

**LAND SOUTH AT CHANNEL VIEW, GRANGETOWN**

**CARDIFF**

**ENVIRONMENTAL STATEMENT**

**VOLUME 2**

**CHAPTER 5: TRAFFIC & TRANSPORT**

## **INTRODUCTION**

- 5.1 The chapter describes the assessment methodology; the baseline conditions at the Site and surroundings; the potential impacts related to traffic and access; the mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely effects after these measures have been employed.
  
- 5.2 This chapter has been prepared by Alun Rees of Cambria Consulting Ltd, a Transport Planner with some 25 years' experience in the assessment of transport related impacts of developments throughout the UK.

## LEGISLATIVE AND POLICY CONTEXT

### Planning Policy Wales

- 5.3 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government.
- 5.4 In terms of transport related policies, it places the sustainability of development at the heart of the decision making process (paragraph 4.7.4) and requires that new development proposals minimise 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.
- 5.5 The principles discussed above are repeated again in PPW's Chapter 8, which deals specifically with Transport issues. At paragraph 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.

5.6 In terms of transport related issues PPW advises (paragraph 8.7.1) that the following 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.

### **Technical Advice Note 18, Transport (TAN18)**

5.7 Technical Advice Note 18 (TAN18) details the Welsh 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 (paragraph 2.1). It sees the integration of transport and land use planning as key (paragraph 2.3) in achieving the Welsh 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.

5.8 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).

- 5.9 Section 9 of TAN18 requires that an Environmental Impact Assessment (EIA) is required where a development is likely to have significant environmental effects.
- 5.10 TAN18 recommends (Annex D, paragraph D12) that the guidance provided in “Guidelines for Traffic Impact Assessments – Institution of Highways & Transportation (IHT – 1994)” be followed when assessing the traffic impacts of a development.

### **Cardiff Council’s Local Development Plan 2006 – 2026**

- 5.11 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.
- 5.12 **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.
- 5.13 **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.
- 5.14 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)**.

## **Relevant Guidance**

5.15 The advice and recommendations of the following guidance documents have been followed in preparing this chapter:

- Guidelines for Traffic Impact Assessments – Institution of Highways & Transportation (IHT), 1994;
- Guidelines for the Environmental Assessment of Road Traffic – Institute of Environmental Assessment (IEA), 1993; and
- Design Manual for Roads & Bridges (DMRB) LA 104 – Environmental Assessment and Monitoring, 2020.

## ASSESSMENT METHODOLOGY

- 5.16 The methodology employed in assessing the environmental impact of the proposed development is based on criteria recommended within guidance (Guidelines for the Environmental Assessment of Road Traffic, Institute of Environmental Assessment) to identify roads where significant impacts may occur. Significant impacts can include:
- Driver delay;
  - Severance of routes;
  - Pedestrian delay;
  - Fear and intimidation;
  - Accidents and road safety; and
  - The movement of hazardous, dangerous and abnormal loads
- 5.17 These roads can be identified as ones where traffic flows are predicted to increase by more than 30% (or where the number of HGV's are predicted to increase by more than 30%) or any sensitive areas (hospitals, churches, schools, historical buildings) where traffic flows are predicted to increase by 10% or more.
- 5.18 The determination of the sensitivity of receptors to environmental effects is broadly based on the criteria of value, adaptability, tolerance and reversibility. In terms of transport impacts, receptors comprise people living in an area, using facilities in an area and using transport networks in an area. Given that all persons are deemed to be of equal value, sensitivity to changes in transport conditions is generally focussed on vulnerable user groups who are less able to tolerate, adapt to and recover from those changes. Vulnerable groups would include school children and the elderly. The following table summarises the general criteria for identifying receptor sensitivity by relating the presence of vulnerable groups to identifiable physical features within the environment.
- 5.19 Table 5.1 is based on IEMA Guidelines for the Environmental Assessment of Road Traffic (1993). It should be noted that although it draws attention to the presence of potentially vulnerable groups, more detailed assessments of local circumstances may indicate that in relation to specific transport environmental impacts the area is either more or less sensitive to changes in traffic flows. For example, the presence of a school would suggest high sensitivity. However, in relation to pedestrian delay the area may not be sensitive to an increase in traffic flows because signal-controlled pedestrian crossing

facilities are provided either side of the school. On the other hand, a school with a high proportion of children with special needs or close to an accident black spot may be considered to have very high sensitivity to changes in traffic flows. The detailed assessments set out below, therefore, consider each case in the context of the local circumstances and each specific transport impact.

*Table 5.1: Definitions of Sensitivity or Value*

| <b>Sensitivity</b> | <b>Typical Descriptors</b>   |
|--------------------|--|
| Very High          | Those receptors with high sensitivity with site-specific reasons for being particularly sensitive to changes in traffic flows e.g. community with high incidence of mobility impairment requiring to cross roads to access essential facilities.                     |
| High               | Receptors of greatest sensitivity to traffic flows: e.g. schools, colleges, playgrounds, accident black spots, urban/residential roads without footways that are used by pedestrians.  |
| Medium             | Traffic flow sensitive receptors including: e.g. congested junctions, doctors' surgeries, hospitals, shopping areas with roadside frontage, roads with narrow footways, un-segregated cycle ways, community centres, parks, recreation facilities, retirement homes. |
| Low                | Receptors with some sensitivity to traffic flow: e.g. places of worship, public open space, nature conservation areas, listed buildings, tourist attractions and residential areas with adequate footway provision.  |
| Negligible         | Receptors with low sensitivity to traffic flows and those sufficiently distant from affected roads and junctions.  |

5.20 Where the screening test outlined above identifies that transport effects have the potential to be significant, the magnitude of the impact is identified. Magnitude is defined in general terms in guidance contained in LA 104 of DMRB and is summarised in the context of transport in Table 5.2 below.



Table 5.2: Definitions of Magnitude

| Magnitude of Impact (Change) |            | Typical Descriptors   |
|------------------------------|------------|---|
| Major                        | Adverse    | Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements.  |
|                              | Beneficial | Large scale or major improvement of resource quality; extensive restoration; major improvement of attribute quality.  |
| Moderate                     | Adverse    | Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements.   |
|                              | Beneficial | Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality.  |
| Minor                        | Adverse    | Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements.                      |
|                              | Beneficial | Minor benefit to, or addition of, one (maybe more) key characteristics, features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring. |
| Negligible                   | Adverse    | Very minor loss or detrimental alteration to one or more characteristics, features or elements.   |
|                              | Beneficial | Very minor benefit to or positive addition of one or more characteristics, features or elements.  |
| No change                    |            | No loss or alteration of characteristics, features or elements; no observable impact in either direction.   |

5.21 The descriptions of significance of effects are based on the following detailed in Table 5.3.

Table 5.3: Significance Categories and Typical Descriptions

| <b>Significance Category</b> | <b>Typical Description</b>  |
|------------------------------|---|
| Very Large                   | Effects at this level are material in the decision-making process.  |
| Large                        | Effects at this level are likely to be material in the decision-making process.   |
| Moderate                     | Effects at this level can be considered to be material decision-making factors.   |
| Slight                       | Effects at this level are not material in the decision-making process.  |
| Neutral                      | No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error. |

5.22 The approach to deriving effects significance from receptor value and magnitude of impacts is based on the following matrix contained in Table 5.4.

Table 5.4: Significance Matrix

| <b>Sensitivity</b> | <b>Magnitude of Impact</b> |                   |                    |                     |                     |
|--------------------|----------------------------|-------------------|--------------------|---------------------|---------------------|
|                    | <b>No Change</b>           | <b>Negligible</b> | <b>Minor</b>       | <b>Moderate</b>     | <b>Major</b>        |
| Very High          | Neutral                    | Slight            | Moderate or Large  | Large or Very Large | Very Large          |
| High               | Neutral                    | Slight            | Slight or Moderate | Moderate or Large   | Large or Very Large |
| Medium             | Neutral                    | Neutral or Slight | Slight             | Moderate            | Moderate or Large   |
| Low                | Neutral                    | Neutral or Slight | Neutral or Slight  | Slight              | Slight or Moderate  |
| Negligible         | Neutral                    | Neutral           | Neutral or Slight  | Neutral or Slight   | Slight              |

5.23 Following the assessment of effects using this methodology, further consideration of whether an effect is significant and requires mitigation is carried out using professional judgement, but taking account of:

- the adverse or beneficial nature of the effect;
- whether the effect is permanent or temporary;
- the duration/frequency of the effect; and
- the likelihood of the effect.

5.24 For the purposes of this assessment any effect that is moderate, large or very large is considered to be significant in EIA terms. Any effect that is slight or neutral is not significant in EIA terms.

### **Limitations of the Assessment**

5.25 This EIA has been prepared during the Covid-19 pandemic. Traffic conditions on the roads surrounding the site have not been typical as a result and it has not been possible to conduct meaningful traffic surveys. As a result, the assessment of baseline conditions relies on historic traffic data that has been extracted from the Transport Assessments for nearby planning applications and from the Department for Transport's Road (DfT) Traffic Statistics website. There is some uncertainty, therefore, over baseline traffic flows on some streets. To address this, a precautionary approach has been adopted in terms of any assumptions made in order to ensure a robust assessment of traffic and access related impacts of the proposed development.

5.26 There is uncertainty also, at this stage, about the construction programme of the development. The details of construction methods, timing and phasing are necessarily broad at this stage. The limits of the assessment, however, have been set sufficiently wide to allow a robust assessment to be undertaken of a reasonable worst-case scenario.

## BASELINE CONDITIONS

### Existing Conditions

- 5.27 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.
- 5.28 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.
- 5.29 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
- 5.30 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 5.3 and summarised below and in the tables overleaf (Table 5.5 and Table 5.6).
- 5.31 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 5.5 below).
- 5.32 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).

**Table 5.5: People Trip Rates per Dwelling**

| 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 |

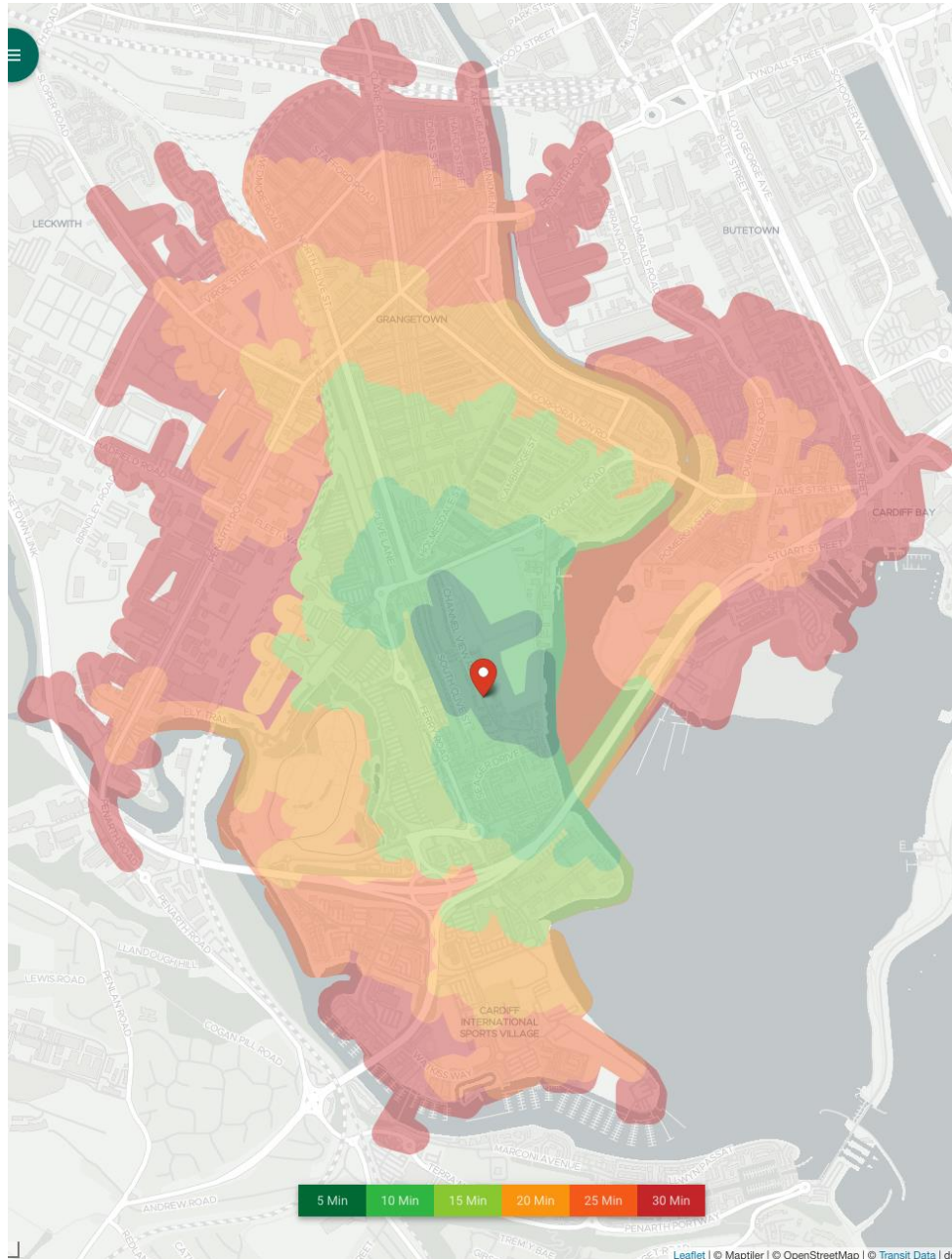
**Table 5.6: Existing Vehicle Trip Rates (188 Dwellings)**

| 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   |

5.33 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.

5.34 Figure 5.1 overleaf shows the areas that are within a 30-minute walk of the application site. It includes 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.

5.35 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.

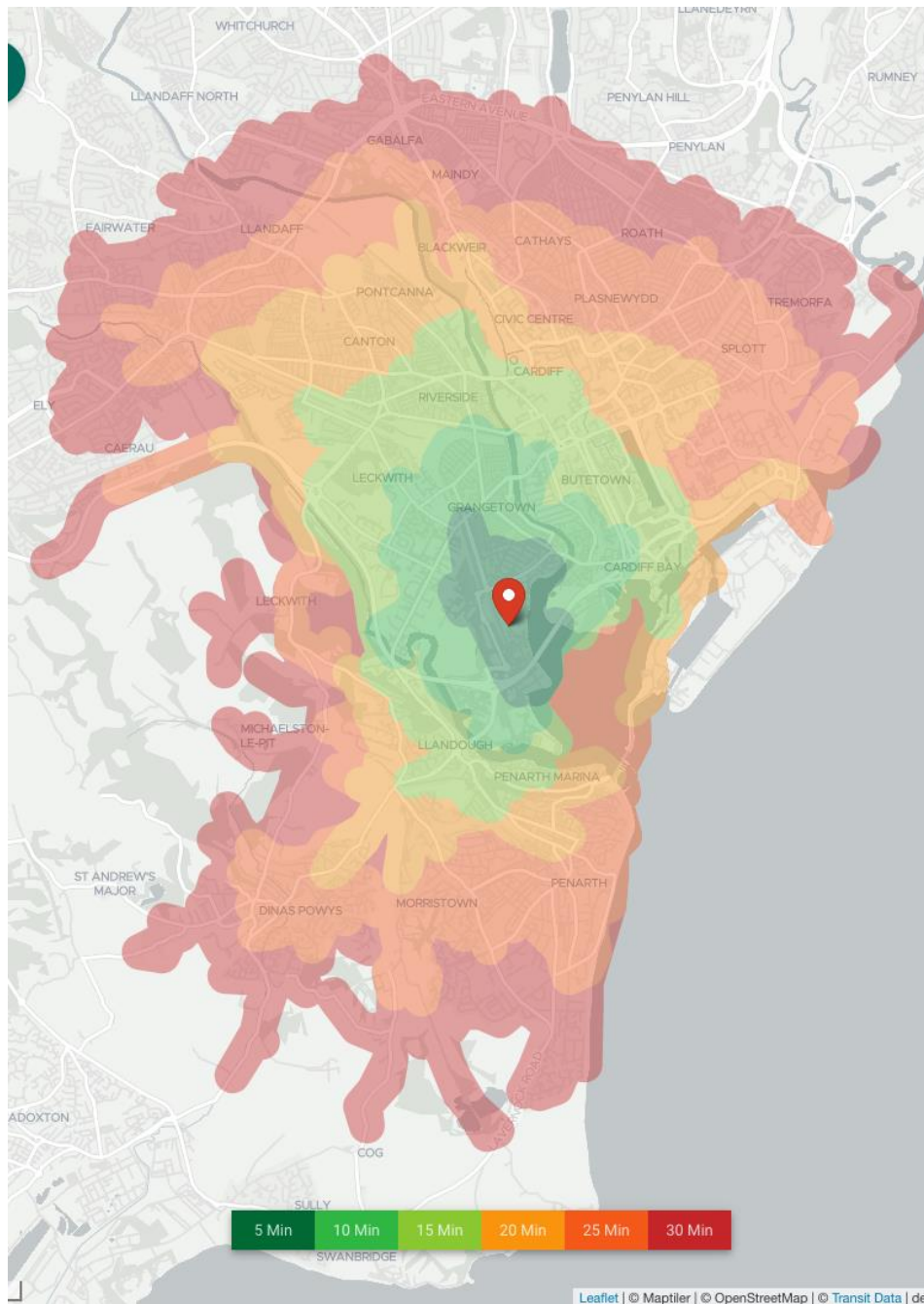


**Figure 5.1 – 30-Minute Walk Catchment**

5.36 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)'.

5.37 Figure 5.2 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.



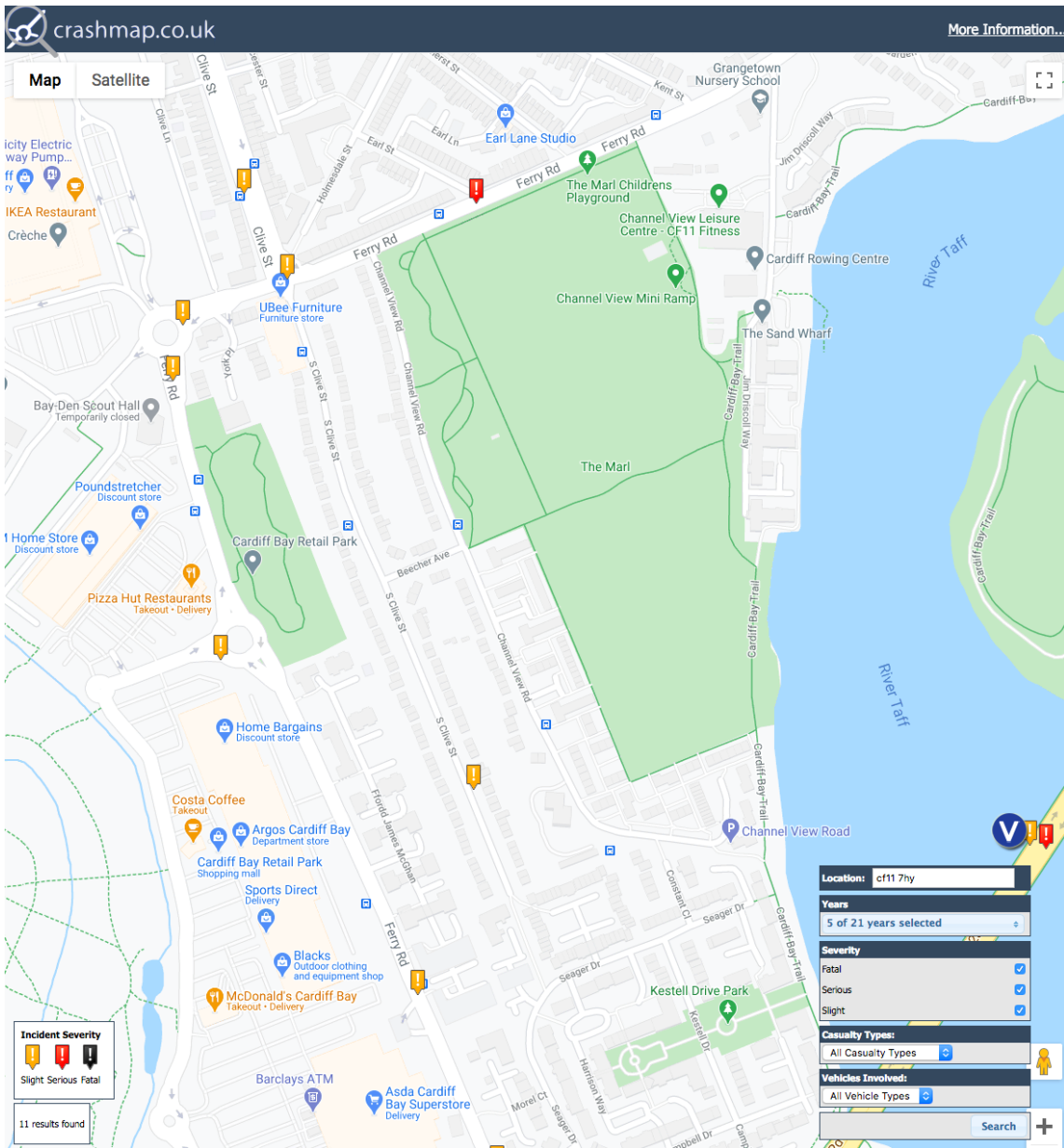
### **Figure 5.2 – 30-Minute Cycle Catchment**

- 5.38 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.
- 5.39 Channel View Road is a cul-de-sac and buses undertake a U-turn at the Channel View Turn bus stop.
- 5.40 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).
- 5.41 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.
- 5.42 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).
- 5.43 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.
- 5.44 Approximately mid-way along its length Beecher Avenue provides a link between Channel View Road and South Clive Street.
- 5.45 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.
- 5.46 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.
- 5.47 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.

5.48 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 chapter and demonstrates 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 5.3 – Injury Accident Location & Severity (2015 – 2019) – Crashmap.co.uk**

5.49 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.

5.50 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).

5.51 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 website<sup>1</sup>.

5.52 The traffic data that has been sourced from previous TA's and the DfT's website is presented in Appendix 5.1. 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 5.1.

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

## **Future Baseline**

- 5.53 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.
- 5.54 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 5.2.

## POTENTIAL IMPACTS

5.55 A detailed description of the proposed development is provided in Chapter 3. This section includes a prediction of impact magnitude and provides an assessment of impact significance prior to mitigation

### During Construction

5.56 Because a significant element of the application seeks outline, rather than full, planning permission there can be no certainty on the exact construction programme at this stage. For the purpose of this assessment it is assumed that the development will be fully completed within five years i.e. by 2026, that a workforce of up to 100 will be present on site and that the construction site will accept up to 15 HGV deliveries in any one day.

5.57 All construction traffic will access and egress the site via Channel View Road or South Clive Street.

5.58 During construction phases of the Proposed Development, the following potential direct impacts are likely:

- HGV vehicle trips to deliver and remove building materials;
- Temporary closure of pedestrian footpaths;
- Dirt and mud on road surfaces within the immediate vicinity; and
- Construction workers accessing the site.

5.59 Indirect or secondary impacts such as dust and vehicle emissions are also likely however these are dealt with in the ES Chapters that specifically relate to those topics.

5.60 The sensitivity of Channel View Road and South Clive Street as receptors is considered to be low (see Table 5.1) given that it is a residential area with adequate footway provision.

5.61 The impacts of construction traffic will be temporary and last for the duration of the construction period only.

5.62 In terms of **driver delay** the increase in the number of HGV movement on the surrounding network is not likely to exceed 30 two-way movements per day. This level of change is within any daily variation in traffic flows but could potentially impact on driver delay if the construction traffic coincides with peak traffic hours. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the

potential magnitude of impact of construction traffic on driver delay is **moderate, adverse and the significance of these impacts would be slight.**

- 5.63 The impact of the development's construction traffic may affect **severance**. Severance can be caused by the flow of traffic impacting on the ability to move within or between communities and facilities. The impact affects receptors directly and would be continuous but short-term during construction. There are segregated footways on Channel View Road and South Clive Street with appropriate crossing facilities. The number of HGV movement on the surrounding network is not likely to exceed 30 two-way movements per day or 3 to 4 movements per hour on average and it is considered that this volume of traffic will not have a measurable impact on the ability of people to move within the community. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the potential magnitude of impact of construction traffic on severance is **minor, adverse and the significance of these impacts would be slight.**
- 5.64 The impact of the development may affect **pedestrian delay**. Pedestrian delay can be caused by the flow of traffic impacting on the ability of pedestrians to walk along or across roads. There are segregated footways on Channel View Road and South Clive Street with appropriate crossing facilities. The number of HGV movement on the surrounding network is not likely to exceed 30 two-way movements per day or 3 to 4 movements per hour on average and it is considered that this volume of traffic will not have a measurable impact on pedestrian delay. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the potential magnitude of impact of construction traffic on pedestrian delay is **negligible, adverse and the significance of these impacts would be slight.**
- 5.65 The temporary impact of the construction work may affect **fear and intimidation** by way of HGV's passing others, particularly vulnerable road users. The impact affects receptors directly and would be continuous but short-term. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the potential magnitude of impact of construction traffic in terms of fear and intimidation is moderate, adverse and the significance of these impacts would be slight.
- 5.66 The temporary impact of the construction work may affect **accidents and road safety**. The impact affects receptors directly and would be continuous but short-term. The increase in the number of HGV movements on the surrounding network is not likely to exceed 30 two-way movements per day. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the potential magnitude of impact of construction traffic in terms of accidents and road safety is **negligible, adverse and the significance of these impacts would be slight.**

5.67 There are no anticipated **hazardous, dangerous or abnormal loads** associated with this development and consequently no related environmental impacts.

### **During Operation**

5.68 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.

5.69 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.

5.70 The trip generation of the 282 standard residential units have been based on the typical trip rates of privately-owned apartment developments and the 77 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 5.4 and Appendix 5.5, respectively and summarised below.

5.71 The TRICS data suggests that, typically, the standard accommodation will generate some 6.7 people trips by per dwelling per day (Table 5.7) and the elderly persons accommodation will generate 4.9 people trips by per dwelling per day (Table 5.8).

Table 5.7: People Trip Rates per Dwelling – Privately Owned Flats – Table 5.8: Vehicle Trip Rates – Elderly Persons 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  |

| 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 |

- 5.72 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.
- 5.73 Based on that modal split it is calculated that the proposed development will generate a total of 1,265 daily vehicle movements with some 116 to 117 movements occurring during the traditional highway network peak hours (8am-9am and 5pm-6pm). This is an increase of some 524 daily vehicle movements – 56 to 62 peak hour movements - compared to the existing traffic generation of the site.

Table 5.7: Vehicle Trip Generation – Privately Owned Flats

| 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 5.8: Vehicle Trip Generation – Elderly Persons Flats

| 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 5.9: Total Development Vehicle Trip Generation      Table 5.10: Additional Vehicle Trips Compared to Existing

| 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  |

| 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   |

- 5.74 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.
- 5.75 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.
- 5.76 Traffic turning movements at the Clive Street / Penarth Road junction are assumed to match the proportions evident in the 2015 traffic survey described earlier.
- 5.77 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.

- 5.78 The development traffic assignment and distribution that has been applied as part of this assessment is shown in Appendix 5.6.
- 5.79 The assessment criteria used to identify roads where significant impacts may occur is set out in 5.17.
- 5.80 All of the roads within the study area, with the exception of Channel View Road, are calculated to experience an increase in traffic of under 30% and are therefore scoped out of this assessment.
- 5.81 Due to the impact of the Covid-19 pandemic on traffic volumes it has not been possible to establish a reliable figure for baseline traffic flow on Channel View Road. Consequently, it is not possible to quantify the % impact of development traffic on this street. Due to this uncertainty a precautionary approach has been adopted and Channel View Road has been scoped in to this assessment.

*Table 5.11: Traffic % Impact (Daily Traffic)*

| <b>Highway Link</b>                           | <b>2026<br/>(Baseline)</b> | <b>Development<br/>Traffic</b> | <b>% Impact</b> | <b>Scoped In / Scoped<br/>Out</b> |
|---|----------------------------|--------------------------------|-----------------|-----------------------------------|
| <b>Channel View Road</b>                      | Not Known                  | 400                            | Not Known       | Scoped In                         |
| <b>South Clive Street</b>                     | 880                        | 240                            | 27%             | Scoped Out                        |
| <b>Ferry Road (W. of Clive Street)</b>        | 8404                       | 230                            | 3%              | Scoped Out                        |
| <b>Ferry Rd (Clive St to Channel View Rd)</b> | 9226                       | 230                            | 2%              | Scoped Out                        |
| <b>Avondale Road</b>                          | 9226*                      | 140                            | 1%              | Scoped Out                        |
| <b>Clarence Bridge / James St.</b>            | 1187                       | 70                             | 5%              | Scoped Out                        |
| <b>Corporation Road</b>                       | 7683                       | 70                             | <1%             | Scoped Out                        |
| <b>Clive Street</b>                           | 6444                       | 230                            | 3%              | Scoped Out                        |
| <b>Penarth Road (E. of Clive St.)</b>         | 16515                      | 180                            | <1%             | Scoped Out                        |
| <b>Penarth Road (W. of Clive St.)</b>         | 12466                      | 0                              | 0               | Scoped Out                        |

\* Assumed to be equal to Ferry Rd (Clive St to Channel View Rd)

- 5.82 The sensitivity of Channel View Road as a receptor is considered to be low (see Table 5.1) given that this residential area benefits from good quality segregated footways.
- 5.83 The impacts of the development's post-construction traffic will be permanent.

5.84 The impact of the development may affect **driver delay** as a result of:

- An increase in traffic flows, particularly during peak hours resulting in increased queues on links and at junctions;
- Reduction in link capacity resulting from changes in carriageway width or other highway characteristics.

5.85 It is predicted that the development will result in an additional 31 vehicle movements during the am peak hour and 42 vehicle movements during the pm peak hour at the Channel View Road / Ferry Road junction. 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 42 during the busiest hour, is relatively modest and represents, on average, one additional movement every 1½ minutes or so throughout that hour.

5.86 Based on professional judgement of the likely impact of this volume of traffic it is considered that the additional traffic could result in some measurable change in the attributes of Channel View Road. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the potential magnitude of impact of development traffic on driver delay is **moderate, adverse and the significance of these impacts would be slight.**

5.87 The impact of the development's traffic may affect **severance**; the ability to move within or between communities and facilities. The additional number of traffic movements, at up to 42 during the busiest hour, is relatively modest and represents, on average, one additional movement every 1½ minutes or so throughout that hour. It is considered that this will not have a measurable impact on the ability of people to move within the community. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the potential magnitude of impact of development traffic on severance is **minor, adverse and the significance of these impacts would be slight.**

5.88 The development's traffic has the potential to impact **pedestrian delay**. The additional number of traffic movements, at up to 42 during the busiest hour, is relatively modest and represents, on average, one additional movement every 1½ minutes or so throughout that hour. It is considered that this will not have a measurable impact on the ability of people to move along or across the street. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the potential magnitude of impact

of development traffic on pedestrian delay is **negligible, adverse and the significance of these impacts would be slight.**

- 5.89 The development's traffic has the potential to impact upon **fear and intimidation**. The development's traffic will consist primarily of light vehicles that will be consistent with the type of traffic experienced under baseline conditions. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the potential magnitude of impact of development traffic on fear and intimidation is **negligible, adverse and the significance of these impacts would be neutral.**
- 5.90 The development's traffic has the potential to impact upon **accidents and road safety**. The additional number of traffic movements, at up to 42 during the busiest hour, is relatively modest and represents, on average, one additional movement every 1½ minutes or so throughout that hour. It is considered that this will not have a measurable impact on accidents and road safety. Based on the descriptions provided in tables 5.2 to 5.4 it is considered that the potential magnitude of impact of development traffic on accidents and road safety is minor, adverse and the significance of these impacts would be slight.
- 5.91 There are no anticipated **hazardous, dangerous or abnormal loads** associated with this development and consequently no related environmental impacts.

Table 5-12: Summary of Potential Impacts

| Receptor & Receptor Sensitivity          |                     | Impact on:                            | Short-term / Long-term | Impact Magnitude   | Significance of Effect |
|--|---------------------|---------------------------------------|------------------------|--------------------|------------------------|
| Channel View Road<br><br>Low Sensitivity | During Construction | Driver Delay                          | Short-term             | Moderate Adverse   | Slight                 |
|  |                     | Severance                             | Short-term             | Minor Adverse      | Slight                 |
|  |                     | Pedestrian delay                      | Short-term             | Negligible Adverse | Slight                 |
|  |                     | Fear and Intimidation                 | Short-term             | Moderate Adverse   | Slight                 |
|  |                     | Accidents & Road Safety               | Short-term             | Negligible Adverse | Slight                 |
|  |                     | Hazardous, dangerous & abnormal loads | N/A                    | N/A                | N/A                    |
|  | Operational         | Driver Delay                          | Long-term              | Moderate Adverse   | Slight                 |
|  |                     | Severance                             | Long-term              | Minor Adverse      | Slight                 |
|  |                     | Pedestrian delay                      | Long-term              | Negligible Adverse | Slight                 |
|  |                     | Fear and Intimidation                 | Long-term              | Negligible Adverse | Neutral                |
|  |                     | Accidents & Road Safety               | Long-term              | Minor Adverse      | Slight                 |
|  |                     | Hazardous, dangerous & abnormal loads | N/A                    | N/A                | N/A                    |

## MITIGATION MEASURES

### Mitigation by Design

- 5.92 The proposed development has been informed by the following key design principles:
- A hierarchy of movement that prioritises the needs of pedestrians, cyclists and public transport users over those of the car;
  - Improvements that increase the choice and viability of sustainable transport travel for users of the development and the surrounding community; and
  - Integration with the surrounding community.
- 5.93 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.
- 5.94 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.
- 5.95 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.

## **During Construction**

5.96 Mitigation during construction will be set out in a Construction and Environmental Management Plan (CEMP). This will include a Construction Traffic Management Plan (CTMP). The CEMP will cover the following:

- Access Arrangements for Vehicles;
- Access Route;
- Vehicle Size and Schedule of Use;
- A Travel Plan;
- Necessary Highway Works;
- Parking and Loading Arrangements;
- Traffic Management Orders;
- Proposed Hoarding;
- Pedestrian and Cyclist Safety;
- Proposed Working Hours; and
- Proposed Start and End Dates for Each Phase of Construction.

## **During Operation**

5.97 The Proposed Development will be accompanied by a Travel Plan that includes a package of measures to encourage residents to use alternatives to single-occupancy car use. These measures will include information provision, car sharing schemes, and the introduction of sustainable travel initiatives or minimising the need to travel, all of which will support the mitigation incorporated into the design.

5.98 Travel Plans can offer real benefits not only to future residents, but also to existing residents and the communities in the vicinity of the Proposed Development. In promoting sustainable travel, Travel Plans can help to minimise delay and inconvenience experienced by drivers on the highway network.

## RESIDUAL IMPACTS

5.99 This section considers the residual effects as a result of the mitigation proposed during the construction period and during the operational phase of the proposed development.

### During Construction

5.100 The maximum predicted number of daily two-way HGV movements during the construction period is not expected to exceed 30. The movement of all construction HGVs will be managed through the CEMP. This will also cover pedestrian and cycle access to the construction site.

5.101 There will be a controlled approach to on-site parking, and construction workers will be encouraged to travel using sustainable modes where possible.

5.102 Given the number and control of HGV movements during the construction phase, and the limited number of construction worker vehicle trips and the management of pedestrian and cycle movements, it is not expected that construction traffic will have a material impact on key receptors. The residual effects are therefore assessed as **negligible, adverse and of slight significance**.

### During Operation

5.103 The potential magnitude of impact of development traffic on **driver delay**, without mitigation was considered to be moderate, adverse and the significance of these impacts would be slight. Mitigation measures will facilitate and encourage more trips to be made by sustainable forms of transport, reducing the number of vehicle trips. As a consequence, it is considered that the residual impact of the development on driver delay is minor, adverse and of slight significance.

5.104 The potential impact of the development's traffic on **severance and accidents and road safety**, without mitigation, was considered to be minor, adverse and of slight significance. Mitigation measures will facilitate and encourage more trips to be made by sustainable forms of transport, reducing the number of vehicle trips. The provision of high-quality pedestrian and cycle infrastructure will cater for safe movement throughout and around the development and benefit the existing community in addition to the future residents of the development. As a consequence, it is considered that the residual impact of the development on severance and accidents and road safety is negligible, beneficial and of neutral significance.



5.105 Without mitigation, the potential impact of the development's traffic on **pedestrian delay** and on **fear and intimidation** was considered to be negligible, adverse and of slight significance. Public realm improvements and the provision of high-quality pedestrian and cycle infrastructure will cater for safe movement throughout and around the development and benefit the existing community in addition to the future residents of the development. As a consequence, it is considered that the residual impact of the development on severance and accidents and road safety is **negligible, beneficial and of slight significance.**

Table 5.13: Summary of Residual Impacts

| Receptor & Receptor Sensitivity          |                     | Impact on:                            | Short-term / Long-term | Impact Magnitude   | Significance of Effect |
|--|---------------------|---------------------------------------|------------------------|--------------------|------------------------|
| Channel View Road<br><br>Low Sensitivity | During Construction | Driver Delay                          | Short-term             | Negligible Adverse | Slight                 |
|  |                     | Severance                             | Short-term             | Negligible Adverse | Slight                 |
|  |                     | Pedestrian delay                      | Short-term             | Negligible Adverse | Slight                 |
|  |                     | Fear and Intimidation                 | Short-term             | Negligible Adverse | Slight                 |
|  |                     | Accidents & Road Safety               | Short-term             | Negligible Adverse | Slight                 |
|  |                     | Hazardous, dangerous & abnormal loads | N/A                    | N/A                | N/A                    |
|  | Operational         | Driver Delay                          | Long-term              | Minor Adverse      | Slight                 |
|  |                     | Severance                             | Long-term              | Negligible Adverse | Neutral                |
|  |                     | Pedestrian delay                      | Long-term              | Minor Beneficial   | Slight                 |
|  |                     | Fear and Intimidation                 | Long-term              | Minor Beneficial   | Slight                 |
|  |                     | Accidents & Road Safety               | Long-term              | Negligible Adverse | Neutral                |
|  |                     | Hazardous, dangerous & abnormal loads | N/A                    | N/A                | N/A                    |