



Channel View, Cardiff

Transport Assessment

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1 Introduction

1.1.1 Cambria Consulting Ltd have been appointed by Powell Dobson Architects on behalf of Cardiff City Council to prepare a Transport Assessment in support of a planning application for the redevelopment of the Channel View area in Grangetown, Cardiff. The site location is shown in Figure 1 below.

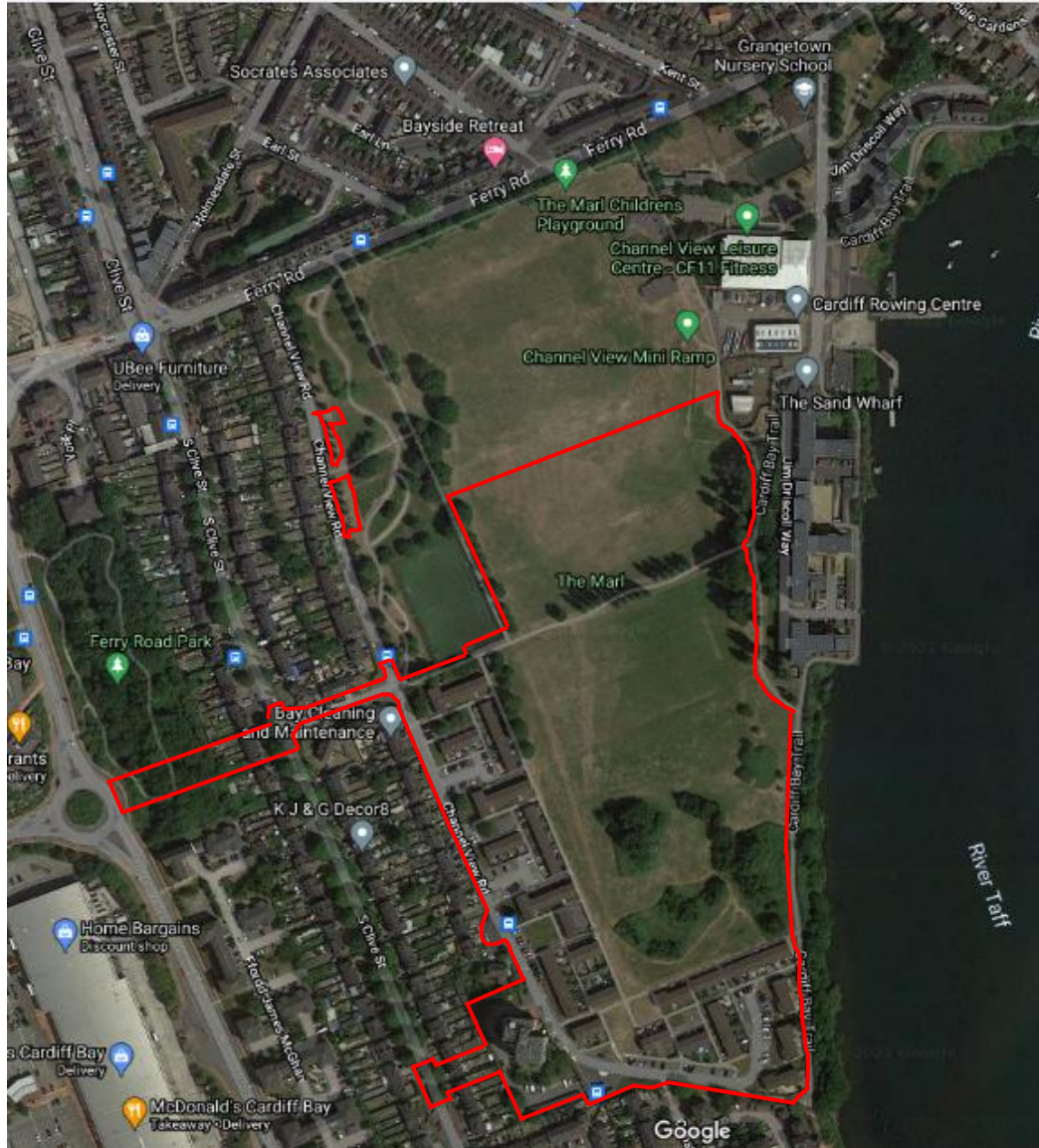


Figure 1 - Site location map (Google Earth)

- 1.1.2 Hybrid planning application for mixed-use development. Outline planning permission is sought for: The redevelopment and extension of part of the existing Channel View Estate to provide up to 321 residential apartments and houses (Use Class C3), up to 285 sq.m of retail floorspace (Use Class A1), communal gardens incorporating allotments and picnic areas, formal and informal children's play space, landscaping, cyclepaths/footpaths, drainage infrastructure, roads and parking; The regeneration of the Marl public open space to include new/improved sports pitches, children's play space, a new 'beach', water features, landscaping, and cyclepaths/footpaths; The provision of a new bus/cycle/pedestrian link between Channel View Road and South Clive Street and a new cycle/pedestrian link between South Clive Street and Ferry Road; The provision of a new parking area; Together with associated works (all matters reserved for future consideration).
- 1.1.3 Full planning permission is sought for a first phase of development comprising of a tower block (8-12 storeys) providing 79 elderly-persons (over 55s) accommodation units, a 115sq.m community cafe, communal gardens incorporating allotments and picnic areas, landscaping, drainage infrastructure, footpaths, roads, parking, and associated works.
- 1.1.4 This Transport Assessment sets out the transport issues relating to the proposed development site.
- 1.1.5 The Transport Assessment considers the site's location and its accessibility by all modes of transport. It finds that there is a good range of facilities within walking and cycling distance to the site and that the site benefits from ready access to good quality, regular and frequent public transport services. The site's proximity to services and its accessibility by sustainable modes of transport provide opportunities for many of the trips generated by users of the development, to be made by sustainable, non-car, means. The development also provides opportunities for improving existing active travel and public transport links.
- 1.1.6 The structure of this Transport Statement is as follows:
- ▶ Section 2 presents the planning policy framework relevant to the proposal.
 - ▶ Section 3 describes the site's location, the transport network that surrounds and serves it and estimates the traffic generation of the existing use of the site.
 - ▶ Section 4 describes the proposed development.
 - ▶ Section 5 considers the likely traffic impact of the proposed development.
 - ▶ Section 6 describes the development's Transport Implementation Strategy.
 - ▶ Section 7 provides a summary and conclusion.

2 Development Proposal & Planning Policy Framework

2.1 Planning Policy Wales

- 2.1.1 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government.
- 2.1.2 In terms of transport related policies, it places the sustainability of development at the heart of the decision making process (pp 4.7.4) and requires that new development proposals minimize the need to travel and increase accessibility by modes other than the private car. It requires that major generators of travel demand be located within existing urban areas that are well served by public transport, or can be reached by walking or cycling.
- 2.1.3 The principles discussed above are repeated again in PPW's Chapter 8, which deals specifically with Transport issues. In 8.1.4 it reinforces the Welsh Government's objectives for transport through:
- ▶ reducing the need to travel, especially by private car, by locating development where there is good access by public transport, walking and cycling;
 - ▶ locating development near other related uses to encourage multi-purpose trips and reduce the length of journeys;
 - ▶ improving accessibility by walking, cycling and public transport;
 - ▶ ensuring that transport is accessible to all, taking into account the needs of disabled and other less mobile people;
 - ▶ promoting walking and cycling;
 - ▶ supporting the provision of high quality public transport;
 - ▶ supporting traffic management measures;
 - ▶ promoting sustainable transport options for freight and commerce;
 - ▶ supporting sustainable travel options in rural areas;
 - ▶ supporting necessary infrastructure improvements; and
 - ▶ ensuring that, as far as possible, transport infrastructure does not contribute to land take, urban sprawl or neighbourhood severance.
- 2.1.4 In terms of plan making and development control it advises (8.7.1) that the following issues should be taken into account:
- ▶ the impacts of the proposed development on travel demand;
 - ▶ the level and nature of public transport provision;
 - ▶ accessibility by a range of different transport modes;
 - ▶ the willingness of a developer to promote travel by public transport, walking or cycling, or to provide infrastructure or measures to manage traffic
 - ▶ the environmental impact of both transport infrastructure and the traffic generated; and
 - ▶ the effects on the safety and convenience of other users.
- 2.1.5 PPW also requires that the proposed access to a development should reflect the likely travel patterns involved. It should ensure that people can reach the development, as far as practicable, by walking, cycling and public transport, as well as by car (pp 8.7.3).

2.2 TAN18 Transportation

2.2.1 Planning Policy Wales Technical Advice Note 18 (TAN18) details the Welsh Government Government's policies in terms of transportation and repeats the general principles advocated in PPW i.e. that development is encouraged in sustainable, accessible, locations that will reduce the need to travel by car. Its aim is to promote an efficient and sustainable transport system and to counter the negative impacts associated with road traffic growth, for example increased air pollution, green house gases and congestion (2.1). It sees the integration of transport and land use planning as key (2.3) in achieving the Welsh Government Governments' sustainable development policy objectives by:

- ▶ promoting travel efficient settlement patterns;
- ▶ ensuring new development is located where there is good access by public transport, walking and cycling thereby minimizing the need for travel and fostering social inclusion;
- ▶ managing parking provision;
- ▶ ensuring that new development includes appropriate provision for pedestrians, cycling, public transport, and traffic management and parking/servicing;
- ▶ encouraging the location of development near other related uses to encourage multi-purpose trips; and
- ▶ ensuring that transport infrastructure necessary to serve new development allows existing transport networks to continue to perform their identified functions.

2.2.2 The needs of walkers and cyclists must be taken into consideration and the use of these most sustainable forms of transport encouraged in all developments (TAN18 Chapter 6). Similarly, all development should be accessible by public transport (Chapter 7).

2.3 The Active Travel (Wales) Act 2013

2.3.1 The Active Travel (Wales) Act 2013 is Welsh Government legislation aimed to support an increase in the level of walking and cycling in Wales; to encourage a shift in travel behaviour to active travel modes, and to facilitate the building of walking and cycling infrastructure.

2.3.2 The Active Travel (Wales) Act 2013 makes it a legal requirement for local authorities in Wales to map and plan for suitable routes for active travel, and to build and improve infrastructure for walking and cycling every year. It creates new duties to consider the needs of walkers and cyclists and make better provision for them. It also requires the consideration of walking and cycling as a mode of transport and the Act focuses on the promotion of walking and cycling for purposeful journeys, rather than as a purely recreational activity.

2.3.3 The Act is supported by the Active Travel Action Plan Wales (2014), and many of the actions of the Active Travel Action Plan Wales document also benefit recreational or competitive walking and cycling. 'Walking' in the Active Travel Action Plan for Wales includes the use of wheelchairs and mobility scooters and 'cycling' includes the use of electric bikes, but not motorcycles.

2.4 Cardiff Local Development Plan 2006 – 2026

- 2.4.1 In terms of transport related policies, KP4 (Masterplanning Approach) and KP5 (Good Quality and Sustainable Design) require that developments are in locations that are accessible by walking, cycling and public transport and where residents can easily access services by these sustainable modes of travel.
- 2.4.2 Policy KP6 (New Infrastructure) requires that new development makes appropriate provision for, or contributes towards, essential, enabling infrastructure that includes infrastructure relating to transportation and highways including access, circulation, parking, public transport provision, walking and cycling.
- 2.4.3 Policy KP8 (Sustainable Transport) requires that “Development in Cardiff will be integrated with transport infrastructure and services in order to:
- ▶ Achieve the target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport.
 - ▶ Reduce travel demand and dependence on the car;
 - ▶ Enable and maximise use of sustainable and active modes of transport;
 - ▶ Integrate travel modes;
 - ▶ Provide for people with particular access and mobility requirements;
 - ▶ Improve safety for all travellers;
 - ▶ Maintain and improve the efficiency and reliability of the transport network;
 - ▶ Support the movement of freight by rail or water; and
 - ▶ Manage freight movements by road and minimise their impacts.
- 2.4.4 There are a number of more specific transport related policies that are relevant to the development proposal including T1 (Walking and Cycling), T5 (Managing transport Impacts) and T6 (Impact on Transport Networks and Services).

2.5 Managing Transportation Impacts (Incorporating Parking Standards) – Supplementary Planning Guidance

- 2.5.1 The supplementary planning guidance (SPG) recommends that all planning applications for residential developments of more than 80 dwellings should be accompanied by a Transport Assessment (TA) and Travel Plan (TP). The output of the TA should be a Transport Implementation Strategy (TIS) that addresses relevant transport objectives for the site, guided by policies in the development plan and the issues identified in the analysis of movements.
- 2.5.2 A TP is a long-term management strategy for the occupier(s) of a site that seeks to deliver sustainable transport objectives through positive action.
- 2.5.3 The SPG sets out the maximum level of car parking provision and minimum level of cycle parking provision that should be made within new development. The application site is located within the defined Central Area
- 2.5.4 For all dwellings a maximum of 1 car parking space per unit is specified. For elderly person dwellings cycle parking provision of 1 per 10 units is required. For all other dwellings 1 cycle parking space per bedroom is required.

3 Existing Conditions

3.1 Site Location

3.1.1 The development is located predominantly on a brownfield site, currently occupied by 188 dwellings, accessed off Channel View Road in Grangetown, Cardiff. The site is bounded by the Marl to north, the Cardiff Bay Trail & Cardiff Bay to the east, residential properties fronting Channel View road to the west and residential dwellings to the south fronting Constant Close, Seager Drive and Chetterton Square. The site boundary extends to South Clive Street to the south west and Ferry Road Park and Beecher Avenue to the north west. The site is centered around OS coordinates E:317994 N:173973 with a post code of CF11 7HY.

3.1.2 There is a wide range of services and facilities in the area with a selection provided in the table below.

Table 1: Proximity to Services and Facilities

Service / Facility	Walk Distance / Time
Bus Stops (Channel View Road)	Within the Site
Channel View Leisure Centre	600m / 7 Minutes
Grangetown Nursery School	650m / 8 Minutes
Convenience Store (Kent St)	800m / 9 Minutes
Post Office (Holmesdale St)	850m / 10 Minutes
Cardiff Bay Retail Park	850m / 11 Minutes
Grangetown Primary School	950m / 12 Minutes
St Paul's Primary School	950m / 12 Minutes
Grangetown Railway Station	1.4km / 17 Minutes

3.1.3 A wider range of services can be accessed in the Grangetown and Cardiff Bay district centres, approximately 1.5km and 1.8km walk from the application site, respectively. Cardiff city centre is approximately 2.5km from the site.

3.2 Active Travel

3.2.1 The Chartered Institution of Highways and Transportation's (CIHT) 'Planning for Walking' (2015) states that "Across Britain about 80 per cent of journeys shorter than 1 mile (1.6km) are made wholly on foot – something that has changed little in thirty years. In 2012 walkers accounted for 79 per cent of all journeys shorter than 1 mile, but beyond that distance cars are the dominant mode (DfT, annual)". It is considered that 2km, a distance that can be walked in around 25 to 30 minutes, represents a reasonable distance to expect that walking can be a viable option.

3.2.2 Figure 2 overleaf shows the areas that are within a 30-minute walk of the application site. It includes the the whole of Grangetown and extends to Cardiff Bay to the east. All of the services and facilities available within this catchments area are considered to be within reasonable walking distance to the proposed development. This increases the potential for many trips to access everyday facilities to be made on foot.

3.2.3 The site is accessible to pedestrians via the footways that run alongside Channel View Road that link with the wider footway network. Pedestrian access is also available via The Marl and Cardiff Bay Trail that lie to the north and east of the site.

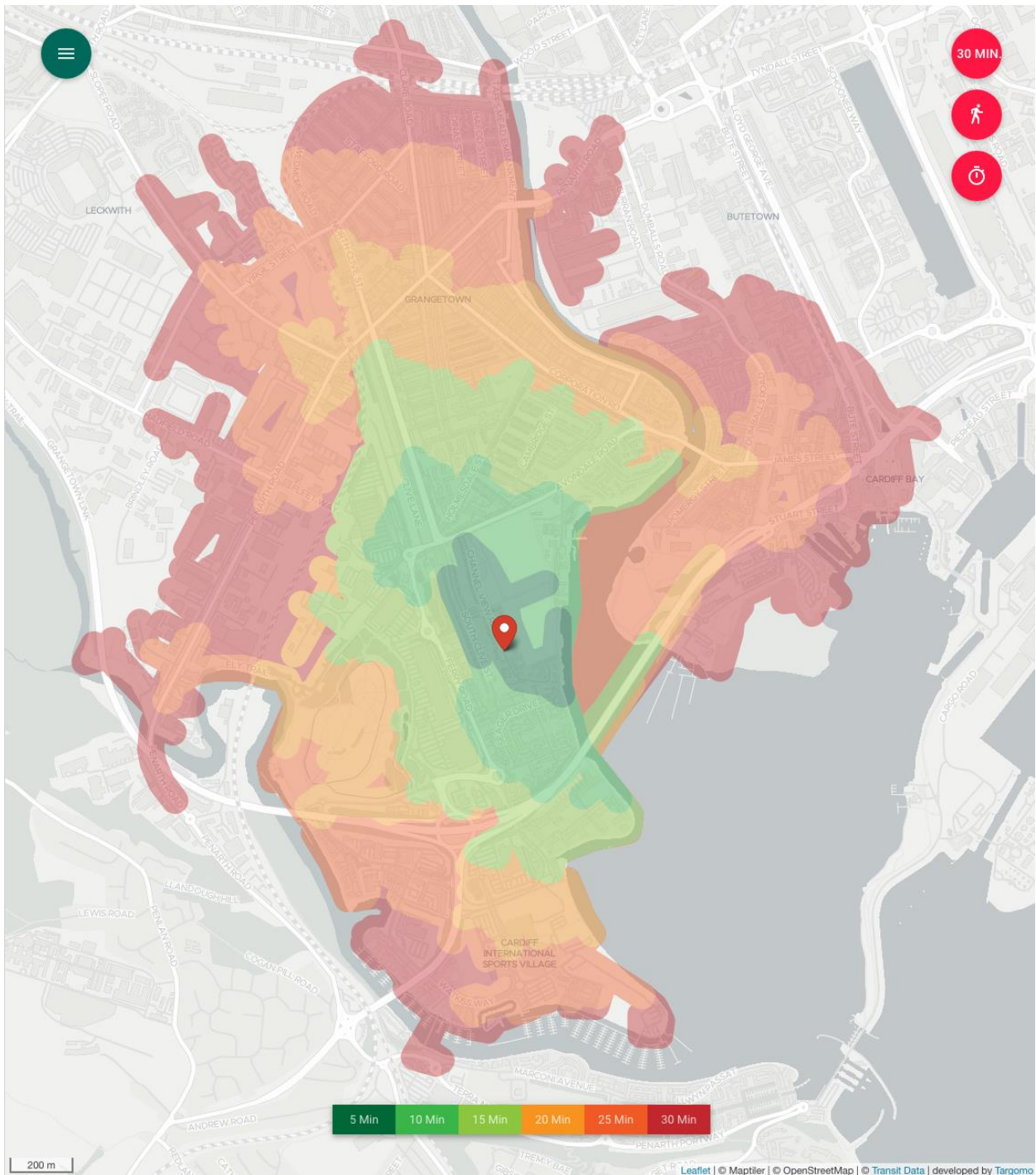


Figure 2 – 30-Minute Walk Catchment

3.2.4 The Chartered Institution of Highways and Transportation’s ‘Planning for Cycling’ (2014) states that ‘cycle use is more seasonal than for other modes, with up to twice as many cyclists in summer compared with winter. The majority of cycling trips are for short distances, with 80% being less than five miles (8km) and with 40% being less than two miles (3km). However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, the bicycle is a potential mode for many of these trips (National Travel Survey, 2013, Department for Transport)’.

3.2.5 Figure 3 below shows the areas that can be reached within a 30-minute cycle ride of the application site. There is an extensive and growing cycle network in and around Cardiff, with the Cardiff Bay Trail, that passes adjacent to the site, providing a high quality and traffic free route for cyclists.

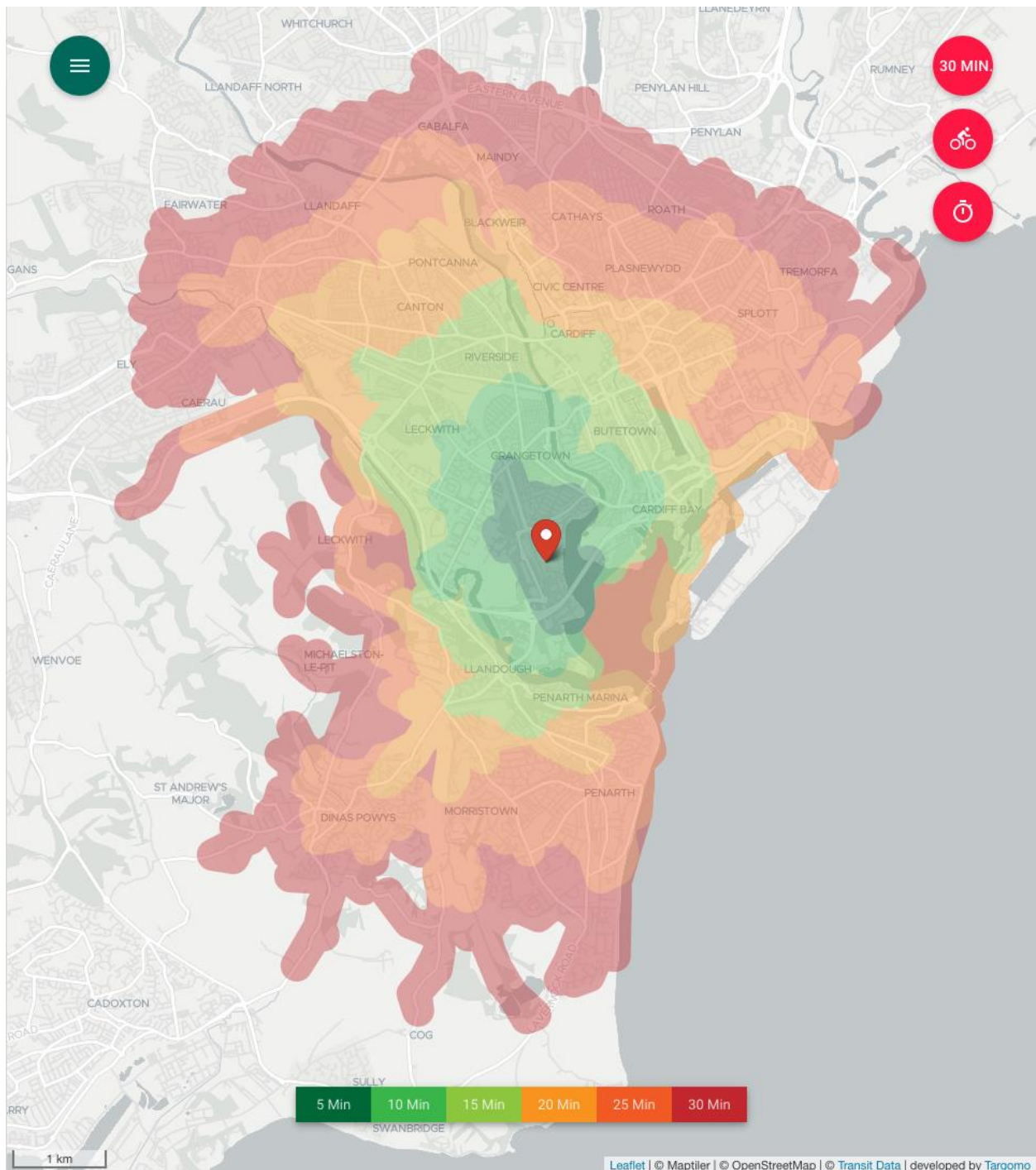


Figure 3 – 30-Minute Cycle Catchment

3.3 Public Transport

- 3.3.1 There are bus stops located on Channel View Road, within the application site. These provide access to the 9C (City Centre – Channel View) service that runs every 30 minutes every day apart from Sundays. Service 9A (City Centre – Sports Village) did also call at Channel View Road but the service has been suspended due to the Covid19 pandemic. No information is available in relation to if and when the 9A service might resume.
- 3.3.2 Channel View Road is a cul-de-sac and buses undertake a U-turn at the Channel View Turn bus stop. As part of the proposed development a link will be created between Channel View Road and South Clive Street that will allow for more efficient circulation of buses.

- 3.3.3 There are additional bus stops within some 500m of the site on Ferry Road and Clive Street that provide access to other bus services including the No. 9 (Heath Hospital – Sports Village) and X45 (Sports Village – City Centre – St Mellons).
- 3.3.4 Grangetown Railway Station is located some 1.4km walk to the north of the site that provides access to regular services towards Cardiff Central Station to the north east and Penarth and Barry to the south west. There are approximately 8 trains per hour in each direction.
- 3.3.5 There is an Aquabus pier on the eastern side of The Marl that provides access to a scheduled, hourly, river bus service between Cardiff Bay and the city centre (Bute Park).

3.4 Highway Network

- 3.4.1 Channel View Road is a 600m long cul-de-sac that is accessed from Ferry Road. It has a 5.5m wide carriageway with footways on both sides. There is a 20mph speed limit and there are traffic calming features in the form of road humps, some coupled with road narrowings, at regular intervals. Channel View Road joins Ferry Road at a priority junction.
- 3.4.2 Approximately mid-way along its length Beecher Avenue provides a link between Channel View Road and South Clive Street.
- 3.4.3 South Clive Street runs parallel with and some 70m to the west of Channel View Road. South Clive Street joins Ferry Road and Clive Street at a signal-controlled crossroads.
- 3.4.4 Ferry Road provides a link to the Cardiff Bay Retail Park, Sports Village and A4232 to the south and the A4119 and Cardiff Bay to the east. Clive Street provides a link to Penarth Road (A4160) to the north.
- 3.4.5 A review of the safety record of the highway network in the vicinity of the proposed development has been undertaken. The location and severity of injury accidents reported to the police and During the latest five-year period (2015 to 2019 inclusive) there are no recorded injury accidents on Channel View Road or at its junction with Ferry Road, which indicates that the street and junction operates safely.
- 3.4.6 There is one slight severity accident recorded on South Clive Street, one at the South Clive Street / Ferry Road / Clive Street crossroads and a number recorded elsewhere. The accident locations are disparate and the absence of any accident clusters indicate that these roads operate at a satisfactory level of safety. An assessment of the development's traffic generation and distribution is provided later within this document. It is demonstrated that the development traffic will not have a significant impact on junctions further afield. Broadening the accident analysis to roads and junctions where the development will have no material impact is considered unnecessary.

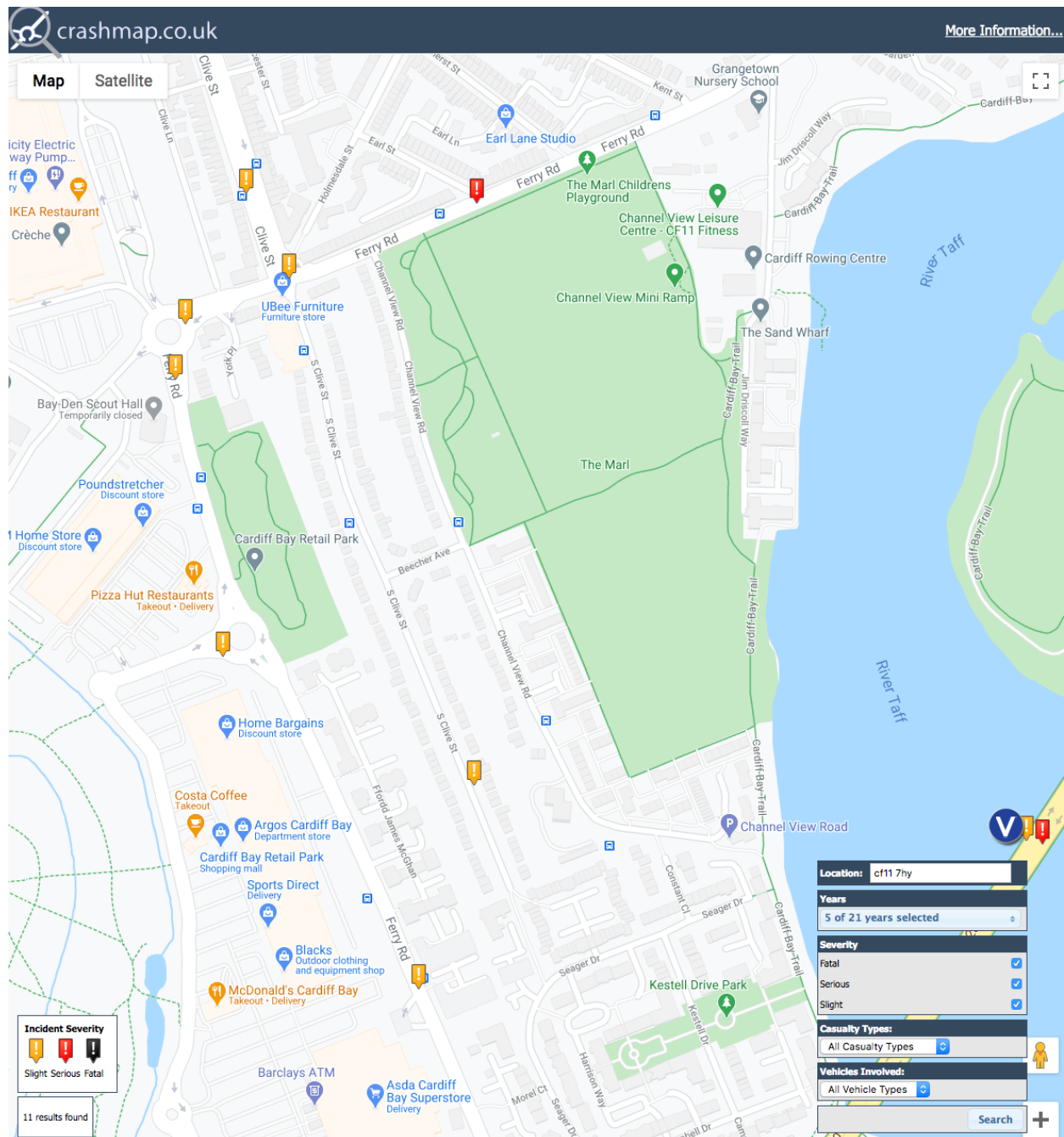


Figure 4 – Injury Accident Location & Severity (2015 – 2019) – Crashmap.co.uk

3.4.7 Due to the Covid19 pandemic there has been no opportunity to undertake traffic surveys to establish typical traffic conditions on the roads surrounding the site. A search has been undertaken of nearby planning applications submitted since 2015 that were supported by TA's from which traffic data can be extracted. Two applications have been found:

- ▶ 15/02834/MJR – Residential Development at Clive Lane. This provides traffic survey data for Clive St / Ferry Rd / S Clive St & Clive St / Penarth Rd / N Clive St junctions from 2015;
- ▶ 16/02916/MJR – Hamadryad Welsh Medium Primary School. This provides traffic survey data for the Clarence Bridge / Clarence Embankment junction from 2016.

- 3.4.8 The traffic survey of the Clive Street / Ferry Road / South Clive Street junction is of particular interest. In the absence of traffic data for the Channel View Road / Ferry Road junction the data from the crossroads can be used as a basis for estimating the likely distribution of future development traffic. Analysis of the proportion of vehicles turning into and out of South Clive Street, which is parallel to Channel View Road, shows that some 25% turns to/from the east (Cardiff Bay / Grangetown direction). Of the remaining 75% there is broadly an equal split between those turning to/from Ferry Road (A4232 / Penarth direction) and to/from Clive Street (Penarth Road direction).
- 3.4.9 In addition to the traffic data obtained from historic TA's, 2019 Average Annual Daily Traffic (AADT) flows have been sourced for Corporation Road, the A4232 and A4055 from the Department for Transport's Road (DfT) Traffic Statistics website¹.
- 3.4.10 The traffic data that has been sourced from previous TA's and the DfT's website is presented in *Appendix A*. Appropriate growth factors, taken from the DfT's TEMPRO software, have been applied to the historic traffic data to convert that data to represent 2020 conditions. This is also shown in *Appendix A*.

3.5 Existing Traffic Generation

- 3.5.1 The likely trip generation of the existing 188 dwellings accommodated on the site has been assessed by reference to the TRICS trip rate database. The database holds details of traffic surveys undertaken at many types of development throughout the UK and Ireland. The surveys are grouped by land use and it is considered that those contained within the database's 'GP Surgery' category are most appropriate for this development proposal.
- 3.5.2 The surveyed sites have been filtered further to ensure that those contained within this assessment are comparable to the proposed development and its location. The following filtering criteria have been applied:
- | | |
|--------------|--|
| Land use: | Residential – Affordable / Local Authority Flats |
| Regions: | England (Excluding Greater London), Scotland and Wales |
| Survey Days: | Weekdays |
| Locations: | Sites in suburban and edge of town centre locations |
- 3.5.3 After applying these search criteria the typical trip rates for the existing use of the land has been calculated. The TRICS output is included in full as *Appendix B* and summarised below and in the tables overleaf.
- 3.5.4 The TRICS data suggests that, typically, this type of development generates a total of approximately 6.5 people trips by per dwelling per day (see Table 2 overleaf).
- 3.5.5 Policy KP8 of the LDP sets a target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport. If it is assumed that this target will be met it is calculated that the existing 188 dwellings have the potential to generate some 607 daily vehicle movements with around 56 to 60 movements occurring during the traditional highway network peak hours (8am-9am and 5pm-6pm).

¹ <https://roadtraffic.dft.gov.uk/#12/51.5017/-3.2065/basemap-countpoints>

Table 2: People Trip Rates per Dwelling (Existing)

Time Range	Arrival	Departure	Total
07:00-08:00	0.078	0.227	0.305
08:00-09:00	0.176	0.418	0.594
09:00-10:00	0.209	0.272	0.481
10:00-11:00	0.219	0.252	0.471
11:00-12:00	0.239	0.285	0.524
12:00-13:00	0.257	0.259	0.516
13:00-14:00	0.252	0.239	0.491
14:00-15:00	0.29	0.242	0.532
15:00-16:00	0.36	0.338	0.698
16:00-17:00	0.368	0.275	0.643
17:00-18:00	0.378	0.264	0.642
18:00-19:00	0.307	0.252	0.559
Daily	3.133	3.323	6.456

Table 3: Existing Vehicle Trip Generation (188 Dwellings)

Time Range	Arrival	Departure	Total
07:00-08:00	7	21	29
08:00-09:00	17	39	56
09:00-10:00	20	26	45
10:00-11:00	21	24	44
11:00-12:00	22	27	49
12:00-13:00	24	24	49
13:00-14:00	24	22	46
14:00-15:00	27	23	50
15:00-16:00	34	32	66
16:00-17:00	35	26	60
17:00-18:00	36	25	60
18:00-19:00	29	24	53
Daily	295	312	607

4 Proposed Development

4.1 Development Composition

- 4.1.1 The proposed development will include the demolition of 188 residential units including a 14-storey block of flats.
- 4.1.2 The site will be redeveloped to provide up to 400 residential dwellings.
- 4.1.3 Full planning permission is sought for a first phase of development comprising of a tower block (8-12 storeys) providing 80 elderly-persons accommodation units, a 115sq.m community café together with landscaping, drainage infrastructure, highways and footpaths, and other associated works. Outline planning permission is sought for the subsequent phases of development for up to 320 residential apartments and houses (Use Class C3); up to 285sq.m of commercial floorspace (Use Class A1); new sports changing facilities; new and improved vehicular, cycle and pedestrian links; upgrade works to The Marl public open space; landscaping; drainage infrastructure; associated works; with all matters except access reserved for future consideration.



Figure 5 – Proposed Masterplan (Powell Dobson Architect)

- 4.1.4 Car and cycle parking provision will be provided in accordance with the Council's current Parking Standards.

4.2 Active Travel

- 4.2.1 Public realm improvements will provide a more pleasant environment for walking and cycling and encourage an increase in the proportion of trips made by these most sustainable modes of transport. Improved pedestrian and cycle links across The Marl and to the Cardiff Bay Trail will be provided and these will be complimented by the creation of a new active travel link between South Clive Street and Ferry Road Park. Although it does not form part of this planning application, these new east-west active travel linkages are designed with the possibility of a future active travel crossing of the River Taff, that would link The Marl and Hamadryad Park, in mind.
- 4.2.2 These new active travel linkages will provide a high quality, mainly traffic free route between the existing Cardiff Bay Trail and Ferry Road that will be of significant benefit to future residents of the development. The linkages will also improve active travel options for other residents of the area and for users of the Cardiff Bay Retail Park and Ikea store.

4.3 Public Transport

- 4.3.1 Significant improvements to the accessibility of the site for buses will be delivered through the creation of a new link between Channel View Road and South Clive Street. Bus services will no longer need to undertake a U-turn at the current Channel View Turn. Instead, buses will be able to complete a more efficient, clockwise, loop from Channel View Road into South Clive Street. A new bus stop will be provided within the central square within the development.

4.4 Travel Plan

- 4.4.1 A Travel Plan will be produced and implemented as part of the development. The Travel Plan will align with Policy KP8 of the LDP by setting a target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport.

4.5 Trip Generation

- 4.5.1 An assessment of the likely trip generation of the proposed development has been undertaken by reference to the TRICS trip rate database. Trip rates for the standard and the elderly persons dwellings are considered separately.
- 4.5.2 The proposed development includes a small element of commercial floorspace (A1/A3 use). This is seen as complimentary to the residential development and the existing residential areas around Channel View road and South Clive Street. It is considered that the A1/A3 use will principally serve the residential area and is unlikely to attract external trips. Any external trips that are attracted are likely to be balanced by the reduction of external trips by residents that would result from the commercial use being located on site – residents would have to travel elsewhere to access comparable commercial services were they not located on site.
- 4.5.3 The trip generation of the 320 standard residential units have been based on the typical trip rates of privately-owned apartment developments and the 80 elderly persons units are based on typical trip rates for sheltered housing. The TRICS output for each land use is included in full as *Appendix C* and *Appendix D*, respectively and summarised below.
- 4.5.4 The TRICS data suggests that, typically, the standard accommodation will generate some 6.7 people trips by per dwelling per day (see Table 4) and the elderly persons accommodation will generate 4.9 people trips by per dwelling per day.

Table 4: People Trip Rates per Dwelling (Privately Owned Flats)

Time Range	Arrival	Departure	Total
07:00-08:00	0.08	0.311	0.391
08:00-09:00	0.118	0.524	0.642
09:00-10:00	0.147	0.227	0.374
10:00-11:00	0.134	0.178	0.312
11:00-12:00	0.139	0.173	0.312
12:00-13:00	0.181	0.178	0.359
13:00-14:00	0.14	0.168	0.308
14:00-15:00	0.158	0.194	0.352
15:00-16:00	0.282	0.166	0.448
16:00-17:00	0.272	0.171	0.443
17:00-18:00	0.44	0.211	0.651
18:00-19:00	0.339	0.216	0.555
Daily	3.13	3.55	6.68

Table 5: People Trip Rates per Dwelling (Elderly Persons Flats)

Time Range	Arrival	Departure	Total
07:00-08:00	0.115	0.088	0.203
08:00-09:00	0.183	0.186	0.369
09:00-10:00	0.217	0.294	0.511
10:00-11:00	0.29	0.367	0.657
11:00-12:00	0.226	0.238	0.464
12:00-13:00	0.253	0.213	0.466
13:00-14:00	0.226	0.271	0.497
14:00-15:00	0.242	0.165	0.407
15:00-16:00	0.176	0.208	0.384
16:00-17:00	0.213	0.183	0.396
17:00-18:00	0.176	0.131	0.307
18:00-19:00	0.122	0.118	0.24
Daily	2.439	2.462	4.901

- 4.5.5 Policy KP8 of the LDP sets a target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport. This will be the development's Travel Plan target.
- 4.5.6 Based on that modal split it is calculated that the proposed development will generate a total of 116 to 117 peak hour movements (8am-9am and 5pm-6pm). This is an increase of 56 to 62 peak hour movements - compared to the existing traffic generation of the site.

Table 6: Privately Owned Flats Vehicle Trip Generation (321 Dwellings))

Time Range	Arrival	Departure	Total
07:00-08:00	13	50	63
08:00-09:00	19	84	103
09:00-10:00	24	36	60
10:00-11:00	21	28	50
11:00-12:00	22	28	50
12:00-13:00	29	28	57
13:00-14:00	22	27	49
14:00-15:00	25	31	56
15:00-16:00	45	27	72
16:00-17:00	44	27	71
17:00-18:00	70	34	104
18:00-19:00	54	35	89
Daily	501	568	1069

Table 7: Elderly Persons Flats Vehicle Trip Generation (79 Dwellings))

Time Range	Arrival	Departure	Total
07:00-08:00	5	4	8
08:00-09:00	7	7	15
09:00-10:00	9	12	20
10:00-11:00	12	15	26
11:00-12:00	9	10	19
12:00-13:00	10	9	19
13:00-14:00	9	11	20
14:00-15:00	10	7	16
15:00-16:00	7	8	15
16:00-17:00	9	7	16
17:00-18:00	7	5	12
18:00-19:00	5	5	10
Daily	98	98	196

Table 8: Total Development Vehicle Trip Generation

Time Range	Arrival	Departure	Total
07:00-08:00	17	53	71
08:00-09:00	26	91	117
09:00-10:00	32	48	80
10:00-11:00	33	43	76
11:00-12:00	31	37	68
12:00-13:00	39	37	76
13:00-14:00	31	38	69
14:00-15:00	35	38	73
15:00-16:00	52	35	87
16:00-17:00	52	35	87
17:00-18:00	77	39	116
18:00-19:00	59	39	98

Daily	598	666	1265
-------	-----	-----	------

Table 9: Total Increase in Vehicle Trip Generation Compared to Existing

Time Range	Arrival	Departure	Total
07:00-08:00	10	32	42
08:00-09:00	10	52	62
09:00-10:00	13	23	35
10:00-11:00	12	19	32
11:00-12:00	9	10	19
12:00-13:00	15	13	28
13:00-14:00	8	15	23
14:00-15:00	8	15	23
15:00-16:00	18	3	21
16:00-17:00	17	9	26
17:00-18:00	42	14	56
18:00-19:00	30	16	46
Daily	304	354	658

5 Traffic Impact

5.1 Assessment Year

- 5.1.1 In considering the traffic impact of the proposed development an assessment year of 2026 has been chosen. This represents a reasonable completion date for the project and also coincides with the end of the LDP plan period.
- 5.1.2 Traffic growth factors obtained from the TEMPRO software package have been applied to the 2020 baseline traffic conditions described earlier. The resultant 2026 baseline (without development) traffic conditions are shown in *Appendix E*.

5.2 Development Traffic Distribution

- 5.2.1 The assignment of development traffic onto the highway network has been informed by analysis of the Clive Street / Ferry Road / South Clive Street traffic survey described earlier. Around 25% of traffic turning to and from South Clive Street was to/from the east, with the remaining traffic broadly split equally between those turning to/from the north and the west. It is considered reasonable to assume that the proposed development's traffic will turn in similar proportions.
- 5.2.2 It is assumed that all of the development's traffic to/from the east will use the Channel View Road junction with Ferry Road. Traffic to and from the north and west could use either the Channel View Road or South Clive Street junctions with Ferry Road and it has been assumed that there will be a 50:50 split in the junctions used for these movements.
- 5.2.3 Traffic turning movements at the Clive Street / Penarth Road junction are assumed to match the proportions evident in the 2015 traffic survey described earlier.
- 5.2.4 We have no traffic data to base assumptions of turning proportions at the Avondale Road / Corporation Road junction to the east or the Ferry Road / A4232 / A4055 junction to the south. As such it is assumed that traffic movements are split equally in the various directions available at those junctions.
- 5.2.5 The development traffic assignment and distribution that has been applied as part of this assessment is shown in *Appendix F*.

5.3 Development Traffic Impact

5.3.1 The impact of the additional traffic generated by the proposed development on local junctions where exiting traffic flow is known is shown in the table below.

Table 10: Development Traffic Impact						
Junction	am Peak Hour Total Movements			pm Peak Hour Total Movements		
	2026 (Baseline)	Development Traffic	% Impact	2026 (Baseline)	Development Traffic	% Impact
Clive Street / Ferry Road / South Clive Street	1237	46	3.7%	1583	52	3.2%
Clive Street / Penarth Road / North Clive Street	2005	23	1.1%	2167	30	1.3%
Clarence Bridge / Clarence Embankment	1190	8	<1%	1003	10	<1%

- 5.3.2 The development will result in an increase of between 3% to 4% (rounded up) in peak hour traffic movements at the Clive Street / Ferry Road / South Clive Street junction. Peak hour traffic volume will typically fluctuate by as much as $\pm 10\%$ from day to day. The anticipated increase in peak hour traffic at this junction will therefore be well within this normal range of fluctuation. Consequently, any impact caused by the development will be difficult to distinguish from these normal fluctuations in flow. The development's impact on this junction is therefore considered to be insignificant.
- 5.3.3 The impact of development traffic at the other two junctions for which traffic data is available is around 1% or less; an insignificant increase.
- 5.3.4 The greatest volume of development traffic will occur at the Channel View Road / Ferry Road junction where an additional 32 vehicle movements is estimated during the am peak hour and 52 vehicle movements during the pm peak hour. Due to the unusual traffic conditions caused as a result of the Covid19 pandemic there has been no opportunity to undertake a survey at this junction to establish the existing typical traffic conditions. It is not possible therefore to quantify the percentage impact of the development's traffic at this junction. However, it can be said that the additional number of traffic movements, at up to 52 during the busiest hour, is relatively modest and represents, on average, less than one additional movement every minute throughout that hour.
- 5.3.5 The additional traffic movements through the junction will inevitably lead to some additional delays to drivers but due to the lack of baseline information this cannot be quantified at this time. Additional delays to drivers should not however be a cause for concern as there are often desirable outcomes when this occurs. For example, increased delays to car journeys help in encouraging a shift to more sustainable forms of transport and the improved active travel and public transport infrastructure delivered as part of the development together with the implementation of Travel Plan measures will further encourage this positive modal shift.

- 5.3.6 Conversely, any amendment to the junction's layout that results in improvements in its capacity and reductions in driver delay will only encourage more journeys to be made by car. This is contrary to the thrust of planning policy which encourages sustainable transport and places car travel at the bottom of the hierarchy of modes of travel. Junction capacity improvements are therefore not considered to be appropriate.

6 Transport Implementation Strategy

6.1 Introduction

- 6.1.1 Technical Advice Note (TAN) 18: Transport, indicates that the TA process should include the production of a Transport Implementation Strategy (TIS) that addresses relevant transport objectives for the development, guided by the development plan and the issues identified in the analysis of person movements.
- 6.1.2 The aims of undertaking this TA and producing this TIS are to:
- ▶ Understand and communicate the transport impacts of the development to assist the decision-making process;
 - ▶ demonstrate the development is sited in a location that will produce a desired and predicted output (for example in terms of target modal split);
 - ▶ mitigate negative transport impacts through the design process and secured through planning conditions or obligations;
 - ▶ maximise the accessibility of the development by non-car modes;
 - ▶ contribute to relevant LDP objectives relating to accessibility of services and modal share.
- 6.1.3 The proposed development comprises the demolition of 188 residential units. The site will be redeveloped into 359 residential dwellings, including a mixture of 1 & 2 bed flats and 3 & 4 bed houses, an over 55's block of flats, a shop and café. The proposals will include reworking areas of The Marl, providing better pedestrian and cycle linkages through to the Cardiff Bay Trail to the east. Works will be carried to improve the street scene of Channel View Road and this will provide a new egress from the site on to South Clive Street. A new bus stop will be provided within the central square within the development.

6.2 LDP Policy Objectives

- 6.2.1 The LDP policy objectives can be summarised as requiring new developments to:
- ▶ be in locations that are accessible by walking, cycling and public transport and where residents can easily access services by these sustainable modes of travel (Policies KP4 and KP5);
 - ▶ make appropriate provision for, or contributes towards, essential, enabling infrastructure e.g. access, circulation, parking, public transport provision, walking and cycling (Policy KP6);
 - ▶ promote sustainable transport with a target of a 50:50 modal split between journeys by car and journeys by walking, cycling and public transport (Policy KP8);
 - ▶ provide for and encourage walking and cycling (Policy T1);
 - ▶ manage the transport related impacts of development on the transport networks and services (Policies T5 and T6);
 - ▶ be supported by a Travel Plan (SPG); and
 - ▶ meet Parking Standard requirements (SPG).

6.3 Development's Response to LDP Policy Objectives

6.3.1 The measures outlined below outline how the development responds to the LDP policy objectives and form the Transport Implementation Strategy for this development.

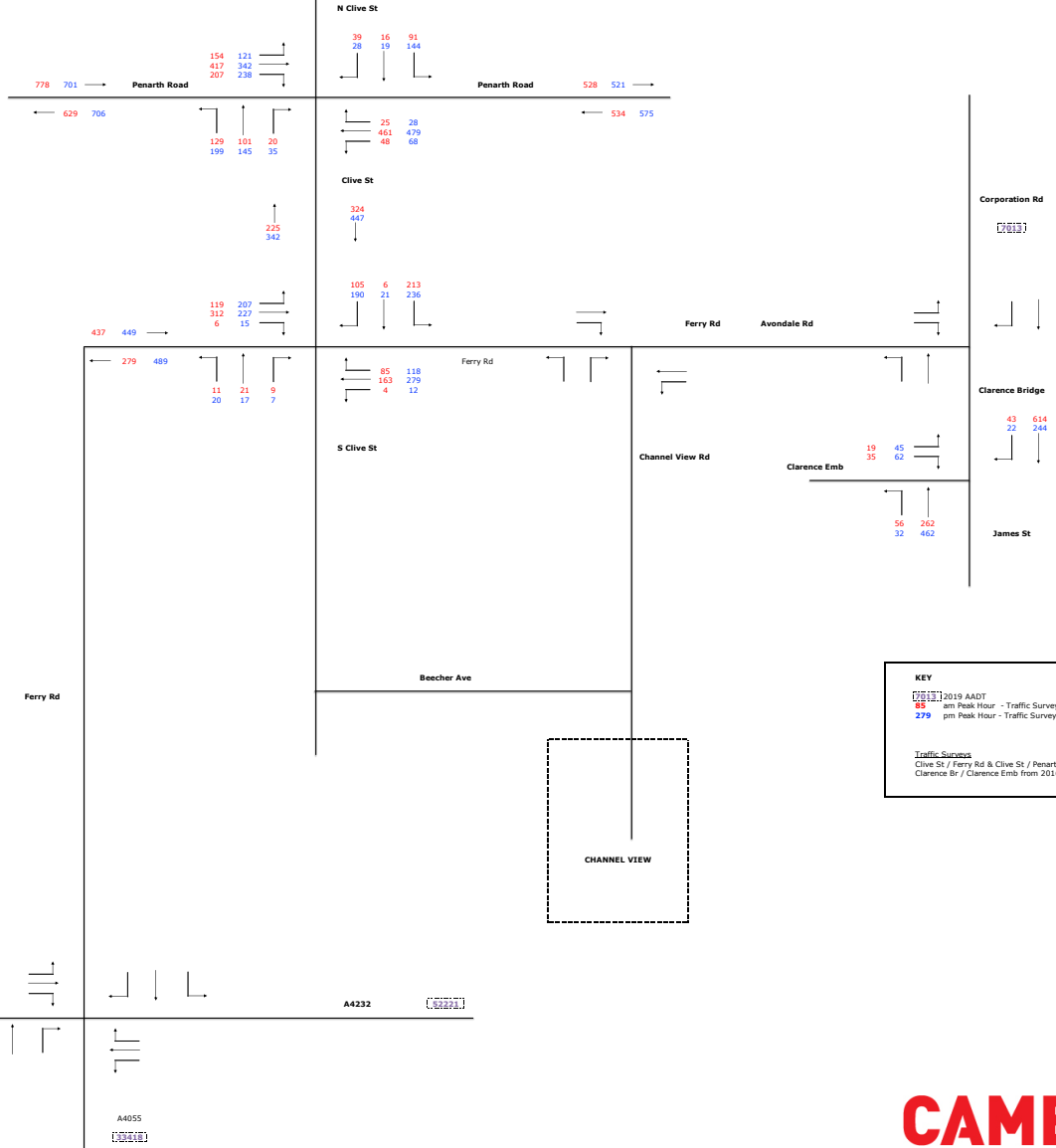
- ▶ The development is in a location that is accessible by walking, cycling and public transport and where residents can easily access services by these sustainable modes of travel. This will assist in encouraging the use of sustainable transport and minimise car transport and its associated impacts.
- ▶ Public realm improvements will encourage walking, cycling and accessibility to public transport;
- ▶ Improved active travel links across The Marl and a new active travel link between South Clive Street and Ferry Road will encourage residents of the site to walk and cycle. The creation of the new active travel linkage between the Cardiff Bay Trail and Ferry Road will also benefit surrounding residential areas and those visiting the Cardiff Bay Retail Park and Ikea.
- ▶ Accessibility to public transport services will be improved through the creation of a new link between Channel View Road and South Clive Street. This will allow existing bus services to circulate more efficiently through this area. A new bus stop will be provided within the development's central square.
- ▶ Car parking provision will meet the requirements of the Council's Parking Standards to manage demand.
- ▶ Cycle parking provision will meet the requirements of the Council's Parking Standards to encourage cycling.
- ▶ A Travel Plan will be developed and is expected to be secured by planning condition or legal agreement. The Travel Plan will encourage the use of sustainable transport and minimise car travel. Its targets will align with the LDP target of a 50:50 50:50 modal split between journeys by car and journeys by walking, cycling and public transport.

7 Conclusions

- 7.1.1 The proposed development comprises the demolition of 188 residential units. The site will be redeveloped into 359 residential dwellings, including a mixture of 1 & 2 bed flats and 3 & 4 bed houses, an over 55's block of flats, a shop and café. The proposals will include reworking areas of The Marl, providing better pedestrian and cycle linkages through to the Cardiff Bay Trail to the east. Works will be carried to improve the street scene of Channel View Road and this will provide a new egress from the site on to South Clive Street. A new bus stop will be provided within the central square within the development.
- 7.1.2 This TA has demonstrated that:
- ▶ The development is in a location that is accessible by walking, cycling and public transport and where residents can easily access services by these sustainable modes of travel.
 - ▶ The development will deliver active travel and public transport improvements that will benefit future residents of Channel View and also benefit members of the wider community.
 - ▶ The streets that serve the application site have a good safety record.
 - ▶ The likely volume and distribution of traffic generated by the development can be safely accommodated on the surrounding highway network.
 - ▶ The development includes appropriate car and cycle parking provision parking.
 - ▶ A Travel Plan will be developed to encourage the use of sustainable transport and minimise car travel.
- 7.1.3 It is considered that it has been demonstrated that the proposed development is acceptable in transport terms.

Appendix A: Historic Traffic Data

HISTORIC TRAFFIC DATA



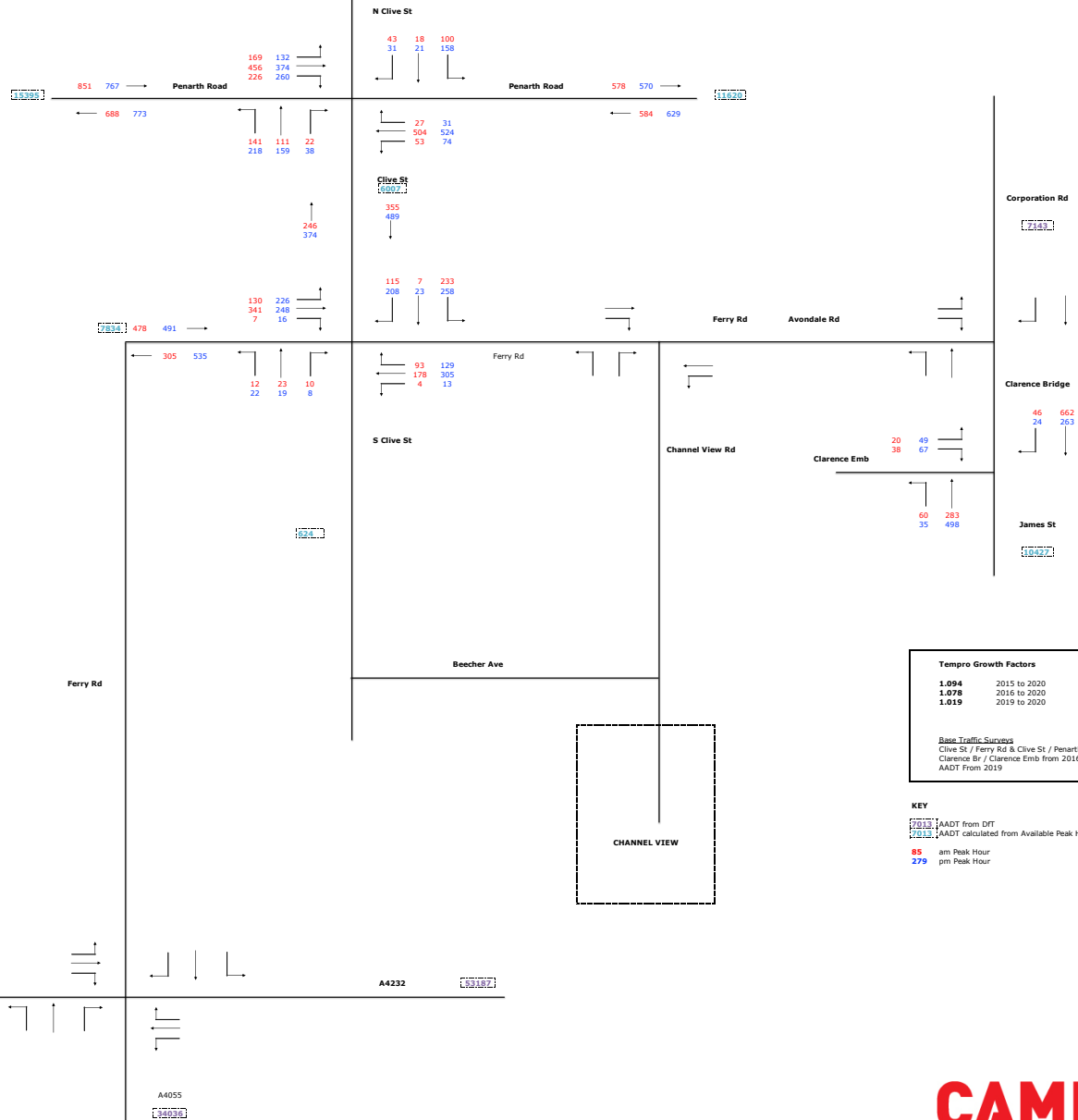
KEY

2019 AADT
 am Peak Hour - Traffic Survey
 pm Peak Hour - Traffic Survey

Traffic Surveys
 Clive St / Ferry Rd & Clive St / Penarth Rd from 2015 (15/02834/MJR)
 Clarence Br / Clarence Emb from 2016 (16/02916/MJR)

CAMBRIA

2020 BASELINE



Tempo Growth Factors

1.094	2015 to 2020
1.078	2016 to 2020
1.019	2019 to 2020

Base Traffic Surveys
 Clive St / Ferry Rd & Clive St / Penarth Rd from 2015 (15/02834/MIR)
 Clarence Br / Clarence Emb from 2016 (16/02916/MIR)
 AADT from 2019

KEY
 AADT from DfT
 AADT calculated from Available Peak Hour Flows
85 am Peak Hour
279 pm Peak Hour



Appendix B: TRICS Trip Rate Data – Local Authority Flats

Calculation Reference: AUDIT-648801-200922-0950

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : D - AFFORDABLE/LOCAL AUTHORITY FLATS
 MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST ES EAST SUSSEX	2 days
03	SOUTH WEST DV DEVON	1 days
09	NORTH TV TEES VALLEY	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
 Actual Range: 54 to 191 (units:)
 Range Selected by User: 50 to 191 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 17/10/13

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

Selected survey days:

Tuesday	1 days
Wednesday	1 days
Friday	2 days

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

Selected survey types:

Manual count	4 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:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	3

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

Selected Location Sub Categories:

Residential Zone	1
Built-Up Zone	1
No Sub Category	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:

C3	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
25,001 to 50,000	1 days
50,001 to 100,000	2 days

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

Population within 5 miles:

125,001 to 250,000	1 days
250,001 to 500,000	3 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	3 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:

Not Known	1 days
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	4 days
-----------------	--------

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

LIST OF SITES relevant to selection parameters

1	DV-03-D-01 WONFORD ROAD EXETER	BLOCKS OF FLATS		DEVON
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 54 <i>Survey date: WEDNESDAY 12/11/03</i>			
2	ES-03-D-01 LEWES ROAD BRIGHTON	BLOCKS OF FLATS		EAST SUSSEX
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 91 <i>Survey date: TUESDAY 20/11/07</i>			
3	ES-03-D-03 UPPER LEWES ROAD BRIGHTON	BLOCKS OF FLATS		EAST SUSSEX
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 191 <i>Survey date: FRIDAY 23/11/07</i>			
4	TV-03-D-01 GRANGE ROAD MIDDLESBROUGH	BLOCKS OF FLATS		TEES VALLEY
	Edge of Town Centre Built-Up Zone Total No of Dwellings: 61 <i>Survey date: FRIDAY 19/10/01</i>			

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS
MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	4	99	0.045	4	99	0.086	4	99	0.131
08:00 - 09:00	4	99	0.073	4	99	0.116	4	99	0.189
09:00 - 10:00	4	99	0.091	4	99	0.088	4	99	0.179
10:00 - 11:00	4	99	0.101	4	99	0.088	4	99	0.189
11:00 - 12:00	4	99	0.103	4	99	0.108	4	99	0.211
12:00 - 13:00	4	99	0.101	4	99	0.134	4	99	0.235
13:00 - 14:00	4	99	0.096	4	99	0.093	4	99	0.189
14:00 - 15:00	4	99	0.101	4	99	0.091	4	99	0.192
15:00 - 16:00	4	99	0.111	4	99	0.131	4	99	0.242
16:00 - 17:00	4	99	0.118	4	99	0.101	4	99	0.219
17:00 - 18:00	4	99	0.123	4	99	0.108	4	99	0.231
18:00 - 19:00	4	99	0.118	4	99	0.108	4	99	0.226
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.181			1.252			2.433

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:	54 - 191 (units:)
Survey date range:	01/01/00 - 17/10/13
Number of weekdays (Monday-Friday):	4
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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	4	99	0.078	4	99	0.227	4	99	0.305
08:00 - 09:00	4	99	0.176	4	99	0.418	4	99	0.594
09:00 - 10:00	4	99	0.209	4	99	0.272	4	99	0.481
10:00 - 11:00	4	99	0.219	4	99	0.252	4	99	0.471
11:00 - 12:00	4	99	0.239	4	99	0.285	4	99	0.524
12:00 - 13:00	4	99	0.257	4	99	0.259	4	99	0.516
13:00 - 14:00	4	99	0.252	4	99	0.239	4	99	0.491
14:00 - 15:00	4	99	0.290	4	99	0.242	4	99	0.532
15:00 - 16:00	4	99	0.360	4	99	0.338	4	99	0.698
16:00 - 17:00	4	99	0.368	4	99	0.275	4	99	0.643
17:00 - 18:00	4	99	0.378	4	99	0.264	4	99	0.642
18:00 - 19:00	4	99	0.307	4	99	0.252	4	99	0.559
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.133			3.323			6.456

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.

Appendix C: TRICS Trip Rate Data – Privately Owned Flats

Calculation Reference: AUDIT-648801-200921-0906

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : C - FLATS PRIVATELY OWNED
 MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	1 days
	HF HERTFORDSHIRE	1 days
	OX OXFORDSHIRE	1 days
	SC SURREY	1 days
03	SOUTH WEST	
	BR BRISTOL CITY	1 days
	DC DORSET	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	2 days
	NF NORFOLK	1 days
	SF SUFFOLK	1 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	2 days
	NR NORTHAMPTONSHIRE	1 days
	NT NOTTINGHAMSHIRE	2 days
06	WEST MIDLANDS	
	ST STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
	RI EAST RIDING OF YORKSHIRE	1 days
08	NORTH WEST	
	MS MERSEYSIDE	2 days
09	NORTH	
	CB CUMBRIA	2 days
	TV TEES VALLEY	2 days
10	WALES	
	DB DENBIGHSHIRE	1 days
11	SCOTLAND	
	EB CITY OF EDINBURGH	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
 Actual Range: 8 to 184 (units:)
 Range Selected by User: 6 to 184 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 18/11/19

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

Selected survey days:

Monday	6 days
Tuesday	6 days
Wednesday	9 days
Thursday	2 days
Friday	3 days

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

Selected survey types:

Manual count	26 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

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	2
Residential Zone	14
Built-Up Zone	1
No Sub Category	9

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

Secondary Filtering selection:

Use Class:

C3	26 days
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This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	5 days
5,001 to 10,000	1 days
10,001 to 15,000	5 days
15,001 to 20,000	1 days
20,001 to 25,000	7 days
25,001 to 50,000	7 days

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

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	1 days
50,001 to 75,000	5 days
100,001 to 125,000	1 days
125,001 to 250,000	7 days
250,001 to 500,000	8 days
500,001 or More	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	9 days
1.1 to 1.5	17 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	26 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	26 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	BR-03-C-01 CLARENCE ROAD BRISTOL	FLATS & TERRACED		BRI STOL CITY
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		102	
	<i>Survey date: MONDAY</i>		<i>09/11/09</i>	<i>Survey Type: MANUAL</i>
2	CA-03-C-02 WESTFIELD ROAD PETERBOROUGH NETHERTON	BLOCK OF FLATS		CAMBRI DGESHI RE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings:		44	
	<i>Survey date: TUESDAY</i>		<i>18/10/11</i>	<i>Survey Type: MANUAL</i>
3	CA-03-C-03 CROMWELL ROAD CAMBRIDGE	BLOCKS OF FLATS		CAMBRI DGESHI RE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings:		82	
	<i>Survey date: MONDAY</i>		<i>18/09/17</i>	<i>Survey Type: MANUAL</i>
4	CB-03-C-02 BRIDGE LANE PENRITH	BLOCK OF FLATS		CUMBRIA
	Edge of Town No Sub Category Total No of Dwellings:		35	
	<i>Survey date: WEDNESDAY</i>		<i>11/06/14</i>	<i>Survey Type: MANUAL</i>
5	CB-03-C-03 LOUND STREET KENDAL	FLATS & BUNGALOWS		CUMBRIA
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		33	
	<i>Survey date: MONDAY</i>		<i>09/06/14</i>	<i>Survey Type: MANUAL</i>
6	DB-03-C-01 RHYL ROAD RHUDDLAN	FLATS IN HOUSES		DENBI GHSHI RE
	Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings:		16	
	<i>Survey date: FRIDAY</i>		<i>07/10/11</i>	<i>Survey Type: MANUAL</i>
7	DC-03-C-02 PALM COURT WEYMOUTH SPA ROAD	FLATS IN BLOCKS		DORSET
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		14	
	<i>Survey date: FRIDAY</i>		<i>28/03/14</i>	<i>Survey Type: MANUAL</i>
8	DS-03-C-01 DRAGE STREET DERBY LITTLE CHESTER	BLOCK OF FLATS		DERBYSHIRE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings:		8	
	<i>Survey date: THURSDAY</i>		<i>25/06/09</i>	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

9	DS-03-C-03 CAESAR STREET DERBY	BLOCKS OF FLATS	DERBYSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 30 <i>Survey date: WEDNESDAY 25/09/19</i>		<i>Survey Type: MANUAL</i>
10	EB-03-C-01 MYRESIDE ROAD EDINBURGH CRAIGLOCKHART	BLOCKS OF FLATS	CITY OF EDINBURGH
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 32 <i>Survey date: TUESDAY 26/05/15</i>		<i>Survey Type: MANUAL</i>
11	HC-03-C-02 WORTING ROAD BASINGSTOKE	FLATS	HAMPSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 16 <i>Survey date: THURSDAY 21/10/10</i>		<i>Survey Type: MANUAL</i>
12	HF-03-C-02 BRIDGE ROAD EAST WELWYN GARDEN CITY	FLATS	HERTFORDSHIRE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 86 <i>Survey date: WEDNESDAY 16/07/08</i>		<i>Survey Type: MANUAL</i>
13	MS-03-C-02 SOUTH FERRY QUAY LIVERPOOL BRUNSWICK DOCK	BLOCKS OF FLATS	MERSEYSIDE
	Suburban Area (PPS6 Out of Centre) Development Zone Total No of Dwellings: 184 <i>Survey date: TUESDAY 13/11/18</i>		<i>Survey Type: MANUAL</i>
14	MS-03-C-03 MARINERS WHARF LIVERPOOL QUEENS DOCK	BLOCK OF FLATS	MERSEYSIDE
	Suburban Area (PPS6 Out of Centre) Development Zone Total No of Dwellings: 9 <i>Survey date: TUESDAY 13/11/18</i>		<i>Survey Type: MANUAL</i>
15	NF-03-C-02 HALL ROAD NORWICH LAKENHAM	MIXED FLATS & HOUSES	NORFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 82 <i>Survey date: MONDAY 18/11/19</i>		<i>Survey Type: MANUAL</i>
16	NR-03-C-01 ROCKINGHAM ROAD CORBY	BLOCK OF FLATS	NORTHAMPTONSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 20 <i>Survey date: FRIDAY 21/11/08</i>		<i>Survey Type: MANUAL</i>
17	NT-03-C-01 LAWRENCE WAY NOTTINGHAM	HOUSES (SPLIT INTO FLATS)	NOTTINGHAMSHIRE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 56 <i>Survey date: TUESDAY 08/11/16</i>		<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

18	NT-03-C-02 CASTLE MARINA ROAD NOTTINGHAM	HOUSES (SPLIT INTO FLATS)	NOTTINGHAMSHIRE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 135 <i>Survey date: WEDNESDAY 09/11/16</i>		<i>Survey Type: MANUAL</i>
19	NY-03-C-01 BOROUGHBRIDGE ROAD NORTHALLERTON ROMANBY	BLOCKS OF FLATS	NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 30 <i>Survey date: MONDAY 22/09/03</i>		<i>Survey Type: MANUAL</i>
20	OX-03-C-01 OXFORD ROAD OXFORD COWLEY	BLOCK OF FLATS	OXFORDSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 14 <i>Survey date: WEDNESDAY 20/10/10</i>		<i>Survey Type: MANUAL</i>
21	RI-03-C-01 465 PRIORY ROAD HULL	FLATS	EAST RIDING OF YORKSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 20 <i>Survey date: TUESDAY 13/05/14</i>		<i>Survey Type: MANUAL</i>
22	SC-03-C-02 CONSTITUTION HILL WOKING	FLATS	SURREY
	Suburban Area (PPS6 Out of Centre) Built-Up Zone Total No of Dwellings: 36 <i>Survey date: WEDNESDAY 23/07/08</i>		<i>Survey Type: MANUAL</i>
23	SF-03-C-03 TOLLGATE LANE BURY ST EDMUNDS	BLOCKS OF FLATS	SUFFOLK
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 30 <i>Survey date: WEDNESDAY 03/12/14</i>		<i>Survey Type: MANUAL</i>
24	ST-03-C-01 ETRURIA COURT STOKE-ON-TRENT HUMBERT ROAD	BLOCKS OF FLATS	STAFFORDSHIRE
	Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 33 <i>Survey date: WEDNESDAY 26/11/08</i>		<i>Survey Type: MANUAL</i>
25	TV-03-C-01 OXFORD ROAD MIDDLESBROUGH LINTHORPE	APARTMENTS BLOCKS	TEES VALLEY
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 85 <i>Survey date: MONDAY 06/10/08</i>		<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

26	TV-03-C-02	FLATS	TEES VALLEY
	ACKLAM ROAD		
	MIDDLESBROUGH		
	LINTHORPE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	85	
	Survey date: WEDNESDAY	29/06/11	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 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	26	51	0.048	26	51	0.154	26	51	0.202
08:00 - 09:00	26	51	0.069	26	51	0.235	26	51	0.304
09:00 - 10:00	26	51	0.078	26	51	0.108	26	51	0.186
10:00 - 11:00	26	51	0.074	26	51	0.090	26	51	0.164
11:00 - 12:00	26	51	0.075	26	51	0.079	26	51	0.154
12:00 - 13:00	26	51	0.084	26	51	0.094	26	51	0.178
13:00 - 14:00	26	51	0.080	26	51	0.089	26	51	0.169
14:00 - 15:00	26	51	0.087	26	51	0.090	26	51	0.177
15:00 - 16:00	26	51	0.119	26	51	0.078	26	51	0.197
16:00 - 17:00	26	51	0.129	26	51	0.088	26	51	0.217
17:00 - 18:00	26	51	0.226	26	51	0.107	26	51	0.333
18:00 - 19:00	26	51	0.168	26	51	0.117	26	51	0.285
19:00 - 20:00	2	15	0.333	2	15	0.200	2	15	0.533
20:00 - 21:00	2	15	0.100	2	15	0.033	2	15	0.133
21:00 - 22:00	2	15	0.133	2	15	0.100	2	15	0.233
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.803			1.662			3.465

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: 8 - 184 (units:)
Survey date range: 01/01/00 - 18/11/19
Number of weekdays (Monday-Friday): 26
Number of Saturdays: 0
Number of Sundays: 0
Surveys automatically removed from selection: 1
Surveys manually removed from selection: 0

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	26	51	0.080	26	51	0.311	26	51	0.391
08:00 - 09:00	26	51	0.118	26	51	0.524	26	51	0.642
09:00 - 10:00	26	51	0.147	26	51	0.227	26	51	0.374
10:00 - 11:00	26	51	0.134	26	51	0.178	26	51	0.312
11:00 - 12:00	26	51	0.139	26	51	0.173	26	51	0.312
12:00 - 13:00	26	51	0.181	26	51	0.178	26	51	0.359
13:00 - 14:00	26	51	0.140	26	51	0.168	26	51	0.308
14:00 - 15:00	26	51	0.158	26	51	0.194	26	51	0.352
15:00 - 16:00	26	51	0.282	26	51	0.166	26	51	0.448
16:00 - 17:00	26	51	0.272	26	51	0.171	26	51	0.443
17:00 - 18:00	26	51	0.440	26	51	0.211	26	51	0.651
18:00 - 19:00	26	51	0.339	26	51	0.216	26	51	0.555
19:00 - 20:00	2	15	0.300	2	15	0.533	2	15	0.833
20:00 - 21:00	2	15	0.133	2	15	0.200	2	15	0.333
21:00 - 22:00	2	15	0.267	2	15	0.100	2	15	0.367
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.130			3.550			6.680

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.

Appendix D: TRICS Trip Rate Data – Elderly Persons Accommodation

Calculation Reference: AUDIT-648801-200921-0924

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : F - SHELTERED ACCOMMODATION
 MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
	KC KENT	1 days
	SC SURREY	1 days
03	SOUTH WEST	
	DC DORSET	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
	NT NOTTINGHAMSHIRE	1 days
06	WEST MIDLANDS	
	WK WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	2 days
11	SCOTLAND	
	AG ANGUS	1 days

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

Primary Filtering selection:

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

Parameter: No of Dwellings
 Actual Range: 14 to 114 (units:)
 Range Selected by User: 14 to 114 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 22/10/18

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	2 days
Tuesday	2 days
Wednesday	1 days
Thursday	2 days
Friday	3 days

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

Selected survey types:

Manual count	10 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	3
Edge of Town	5
Neighbourhood Centre (PPS6 Local 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:

Residential Zone	8
Built-Up Zone	1
No Sub Category	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:

C3 10 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
10,001 to 15,000	3 days
15,001 to 20,000	1 days
25,001 to 50,000	5 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	2 days
50,001 to 75,000	1 days
100,001 to 125,000	2 days
125,001 to 250,000	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	4 days
1.1 to 1.5	6 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 10 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 10 days

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

LIST OF SITES relevant to selection parameters

1	AG-03-F-01 SHELTERED HOUSING CLIFFBURN ROAD EAST ARBROATH HAYSHEAD Edge of Town Residential Zone Total No of Dwellings: 39 <i>Survey date: FRIDAY 28/04/17</i>	ANGUS	<i>Survey Type: MANUAL</i>
2	DC-03-F-02 SHELTERED HOUSING WILLOW PARK POOLE Suburban Area (PPS6 Out of Centre) Built-Up Zone Total No of Dwellings: 114 <i>Survey date: THURSDAY 17/07/08</i>	DORSET	<i>Survey Type: MANUAL</i>
3	ES-03-F-01 SHELTERED HOU. STAR ROAD EASTBOURNE OLD TOWN Neighbourhood Centre (PPS6 Local Centre) No Sub Category Total No of Dwellings: 29 <i>Survey date: MONDAY 30/11/09</i>	EAST SUSSEX	<i>Survey Type: MANUAL</i>
4	KC-03-F-03 SHELTERED HOUSING TERRY WALK NEAR MAIDSTONE Edge of Town Residential Zone Total No of Dwellings: 44 <i>Survey date: FRIDAY 21/11/03</i>	KENT	<i>Survey Type: MANUAL</i>
5	LE-03-F-01 SHELTERED HOUSING BELLAMY CLOSE LEICESTER GLEN PARVA Edge of Town Residential Zone Total No of Dwellings: 33 <i>Survey date: WEDNESDAY 24/06/09</i>	LEICESTERSHIRE	<i>Survey Type: MANUAL</i>
6	NT-03-F-01 SHELTERED HOUSING BEAUMONT STREET NOTTINGHAM SNEINTON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 87 <i>Survey date: FRIDAY 21/06/13</i>	NOTTINGHAMSHIRE	<i>Survey Type: MANUAL</i>
7	SC-03-F-01 SHELTERED HOUSING COLLIER WAY GUILFORD BUSHY HILL Edge of Town Residential Zone Total No of Dwellings: 32 <i>Survey date: TUESDAY 08/07/08</i>	SURREY	<i>Survey Type: MANUAL</i>
8	WK-03-F-01 SHELTERED HOUSING NORTHUMBERLAND ROAD LEAMINGTON SPA MILVERTON Edge of Town Residential Zone Total No of Dwellings: 14 <i>Survey date: THURSDAY 25/10/12</i>	WARWICKSHIRE	<i>Survey Type: MANUAL</i>
9	WY-03-F-01 SHELTERED HOUSING NORTH GRANGE ROAD LEEDS HEADINGLEY Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 28 <i>Survey date: TUESDAY 15/06/10</i>	WEST YORKSHIRE	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

10 WY-03-F-02 SHELTERED HOUSING WEST YORKSHIRE
CHESTER ROAD
HALIFAX

Neighbourhood Centre (PPS6 Local Centre)
Residential Zone

Total No of Dwellings:

22

Survey date: MONDAY

22/10/18

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 03 - RESIDENTIAL/F - SHELTERED ACCOMMODATION
MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	10	44	0.057	10	44	0.048	10	44	0.105
08:00 - 09:00	10	44	0.118	10	44	0.090	10	44	0.208
09:00 - 10:00	10	44	0.147	10	44	0.158	10	44	0.305
10:00 - 11:00	10	44	0.152	10	44	0.174	10	44	0.326
11:00 - 12:00	10	44	0.138	10	44	0.129	10	44	0.267
12:00 - 13:00	10	44	0.167	10	44	0.138	10	44	0.305
13:00 - 14:00	10	44	0.113	10	44	0.152	10	44	0.265
14:00 - 15:00	10	44	0.118	10	44	0.097	10	44	0.215
15:00 - 16:00	10	44	0.095	10	44	0.111	10	44	0.206
16:00 - 17:00	10	44	0.115	10	44	0.113	10	44	0.228
17:00 - 18:00	10	44	0.088	10	44	0.097	10	44	0.185
18:00 - 19:00	10	44	0.066	10	44	0.072	10	44	0.138
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.374			1.379			2.753

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:	14 - 114 (units:)
Survey date range:	01/01/00 - 22/10/18
Number of weekdays (Monday-Friday):	10
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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/F - SHELTERED ACCOMMODATION

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

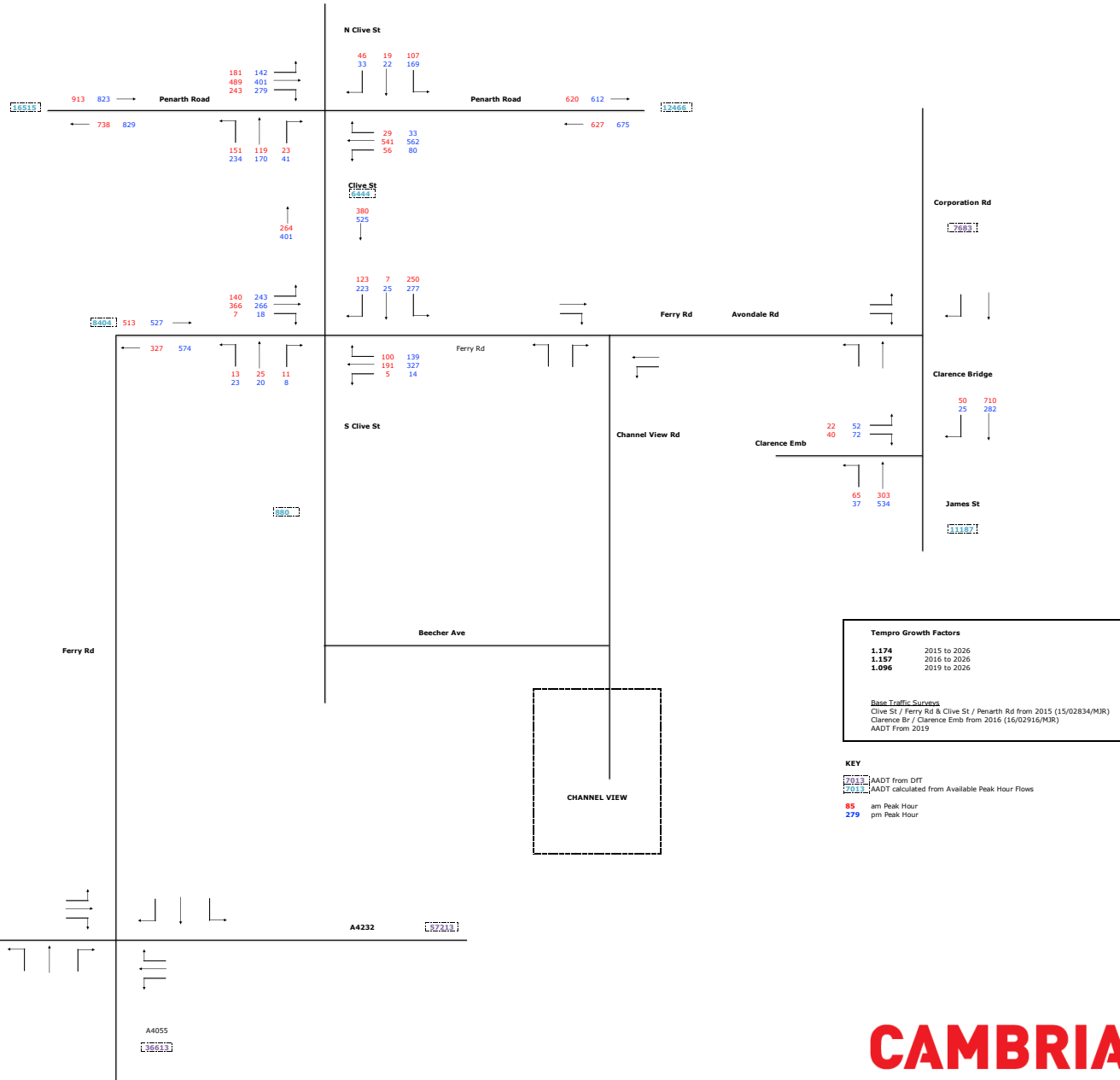
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	44	0.115	10	44	0.088	10	44	0.203
08:00 - 09:00	10	44	0.183	10	44	0.186	10	44	0.369
09:00 - 10:00	10	44	0.217	10	44	0.294	10	44	0.511
10:00 - 11:00	10	44	0.290	10	44	0.367	10	44	0.657
11:00 - 12:00	10	44	0.226	10	44	0.238	10	44	0.464
12:00 - 13:00	10	44	0.253	10	44	0.213	10	44	0.466
13:00 - 14:00	10	44	0.226	10	44	0.271	10	44	0.497
14:00 - 15:00	10	44	0.242	10	44	0.165	10	44	0.407
15:00 - 16:00	10	44	0.176	10	44	0.208	10	44	0.384
16:00 - 17:00	10	44	0.213	10	44	0.183	10	44	0.396
17:00 - 18:00	10	44	0.176	10	44	0.131	10	44	0.307
18:00 - 19:00	10	44	0.122	10	44	0.118	10	44	0.240
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.439			2.462			4.901

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.

Appendix E: 2026 Baseline Traffic Flow

2026 BASELINE

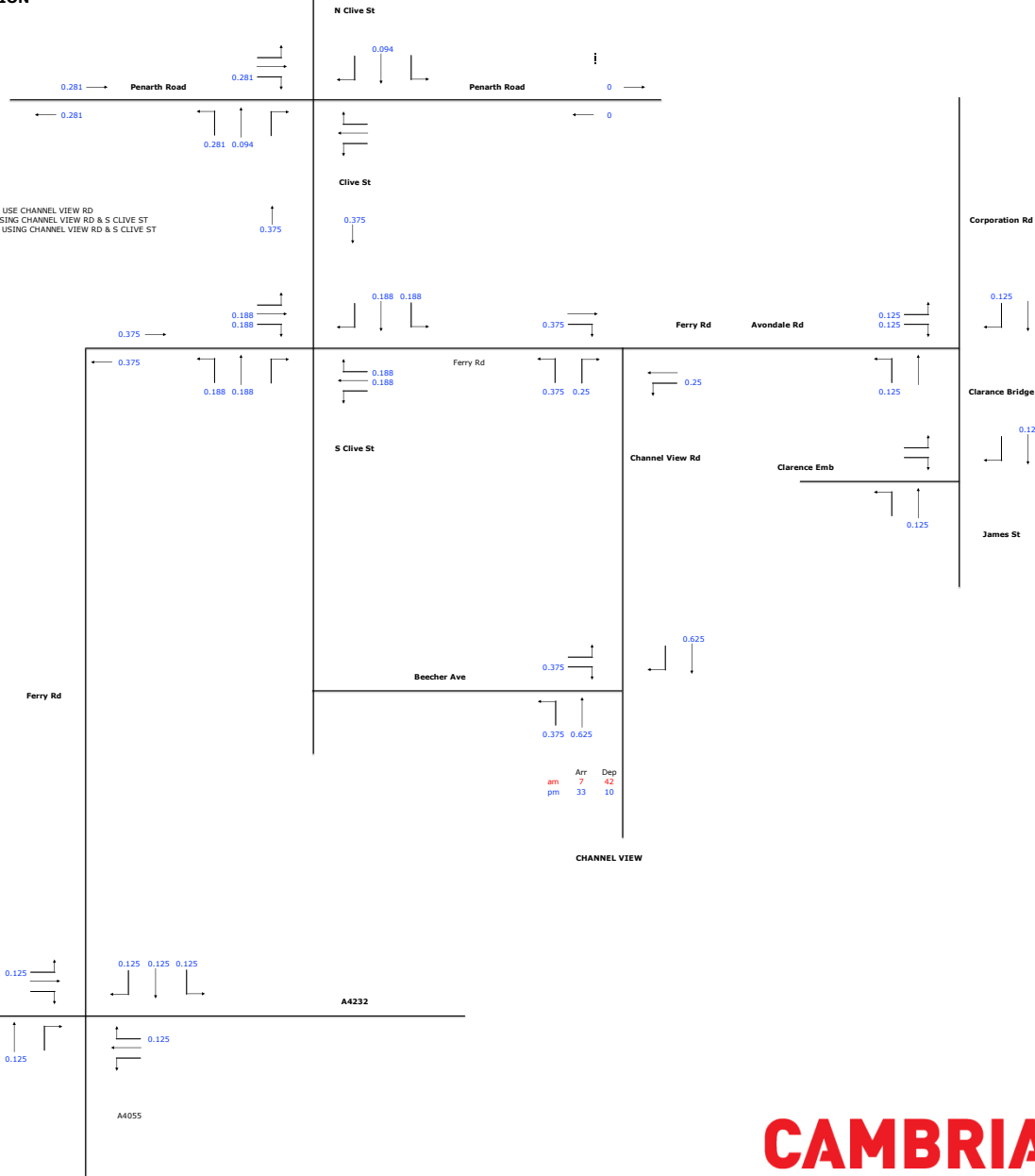


Appendix F: Development Traffic Assignment and Distribution

DEVELOPMENT TRAFFIC DISTRIBUTION

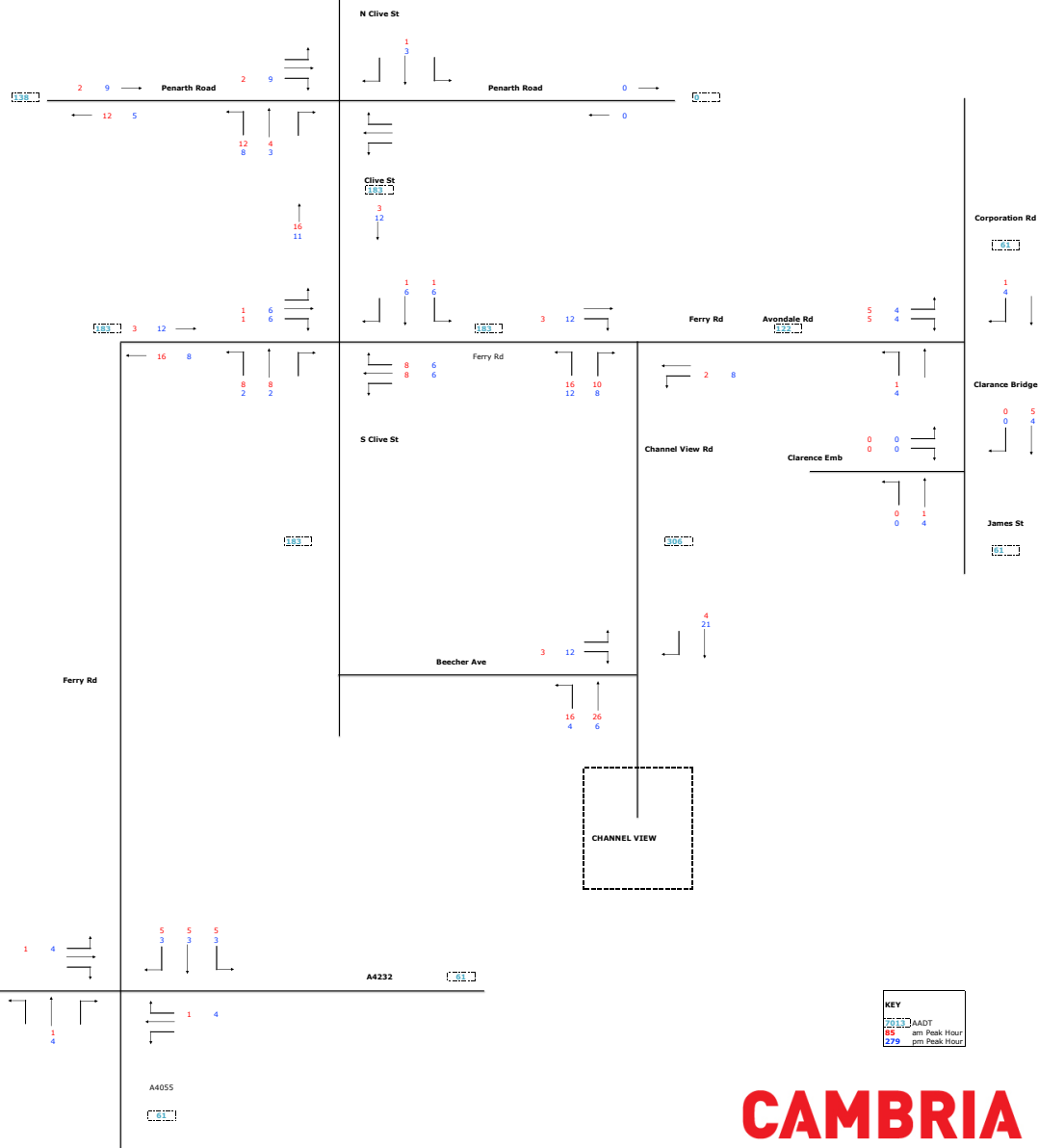
ASSUMPTIONS

25% TO/FROM EAST (GRANGETOWN / CARDIFF BAY) - ALL USE CHANNEL VIEW RD
 37.5% TO/FROM NORTH (PENARTH ROAD) - 50:50 SPLIT USING CHANNEL VIEW RD & S CLIVE ST
 37.5% TO/FROM SOUTH (A4232 / PENARTH) - 50:50 SPLIT USING CHANNEL VIEW RD & S CLIVE ST



CAMBRIA

DEVELOPMENT TRAFFIC



CAMBRIA