/SEMI-DETACHED</td>
<td>POWYS</td>
<td>GUNROG ROAD, WELSHPOOL</td>
<td>Suburban Area (PPS6 Out of Centre)</td>
<td>28</td>
<td>MONDAY 11/05/15</td>
<td>MANUAL</td>
</tr>
<tr>
<td>18</td>
<td>SF-03-A-07</td>
<td>MIXED HOUSES</td>
<td>SUFFOLK</td>
<td>FOXHALL ROAD, IPSWICH</td>
<td>Suburban Area (PPS6 Out of Centre)</td>
<td>73</td>
<td>THURSDAY 09/05/19</td>
<td>MANUAL</td>
</tr>
<tr>
<td>19</td>
<td>SY-03-A-01</td>
<td>SEMI DETACHED HOUSES</td>
<td>SOUTH YORKSHIRE</td>
<td>A19 BENTLEY ROAD, DONCASTER, BENTLEY RISE</td>
<td>Suburban Area (PPS6 Out of Centre)</td>
<td>54</td>
<td>WEDNESDAY 18/09/13</td>
<td>MANUAL</td>
</tr>
<tr>
<td>20</td>
<td>WL-03-A-02</td>
<td>SEMI DETACHED</td>
<td>WILTSHIRE</td>
<td>HEADLANDS GROVE, SWINDON</td>
<td>Suburban Area (PPS6 Out of Centre)</td>
<td>27</td>
<td>THURSDAY 22/09/16</td>
<td>MANUAL</td>
</tr>
<tr>
<td>21</td>
<td>WS-03-A-05</td>
<td>TERRACED &amp; FLATS</td>
<td>WEST SUSSEX</td>
<td>UPPER SHOREHAM ROAD, SHOREHAM BY SEA</td>
<td>Suburban Area (PPS6 Out of Centre)</td>
<td>48</td>
<td>WEDNESDAY 18/04/12</td>
<td>MANUAL</td>
</tr>
</tbody>
</table>

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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

<table>
<thead>
<tr>
<th>Time Range</th>
<th>ARRIVALS</th>
<th></th>
<th>DEPARTURES</th>
<th></th>
<th>TOTALS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Days</td>
<td>Ave.</td>
<td>Trip Rate</td>
<td>No. Days</td>
<td>Ave.</td>
<td>Trip Rate</td>
<td>No. Days</td>
</tr>
<tr>
<td></td>
<td>DWELLS</td>
<td></td>
<td></td>
<td>DWELLS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>00:00 - 01:00</td>
<td>21</td>
<td>54</td>
<td>0.058</td>
<td>21</td>
<td>54</td>
<td>0.265</td>
</tr>
<tr>
<td>01:00 - 02:00</td>
<td>21</td>
<td>54</td>
<td>0.116</td>
<td>21</td>
<td>54</td>
<td>0.369</td>
</tr>
<tr>
<td>02:00 - 03:00</td>
<td>21</td>
<td>54</td>
<td>0.153</td>
<td>21</td>
<td>54</td>
<td>0.179</td>
</tr>
<tr>
<td>03:00 - 04:00</td>
<td>21</td>
<td>54</td>
<td>0.125</td>
<td>21</td>
<td>54</td>
<td>0.154</td>
</tr>
<tr>
<td>04:00 - 05:00</td>
<td>21</td>
<td>54</td>
<td>0.142</td>
<td>21</td>
<td>54</td>
<td>0.141</td>
</tr>
<tr>
<td>05:00 - 06:00</td>
<td>21</td>
<td>54</td>
<td>0.180</td>
<td>21</td>
<td>54</td>
<td>0.151</td>
</tr>
<tr>
<td>06:00 - 07:00</td>
<td>21</td>
<td>54</td>
<td>0.155</td>
<td>21</td>
<td>54</td>
<td>0.181</td>
</tr>
<tr>
<td>07:00 - 08:00</td>
<td>21</td>
<td>54</td>
<td>0.148</td>
<td>21</td>
<td>54</td>
<td>0.187</td>
</tr>
<tr>
<td>08:00 - 09:00</td>
<td>21</td>
<td>54</td>
<td>0.235</td>
<td>21</td>
<td>54</td>
<td>0.160</td>
</tr>
<tr>
<td>09:00 - 10:00</td>
<td>21</td>
<td>54</td>
<td>0.288</td>
<td>21</td>
<td>54</td>
<td>0.178</td>
</tr>
<tr>
<td>10:00 - 11:00</td>
<td>21</td>
<td>54</td>
<td>0.345</td>
<td>21</td>
<td>54</td>
<td>0.179</td>
</tr>
<tr>
<td>11:00 - 12:00</td>
<td>21</td>
<td>54</td>
<td>0.232</td>
<td>21</td>
<td>54</td>
<td>0.163</td>
</tr>
<tr>
<td>12:00 - 13:00</td>
<td>21</td>
<td>54</td>
<td>0.180</td>
<td>21</td>
<td>54</td>
<td>0.151</td>
</tr>
<tr>
<td>13:00 - 14:00</td>
<td>21</td>
<td>54</td>
<td>0.155</td>
<td>21</td>
<td>54</td>
<td>0.181</td>
</tr>
<tr>
<td>14:00 - 15:00</td>
<td>21</td>
<td>54</td>
<td>0.148</td>
<td>21</td>
<td>54</td>
<td>0.187</td>
</tr>
<tr>
<td>15:00 - 16:00</td>
<td>21</td>
<td>54</td>
<td>0.235</td>
<td>21</td>
<td>54</td>
<td>0.160</td>
</tr>
<tr>
<td>16:00 - 17:00</td>
<td>21</td>
<td>54</td>
<td>0.288</td>
<td>21</td>
<td>54</td>
<td>0.178</td>
</tr>
<tr>
<td>17:00 - 18:00</td>
<td>21</td>
<td>54</td>
<td>0.345</td>
<td>21</td>
<td>54</td>
<td>0.179</td>
</tr>
<tr>
<td>18:00 - 19:00</td>
<td>21</td>
<td>54</td>
<td>0.232</td>
<td>21</td>
<td>54</td>
<td>0.163</td>
</tr>
<tr>
<td>19:00 - 20:00</td>
<td>21</td>
<td>54</td>
<td>0.180</td>
<td>21</td>
<td>54</td>
<td>0.151</td>
</tr>
<tr>
<td>20:00 - 21:00</td>
<td>21</td>
<td>54</td>
<td>0.155</td>
<td>21</td>
<td>54</td>
<td>0.181</td>
</tr>
<tr>
<td>21:00 - 22:00</td>
<td>21</td>
<td>54</td>
<td>0.148</td>
<td>21</td>
<td>54</td>
<td>0.187</td>
</tr>
<tr>
<td>22:00 - 23:00</td>
<td>21</td>
<td>54</td>
<td>0.235</td>
<td>21</td>
<td>54</td>
<td>0.160</td>
</tr>
<tr>
<td>23:00 - 24:00</td>
<td>21</td>
<td>54</td>
<td>0.288</td>
<td>21</td>
<td>54</td>
<td>0.178</td>
</tr>
<tr>
<td>Total Rates:</td>
<td></td>
<td></td>
<td>2.177</td>
<td></td>
<td></td>
<td>2.307</td>
</tr>
</tbody>
</table>

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

- Trip rate parameter range selected: 21 - 161 (units: )
- Survey date range: 01/01/12 - 19/11/19
- Number of weekdays (Monday-Friday): 21
- Number of Saturdays: 0
- Number of Sundays: 0
- Surveys automatically removed from selection: 4
- 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 show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.
TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

**MULTI-MODAL CYCLISTS**

**Calculation factor: 1 DWELLS**

**BOLD print indicates peak (busiest) period**

<table>
<thead>
<tr>
<th>Time Range</th>
<th>ARRIVALS</th>
<th>DEPARTURES</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. Days</td>
<td>Ave. DWELLS</td>
<td>Trip Rate</td>
</tr>
<tr>
<td>00:00 - 01:00</td>
<td>21</td>
<td>54</td>
<td>0.006</td>
</tr>
<tr>
<td>01:00 - 02:00</td>
<td>21</td>
<td>54</td>
<td>0.001</td>
</tr>
<tr>
<td>02:00 - 03:00</td>
<td>21</td>
<td>54</td>
<td>0.002</td>
</tr>
<tr>
<td>03:00 - 04:00</td>
<td>21</td>
<td>54</td>
<td>0.006</td>
</tr>
<tr>
<td>04:00 - 05:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>05:00 - 06:00</td>
<td>21</td>
<td>54</td>
<td>0.006</td>
</tr>
<tr>
<td>06:00 - 07:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>07:00 - 08:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>08:00 - 09:00</td>
<td>21</td>
<td>54</td>
<td>0.028</td>
</tr>
<tr>
<td>09:00 - 10:00</td>
<td>21</td>
<td>54</td>
<td>0.016</td>
</tr>
<tr>
<td>10:00 - 11:00</td>
<td>21</td>
<td>54</td>
<td>0.019</td>
</tr>
<tr>
<td>11:00 - 12:00</td>
<td>21</td>
<td>54</td>
<td>0.012</td>
</tr>
<tr>
<td>12:00 - 13:00</td>
<td>21</td>
<td>54</td>
<td>0.012</td>
</tr>
<tr>
<td>13:00 - 14:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>14:00 - 15:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>15:00 - 16:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>16:00 - 17:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>17:00 - 18:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>18:00 - 19:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>19:00 - 20:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>20:00 - 21:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>21:00 - 22:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>22:00 - 23:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>23:00 - 24:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
</tbody>
</table>

Total Rates: 0.108 0.106 0.214

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

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.
### TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

**MULTI-MODAL VEHICLE OCCUPANTS**

**Calculation factor: 1 DWELLS**

**BOLD print indicates peak (busiest) period**

<table>
<thead>
<tr>
<th>Time Range</th>
<th>ARRIVALS</th>
<th>DEPARTURES</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. Days</td>
<td>Ave. DWELLS</td>
<td>Trip Rate</td>
</tr>
<tr>
<td>00:00 - 01:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01:00 - 02:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02:00 - 03:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>03:00 - 04:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04:00 - 05:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05:00 - 06:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>06:00 - 07:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07:00 - 08:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08:00 - 09:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>09:00 - 10:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00 - 11:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00 - 12:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00 - 13:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00 - 14:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:00 - 15:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:00 - 16:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:00 - 17:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:00 - 18:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:00 - 19:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:00 - 20:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20:00 - 21:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21:00 - 22:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22:00 - 23:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23:00 - 24:00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.
### MULTI-MODAL PEDESTRIANS

**Calculation factor: 1 DWELLS**

**BOLD print indicates peak (busiest) period**

<table>
<thead>
<tr>
<th>Time Range</th>
<th>ARRIVALS</th>
<th>DEPARTURES</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. Days</td>
<td>Ave. DWELLS</td>
<td>Trip Rate</td>
</tr>
<tr>
<td>00:00 - 01:00</td>
<td>21</td>
<td>54</td>
<td>0.023</td>
</tr>
<tr>
<td>01:00 - 02:00</td>
<td>21</td>
<td>54</td>
<td>0.070</td>
</tr>
<tr>
<td>02:00 - 03:00</td>
<td>21</td>
<td>54</td>
<td>0.079</td>
</tr>
<tr>
<td>03:00 - 04:00</td>
<td>21</td>
<td>54</td>
<td>0.056</td>
</tr>
<tr>
<td>04:00 - 05:00</td>
<td>21</td>
<td>54</td>
<td>0.058</td>
</tr>
<tr>
<td>05:00 - 06:00</td>
<td>21</td>
<td>54</td>
<td>0.071</td>
</tr>
<tr>
<td>06:00 - 07:00</td>
<td>21</td>
<td>54</td>
<td>0.043</td>
</tr>
<tr>
<td>07:00 - 08:00</td>
<td>21</td>
<td>54</td>
<td>0.051</td>
</tr>
<tr>
<td>08:00 - 09:00</td>
<td>21</td>
<td>54</td>
<td>0.117</td>
</tr>
<tr>
<td>09:00 - 10:00</td>
<td>21</td>
<td>54</td>
<td>0.087</td>
</tr>
<tr>
<td>10:00 - 11:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>11:00 - 12:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>12:00 - 13:00</td>
<td>21</td>
<td>54</td>
<td>0.123</td>
</tr>
<tr>
<td>13:00 - 14:00</td>
<td>21</td>
<td>54</td>
<td>0.117</td>
</tr>
<tr>
<td>14:00 - 15:00</td>
<td>21</td>
<td>54</td>
<td>0.087</td>
</tr>
<tr>
<td>15:00 - 16:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>16:00 - 17:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>17:00 - 18:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>18:00 - 19:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>19:00 - 20:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>20:00 - 21:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>21:00 - 22:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>22:00 - 23:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
<tr>
<td>23:00 - 24:00</td>
<td>21</td>
<td>54</td>
<td>0.061</td>
</tr>
</tbody>
</table>

**Total Rates:**

|          | 0.889 | 0.918 | 1.807 |

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.
TRIPS 7.7.2 250720 B19.45  Database right of TRICS Consortium Limited, 2020. All rights reserved

TRICES Consulting Ltd  10 Oxford Street  Manchester

Licence No: 148301

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

<table>
<thead>
<tr>
<th>Time Range</th>
<th>ARRIVALS</th>
<th>DEPARTURES</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. Days</td>
<td>Ave. DWELLS</td>
<td>Trip Rate</td>
</tr>
<tr>
<td>00:00 - 01:00</td>
<td>21</td>
<td>54</td>
<td>0.002</td>
</tr>
<tr>
<td>01:00 - 02:00</td>
<td>21</td>
<td>54</td>
<td>0.003</td>
</tr>
<tr>
<td>02:00 - 03:00</td>
<td>21</td>
<td>54</td>
<td>0.004</td>
</tr>
<tr>
<td>03:00 - 04:00</td>
<td>21</td>
<td>54</td>
<td>0.011</td>
</tr>
<tr>
<td>04:00 - 05:00</td>
<td>21</td>
<td>54</td>
<td>0.007</td>
</tr>
<tr>
<td>05:00 - 06:00</td>
<td>21</td>
<td>54</td>
<td>0.011</td>
</tr>
<tr>
<td>06:00 - 07:00</td>
<td>21</td>
<td>54</td>
<td>0.005</td>
</tr>
<tr>
<td>07:00 - 08:00</td>
<td>21</td>
<td>54</td>
<td>0.013</td>
</tr>
<tr>
<td>08:00 - 09:00</td>
<td>21</td>
<td>54</td>
<td>0.020</td>
</tr>
<tr>
<td>09:00 - 10:00</td>
<td>21</td>
<td>54</td>
<td>0.015</td>
</tr>
<tr>
<td>10:00 - 11:00</td>
<td>21</td>
<td>54</td>
<td>0.028</td>
</tr>
<tr>
<td>11:00 - 12:00</td>
<td>21</td>
<td>54</td>
<td>0.033</td>
</tr>
</tbody>
</table>

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.
Our Locations

Birmingham
2 The Wharf
Bridge Street
Birmingham
B1 2JS
T. 0121 643 4694
birmingham@curtins.com

Kendal
28 Lowther Street
Kendal
Cumbria
LA9 4DH
T. 01539 724 823
kendal@curtins.com

Bristol
Quayside
40-58 Hotwell Road
Bristol
BS8 4UQ
T. 0117 302 7560
bristol@curtins.com

Leeds
Rose Wharf
Ground Floor
Leeds
L29 8EE
T. 0113 274 8509
leeds@curtins.com

Cardiff
3 Cwrt-y-Parc
Earlswood Road
Cardiff
CF14 5GH
T. 029 2068 0900
cardiff@curtins.com

Liverpool
Curtins
51-55 Tithebarn Street
Liverpool
L2 2SB
T. 0151 726 2000
liverpool@curtins.com

Douglas
Varley House
29-31 Duke Street
Douglas
Isle of Man
IM1 2AZ
T. 01624 624 585
douglas@curtins.com

London
40 Compton Street
London
EC1V 0BD
T. 020 7324 2240
london@curtins.com

Manchester
Merchant Exchange
17-19 Whitworth Street West
Manchester
M1 5WG
T. 0161 236 2394
manchester@curtins.com

Nottingham
56 The Ropewalk
Nottingham
NG1 5DW
T. 0115 941 5551
nottingham@curtins.com

Registered in England and Wales number: 2054159
Registered office: Curtin House, Columbus Quay, Riverside Drive, Liverpool L3 4DB