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*traffic engineering and transport planning*

Castle Buildings LLP


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**Proposed Hotel**  
**Castle Buildings, Castle Street, Hull**  
**Transport Assessment**


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March 2019

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# Castle Buildings LLP

## Proposed Hotel Castle Buildings, Castle Street, Hull Transport Assessment

March 2019

### Client Commission

Client: Castle Buildings LLP Date Commissioned: February 2019

### LTP Quality Control

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As part of our commitment to quality the following team of transport professionals was assembled specifically for the delivery of this project. Relevant qualifications are shown and CVs are available upon request to demonstrate our experience and credentials.

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# PROPOSED HOTEL CASTLE BUILDINGS, CASTLE STREET, HULL TRANSPORT ASSESSMENT

## CONTENTS

EXECUTIVE SUMMARY .....	3
1. INTRODUCTION .....	4
1.1 Background .....	4
1.2 Scope .....	4
2. SITE BACKGROUND .....	6
2.1 Site Location & Existing Use .....	6
2.2 Development Proposals & Access Arrangements .....	7
2.3 Allocation Status & Planning History .....	8
2.4 A63 Improvement Schemes .....	9
3. SITE ASSESSMENT .....	10
3.1 Local Highway Network .....	10
3.2 Pedestrian Provision .....	13
3.3 Cycling Provision .....	16
3.4 Public Transport Provision .....	18
3.5 Air Quality Management Area (AQMA) .....	18
4. ROAD CASUALTY APPRAISAL .....	19
4.1 Collision Record .....	19
4.2 Collision Conditions .....	19
4.3 Collision Times .....	20
4.4 Collision Locations .....	20
4.5 Casualties .....	21
4.6 Road Safety Impact .....	21
5. TRIP GENERATION PROJECTIONS .....	22
5.1 Proposed Trip Generation - Hotel .....	22
5.2 Proposed Trip Generation – Castle Buildings/Earl de Grey .....	24
5.3 Total Proposed Trip Generation .....	28
5.4 Existing Trip Generation .....	29
5.5 Impact on Parking .....	29
5.6 Impact on the Highway Network .....	32
6. CONCLUSIONS .....	33
7. REFERENCES .....	35

## APPENDICES

- Appendix 1 – Proposed Site Layout
- Appendix 2 – Personal Injury Collision Data
- Appendix 3 – Proposed Hotel Trip Generation
- Appendix 4 – Proposed Restaurant Trip Generation
- Appendix 5 – Proposed Office Trip Generation
- Appendix 6 – Princes Quay Car Park Data

## TABLES

Table 1: Collision History .....	19
Table 2: Collision Conditions .....	19
Table 3: Collisions by Time of Year .....	20
Table 4: Collisions by Day & Time .....	20
Table 5: Casualty Road User Groups .....	21
Table 6: Projected Vehicle Trip Generation – Hotel.....	22
Table 7: Projected Person Trip Generation – Hotel .....	23
Table 8: Projected Modal Trip Generation – Hotel .....	23
Table 9: Projected Vehicle Trip Generation – A3/A4 Use .....	24
Table 10: Projected Person Trip Generation – A3/A4 Use.....	25
Table 11: Projected Modal Trip Generation – A3/A4 Use.....	25
Table 12: Projected Vehicle Trip Generation – Offices .....	26
Table 13: Projected Modal Trip Generation – Offices.....	27
Table 14: Total Projected Vehicle Trip Generation .....	28
Table 15: Princes Quay Car Park Occupancy .....	30

## FIGURES

Figure 1: Site Location .....	6
Figure 2: Adopted Employment/Community Land (Site 2) .....	8
Figure 3: Primary Pedestrian Routes.....	14
Figure 4: 15 Minute Cycle Isochrone.....	16
Figure 5: Extract of Hull Cycle Map .....	17
Figure 6: E33009828 Workplace Zone .....	27

## PHOTOS

Photo 1: Waterhouse Lane.....	10
Photo 2: Myton Street.....	12
Photo 3: Myton Street/Osborne Street/Anne Street Signalised Junction .....	12
Photo 4: Pedestrian Links Across Bonus Arena.....	14
Photo 5: Zebra Crossing on Waterhouse Lane .....	15

## EXECUTIVE SUMMARY

This Transport Assessment (TA) provides a detailed appraisal of transport aspects associated with proposals for a 150-bed hotel and the redevelopment of the Castle Buildings and Earl de Grey Building at a site located to the north of Castle Street in Hull city centre. The key findings of this TA are summarised below:

- Vehicular access to the proposed development is to be provided via Waterhouse Lane and a small on site car park with 8 parking spaces along with a servicing area is to be provided to the north of the proposed hotel. Pedestrian access to the site is to be provided via both Waterhouse Lane and Castle Street, and the proposals will enhance pedestrian permeability by providing a footpath link through the site which will link the two streets.
- The application site is well placed to generate trips by sustainable modes of transport. The entire built-up area of Hull city centre is located within a 2km walk of the site. There are footways on both sides of local streets which are supplemented by formal crossing facilities. The site is within a 5km cycle ride of much of the built-up area of Hull and there are a number of on and off-road cycling facilities within the vicinity of the site. The nearest bus stops to the site are located on Carr Lane, within a 320m walk of the site. Hull Paragon Interchange is also located within a 550m walk of the site and accommodates all bus services within Hull along with regional and national rail services. A Travel Plan (LTP, 2019) that provides a strategy for encouraging sustainable travel at the site has been produced in conjunction with this TA as a separate document.
- A road casualty study showed that 40 Personal Injury Collisions (PICs) occurred within the study area around the proposed development site during the five-year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements generated by the proposed development, therefore it is considered that there are no existing road safety issues pertinent to the development of the site.
- The trip generation projections of this TA demonstrate that the proposals are expected to generate up to 49 two-way vehicle trips during the AM peak hour (08:00-09:00) and 44 two-way vehicle trips during the PM peak hour (17:00-18:00), based upon a number of robust worst-case assumptions including that the Castle Buildings/Earl de Grey Building are entirely in B1 use. It is therefore considered that the proposed development will not have a significant impact on the operation of the local highway network or Strategic Road Network (SRN).
- The highest demand generated by the proposals is expected to occur during the evening and overnight period, when data shows that average occupancy levels in Princes Quay Multi-Storey are less than 50% of capacity. The parking demand generated by the proposals is therefore expected to be suitably accommodated within existing local parking stock, including Princes Quay Multi-Storey and Osborne Street Multi-Storey.

This TA demonstrates that the proposed development would not be expected to have a significant impact in terms of sustainable travel, traffic impact and road safety. As the impact of the proposals is not expected to be severe, the proposals are therefore considered to be in accordance with the National Planning Policy Framework (NPPF).

## I. INTRODUCTION

### I.1 Background

- 1.1.1 Local Transport Projects Ltd (LTP) has been commissioned to produce a Transport Assessment (TA) in support of a planning application for a proposed 150-bed hotel and the redevelopment of the Castle Buildings and Earl de Grey Building at a site located to the north of Castle Street in Hull city centre. This TA provides a detailed appraisal of all transport aspects associated with the proposed development. A plan of the proposed site layout is attached as Appendix 1.
- 1.1.2 The local planning and highway authority for the site is Hull City Council (HCC), with Highways England (HE) also a key consultee of the scheme given the proximity of the site to the A63 trunk road.
- 1.1.3 LTP has also been commissioned to prepare a Travel Plan (LTP, 2019) for the proposed development, which outlines the approach to encouraging travel by sustainable modes at the site. Although the TP has been prepared as a standalone document, both the TA and TP are linked and should be read in conjunction with each other.

### I.2 Scope

- 1.2.1 The scope of this report has been agreed with HCC Highways Officers (ref: Tim Robinson) and is written in accordance with the Government's 'National Planning Policy Framework' (MHCLG, 2019) and 'Planning Practice Guidance' (DCLG, 2014), as summarised below:
- **Executive Summary:** A non-technical summary of the report outlining the key outcomes of the assessment.
  - **Introduction & Description of Proposals:**
    - Description of the development site, including location and any existing access arrangements;
    - Summary of relevant planning and allocation history for the site;
    - Description of the proposed development including site layout, pedestrian/cycle facilities and proposed access arrangements.
  - **Site Assessment:**
    - Site assessments to determine existing traffic conditions, such as posted speed limits, road restrictions, highway geometry, on-street parking restrictions and any other relevant features of the local area;
    - Assessment of the sustainable transport infrastructure (pedestrian, cycle and public transport) local to the site.
  - **Road Casualty Appraisal:** Examination of road collision records (5 year study period) and assessment of the road safety impact of the proposed development on the local highway network.

- **Traffic Impact:**
  - Calculation of the projected trip generation for the proposed development;
  - Consideration of the trip generation associated with the consented use of the site;
  - Consideration of any relevant consented developments within the local area and any committed changes to the surrounding highway network;
  - Assessment of the likely parking impact of the proposed development on local parking stock;
  - Assessment of the likely traffic impact of the proposed development on the operation of the local highway network and SRN. This will involve assessing the traffic generation of the proposals against the typical threshold for assessment (30 two-way traffic flows).
- **Access, Parking & Internal Layout:** Description of the proposed access arrangements and internal layout of the site, including consideration of the proposed parking provision, access/servicing arrangements and suitability of the proposed access arrangements.
- **Conclusions:** Conclusions summarising the outcomes of the TA, including a commentary on the suitability of the proposals in terms of traffic impact and road safety.

1.2.2 This TA report has been prepared in accordance with the above scope and reference has been made to the following documents where appropriate:

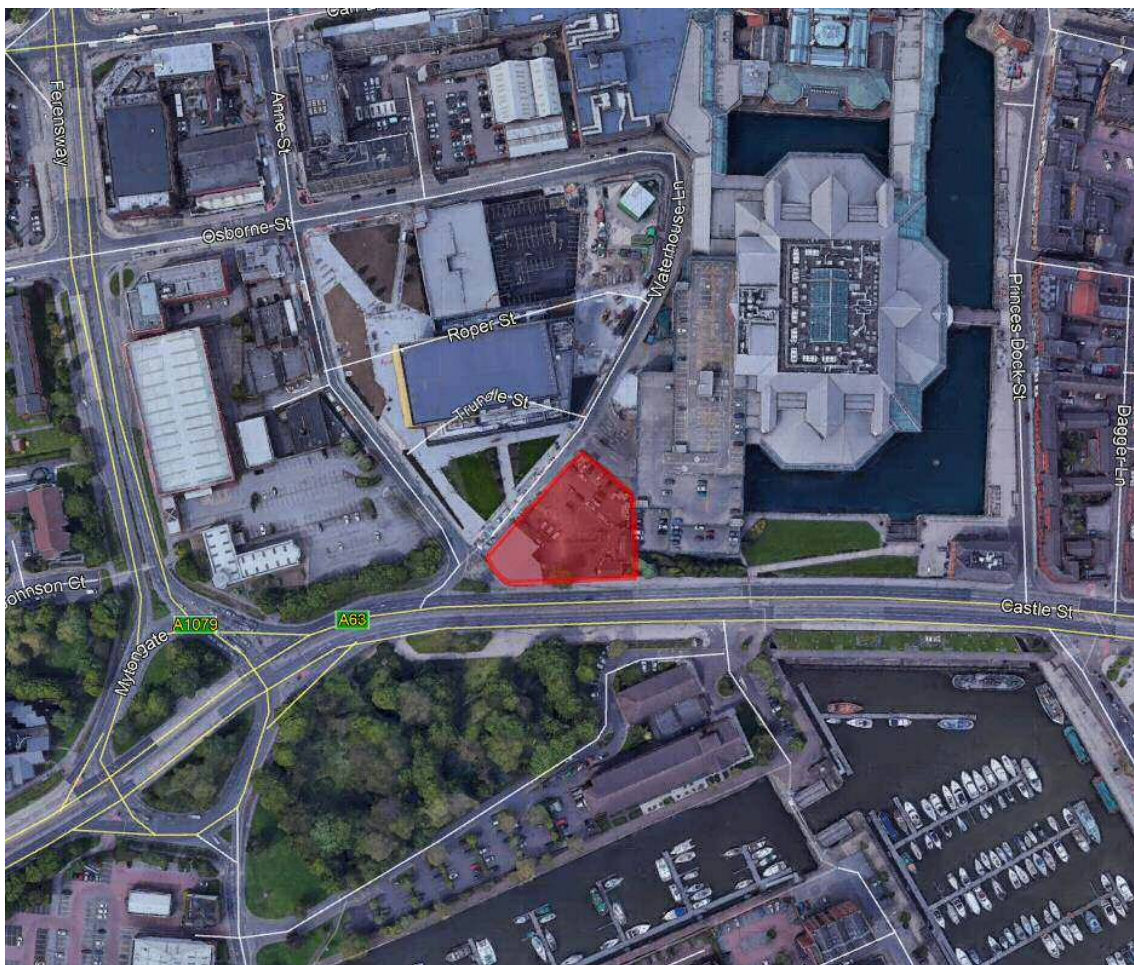
- National Planning Policy Framework (MHCLG, 2019);
- Hull Local Plan 2016 to 2032 (HCC, 2017);
- Planning Practice Guidance (DCLG, 2014);
- HCC LTP3 (3<sup>rd</sup> Local Transport Plan) (HCC, 2011a);
- HCC Highway Design Guide for New Developments (HCC, 2011b);
- Manual for Streets 2: Wider Application of the Principles (CIHT, 2010);
- Guidance on Transport Assessment (DfT, 2007a); and
- Manual for Streets (DfT, 2007b).

## 2. SITE BACKGROUND

### 2.1 Site Location & Existing Use

- 2.1.1 The proposed development site is located to the north of Castle Street (A63) in Hull city centre. The site currently accommodates the Castle Buildings and Earl de Grey Building, both of which are currently out of use, along with a surface pay & display car park with approximately 50 car parking spaces which is accessed via Waterhouse Lane.
- 2.1.2 The site is bound by Waterhouse Lane to the north-west, Princes Quay Multi-Storey Car Park (MSCP) to the east and Castle Street to the south. The approximate boundary of the development site is highlighted in Figure 1.

Figure 1: Site Location



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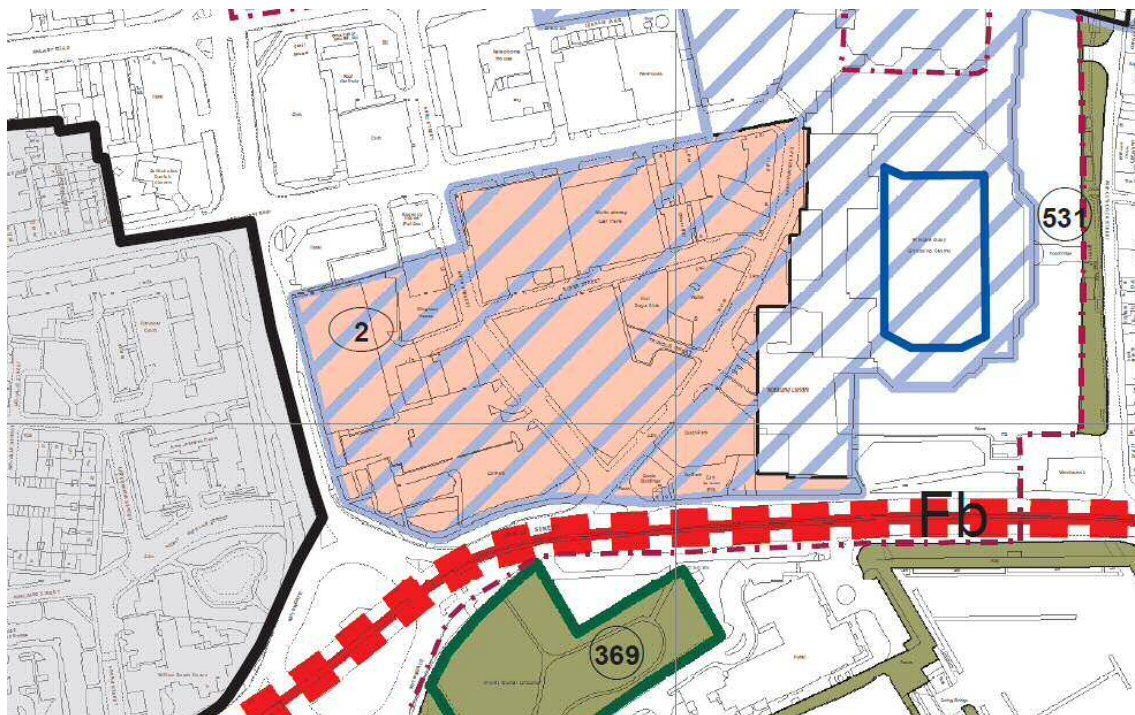
## 2.2 Development Proposals & Access Arrangements

- 2.2.1 This TA is based upon the proposals outlined on the site layout plan attached as Appendix 1. The proposed development comprises:
- Demolition and (partial) relocation of Earl de Grey building, subsequent use for A3/A4 and/or B1 uses;
  - Conversion and extension of Castle Buildings, subsequent use for A3/A4 and/or B1 uses;
  - Erection of 9 storey hotel building; and
  - Associated hard/soft landscape works, access and infrastructure.
- 2.2.2 The proposed hotel is expected to have a total of 150 bedrooms and ancillary facilities, including a sky bar, are to be provided within the hotel.
- 2.2.3 The Castle Buildings and Earl de Grey Building are to have a total combined Gross Internal Area (GIA) of 771m<sup>2</sup>, including 410m<sup>2</sup> on the ground floor and 361m<sup>2</sup> on the upper floors. The proposals are for mixed A3/A4 and B1 (office) uses within the buildings.
- 2.2.4 Pedestrian access to the site is to be provided via both Waterhouse Lane and Castle Street, with a footpath running in an approximately northwest – southeast direction through the site, connecting the two streets and facilitating pedestrian access to the hotel and proposed courtyard area to the east of the Castle Buildings and the Earl de Grey building.
- 2.2.5 A small on-site car parking area with 8 spaces (including 2 disabled spaces) is to be provided to the north of the proposed hotel and will be accessed via Waterhouse Lane. Servicing for the proposed hotel will also be undertaken from within this area.
- 2.2.6 It is understood that an agreement is in place with Princes Quay Shopping Centre to accommodate parking associated with hotel guests within the existing Multi-Storey Car Park (MSCP). The demand generated by the remainder of the development (A3/A4/B1 uses) will be absorbed by local car parks including Princes Quay MSCP and Osborne Street MSCP. The parking impact of the development is considered further within Section 5.5 of this TA.

## 2.3 Allocation Status & Planning History

2.3.1 The proposed development site is allocated for mixed-use development within the adopted 'Hull Local Plan' (HCC, 2017). The site is referenced as 'Land around Myton Street (west of Princes Quay)' (ref: 2) and is allocated for "a new conference centre and live music venue together with a hotel and retail space". The outline of the allocated development site is shown within Figure 2:

**Figure 2: Adopted Employment/Community Land (Site 2)**



Ref: HCC, 2017

2.3.2 A planning application for "Listed Building Consent for the remedial works to eastern elevation of Castle Buildings following demolition of 13, 14 Castle Street, comprising making good of brickwork and blocking up of 2no. door openings (at ground and first floor)" was submitted to HCC in January 2018 (18/00029/LBC) and was approved in March 2018.

## 2.4 A63 Improvement Schemes

- 2.4.1 There are a number of highway improvement schemes planned for the A63 within the vicinity of the site which are pertinent to the development of the site.
- 2.4.2 A scheme to provide a footbridge across the A63 to connect Princes Dock Street and Humber Dock Street (Princes Quay Footbridge) began in November 2018. The proposals include the removal of the existing staggered puffin crossings on the A63 within the vicinity of Princes Dock Street and the Holiday Inn. The scheme is expected to improve pedestrian permeability across the A63 and the removal of the crossings is expected to reduce delay to through traffic.
- 2.4.3 A scheme to improve the A63 Roger Millward Way roundabout approximately 1.3km to the east of the site is also running concurrently to the footbridge scheme. The proposals involve the full signalisation of the roundabout and the construction of two through traffic lanes on the A63 in either direction in a 'hamburger' style layout. The scheme is expected to reduce congestion and improve the road safety record at the existing roundabout.
- 2.4.4 The Roger Millward Way roundabout scheme is expected to be completed in summer 2019, with completion of the footbridge expected in March 2020. Once these schemes have been completed the main A63 Castle Street improvement scheme is expected to begin. The main improvement scheme is expected to reduce delays to mainline traffic flows on the A63 and briefly involves:
- The removal of the existing Mytongate signalised junction, with the lowering of the A63 carriageway and the provision of a signalised grade-separated junction to serve Ferensway/Commercial Road;
  - Improvements to the A63/Queen Street/Market Place junctions to introduce on/off slip roads, including the removal of the existing traffic signals;
  - The stopping-up of a number of minor road accesses along the A63, including St James Street, Waverley Street, Spruce Road and Humber Dock Street; and
  - The construction of a footbridge across the A63 at Porter Street and the removal of the existing staggered puffin crossing.
- 2.4.5 A Development Consent Order (DCO) for the scheme was submitted to the Planning Inspectorate on 20<sup>th</sup> September 2018 and is expected to be determined during 2019.
- 2.4.6 Within the immediate vicinity of the site, the existing off-slip road from the A63 to Myton Street is to be retained, but will be provided from the proposed eastbound on-slip road rather than the main eastbound carriageway as existing. The kerb line of the new alignment of the A63 is proposed to be in slightly closer proximity to the red line boundary of the site, however this has been factored in to the design of the development proposals, with no adverse impact expected.

### 3. SITE ASSESSMENT

#### 3.1 Local Highway Network

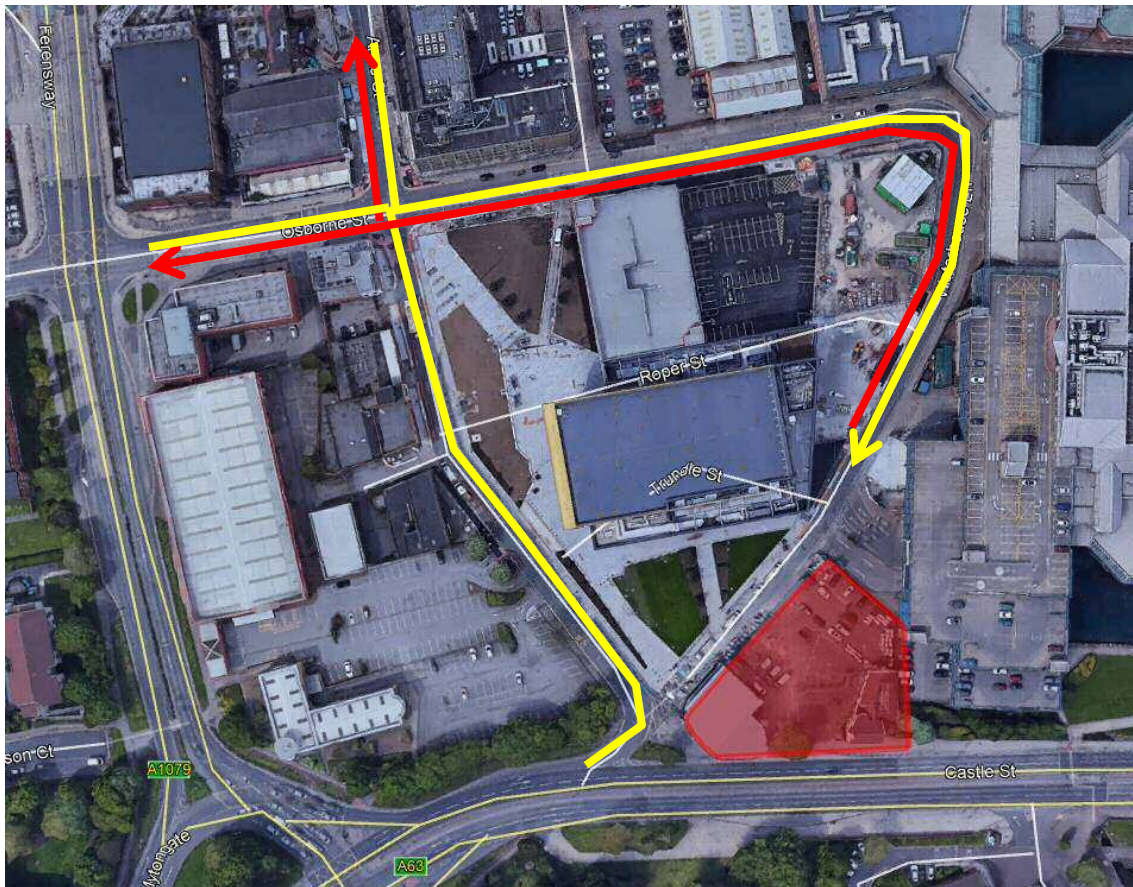
- 3.1.1 As previously outlined, a small on-site parking area is to be provided to the north of the proposed hotel and is to be accessed via Waterhouse Lane. All other vehicle trips generated by the site are expected to be accommodated within other local car parks including Princes Quay Multi-Storey and Osborne Street Multi-Storey.
- 3.1.2 Waterhouse Lane is a two-way single carriageway that measures approximately 6.2m in width within the vicinity of the proposed access location. It is approximately 200m in length and becomes Osborne Street to the north of the site. No through access is available to/from Myton Street to the south-west of the site, with bollards restricting vehicular access.

**Photo 1: Waterhouse Lane**



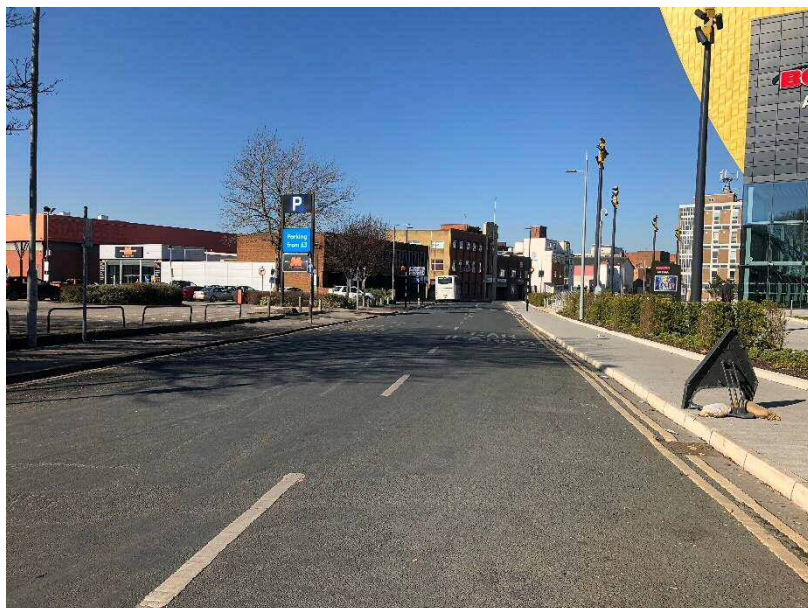
- 3.1.3 The vehicular route to access the site from the eastbound carriageway of the A63 is Myton Street – Osborne Street – Waterhouse Lane. The vehicular access routes to the site are shown in yellow within Figure 3, with the egress routes shown in red.

Figure 3: Vehicular Access & Egress Routes

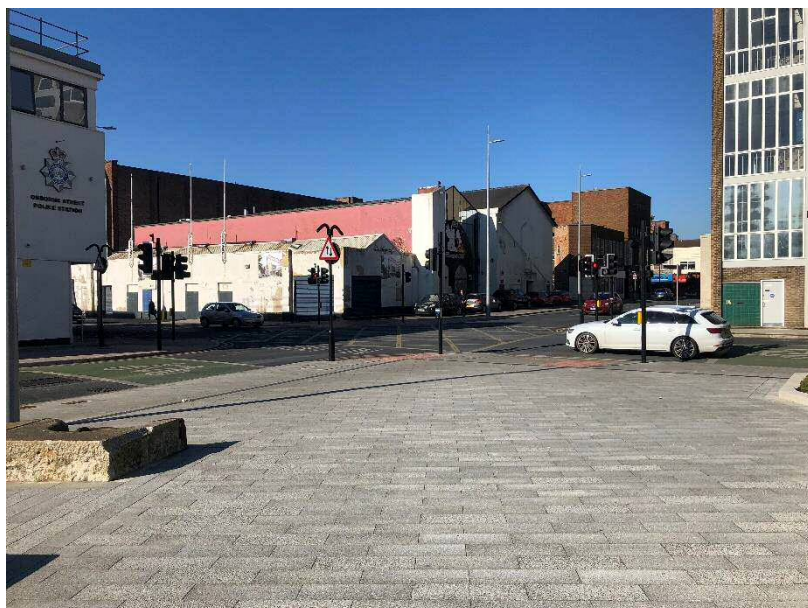


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- 3.1.4 No Waiting At Any Time (NWAAT) restrictions are generally provided on both sides of the carriageway on both sides of Waterhouse Lane, with the exception of 5 unrestricted parking bays (including 1 disabled bay) on the northern side opposite the proposed development site.
- 3.1.5 Myton Street is located to the north-west of the site and runs one-way (northbound) between the eastbound carriageway of the A63 and the four-arm Myton Street/Osborne Street/Anne Street signalised junction. It measures approximately 280m in length and there are two general northbound traffic lanes throughout.

**Photo 2: Myton Street**

- 3.1.6 NWAAT restrictions are generally provided on both sides of Myton Street, with the exception of three coach stands, a taxi rank and parking bays for police vehicles on the western side of the carriageway.
- 3.1.7 Osborne Street is located to the north of the site and is approximately 400m in length in total, running between Waterhouse Lane to the east and Porter Street to the west. It meets Myton Street/Anne Street at a four-arm signalised junction approximately 170m north-west of the site and Ferensway (A1079) at a four-arm signalised junction approximately 80m to the west of Myton Street/Anne Street.

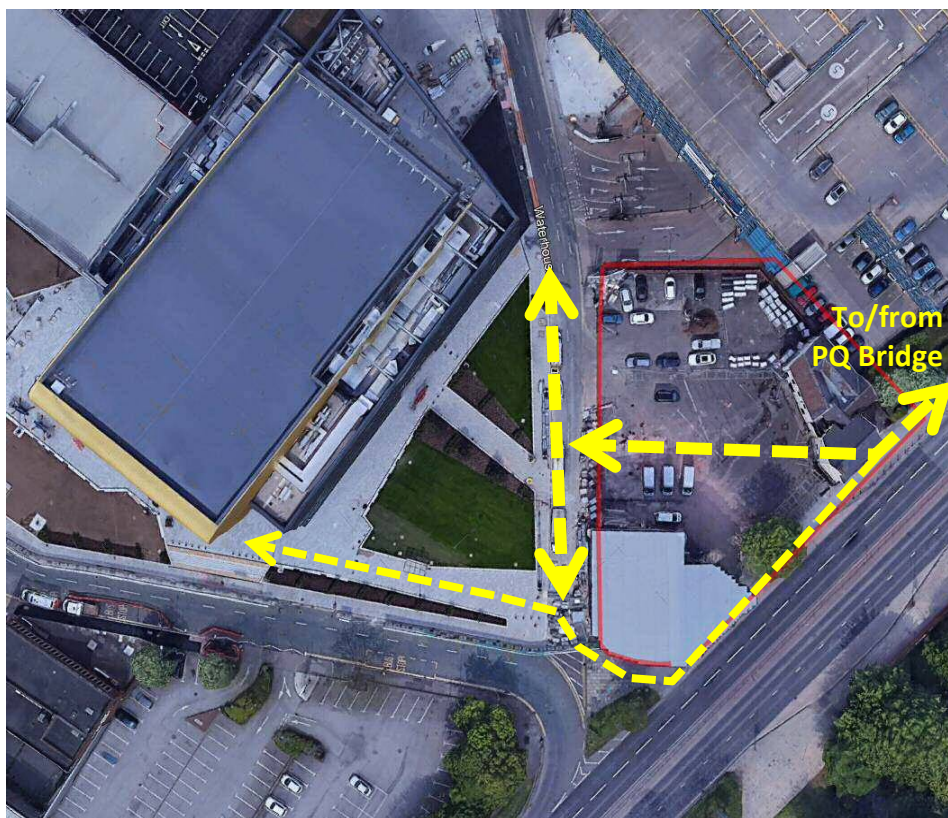
**Photo 3: Myton Street/Osborne Street/Anne Street Signalised Junction**

- 3.1.8 NWAAT restrictions are generally provided on both sides of Osborne Street to the east of Ferensway, with the exception of five metred parking bays on the northern side of the carriageway to the east of Anne Street and loading bays and disabled parking bays on the northern side within the vicinity of Waterhouse Lane.
- 3.1.9 Castle Street (A63) runs along the southern boundary of the site and forms part of the Strategic Road Network (SRN) that is managed by Highways England (HE). It is a dual carriageway with two general traffic lanes in each direction and currently meets Ferensway (A1079)/Commercial Road at the signalised 'Mytongate' junction approximately 100m west of the site. An off-slip road is currently provided from the eastbound carriageway of the A63 to Myton Street, which is likely to form one of the access routes to the site. Egress from the site to the A63 is currently via Osborne Street, Ferensway and the Mytongate junction.
- 3.1.10 As previously outlined, as part of the A63 Castle Street improvement scheme, the existing Mytongate junction will be replaced with a signalised grade separated junction, with the mainline carriageway of the A63 running beneath. The off-slip road on to Myton Street will be retained under the proposals, but will be provided from the eastbound on-slip road from the proposed grade separated junction rather than the mainline carriageway. Access for traffic from the west will therefore be via the grade separated junction. The improvement scheme is not expected to have a significant impact on access to the proposed development.

## 3.2 Pedestrian Provision

- 3.2.1 Guidance from the Chartered Institution of Highways & Transportation (CIHT) suggests a preferred maximum walking distance of 2km for a number of trips, including commuting and sightseeing trips (IHT, 2000). The proposed development site is located within a 2km walk of the entire built up area of Hull city centre, which includes numerous shopping and leisure facilities. The site is also located within an up to 1km of the Hull Marina and Fruit Market areas, which also include shopping and leisure facilities along with attractions such as The Deep.
- 3.2.2 The pedestrian infrastructure within the vicinity of the site is well developed and the development proposals will enhance permeability by providing a pedestrian link through the site, connecting Waterhouse Lane with Castle Street which will facilitate a more direct pedestrian link to/from the Princes Quay Footbridge. It is intended that this route through the site will form the main route for pedestrians between Bonus Arena and the Princes Quay Footbridge, replacing the existing route via Myton Street/Castle Street around the front of Castle Buildings. The proposed primary pedestrian routes within the vicinity of the site are shown within Figure 4.

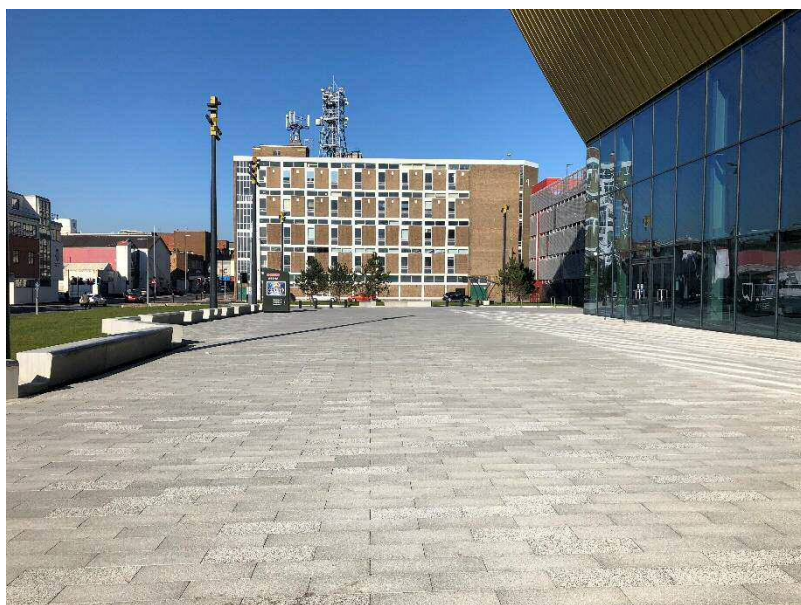
**Figure 4: Primary Pedestrian Routes**



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3.2.3 There are direct pedestrian routes to/from parts of Hull city centre, including Hull Interchange, to the north-west of the site via the pedestrianised area within the frontage of Bonus Arena. The pedestrianised area connects the site with the Myton Street/Osborne Street/Anne Street signalised junction, at which there are puffin crossing facilities on all arms.

**Photo 4: Pedestrian Links Across Bonus Arena Frontage**





- 3.2.4 A direct pedestrian link to Princes Quay Shopping Centre, which includes shopping and leisure facilities is provided from Waterhouse Lane approximately 60m north of the proposed site.
- 3.2.5 There are footways on both sides of the carriageway on most roads within the vicinity of the site, including Myton Street, Waterhouse Lane, Osborne Street and Castle Street (A63). These footways are complemented by crossing facilities, including zebra crossings on both Myton Street and Waterhouse Lane.

**Photo 5: Zebra Crossing on Waterhouse Lane**



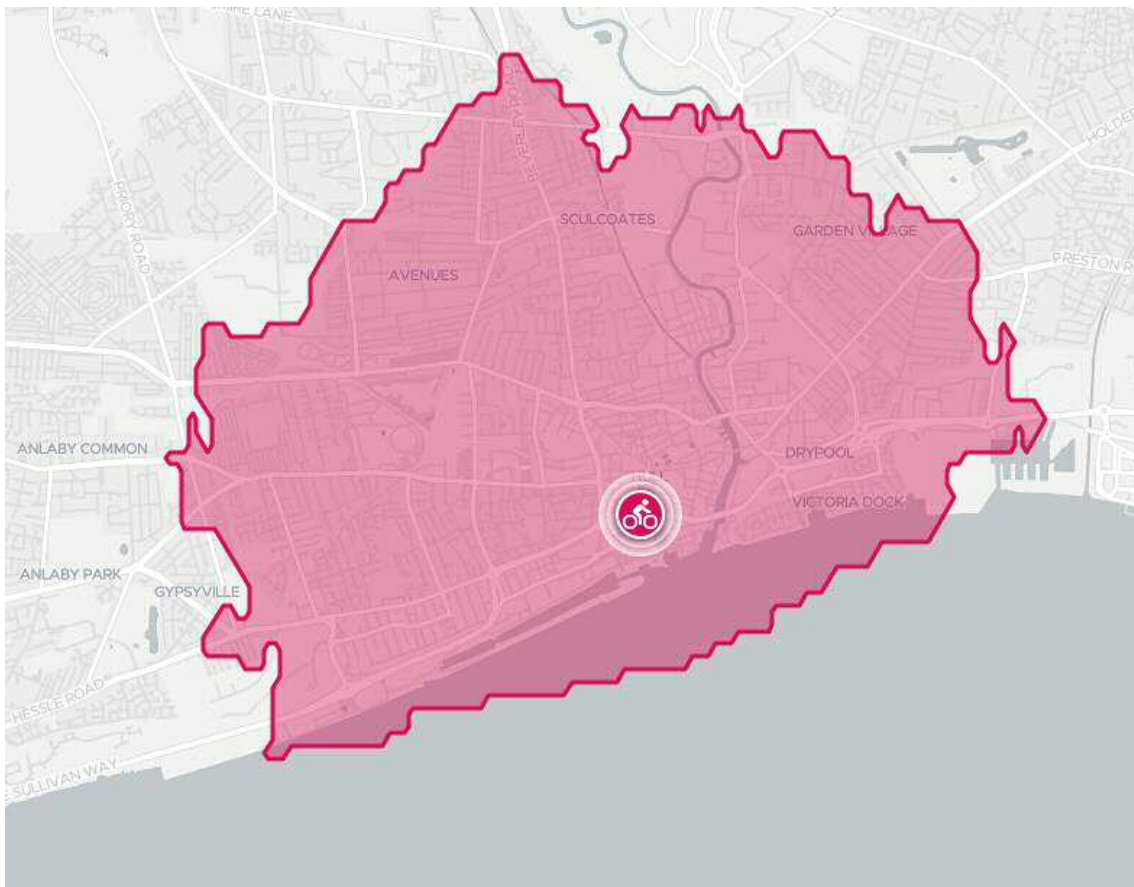
- 3.2.6 There are currently staggered puffin crossing facilities on Castle Street (A63) to the east of the site which facilitate access between the site and Hull Marina/Fruit Market. These crossing facilities will be removed and replaced with the Princes Quay Footbridge, which is to be located approximately 120m to the east of the site and is currently expected to be open in March 2020.
- 3.2.7 There are also toucan crossing facilities across the A63 at the Mytongate junction to the west of the site. These crossing facilities are to be replaced as part of the wider A63 Castle Street Improvement Scheme.
- 3.2.8 There are no existing Public Rights of Way (PRoW) within the immediate vicinity of the site.
- 3.2.9 The pedestrian infrastructure within the vicinity of the site appears to generally be sufficient to facilitate the movements of mobility and visually impaired people, with provision of dropped kerbs and tactile paving at most local junctions and crossing points within the local area. The footways are generally of sufficient width and surface quality to accommodate the passage of wheelchairs (DfT, 2002).

- 3.2.10 The proposed internal pedestrian routes are expected to be of adequate width, with step-free access between the site and the local footway network. It is therefore considered that the site can be suitably accessed on foot by all users, including those accompanied by young children and the mobility impaired.
- 3.2.11 A number of measures to promote walking trips to and from the site are outlined within the site Travel Plan (LTP, 2019).

### 3.3 Cycling Provision

- 3.3.1 Cycling is a low cost and healthy alternative to car use, which can substitute for short car trips, or can form part of a longer journey by public transport. The DfT state that “*in common with other modes, many utility cycle journeys are under three miles (5km), although, for commuter journeys, a trip distance of over five miles (8km) is not uncommon*” (DfT, 2008).
- 3.3.2 The proposed development site is located within a reasonable cycle ride, up to 5km (approximately 15 minutes at the average cycling speed of 12mph), of much of the built-up area of Hull. The Avenues, Sculcoates, Victoria Dock and Garden Village areas of the city are all within a 5km cycle ride of the site, as illustrated within Figure 5:

**Figure 5: 15 Minute Cycle Isochrone**



Source: TTM, 2019

3.3.3 An extract from the Hull cycle map is provided as Figure 6 and shows the cycle facilities available within the local area. The proposed site is indicated by a blue star, with on-road cycle facilities shown in blue and off-road facilities in red.

Figure 6: Extract of Hull Cycle Map



Source: HCC, 2014

3.3.4 The existing cycling infrastructure within the vicinity of the site includes:

- On-road cycle lanes on both sides of Anlaby Road;
- Shared-use foot/cycleways around Mytongate junction, including toucan crossings and the continuation of the shared-use facility on the northern side of the A63 to the west of Mytongate; and
- The designation of Osborne Street/Anne Street/Carr Lane as a recommended on-road cycle route, which forms part of National Cycle Network (NCN) Route 65 and the Trans Pennine Trail.

- 3.3.5 It is understood that pedestrian and cycle infrastructure improvements will be provided as part of the A63 Castle Street Improvement Scheme, including shared-use foot/cycleways on both sides of the A63 and crossing facilities at the Ferensway/Commercial Road junctions. It should also be noted that the bridge deck on the proposed Princes Quay Footbridge is proposed to measure 5.0m in width and will be designed to accommodate cyclists, providing a cycle link between the site and the Marina/Fruit Market areas, as well as between cycling facilities on each side of the A63.
- 3.3.6 A number of measures to promote cycling trips to and from the site are outlined within the site Travel Plan (LTP, 2019).

### **3.4 Public Transport Provision**

- 3.4.1 Advice within 'Guidelines for Public Transport in Development' (IHT, 1999) states that the generally acceptable maximum distance that a bus stop should be located from a development site is 400m, although it is acknowledged that actual walking distances can be notably longer.
- 3.4.2 The nearest bus stops to the proposed development site are the westbound stops on Carr Lane adjacent to Telephone House, which are within a 320m walk of the site. There are additional stops further to the east on Carr Lane which are within a 450m walk of the site. Hull Paragon Interchange is located approximately 550m walk to the north-west of the site.
- 3.4.3 The stops on Carr Lane accommodate services on the city loop, including arrivals from the north of the city and both arrivals and departures to/from the west. All bus services that operate within Hull and to the wider areas of the East Riding of Yorkshire and North Lincolnshire are accessible from the stops on Carr Lane or the Interchange, therefore it is considered that the site benefits from excellent public transport access.
- 3.4.4 A number of measures to encourage public transport use to and from the site are outlined within the site Travel Plan (LTP, 2019).

### **3.5 Air Quality Management Area (AQMA)**

- 3.5.1 The proposed development site is located within the extents of Hull AQMA No.1, which is in place in order to control Nitrogen Dioxide (NO<sub>2</sub>) levels and covers a large proportion of an area to the south and south-west of the city centre around the A63 corridor.

## 4. ROAD CASUALTY APPRAISAL

### 4.1 Collision Record

- 4.1.1 Personal Injury Collision (PIC) data for the highway network local to the site for the most recent available five-year study period (01/01/2013 to 31/12/2017) was obtained via a search of the Department for Transport's (DfT) road safety data (DfT, 2018a).
- 4.1.2 A total of 40 collisions occurred within the study area, which includes Waterhouse Lane, Myton Street, Osborne Street and the A63/Mytongate junction within the vicinity of the site. The study area and the locations of the collisions are shown on the plan attached as Appendix 2. Table 1 below outlines the collision history of the study area.

**Table 1: Collision History**

Year	2013	2014	2015	2016	2017	Total
Fatal	-	-	-	-	-	0
Serious	1	-	-	1	-	2
Slight	12	7	5	9	5	38
<b>Total</b>	<b>13</b>	<b>7</b>	<b>5</b>	<b>10</b>	<b>5</b>	<b>40</b>

- 4.1.3 The collision records show that the number of collisions per year has fluctuated throughout the study period, with a peak of collisions in 2013 and fewest collisions occurring in 2015 and 2017. There were 2 Killed or Seriously Injured (KSI) collisions recorded during the study period, resulting in a severity ratio of 5%.

### 4.2 Collision Conditions

- 4.2.1 Table 2 below summarises the collisions by road surface, weather and lighting conditions:

**Table 2: Collision Conditions**

Road Surface	Collisions	%
Dry	34	85%
Wet/Damp	6	15%
Weather	Collisions	%
Fine	38	95%
Rain	2	5%
Lighting	Collisions	%
Daylight	31	77.5%
Dark	9	22.5%

- 4.2.2 As illustrated in Table 2, the majority of collisions did not occur in adverse weather or lighting conditions or when the road surface was wet/damp.

### 4.3 Collision Times

4.3.1 Table 3 summarises the collisions by time of year:

**Table 3: Collisions by Time of Year**

Time of Year	Collisions	%
Winter (Dec-Feb)	13	32.5%
Spring (Mar-May)	3	7.5%
Summer (Jun-Aug)	15	37.5%
Autumn (Sep-Nov)	9	22.5%

4.3.2 Table 3 shows that the majority of collisions occurred during the summer (37.5%) and winter (32.5%) months, with the fewest collisions recorded during the spring months.

4.3.3 Table 4 below summarises the collisions by day of week and also the time of day:

**Table 4: Collisions by Day & Time**

	Morning (06:00- 11:00)	Lunch (11:00- 14:00)	Afternoon (14:00- 19:00)	Evening (19:00- 01:00)	Night (01:00- 06:00)	Total	%
Monday	1	0	3	2	0	6	15.0%
Tuesday	2	1	3	0	0	6	15.0%
Wednesday	4	3	2	2	0	11	27.5%
Thursday	0	1	0	1	0	2	5%
Friday	1	1	0	3	0	5	12.5%
Saturday	0	2	3	0	0	5	12.5%
Sunday	2	1	2	0	0	5	12.5%
<b>Total</b>	<b>10</b>	<b>9</b>	<b>13</b>	<b>8</b>	<b>0</b>	<b>40</b>	
<b>%</b>	<b>25%</b>	<b>22.5%</b>	<b>32.5%</b>	<b>20%</b>	<b>0%</b>		

4.3.4 Table 4 shows that most collisions were recorded on a Wednesday (27.5%), with the fewest on a Thursday (5.0%) and a relatively even spread across other days of the week. The majority of collisions were recorded during the afternoon period (32.5%), with no collisions recorded during the night.

### 4.4 Collision Locations

4.4.1 The locations of the 40 study collisions (shown on the plot attached as Appendix 2) can be summarised as follows:

- 32 PICs occurred at the A63/Mytongate signalised junction;
- 6 PICs occurred at the Osborne Street/Ferensway (A1079) signalised junction; and
- 2 PICs occurred at the Myton Street/Osborne Street/Anne Street signalised junction.

4.4.2 It should be noted that no collisions were recorded on Myton Street, Osborne Street or Waterhouse Lane within the immediate vicinity of the site.

4.4.3 Whilst a relatively high number of collisions occurred at the A63/Mytongate signalised junction, it is to be replaced with a grade separated junction as part of the A63 Castle Street Improvement Scheme, which is expected to improve the road safety record in this location.

## 4.5 Casualties

4.5.1 A total of 51 casualties occurred as a result of the 40 recorded injury collisions during the study period. Table 5 below provides a breakdown of the casualties according to the mode of travel and age group:

**Table 5: Casualty Road User Groups**

Road User Group	Age (years)						Total	%
	0 to 15	16 to 20	21 to 25	26 to 45	46 to 65	66+		
Pedestrian	0	0	0	0	1	0	1	2%
Cyclist	0	1	1	2	0	0	4	7.8%
Car Driver	0	1	5	19	8	1	34	66.7%
Car Passenger	3	0	3	4	0	1	11	21.6%
Goods Vehicle Occupant	0	0	0	1	0	0	1	2.0%
<b>Total</b>	<b>3</b>	<b>2</b>	<b>9</b>	<b>26</b>	<b>9</b>	<b>2</b>	<b>51</b>	
<b>%</b>	<b>5.9%</b>	<b>3.9%</b>	<b>17.6%</b>	<b>51%</b>	<b>17.6%</b>	<b>3.9%</b>		

4.5.2 Table 5 shows that the majority of casualties were vehicle occupants (90.3%) with low proportions of pedestrian and cycle casualties. The highest proportion of casualties were aged 26 to 45 years (51%) with low proportions of both child casualties (0 to 15 years) and elderly casualties (66+ years).

## 4.6 Road Safety Impact

4.6.1 A total of 40 collisions, resulting in 51 casualties, have occurred within the study area during the five-year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements of the proposed development, therefore it is considered that there are no existing road safety issues pertinent to the development of the site.

4.6.2 If the proposed site access is designed with due consideration to road safety, with appropriate highway design features incorporated into the detailed design, then the proposals should not have a detrimental road safety impact on the local highway network and should not adversely affect the safety of pedestrians and cyclists.

## 5. TRIP GENERATION PROJECTIONS

### 5.1 Proposed Trip Generation - Hotel

5.1.1 The TRICS database is an industry-standard collection of traffic counts and trip generation statistics for calculating trip rates at development sites. The TRICS database has been interrogated to find suitable data to assist in projecting the trip generation of the proposed hotel.

5.1.2 In order to derive reflective trip rates, trip generation statistics within the ‘Hotels’ category (06-A) of the TRICS database have been interrogated. To ensure that only trip generation statistics for comparable sites were used in calculations, the TRICS sites were filtered to the following criteria:

- Database version: v7.5.4;
- Survey type: Multi-modal sites;
- Size: 50 to 250 beds;
- TRICS location type: ‘Town Centre’ and ‘Edge of Town Centre’;
- Regions: UK only, excluding Greater London and Ireland sites;
- Weekday survey data only (exclusion of Saturday and Sunday surveys);
- Recent survey data only (exclusion of surveys undertaken prior to 01/01/2010); and
- Removal of any sites that did not contain an on-site bar/restaurant.

5.1.3 As there were less than 20 comparable sites in the database after filtering (10 survey sites), mean trip rates (as weighted and calculated by the TRICS software) have been used to project the vehicle trip generation of the proposed hotel, in accordance with good practice guidelines (TCL, 2016). Details of the site selection and trip rates taken from the TRICS database are attached in full within Appendix 3, with the projected vehicle trip rates and generation shown in Table 6:

**Table 6: Projected Vehicle Trip Generation – Hotel**

Hotel	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)		Daily (07:00-22:00)	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Vehicle Trip Rates (per bedroom)	0.078	0.092	0.107	0.061	0.896	0.751
Vehicle Trips (150 bedrooms)	12	14	16	9	134	114

5.1.4 The trip generation projections indicate that the proposed hotel could generate up to 26 two-way vehicle trip movements during the AM peak hour (08:00-09:00), with 25 during the PM peak hour (17:00-18:00) and 248 across the full daily (07:00-22:00) period.



5.1.5 The TRICS sites utilised to predict the traffic generation of the hotel contain multi-modal information, therefore the person trip generation of the hotel has been predicted based on the person trip rates derived from the comparable TRICS sites, summarised in Table 7 and shown in full within Appendix 3.

**Table 7: Projected Person Trip Generation – Hotel**

Hotel	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)		Daily (07:00-22:00)	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Person Trip Rates (per bedroom)	0.170	0.304	0.361	0.244	3.179	3.171
Person Trips (150 bedrooms)	26	46	54	37	477	476

5.1.6 The modal split of the development has been predicted based on travel pattern information from the comparable hotel sites in the TRICS database, with the number of trips generated by each mode projected utilising the total person trip generation for the site, as summarised in Table 8.

**Table 8: Projected Modal Trip Generation – Hotel**

Person Trips	Modal Split	Daily (07:00-22:00) Two-Way Trips
Vehicle Drivers	25.9%	248
Vehicle Passengers	9.8%	93
<b>Vehicle Occupants</b>	<b>35.7%</b>	<b>341</b>
Pedestrians	55.7%	531
Cyclists	0.3%	2
Public Transport Users	8.2%	78
<b>TOTAL</b>	<b>100%</b>	<b>953</b>

\* The total may not represent the sum of its parts due to rounding

5.1.7 The modal split predictions indicate that almost three quarters of person trips (74%) generated by the hotel would be expected to be made by sustainable modes (pedestrian, cycle, public transport and car passenger).

5.1.8 It should be noted that all the TRICS sites used in projecting the trip generation of the hotel were filtered to ensure that the comparable sites included on-site bars/restaurants. It is therefore considered that any ancillary uses of the hotel (e.g. a sky bar) are included within the above trip generation projections.

5.1.9 It is also noted that a number of guests at the proposed hotel may be attendees of events at the adjacent Bonus Arena. These trips will have therefore been factored in to the TA produced in support of the planning application for the Arena (AECOM, 2016) and may already be on the local highway network on event days. No reductions have been made to the above projections to account for this, therefore the projections are considered to be suitably robust.

## 5.2 Proposed Trip Generation – Castle Buildings/Earl de Grey

### Introduction

- 5.2.1 As previously outlined, the Castle Buildings and Earl de Grey Building are to have a combined total GFA of 771m<sup>2</sup> and are proposed for mixed A3/A4 (restaurant/drinking establishment) and/or B1 (office) use.
- 5.2.2 B1 uses are typically more trip intensive during the network peak hours, whilst A3/A4 uses are typically more trip intensive during the evening periods. In order to ensure a worst-case assessment is undertaken, trip generation projections have been considered for both A3/A4 and B1 uses.

### A3/A4 Uses

- 5.2.3 In order to derive reflective trip rates for the proposed A3/A4 use, trip generation statistics within the ‘Restaurant’ category (06-B) of the TRICS database have been interrogated. To ensure that only trip generation statistics for comparable sites were used in calculations, the TRICS sites were filtered to the following criteria:
- Database version: v7.5.4;
  - Survey type: Multi-modal sites;
  - Size: All sizes;
  - TRICS location type: ‘Town Centre’ and ‘Edge of Town Centre’;
  - Regions: UK only, excluding Greater London and Ireland sites;
  - Weekday survey data only (exclusion of Saturday and Sunday surveys); and
  - Recent survey data only (exclusion of surveys undertaken prior to 01/01/2010).
- 5.2.4 As there were less than 20 comparable sites in the database after filtering (3 survey sites), mean trip rates (as weighted and calculated by the TRICS software) have been used to project the vehicle trip generation of the proposed A3/A4 uses, in accordance with good practice guidelines (TCL, 2016). Details of the site selection and trip rates taken from the TRICS database are attached in full within Appendix 4, with the projected vehicle trip rates and generation shown in Table 9:

**Table 9: Projected Vehicle Trip Generation – A3/A4 Use**

Restaurant	PM Peak (17:00-18:00)		Daily (11:00-00:00)	
	Arrivals	Departures	Arrivals	Departures
Vehicle Trip Rates (per 100m <sup>2</sup> GFA)	1.150	0.133	11.543	11.196
Vehicle Trips (771m <sup>2</sup> GFA)	9	1	89	88

- 5.2.5 The trip generation projections indicate that the use of Castle Buildings and Earl de Grey Building entirely for A3/A4 uses could generate up to 10 two-way vehicle trip movements during the PM peak hour (17:00-18:00) and 177 across the full daily (11:00-00:00) period, with no trips generated during the AM peak hour (08:00-09:00).

- 5.2.6 It should be noted that these projections are based upon restaurant use, with no cafés or bars within the TRICS database to allow appropriate trip generation projections to be calculated for these uses. If the ultimate end use is as a café, trips are more likely to occur during the daytime period (08:00-17:00), with bar use likely to generate more trips in an evening (18:00-00:00). The projections for restaurant use encompass trips occurring during both the daytime and evening periods and are therefore considered to be robust.
- 5.2.7 The TRICS sites utilised to predict the traffic generation of the A3/A4 uses contain multi-modal information, therefore the person trip generation has been predicted based on the person trip rates derived from the comparable TRICS sites, summarised in Table 10 and shown in full within Appendix 4.

**Table 10: Projected Person Trip Generation – A3/A4 Use**

Restaurant	PM Peak (17:00-18:00)		Daily (11:00-00:00)	
	Arrivals	Departures	Arrivals	Departures
Person Trip Rates (per 100m <sup>2</sup> GFA)	2.875	0.398	27.746	27.229
Person Trips (771m <sup>2</sup> GFA)	22	3	215	210

- 5.2.8 The modal split of the development has been predicted based on travel pattern information from the comparable restaurant sites in the TRICS database, with the number of trips generated by each mode projected utilising the total person trip generation for the site, as summarised in Table 11.

**Table 11: Projected Modal Trip Generation – A3/A4 Use**

Person Trips	Modal Split	Daily (11:00-00:00) Two-Way Trips
Vehicle Drivers	41.4%	177
Vehicle Passengers	41.7%	178
<b>Vehicle Occupants</b>	<b>83.1%</b>	<b>355</b>
Pedestrians	12.7%	54
Cyclists	0.0%	0
Public Transport Users	4.2%	18
<b>TOTAL</b>	<b>100%</b>	<b>425</b>

\* The total may not represent the sum of its parts due to rounding

- 5.2.9 The modal split predictions indicate that approximately 60% of person trips (58.6%) generated by the proposed A3/A4 uses would be expected to be made by sustainable modes (pedestrian, cycle, public transport and car passenger).
- 5.2.10 It should be noted that a number of trips generated by the proposed A3/A4 uses are unlikely to be new to the local highway network, and will include wider linked trips to Hull city centre, including existing visitors to Bonus Arena and Princes Quay. The trip projections outlined above are therefore considered to be robust.

**B1 Use**

5.2.11 In order to derive reflective trip rates for the proposed B1 office use, trip generation statistics within the ‘Offices’ category (02-A) of the TRICS database have been interrogated. To ensure that only trip generation statistics for comparable sites were used in calculations, the TRICS sites were filtered to the following criteria:

- Database version: v7.5.4;
- Survey type: Multi-modal sites;
- Size: 100 to 1000m<sup>2</sup> GFA;
- TRICS location type: ‘Town Centre’ and ‘Edge of Town Centre’;
- Regions: UK only, excluding Greater London and Ireland sites;
- Weekday survey data only (exclusion of Saturday and Sunday surveys); and
- Recent survey data only (exclusion of surveys undertaken prior to 01/01/2010).

5.2.12 As there were less than 20 comparable sites in the database after filtering (5 survey sites), mean trip rates (as weighted and calculated by the TRICS software) have been used to project the vehicle trip generation of the proposed offices, in accordance with good practice guidelines (TCL, 2016). Details of the site selection and trip rates taken from the TRICS database are attached in full within Appendix 5, with the projected vehicle trip rates and generation shown in Table 12:

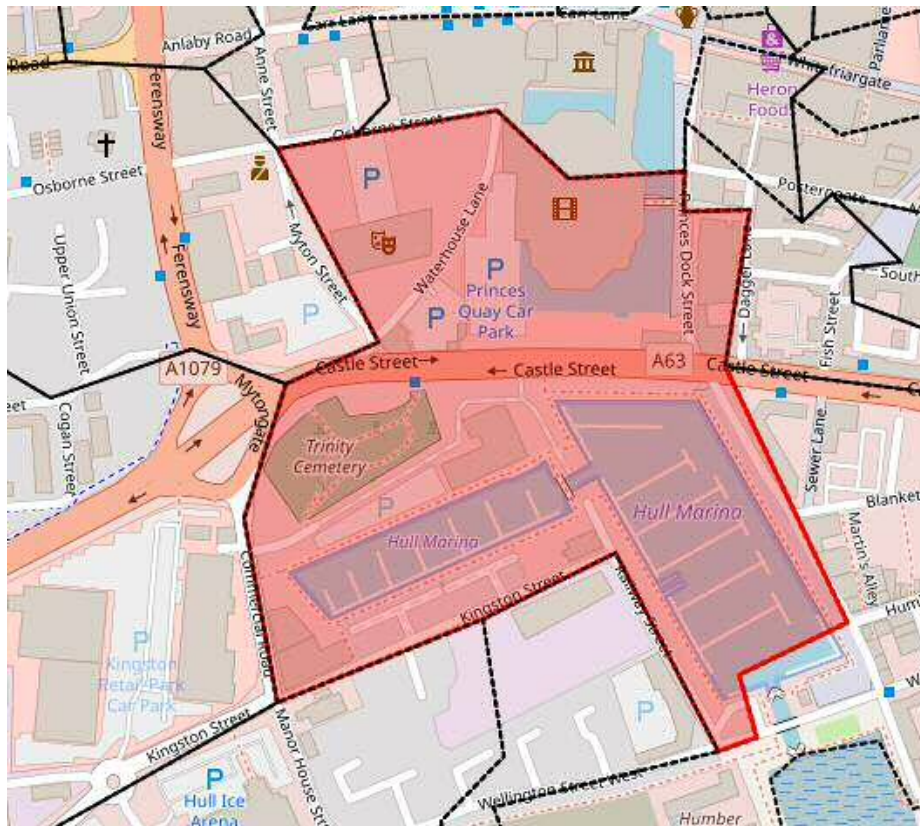
**Table 12: Projected Vehicle Trip Generation – Offices**

Offices	AM Peak (08:00-09:00)		PM Peak (17:00-18:00)		Daily (07:00-19:00)	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
Vehicle Trip Rates (per 100m <sup>2</sup> GFA)	2.620	0.357	0.476	1.965	7.265	7.117
Vehicle Trips (771m <sup>2</sup> GFA)	20	3	4	15	55	53

5.2.13 The trip generation projections indicate that the use of Castle Buildings and Earl de Grey Building entirely for B1 use could generate up to 23 two-way vehicle trip movements during the AM peak hour (08:00-09:00), with 19 during the PM peak hour (17:00-18:00) and 112 across the full daily (07:00-22:00) period.

5.2.14 In order to forecast the modal split of the person trips generated by the proposed offices, local travel patterns have been interrogated using ‘Method of Travel to Work’ data from the 2011 National Census (ONS, 2013). The site modal split has been predicted based on the average for the workplace population of the Workplace Zone ‘E33009828’ which covers the proposed development site and adjacent areas of employment, as shown within Figure 7:

Figure 7: E33009828 Workplace Zone



Source: ONS, 2013

5.2.15 The modal split of the proposed offices has been predicted based on the above Census data, with the number of trips generated by each mode projected utilising the TRICS derived vehicle trip generation for the site, as summarised in Table 13.

Table 13: Projected Modal Trip Generation – Offices

Person Trips	Modal Split	AM Peak (08:00-09:00) Two-Way Trips	PM Peak (17:00-18:00) Two-Way Trips	Daily (07:00-19:00) Two-Way Trips
Car Driver	35.0%	22	18	104
Taxi	0.4%	0	0	2
Powered Two-Wheeler	0.8%	0	0	2
<b>Vehicle Trip Generating</b>	<b>36.2%</b>	<b>23</b>	<b>19</b>	<b>112</b>
Car Passenger	5.9%	3	3	18
Pedestrian	10.0%	7	5	30
Cyclist	2.5%	1	1	8
Public Transport User	45.3%	29	24	135
<b>TOTAL</b>	<b>100%</b>	<b>63</b>	<b>52</b>	<b>298</b>

\* Totals may not represent the sum of their parts due to rounding

5.2.16 The modal split predictions indicate that approximately two thirds of person trips (63.7%) generated by the proposed offices would be expected to be made by sustainable modes (pedestrian, cycle, public transport and car passenger).

### 5.3 Total Proposed Trip Generation

5.3.1 The total proposed vehicle trip generation of the site on a typical weekday is outlined within Table 14 for the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00), considering scenarios whereby the Castle Buildings/Earl de Grey Building are used entirely for either A3/A4 use or B1 use respectively.

**Table 14: Total Projected Vehicle Trip Generation**

Proposed Use	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Hotel	12	14	26	16	9	25
Restaurants (A3/A4)	0	0	0	9	1	10
Offices (B1)	20	3	23	4	15	19
<b>TOTAL (Hotel + A3/A4)</b>	<b>12</b>	<b>14</b>	<b>26</b>	<b>25</b>	<b>10</b>	<b>35</b>
<b>TOTAL (Hotel + B1)</b>	<b>32</b>	<b>17</b>	<b>49</b>	<b>20</b>	<b>24</b>	<b>44</b>

\*Totals may not represent the sum of their parts due to rounding

5.3.2 As demonstrated in Table 14, if Castle Buildings/Earl de Grey Building are used entirely for A3/A4 use, the proposals could be expected to generate 26 two-way vehicle trips during the AM peak hour (08:00-09:00) and 35 two-way vehicle trips during the PM peak hour (17:00-18:00).

5.3.3 If the Castle Buildings/Earl de Grey Building are used entirely for B1 use, the proposals could be expected to generate 49 two-way vehicle trips during the AM peak hour (08:00-09:00) and 44 two-way vehicle trips during the PM peak hour (17:00-18:00). This is representative of a worst-case scenario in terms of peak hour traffic.

5.3.4 In reality, a mix of A3/A4 and B1 uses are expected to be provided, therefore the peak hour trip generation is likely to lie between the two sets of total figures shown within Table 14.

5.3.5 Whilst it is noted that the proposals are also likely to generate a number of trips on a weekend, these trips have not been considered further within this TA as they would occur outside of the peak hours of the local highway network.

## 5.4 Existing Trip Generation

5.4.1 As previously outlined, the site is currently in use as a private pay & display car park and accommodates approximately 50 car parking spaces. The car park has a charging schedule that is likely to be attractive to both shoppers and commuters:

- 1 hour = £1
- 2 hours = £2
- 12 hours = £3
- 24 hours = £4

5.4.2 Informal spot counts of the car park have been undertaken in order to determine current occupancy levels, as follows:

- 28 cars @ 12:45 on Tuesday 26<sup>th</sup> February 2019
- 12 cars @ 08:00 on Wednesday 6<sup>th</sup> March 2019
- 20 cars @ 10:00 on Wednesday 6<sup>th</sup> March 2019

5.4.3 The car park is considered to accommodate a moderate level of use throughout the day and is therefore likely to generate a number of trips during the network peak hours. It is recognised that this existing parking is likely to be displaced to other local car parks as a result of the development proposals, however the proposed development trip generation should be considered in light of the existing trip generation.

## 5.5 Impact on Parking

5.5.1 It is understood that car parking provision will be made available within the Princes Quay MSCP to accommodate guests at the proposed hotel, with the parking demand associated with the other site uses (café/restaurant/bar and offices) to be accommodated within local car parks including Princes Quay MSCP and Osborne Street MSCP. The Princes Quay MSCP has a capacity of 900 vehicles and Osborne Street MSCP has a capacity of 342 vehicles which, along with the 8 proposed on-site spaces, provides a total of 1,250 parking spaces within close proximity of the site.

5.5.2 In order to determine the existing occupancy levels of the Princes Quay MSCP, car park occupancy data has been provided by Princes Quay for the week commencing 3<sup>rd</sup> September 2018. There were events held at the Bonus Arena on the evening of the 4<sup>th</sup> September and all day on 8<sup>th</sup> and 9<sup>th</sup> September, therefore the data is representative of both event and non-event days and is considered to be robust.

5.5.3 A summary of the average weekday and weekend occupancy of the Princes Quay MSCP is provided within Table 15, with the full data included as Appendix 6.

**Table 15: Princes Quay Car Park Occupancy**

Time	Average Weekday		Average Weekend	
	Vehicles	Occupancy	Vehicles	Occupancy
00:00	120	13%	116	13%
01:00	107	12%	87	10%
02:00	106	12%	79	9%
03:00	106	12%	77	9%
04:00	105	12%	77	9%
05:00	105	12%	77	9%
06:00	105	12%	39	4%
07:00	113	13%	41	5%
08:00	160	18%	49	5%
09:00	299	33%	93	10%
10:00	464	52%	253	28%
11:00	628	70%	504	56%
12:00	729	81%	696	77%
13:00	734	82%	777	86%
14:00	686	76%	781	87%
15:00	573	64%	723	80%
16:00	462	51%	544	60%
17:00	352	39%	339	38%
18:00	264	29%	226	25%
19:00	329	37%	233	26%
20:00	404	45%	245	27%
21:00	377	42%	232	26%
22:00	295	33%	176	20%
23:00	155	17%	121	13%
<b>MAX</b>	<b>734</b>	<b>82%</b>	<b>781</b>	<b>87%</b>

- 5.5.4 The data within Table 15 demonstrates that the peak parking demand in Princes Quay MSCP is around 12:00/13:00 on a weekday and 13:00/14:00 on a weekend day. The car park largely operates with some reserve capacity, with significant reserve capacity available (over 50% on average) in evenings and overnight when demand generated by the proposed development is likely to be highest.
- 5.5.5 As outlined with Section 5.1, approximately 25.9% of person trips generated by the hotel are expected to be made by vehicle drivers. Given the nature of hotel operation, parking for these vehicles is expected to primarily be required overnight, with reduced demand during the daytime. It is recognised that hotel is also likely to generate some additional staff parking demand but this is unlikely to be a significant number and could be accommodated within the on-site parking area. Based upon the average evening and overnight car park occupancy data within Table 15, it is considered that suitable reserve capacity is likely to be available within the Princes Quay MSCP to accommodate the demand generated by the proposed hotel.



- 5.5.6 As outlined within Section 5.2, the majority of trips associated with A3/A4 uses could be expected to occur during the evening, with a number of these trips expected to be linked to wider trips to Hull city centre. The parking demand for the proposed A3/A4 uses of the site is therefore expected to be greatest during the evening and is expected to be suitably accommodated within the Princes Quay MSCP or Osborne Street MSCP.
- 5.5.7 Analysis of the TRICS derived vehicle trip generation for the proposed offices demonstrates a worst-case end of hour accumulation of 26 vehicles on a weekday (between 10:00-11:00), based upon the entire use of Castle Buildings/Earl de Grey Building for B1 use. No trips are expected to be generated by the offices on a weekend. It is therefore expected that a worst-case of 26 weekday daytime car parking spaces will be required for the proposed office use and that this demand is likely to be suitably accommodated within Princes Quay MSCP or Osborne Street MSCP.
- 5.5.8 Whilst it is recognised that 100% occupancy is reached in Princes Quay MSCP at 13:00 and 14:00 on Saturday, this is only across a relatively short period when the parking demand generated by the proposed development is unlikely to be at its highest. If required, it is considered that the small amount of additional demand generated during this period could be accommodated within alternative local car parks, such as the nearby Osborne Street MSCP.
- 5.5.9 It is therefore considered that the parking demand generated by the proposed development can be suitably accommodated by the available local parking stock.

## 5.6 Impact on the Highway Network

- 5.6.1 The proposed development is expected to generate a maximum of 49 two-way vehicle trips during the AM peak hour (08:00-09:00) and 44 two-way vehicle trips during the PM peak hour (17:00-18:00). It is re-iterated that this is based upon a number of worst-case assumptions, including that the Castle Buildings/Earl de Grey Building are entirely in B1 use when in reality a mix of A3/A4 and B1 uses are likely to be provided. The projections also do not include any reductions to account for any linked trips likely to already be on the local highway network, or the trip generation of the existing car park.
- 5.6.2 Based upon the location of the parking areas expected to serve the site, all vehicle trips to/from the development are expected to arrive and depart via Osborne Street/Waterhouse Lane to the east of the Myton Street/Osborne Street/Anne Street signalised junction. Within the wider local highway network, trips are expected to be split across a number of routes, including arrivals from Myton Street, Osborne Street and Anne Street, and departures to Osborne Street and Anne Street.
- 5.6.3 The DfT has previously issued guidance that transport assessment of development impacts could be based on a threshold of “30 two-way peak hour vehicle trips” (DfT, 2007a). This guidance acknowledged that this threshold was not to be applied rigidly, but rather that it provided “a useful point of reference from which to commence discussions”.
- 5.6.4 This national DfT guidance has now been superseded and replaced with the ‘National Planning Policy Framework’ (NPPF) (MHCLG, 2019) and its accompanying ‘Planning Practice Guidance’ (PPG) (DCLG, 2014). NPPF and PPG require that transport assessment is undertaken for “developments that generate significant amounts of movement”, although this is not defined. It is therefore acknowledged that there is no set threshold for assessment within the current national planning policy.
- 5.6.5 Based upon the projections of this TA, the number of new trips generated by the proposed development is not expected to significantly exceed the previous 30 two-way trip threshold, therefore it is considered that the proposed development will not have a significant impact on the operation of the local highway network or Strategic Road Network (SRN).
- 5.6.6 Therefore, as the impact of the proposals is not expected to be severe, the proposals are considered to be in accordance with the ‘National Planning Policy Framework’ (MHCLG, 2019), which states that “development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe”.

## 6. CONCLUSIONS

- 6.1.1 This TA provides a detailed appraisal of the expected transport impact associated with proposals for a 150-bed hotel and the redevelopment of the Castle Buildings and Earl de Grey Building at a site located to the north of Castle Street in Hull city centre.
- 6.1.2 This report has been produced in accordance with the relevant local and national guidance. A Travel Plan (LTP, 2019) has also been produced for the development which outlines the approach to encouraging travel by sustainable modes at the site.
- 6.1.3 Vehicular access to the proposed development is to be provided via Waterhouse Lane. A small on-site car park with 8 car parking spaces (including 2 disabled bays) and a servicing area is to be provided to the north of the proposed hotel. The remainder of the parking demand generated by the development is to be accommodated within the adjacent Princes Quay Multi-Storey and nearby Osborne Street Multi-Storey.
- 6.1.4 Pedestrian access to the site is to be provided via both Waterhouse Lane and Castle Street, with a footpath running in an approximately northwest – southeast direction throughout the site, connecting the two streets and enhancing pedestrian permeability both to the proposed site and within the local area.
- 6.1.5 The application site is well placed to generate trips by sustainable modes of transport. There are footways on both sides of most local streets and there are a number of other pedestrian routes within the vicinity of the site. There are formal crossing facilities on Myton Street, Waterhouse Lane and at the Myton Street/Osborne Street/Anne Street signalised junction within the vicinity of the site. The proposed Princes Quay Footbridge across the A63 will also strengthen links between the site and the Marina/Fruit Market areas. The site is within a 5km cycle ride of much of the built-up area of Hull and there are a number of on and off-road cycling facilities within the vicinity of the site. The nearest bus stops to the site are located on Carr Lane, within a 320m walk of the site. Hull Paragon Interchange is also located within a 550m walk of the site and accommodates all bus services within Hull along with regional and national rail services.
- 6.1.6 A road casualty study showed that 40 PICs occurred within the study area around the proposed development site during the five-year study period. Analysis of the study collisions has not revealed any identifiable existing collision issues associated with the expected movements generated by the proposed development, therefore it is considered that there are no existing road safety issues pertinent to the development of the site. If the proposed site access is designed with due consideration to road safety, then the proposals should not have a detrimental road safety impact on the local transport network and should not adversely affect the safety of pedestrians and cyclists.

- 6.1.7 The trip generation of the proposed development has been projected using vehicle and person trip rates derived from the industry-standard TRICS database. The traffic projections indicate that the proposed development could be expected to generate up to a total of 49 two-way vehicle trips during the AM peak hour (08:00-09:00) and 44 two-way vehicle trips during the PM peak hour (17:00-18:00). These projections are based upon a number of worst-case assumptions, including that Castle Buildings/Earl de Grey Building are entirely in B1 use, and are therefore considered to represent a robust assessment of the number of 'new' trips likely to be generated by the development.
- 6.1.8 Analysis of the existing occupancy levels of the Princes Quay Multi-Storey demonstrates that appropriate capacity to accommodate the likely car parking demand generated by the development is available within the existing car park. The proposals are expected to generate the highest demand during the evening and overnight periods, when data shows that average occupancy levels are less than 50% of capacity. Any excess parking demand generated by the development during the car park peak period on a Saturday is likely to be suitably accommodated within alternative local car parks, such as the nearby Osborne Street Multi-Storey.
- 6.1.9 Based upon the trip generation projections of this TA, it is considered that the proposed development will not have a significant impact on the operation of the local highway network or Strategic Road Network (SRN). The proposals are therefore considered to be in accordance with the 'National Planning Policy Framework' (NPPF) which states that *"development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe"* (MHCLG, 2019).
- 6.1.10 It is concluded from the assessments within this TA that the proposed development would not be expected to have a significant impact in terms of sustainable travel, traffic impact and road safety.

## 7. REFERENCES

- AECOM, 2016. Hull Venue. Transport Assessment Report.
- CIHT (Chartered Institution of Highways and Transportation), 2010. Manual for Streets 2: Wider Application of the Principles.
- DCLG (Department for Communities and Local Government), 2014. Planning Practice Guidance – Travel Plans, Transport Assessments and Statements in Decision-Taking (ID: 42-06/03/2014) [online: <http://planningguidance.planningportal.gov.uk>].
- DfT (Department for Transport), 2018a. Road Safety Data [online: <http://data.gov.uk/dataset/road-accidents-safety-data>].
- DfT, 2018b. Transport Analysis Guidance (TAG) Unit M4 – Forecasting and Uncertainty (May 2018).
- DfT, 2008. LTN 02/08 – Cycle Infrastructure Design.
- DfT, 2007a. Guidance on Transport Assessment.
- DfT, 2007b. Manual for Streets.
- DfT, 2002. Inclusive Mobility.
- HCC (Hull City Council), 2017. Hull Local Plan 2016 to 2032.
- HCC, 2011a. Third Local Transport Plan (2011 to 2026).
- HCC, 2011b. Hull Highway Design Guide for New Developments (v5 Oct 2011).
- IHT (Institution of Highways and Transportation), 2000. Guidelines for Providing for Journeys on Foot.
- IHT, 1999. Guidelines for Public Transport in Development.
- LTP (Local Transport Projects Ltd), 2019. Proposed Hotel, Castle Buildings, Castle Street, Hull. Travel Plan.
- MHCLG (Ministry for Housing, Communities and Local Government), 2019. National Planning Policy Framework.
- ONS (Office for National Statistics), 2013. England & Wales National Census 2011. Quick Statistics (last updated 30/01/2013).
- TCL (TRICS Consortium Ltd), 2016. TRICS Good Practice Guide 2016.
- TTM (Travel Time Maps), 2019. Travel Time Isochrone Map [online: [https://app.traveltimeplatform.com/search/0\\_lat=53.74147&0\\_lng=-0.34078&0\\_tt=15&0\\_mode=cycling](https://app.traveltimeplatform.com/search/0_lat=53.74147&0_lng=-0.34078&0_tt=15&0_mode=cycling)] (accessed 19/03/2019).

## **Appendix I – Proposed Site Layout**

BONUS  
ARENA

1  
0015

2  
0015

DLA DESIGN



REVISIONS

No.	DESCRIPTION	DATE

WATERHOUSE LANE

1  
0033

1  
0031

1  
0032

0030  
1

FUTURE A63 ROADWORKS (EDGE OF KERB)

NORTH



ARCHITECTURE

No. 55 | St Paul's Street | Leeds | LS1 2TE  
0113 887 3100 www.dla-design.co.uk

PROJECT  
PRINCES QUAY, HULL

TITLE  
PROPOSED SITE PLAN

SCALE  
1 : 200 @ A2 DATE  
13/02/19

DLA REF  
2016-223 DRAWN  
VP REVIEWED  
JO

DRAWING NAME	PROJECT	ORIGINATOR	ZONE	LEVEL	TYPE	ROLE	NUMBER

STATUS  
FOR PLANNING

REVISION  
REVISION DESCRIPTION

MYTHON STREET

3  
0015

1  
0015

2  
0015

3  
0015

0 2 5 10 20 m

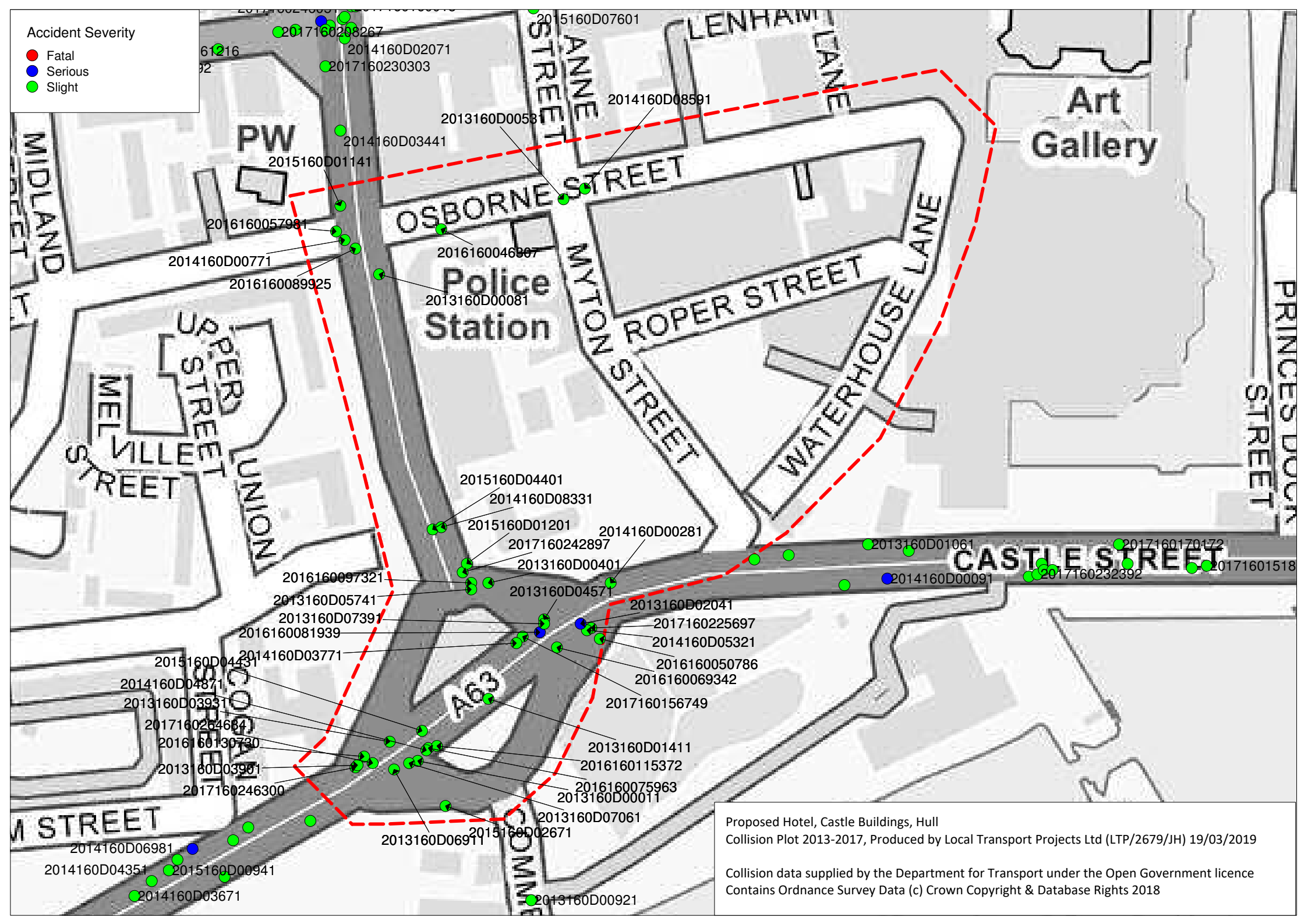


## **Appendix 2 – Personal Injury Collision Data**



Accident Severity

- Fatal
- Serious
- Slight



Proposed Hotel, Castle Buildings, Hull  
Collision Plot 2013-2017, Produced by Local Transport Projects Ltd (LTP/2679/JH) 19/03/2019  
Collision data supplied by the Department for Transport under the Open Government licence  
Contains Ordnance Survey Data (c) Crown Copyright & Database Rights 2018

## **Appendix 3 – Proposed Hotel Trip Generation**

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 06 - HOTEL, FOOD &amp; DRINK

Category : A - HOTELS

**MULTI-MODAL VEHICLES**Selected regions and areas:

<b>05</b>	<b>EAST MIDLANDS</b>	
	DS DERBYSHIRE	1 days
	NT NOTTINGHAMSHIRE	1 days
<b>09</b>	<b>NORTH</b>	
	CB CUMBRIA	1 days
	TV TEES VALLEY	1 days
<b>10</b>	<b>WALES</b>	
	CF CARDIFF	1 days
<b>11</b>	<b>SCOTLAND</b>	
	HI HIGHLAND	1 days

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

**Secondary 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: Number of bedrooms

Actual Range: 84 to 213 (units: )

Range Selected by User: 50 to 250 (units: )

Parking Spaces Range: Selected: 0 to 185 Actual: 0 to 185

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 26/09/16

*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	3 days
Tuesday	1 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	6 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:

Town Centre	5
Edge of Town Centre	1

*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:

Commercial Zone	2
Built-Up Zone	2
High Street	2

*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:

A3	1 days
C1	4 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:

15,001 to 20,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	4 days

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

Population within 5 miles:

50,001 to 75,000	1 days
75,001 to 100,000	1 days
250,001 to 500,000	3 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	2 days
1.1 to 1.5	4 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	6 days
----	--------

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

PTAL Rating:

No PTAL Present	6 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

<b>1</b>	<b>CB-06-A-01</b>	<b>HOTEL</b>		<b>CUMBRIA</b>
	ENGLISH STREET CARLISLE			
	Town Centre High Street			
	Total Number of bedrooms:	92		
	Survey date:	MONDAY 20/06/16		Survey Type: MANUAL
<b>2</b>	<b>CF-06-A-04</b>	<b>TRAVELODGE</b>		<b>CARDIFF</b>
	THE FRIARY CARDIFF			
	Town Centre Built-Up Zone			
	Total Number of bedrooms:	96		
	Survey date:	MONDAY 16/07/12		Survey Type: MANUAL
<b>3</b>	<b>DS-06-A-02</b>	<b>JURY'S INN</b>		<b>DERBYSHIRE</b>
	KING STREET DERBY			
	Town Centre Commercial Zone			
	Total Number of bedrooms:	213		
	Survey date:	TUESDAY 19/07/11		Survey Type: MANUAL
<b>4</b>	<b>HI-06-A-04</b>	<b>HOTEL</b>		<b>HIGHLAND</b>
	ACADEMY STREET INVERNESS			
	Town Centre High Street			
	Total Number of bedrooms:	84		
	Survey date:	FRIDAY 13/05/11		Survey Type: MANUAL
<b>5</b>	<b>NT-06-A-02</b>	<b>PREMIER INN</b>		<b>NOTTINGHAMSHIRE</b>
	LONDON ROAD NOTTINGHAM			
	Edge of Town Centre Built-Up Zone			
	Total Number of bedrooms:	87		
	Survey date:	MONDAY 24/06/13		Survey Type: MANUAL
<b>6</b>	<b>TV-06-A-04</b>	<b>THISTLE</b>		<b>TEES VALLEY</b>
	FRY STREET MIDDLESBROUGH			
	Town Centre Commercial Zone			
	Total Number of bedrooms:	132		
	Survey date:	THURSDAY 03/10/13		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.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CF-06-A-03	Does not contain on-site bar/restaurant
GM-06-A-08	Does not contain on-site bar/restaurant
NW-06-A-01	Does not contain on-site bar/restaurant
WL-06-A-02	Does not contain on-site bar/restaurant

TRIP RATE for Land Use 06 - HOTEL, FOOD &amp; DRINK/A - HOTELS

**MULTI-MODAL VEHICLES****Calculation factor: 1 BEDRMS****BOLD print indicates peak (busiest) period**

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	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	6	117	0.050	6	117	0.077	6	117	0.127
08:00 - 09:00	6	117	0.078	<b>6</b>	<b>117</b>	<b>0.092</b>	<b>6</b>	<b>117</b>	<b>0.170</b>
09:00 - 10:00	6	117	0.087	6	117	0.064	6	117	0.151
10:00 - 11:00	6	117	0.058	6	117	0.050	6	117	0.108
11:00 - 12:00	6	117	0.034	6	117	0.064	6	117	0.098
12:00 - 13:00	6	117	0.048	6	117	0.043	6	117	0.091
13:00 - 14:00	6	117	0.055	6	117	0.037	6	117	0.092
14:00 - 15:00	6	117	0.036	6	117	0.053	6	117	0.089
15:00 - 16:00	6	117	0.041	6	117	0.053	6	117	0.094
16:00 - 17:00	6	117	0.075	6	117	0.047	6	117	0.122
17:00 - 18:00	<b>6</b>	<b>117</b>	<b>0.107</b>	6	117	0.061	6	117	0.168
18:00 - 19:00	6	117	0.105	6	117	0.043	6	117	0.148
19:00 - 20:00	6	117	0.048	6	117	0.024	6	117	0.072
20:00 - 21:00	6	117	0.034	6	117	0.020	6	117	0.054
21:00 - 22:00	6	117	0.040	6	117	0.023	6	117	0.063
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.896			0.751			1.647

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

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

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#### Parameter summary

Trip rate parameter range selected:	84 - 213 (units: )
Survey date date range:	01/01/10 - 26/09/16
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	4

*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 06 - HOTEL, FOOD &amp; DRINK/A - HOTELS

**MULTI-MODAL TOTAL PEOPLE****Calculation factor: 1 BEDRMS****BOLD print indicates peak (busiest) period**

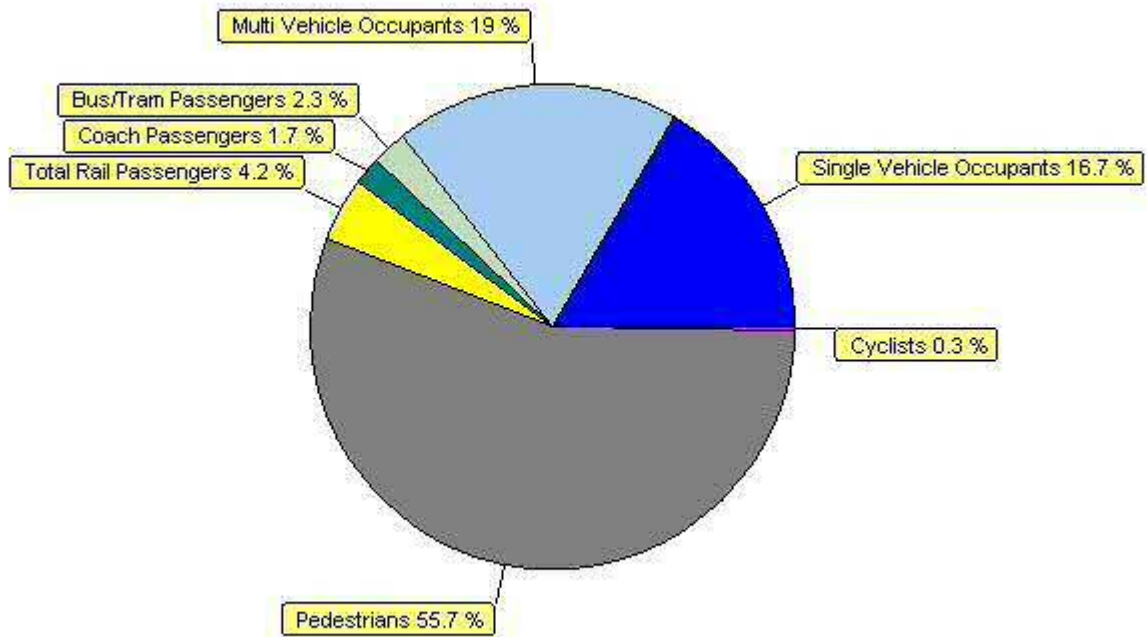
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	6	117	0.080	6	117	0.135	6	117	0.215
08:00 - 09:00	6	117	0.170	<b>6</b>	<b>117</b>	<b>0.304</b>	6	117	0.474
09:00 - 10:00	6	117	0.241	6	117	0.283	6	117	0.524
10:00 - 11:00	6	117	0.176	6	117	0.267	6	117	0.443
11:00 - 12:00	6	117	0.200	6	117	0.247	6	117	0.447
12:00 - 13:00	6	117	0.241	6	117	0.230	6	117	0.471
13:00 - 14:00	6	117	0.209	6	117	0.212	6	117	0.421
14:00 - 15:00	6	117	0.186	6	117	0.197	6	117	0.383
15:00 - 16:00	6	117	0.219	6	117	0.200	6	117	0.419
16:00 - 17:00	6	117	0.277	6	117	0.169	6	117	0.446
17:00 - 18:00	<b>6</b>	<b>117</b>	<b>0.361</b>	6	117	0.244	<b>6</b>	<b>117</b>	<b>0.605</b>
18:00 - 19:00	6	117	0.304	6	117	0.220	6	117	0.524
19:00 - 20:00	6	117	0.180	6	117	0.195	6	117	0.375
20:00 - 21:00	6	117	0.155	6	117	0.169	6	117	0.324
21:00 - 22:00	6	117	0.180	6	117	0.099	6	117	0.279
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.179			3.171			6.350

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.



### Modal Split Percentages



Time Range/Peak Period Selection  
Direction: Totals / Use All Times

**PROPOSED HOTEL**

**Projected Vehicle Trip Generation - Hotel**

**150** bedrooms

Vehicle Trip Rates (per bedroom)

Time	IN	OUT	TOTAL
07:00-08:00	0.050	0.077	0.127
08:00-09:00	0.078	0.092	0.170
09:00-10:00	0.087	0.064	0.151
10:00-11:00	0.058	0.050	0.108
11:00-12:00	0.034	0.064	0.098
12:00-13:00	0.048	0.043	0.091
13:00-14:00	0.055	0.037	0.092
14:00-15:00	0.036	0.053	0.089
15:00-16:00	0.041	0.053	0.094
16:00-17:00	0.075	0.047	0.122
17:00-18:00	0.107	0.061	0.168
18:00-19:00	0.105	0.043	0.148
19:00-20:00	0.048	0.024	0.072
20:00-21:00	0.034	0.020	0.054
21:00-22:00	0.040	0.023	0.063

<b>TOTAL</b>	<b>0.896</b>	<b>0.751</b>	<b>1.647</b>
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TRICS v7.5.4, MM 06-A, 50-250 bedrooms, UK exc. GL & Ireland, Town Centre & Edge of Town Centre, 10+ (6)

Vehicle Trips

IN	OUT	TOTAL
8	12	20
12	14	26
13	10	23
9	8	17
5	10	15
7	6	13
8	6	14
5	8	13
6	8	14
11	7	18
16	9	25
16	6	22
7	4	11
5	3	8
6	3	9

<b>134</b>	<b>114</b>	<b>248</b>
------------	------------	------------

**Projected Person Trip Generation - Hotel**

Person Trip Rates (per bedroom)

Time	IN	OUT	TOTAL
07:00-08:00	0.080	0.135	0.215
08:00-09:00	0.170	0.304	0.474
09:00-10:00	0.241	0.283	0.524
10:00-11:00	0.176	0.267	0.443
11:00-12:00	0.200	0.247	0.447
12:00-13:00	0.241	0.230	0.471
13:00-14:00	0.209	0.212	0.421
14:00-15:00	0.186	0.197	0.383
15:00-16:00	0.219	0.200	0.419
16:00-17:00	0.277	0.169	0.446
17:00-18:00	0.361	0.244	0.605
18:00-19:00	0.304	0.220	0.524
19:00-20:00	0.180	0.195	0.375
20:00-21:00	0.155	0.169	0.324
21:00-22:00	0.180	0.099	0.279

<b>TOTAL</b>	<b>3.179</b>	<b>3.171</b>	<b>6.350</b>
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TRICS v7.5.4, MM 06-A, 50-250 bedrooms, UK exc. GL & Ireland, Town Centre & Edge of Town Centre, 10+ (6)

Person Trips

IN	OUT	TOTAL
12	20	32
26	46	72
36	42	78
26	40	66
30	37	67
36	35	71
31	32	63
28	30	58
33	30	63
42	25	67
54	37	91
46	33	79
27	29	56
23	25	48
27	15	42

<b>477</b>	<b>476</b>	<b>953</b>
------------	------------	------------

**Projected Modal Split**

*Proportion of Vehicle Trips*

Time	IN	OUT	TOTAL
07:00-08:00	62.5%	57.0%	59.1%
08:00-09:00	45.9%	30.3%	35.9%
09:00-10:00	36.1%	22.6%	28.8%
10:00-11:00	33.0%	18.7%	24.4%
11:00-12:00	17.0%	25.9%	21.9%
12:00-13:00	19.9%	18.7%	19.3%
13:00-14:00	26.3%	17.5%	21.9%
14:00-15:00	19.4%	26.9%	23.2%
15:00-16:00	18.7%	26.5%	22.4%
16:00-17:00	27.1%	27.8%	27.4%
17:00-18:00	29.6%	25.0%	27.8%
18:00-19:00	34.5%	19.5%	28.2%
19:00-20:00	26.7%	12.3%	19.2%
20:00-21:00	21.9%	11.8%	16.7%
21:00-22:00	22.2%	23.2%	22.6%

<b>TOTAL</b>	<b>28.2%</b>	<b>23.7%</b>	<b>25.9%</b>
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**Projected Modal Trip Generation**

Mode	Split	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Total (07:00-22:00)		
		IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Vehicle Drivers	25.9%	12	14	26	16	9	25	134	114	248
Vehicle Passengers	9.8%	3	4	7	5	4	9	47	46	93
<b>Vehicle Occupants Sub-Total</b>	<b>35.7%</b>	<b>15</b>	<b>18</b>	<b>33</b>	<b>21</b>	<b>13</b>	<b>34</b>	<b>181</b>	<b>160</b>	<b>341</b>
Pedestrian	55.7%	14	26	40	30	21	51	266	265	531
Pedal-cycle	0.3%	0	0	0	0	0	0	1	1	2
Public Transport	8.2%	2	4	6	4	3	7	39	39	78
	64.2%	16	30	46	34	24	58	306	305	611
<b>Total Person Trips</b>	<b>100%</b>	<b>26</b>	<b>46</b>	<b>72</b>	<b>54</b>	<b>37</b>	<b>91</b>	<b>477</b>	<b>476</b>	<b>953</b>

TRICS v7.5.4, MM 06-A, 50-250 bedrooms, UK exc. GL & Ireland, Town Centre & Edge of Town Centre, 10+ (6)

## **Appendix 4 – Proposed Restaurant Trip Generation**

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 06 - HOTEL, FOOD &amp; DRINK

Category : B - RESTAURANTS

**MULTI-MODAL VEHICLES**Selected regions and areas:

<b>03</b>	<b>SOUTH WEST</b>	
	DC DORSET	1 days
<b>05</b>	<b>EAST MIDLANDS</b>	
	LN LINCOLNSHIRE	1 days
<b>06</b>	<b>WEST MIDLANDS</b>	
	WM WEST MIDLANDS	1 days

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

**Secondary 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: Gross floor area  
 Actual Range: 525 to 1136 (units: sqm)  
 Range Selected by User: 75 to 2400 (units: sqm)

Parking Spaces Range: Selected: 0 to 400 Actual: 0 to 400

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 28/11/17

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

Selected survey days:

Tuesday	1 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	3 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:

Town Centre	1
Edge of Town Centre	2

*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:

Development Zone	1
Built-Up Zone	1
High Street	1

*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:

A3	3 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®.*

**Secondary Filtering selection (Cont.):**

Population within 1 mile:

15,001 to 20,000	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:

25,001 to 50,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	1 days
1.1 to 1.5	1 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	3 days
----	--------

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

PTAL Rating:

No PTAL Present	3 days
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*This data displays the number of selected surveys with PTAL Ratings.*

LIST OF SITES relevant to selection parameters

<b>1</b>	<b>DC-06-B-02</b>	<b>PREZZO</b>		<b>DORSET</b>
	HIGH WEST STREET DORCHESTER			
	Town Centre High Street			
	Total Gross floor area:		525 sqm	
	Survey date:	FRIDAY	16/09/16	Survey Type: MANUAL
<b>2</b>	<b>LN-06-B-01</b>	<b>PREZZO</b>		<b>LINCOLNSHIRE</b>
	BRAYFORD WHARF NORTH LINCOLN			
	BRAYFORD WHARF Edge of Town Centre Development Zone			
	Total Gross floor area:		1136 sqm	
	Survey date:	TUESDAY	10/10/17	Survey Type: MANUAL
<b>3</b>	<b>WM-06-B-05</b>	<b>AKBARS</b>		<b>WEST MIDLANDS</b>
	THE BUTTS COVENTRY			
	Edge of Town Centre Built-Up Zone			
	Total Gross floor area:		600 sqm	
	Survey date:	THURSDAY	17/11/16	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 06 - HOTEL, FOOD &amp; DRINK/B - RESTAURANTS

**MULTI-MODAL 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									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	525	0.190	1	525	0.000	1	525	0.190
11:00 - 12:00	2	831	0.542	2	831	0.000	2	831	0.542
12:00 - 13:00	2	831	1.385	2	831	0.120	2	831	1.505
13:00 - 14:00	2	831	1.505	2	831	1.144	2	831	2.649
14:00 - 15:00	2	831	0.662	2	831	1.445	2	831	2.107
15:00 - 16:00	2	831	0.241	2	831	0.482	2	831	0.723
16:00 - 17:00	3	754	0.088	3	754	0.088	3	754	0.176
17:00 - 18:00	3	754	1.150	3	754	0.133	3	754	1.283
18:00 - 19:00	<b>3</b>	<b>754</b>	<b>2.477</b>	3	754	1.283	3	754	3.760
19:00 - 20:00	3	754	2.388	3	754	1.769	<b>3</b>	<b>754</b>	<b>4.157</b>
20:00 - 21:00	3	754	0.663	<b>3</b>	<b>754</b>	<b>1.902</b>	3	754	2.565
21:00 - 22:00	3	754	0.310	3	754	1.238	3	754	1.548
22:00 - 23:00	3	754	0.088	3	754	1.327	3	754	1.415
23:00 - 24:00	3	754	0.044	3	754	0.265	3	754	0.309
Total Rates:			11.733			11.196			22.929

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

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

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#### Parameter summary

Trip rate parameter range selected:	525 - 1136 (units: sqm)
Survey date date range:	01/01/10 - 28/11/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	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 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 06 - HOTEL, FOOD & DRINK/B - RESTAURANTS

**MULTI-MODAL TOTAL PEOPLE**

Calculation factor: 100 sqm

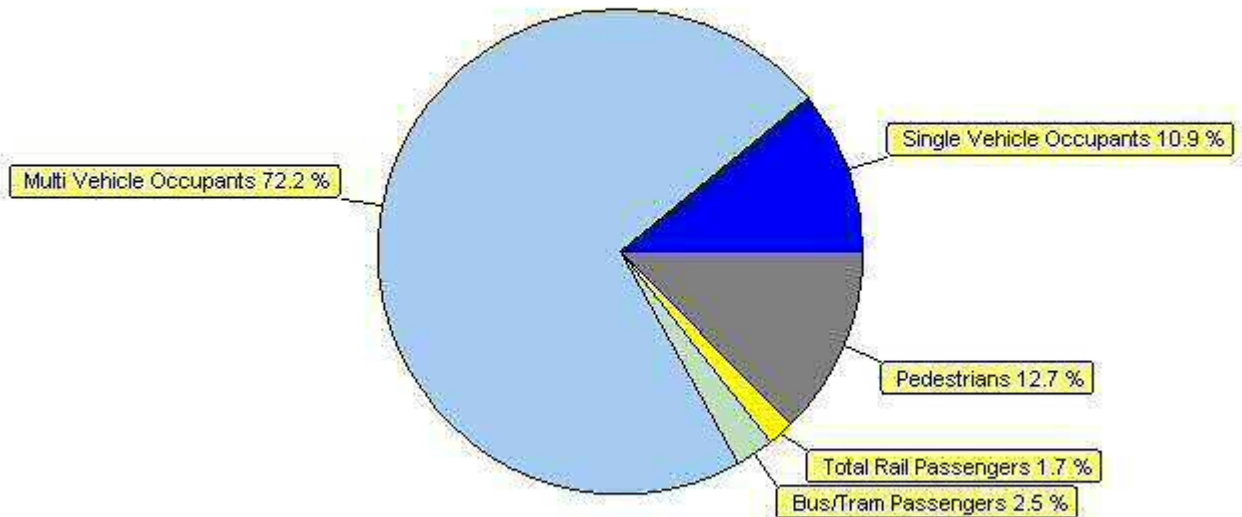
**BOLD print indicates peak (busiest) period**

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									
08:00 - 09:00									
09:00 - 10:00									
10:00 - 11:00	1	525	0.762	1	525	0.000	1	525	0.762
11:00 - 12:00	2	831	1.264	2	831	0.301	2	831	1.565
12:00 - 13:00	2	831	3.131	2	831	0.421	2	831	3.552
13:00 - 14:00	2	831	3.793	2	831	3.251	2	831	7.044
14:00 - 15:00	2	831	1.927	2	831	3.492	2	831	5.419
15:00 - 16:00	2	831	0.602	2	831	1.144	2	831	1.746
16:00 - 17:00	3	754	0.487	3	754	0.221	3	754	0.708
17:00 - 18:00	3	754	2.875	3	754	0.398	3	754	3.273
18:00 - 19:00	3	754	4.998	3	754	2.609	3	754	7.607
19:00 - 20:00	<b>3</b>	<b>754</b>	<b>5.440</b>	<b>3</b>	<b>754</b>	<b>4.379</b>	<b>3</b>	<b>754</b>	<b>9.819</b>
20:00 - 21:00	3	754	2.123	3	754	3.936	3	754	6.059
21:00 - 22:00	3	754	0.752	3	754	3.052	3	754	3.804
22:00 - 23:00	3	754	0.221	3	754	3.229	3	754	3.450
23:00 - 24:00	3	754	0.133	3	754	0.796	3	754	0.929
Total Rates:			28.508			27.229			55.737

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.

### Modal Split Percentages



Time Range/Peak Period Selection  
Direction: Totals / Use All Times

**PROPOSED A3/A4 USE**

**Projected Vehicle Trip Generation - Restaurant**

**771** m2 GFA

Vehicle Trip Rates (per 100m2 GFA)

Time	IN	OUT	TOTAL
11:00-12:00	0.542	0.000	0.542
12:00-13:00	1.385	0.120	1.505
13:00-14:00	1.505	1.144	2.649
14:00-15:00	0.662	1.445	2.107
15:00-16:00	0.241	0.482	0.723
16:00-17:00	0.088	0.088	0.176
17:00-18:00	1.150	0.133	1.283
18:00-19:00	2.477	1.283	3.760
19:00-20:00	2.388	1.769	4.157
20:00-21:00	0.663	1.902	2.565
21:00-22:00	0.310	1.238	1.548
22:00-23:00	0.088	1.327	1.415
23:00-00:00	0.044	0.265	0.309

<b>TOTAL</b>	<b>11.543</b>	<b>11.196</b>	<b>22.739</b>
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TRICS v7.5.4, MM 06-B, UK exc. GL & Ireland, Town Centre & Edge of Town Centre, 10+ (3)

Vehicle Trips

IN	OUT	TOTAL
4	0	4
11	1	12
12	9	21
5	11	16
2	4	6
1	1	2
9	1	10
19	10	29
18	14	32
5	15	20
2	10	12
1	10	11
0	2	2

<b>89</b>	<b>88</b>	<b>177</b>
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**Projected Person Trip Generation - Restaurant**

Person Trip Rates (per 100m2 GFA)

Time	IN	OUT	TOTAL
11:00-12:00	1.264	0.301	1.565
12:00-13:00	3.131	0.421	3.552
13:00-14:00	3.793	3.251	7.044
14:00-15:00	1.927	3.492	5.419
15:00-16:00	0.602	1.144	1.746
16:00-17:00	0.487	0.221	0.708
17:00-18:00	2.875	0.398	3.273
18:00-19:00	4.998	2.609	7.607
19:00-20:00	5.440	4.379	9.819
20:00-21:00	2.123	3.936	6.059
21:00-22:00	0.752	3.052	3.804
22:00-23:00	0.221	3.229	3.450
23:00-00:00	0.133	0.796	0.929

<b>TOTAL</b>	<b>27.746</b>	<b>27.229</b>	<b>54.975</b>
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TRICS v7.5.4, MM 06-B, UK exc. GL & Ireland, Town Centre & Edge of Town Centre, 10+ (3)

Person Trips

IN	OUT	TOTAL
10	2	12
24	3	27
29	25	54
15	27	42
5	9	14
4	2	6
22	3	25
39	20	59
42	34	76
16	30	46
6	24	30
2	25	27
1	6	7

<b>215</b>	<b>210</b>	<b>425</b>
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**Projected Modal Split**

Proportion of Vehicle Trips

Time	IN	OUT	TOTAL
11:00-12:00	42.9%	0.0%	34.6%
12:00-13:00	44.2%	28.5%	42.4%
13:00-14:00	39.7%	35.2%	37.6%
14:00-15:00	34.4%	41.4%	38.9%
15:00-16:00	40.0%	42.1%	41.4%
16:00-17:00	18.1%	39.8%	24.9%
17:00-18:00	40.0%	33.4%	39.2%
18:00-19:00	49.6%	49.2%	49.4%
19:00-20:00	43.9%	40.4%	42.3%
20:00-21:00	31.2%	48.3%	42.3%
21:00-22:00	41.2%	40.6%	40.7%
22:00-23:00	39.8%	41.1%	41.0%
23:00-00:00	33.1%	33.3%	33.3%

<b>TOTAL</b>	<b>41.6%</b>	<b>41.1%</b>	<b>41.4%</b>
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**Projected Modal Trip Generation**

Mode	Split	PM Peak (17:00-18:00)			Total (11:00-00:00)		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Vehicle Drivers	41.4%	9	1	10	89	88	177
Vehicle Passengers	41.7%	9	1	10	90	88	178
<b>Vehicle Occupants Sub-Total</b>	<b>83.1%</b>	<b>18</b>	<b>2</b>	<b>20</b>	<b>179</b>	<b>176</b>	<b>355</b>
Pedestrian	12.7%	3	0	3	27	27	54
Pedal-cycle	0.0%	0	0	0	0	0	0
Public Transport	4.2%	1	0	1	9	9	18
	16.9%	4	0	4	36	36	72

<b>Total Person Trips</b>	<b>100%</b>	<b>22</b>	<b>3</b>	<b>25</b>	<b>215</b>	<b>210</b>	<b>425</b>
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TRICS v7.5.4, MM 06-B, UK exc. GL & Ireland, Town Centre & Edge of Town Centre, 10+ (3)

## **Appendix 5 – Proposed Office Trip Generation**

**TRIP RATE CALCULATION SELECTION PARAMETERS:**

Land Use : 02 - EMPLOYMENT  
 Category : A - OFFICE

**MULTI-MODAL VEHICLES**Selected regions and areas:

<b>02</b>	<b>SOUTH EAST</b>	
	ES EAST SUSSEX	1 days
	HF HERTFORDSHIRE	1 days
<b>04</b>	<b>EAST ANGLIA</b>	
	NF NORFOLK	1 days
<b>06</b>	<b>WEST MIDLANDS</b>	
	WK WARWICKSHIRE	1 days
<b>09</b>	<b>NORTH</b>	
	CB CUMBRIA	1 days

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

**Secondary 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: Gross floor area  
 Actual Range: 280 to 960 (units: sqm)  
 Range Selected by User: 100 to 1000 (units: sqm)

Parking Spaces Range: Selected: 0 to 2923 Actual: 0 to 2923

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 04/07/18

*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
Wednesday	2 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	5 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:

Town Centre	1
Edge of Town Centre	4

*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	1
Commercial Zone	1
Residential Zone	1
Built-Up Zone	2

*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:

B1 5 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:

5,001 to 10,000	1 days
15,001 to 20,000	1 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:

25,001 to 50,000	1 days
75,001 to 100,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	2 days

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

Car ownership within 5 miles:

0.6 to 1.0 5 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 5 days

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

PTAL Rating:

No PTAL Present 5 days

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

LIST OF SITES relevant to selection parameters

<b>1</b>	<b>CB-02-A-02</b>	<b>OFFICE</b>		<b>CUMBRIA</b>
	PORT ROAD			
	CARLISLE			
	Edge of Town Centre			
	Industrial Zone			
	Total Gross floor area:		925 sqm	
	Survey date: FRIDAY		24/06/16	Survey Type: MANUAL
<b>2</b>	<b>ES-02-A-13</b>	<b>OFFICES</b>		<b>EAST SUSSEX</b>
	ROMAN ROAD			
	HOVE			
	Edge of Town Centre			
	Residential Zone			
	Total Gross floor area:		280 sqm	
	Survey date: WEDNESDAY		04/07/18	Survey Type: MANUAL
<b>3</b>	<b>HF-02-A-03</b>	<b>OFFICE</b>		<b>HERTFORDSHIRE</b>
	60 VICTORIA STREET			
	ST ALBANS			
	Edge of Town Centre			
	Built-Up Zone			
	Total Gross floor area:		610 sqm	
	Survey date: WEDNESDAY		16/10/13	Survey Type: MANUAL
<b>4</b>	<b>NF-02-A-02</b>	<b>FINANCIAL PLANNERS</b>		<b>NORFOLK</b>
	NORTH QUAY			
	GREAT YARMOUTH			
	Edge of Town Centre			
	Commercial Zone			
	Total Gross floor area:		894 sqm	
	Survey date: MONDAY		11/09/17	Survey Type: MANUAL
<b>5</b>	<b>WK-02-A-01</b>	<b>OFFICES</b>		<b>WARWICKSHIRE</b>
	WARWICK ROAD			
	COVENTRY			
	Town Centre			
	Built-Up Zone			
	Total Gross floor area:		960 sqm	
	Survey date: THURSDAY		17/10/13	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/A - OFFICE

**MULTI-MODAL 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	5	672	0.655	5	672	0.030	5	672	0.685
08:00 - 09:00	<b>5</b>	<b>672</b>	<b>2.620</b>	5	672	0.357	<b>5</b>	<b>672</b>	<b>2.977</b>
09:00 - 10:00	5	672	0.804	5	672	0.447	5	672	1.251
10:00 - 11:00	5	672	0.357	5	672	0.238	5	672	0.595
11:00 - 12:00	5	672	0.149	5	672	0.566	5	672	0.715
12:00 - 13:00	5	672	0.536	5	672	0.953	5	672	1.489
13:00 - 14:00	5	672	0.834	5	672	0.595	5	672	1.429
14:00 - 15:00	5	672	0.119	5	672	0.149	5	672	0.268
15:00 - 16:00	5	672	0.238	5	672	0.536	5	672	0.774
16:00 - 17:00	5	672	0.417	5	672	0.834	5	672	1.251
17:00 - 18:00	5	672	0.476	<b>5</b>	<b>672</b>	<b>1.965</b>	5	672	2.441
18:00 - 19:00	5	672	0.060	5	672	0.447	5	672	0.507
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			7.265			7.117			14.382

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

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



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#### Parameter summary

Trip rate parameter range selected:	280 - 960 (units: sqm)
Survey date date range:	01/01/10 - 04/07/18
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	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 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 02 - EMPLOYMENT/A - OFFICE

**MULTI-MODAL TOTAL PEOPLE**

Calculation factor: 100 sqm

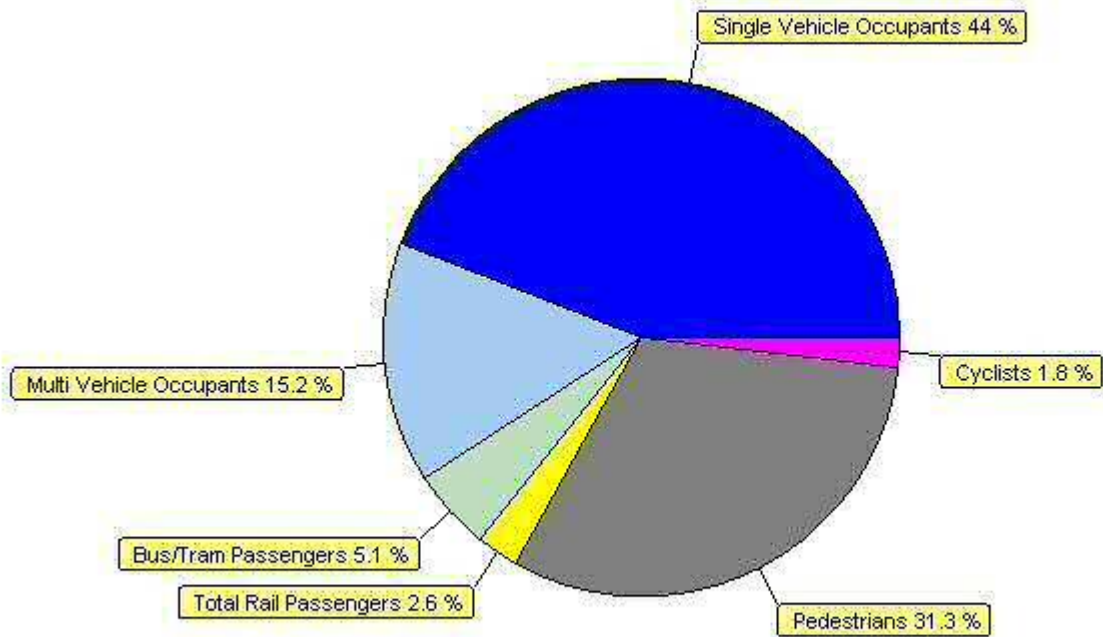
**BOLD print indicates peak (busiest) period**

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	5	672	0.744	5	672	0.030	5	672	0.774
08:00 - 09:00	<b>5</b>	<b>672</b>	<b>3.930</b>	5	672	0.179	<b>5</b>	<b>672</b>	<b>4.109</b>
09:00 - 10:00	5	672	1.369	5	672	0.655	5	672	2.024
10:00 - 11:00	5	672	0.685	5	672	0.982	5	672	1.667
11:00 - 12:00	5	672	0.863	5	672	1.042	5	672	1.905
12:00 - 13:00	5	672	1.429	5	672	2.292	5	672	3.721
13:00 - 14:00	5	672	2.263	5	672	1.518	5	672	3.781
14:00 - 15:00	5	672	0.447	5	672	0.476	5	672	0.923
15:00 - 16:00	5	672	0.774	5	672	0.982	5	672	1.756
16:00 - 17:00	5	672	0.595	5	672	1.340	5	672	1.935
17:00 - 18:00	5	672	0.387	<b>5</b>	<b>672</b>	<b>3.275</b>	5	672	3.662
18:00 - 19:00	5	672	0.060	5	672	0.536	5	672	0.596
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			13.546			13.307			26.853

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.

### Modal Split Percentages



Time Range/Peak Period Selection  
Direction: Totals / Use All Times

**PROPOSED B1 USE**

**Projected Vehicle Trip Generation - Offices**

**771** m2 GFA

Vehicle Trip Rates (per 100m2 GFA)

Time	IN	OUT	TOTAL
07:00-08:00	0.655	0.030	0.685
08:00-09:00	2.620	0.357	2.977
09:00-10:00	0.804	0.447	1.251
10:00-11:00	0.357	0.238	0.595
11:00-12:00	0.149	0.566	0.715
12:00-13:00	0.536	0.953	1.489
13:00-14:00	0.834	0.595	1.429
14:00-15:00	0.119	0.149	0.268
15:00-16:00	0.238	0.536	0.774
16:00-17:00	0.417	0.834	1.251
17:00-18:00	0.476	1.965	2.441
18:00-19:00	0.060	0.447	0.507

Vehicle Trips

IN	OUT	TOTAL
5	0	5
20	3	23
6	3	10
3	2	5
1	4	6
4	7	11
6	5	11
1	1	2
2	4	6
3	6	10
4	15	19
0	3	4

End of Hour Accumulation
5
22
25
26
23
20
21
21
19
16
5
2

<b>TOTAL</b>	<b>7.265</b>	<b>7.117</b>	<b>14.382</b>
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<b>55</b>	<b>53</b>	<b>108</b>
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TRICS v7.5.4, MM 02-A, 100 to 1000 m2 GFA, UK exc. GL & Ireland, Town Centre & Edge of Town Centre, 10+ (5)

**Projected Modal Trip Generation**

Mode	Split	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Total (07:00-19:00)		
		IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Car Driver	35.0%	19	3	22	4	14	18	53	51	104
Taxi	0.4%	0	0	0	0	0	0	1	1	2
Powered Two-Wheeler	0.8%	0	0	0	0	0	0	1	1	2
<b>Vehicle Trip Generating</b>	<b>36.2%</b>	<b>20</b>	<b>3</b>	<b>23</b>	<b>4</b>	<b>15</b>	<b>19</b>	<b>55</b>	<b>53</b>	<b>108</b>
Car Passenger	5.9%	3	0	3	1	2	3	9	9	18
Pedestrian	10.0%	6	1	7	1	4	5	15	15	30
Pedal-cycle	2.5%	1	0	1	0	1	1	4	4	8
Public Transport	45.3%	25	4	29	5	19	24	69	66	135
	63.7%	35	5	40	7	26	33	97	93	191
<b>Total Person Trips</b>	<b>100%</b>	<b>55</b>	<b>8</b>	<b>63</b>	<b>11</b>	<b>41</b>	<b>52</b>	<b>152</b>	<b>146</b>	<b>298</b>

**TOTAL PROPOSED VEHICLE TRIP GENERATION (HOTEL + RESTAURANTS)**

Time	IN	OUT	TOTAL
07:00-08:00	8	12	20
08:00-09:00	12	14	26
09:00-10:00	13	10	23
10:00-11:00	9	8	17
11:00-12:00	9	10	19
12:00-13:00	18	7	25
13:00-14:00	20	15	35
14:00-15:00	10	19	29
15:00-16:00	8	12	20
16:00-17:00	12	8	20
17:00-18:00	25	10	35
18:00-19:00	35	16	51
19:00-20:00	25	18	43
20:00-21:00	10	18	28
21:00-22:00	8	13	21
22:00-23:00	1	10	11
23:00-00:00	0	2	2
<b>TOTAL</b>	<b>223</b>	<b>202</b>	<b>425</b>

**TOTAL PROPOSED VEHICLE TRIP GENERATION (HOTEL + OFFICES)**

Time	IN	OUT	TOTAL
07:00-08:00	13	12	25
08:00-09:00	32	17	49
09:00-10:00	19	13	32
10:00-11:00	12	10	22
11:00-12:00	6	14	20
12:00-13:00	11	13	24
13:00-14:00	14	11	25
14:00-15:00	6	9	15
15:00-16:00	8	12	20
16:00-17:00	14	13	27
17:00-18:00	20	24	44
18:00-19:00	16	9	25
19:00-20:00	7	4	11
20:00-21:00	5	3	8
21:00-22:00	6	3	9
22:00-23:00	0	0	0
23:00-00:00	0	0	0
<b>TOTAL</b>	<b>189</b>	<b>167</b>	<b>356</b>

## **Appendix 6 – Princes Quay Car Park Data**

Time	Mon 3rd Sept		Tues 4th Sept		Weds 5th Sept		Thurs 6th Sept		Fri 7th Sept		Sat 8th Sept		Sun 9th Sept		Average occupancy per hour for week	Average occupancy per hour for weekdays		Average occupancy per hour for weekend	
00:00	103	11%	131	15%	132	15%	108	12%	124	14%	131	15%	100	11%	13%	120	13%	116	13%
01:00	97	11%	113	13%	119	13%	104	12%	104	12%	105	12%	69	8%	11%	107	12%	87	10%
02:00	94	10%	113	13%	116	13%	103	11%	102	11%	103	11%	54	6%	11%	106	12%	79	9%
03:00	94	10%	113	13%	116	13%	103	11%	102	11%	101	11%	52	6%	11%	106	12%	77	9%
04:00	94	10%	113	13%	115	13%	103	11%	102	11%	102	11%	52	6%	11%	105	12%	77	9%
05:00	93	10%	112	12%	115	13%	103	11%	102	11%	102	11%	51	6%	11%	105	12%	77	9%
06:00	94	10%	110	12%	116	13%	102	11%	101	11%	27	3%	50	6%	10%	105	12%	39	4%
07:00	106	12%	119	13%	124	14%	107	12%	108	12%	29	3%	52	6%	10%	113	13%	41	5%
08:00	171	19%	159	18%	163	18%	157	17%	151	17%	45	5%	52	6%	14%	160	18%	49	5%
09:00	394	44%	282	31%	281	31%	275	31%	265	29%	117	13%	69	8%	27%	299	33%	93	10%
10:00	526	58%	475	53%	442	49%	452	50%	426	47%	378	42%	127	14%	45%	464	52%	253	28%
11:00	726	81%	655	73%	588	65%	587	65%	584	65%	662	74%	346	38%	66%	628	70%	504	56%
12:00	828	92%	766	85%	697	77%	674	75%	680	76%	834	93%	558	62%	80%	729	81%	696	77%
13:00	789	88%	780	87%	715	79%	683	76%	703	78%	899	100%	655	73%	83%	734	82%	777	86%
14:00	744	83%	712	79%	667	74%	647	72%	662	74%	898	100%	663	74%	79%	686	76%	781	87%
15:00	652	72%	565	63%	543	60%	544	60%	559	62%	893	99%	553	61%	68%	573	64%	723	80%
16:00	499	55%	466	52%	450	50%	450	50%	445	49%	721	80%	367	41%	54%	462	51%	544	60%
17:00	352	39%	370	41%	341	38%	363	40%	334	37%	468	52%	210	23%	39%	352	39%	339	38%
18:00	225	25%	297	33%	247	27%	287	32%	264	29%	282	31%	169	19%	28%	264	29%	226	25%
19:00	224	25%	409	45%	336	37%	395	44%	283	31%	308	34%	157	17%	34%	329	37%	233	26%
20:00	220	24%	493	55%	520	58%	437	49%	352	39%	322	36%	168	19%	40%	404	45%	245	27%
21:00	201	22%	467	52%	504	56%	371	41%	343	38%	309	34%	154	17%	37%	377	42%	232	26%
22:00	168	19%	353	39%	403	45%	237	26%	312	35%	241	27%	111	12%	29%	295	33%	176	20%
23:00	138	15%	163	18%	124	14%	153	17%	196	22%	186	21%	55	6%	16%	155	17%	121	13%

**Bonus Arena events:**

8th & 9th September Cheese Fest - all day Saturday & Sunday  
4th September - League of Gentleman - 7pm start