

Chapter 10
Population

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10. Population

10.1 Introduction

This Chapter of the Environmental Impact Assessment Report (EIAR) has considered the potential community and economic impacts on the human population associated with the Construction and Operational Phases of the Liffey Valley to City Centre Core Bus Corridor Scheme (hereafter referred to as the Proposed Scheme).

These potential impacts can affect the way in which people live, work, relate to one another, organise to meet their needs and generally operate as members of society. This population assessment will consider both social impacts on communities (community assessment) as well as economic impacts on commercial businesses (economic assessment). The assessment also considers the ways in which the Proposed Scheme will improve walking, cycling and bus facilities and is anticipated to encourage sustainable modes of transport, therefore reducing the demand for private vehicles / parking along the Proposed Scheme.

This Chapter drew on the outcomes of the assessments in the following EIAR chapters (Volume 2):

- Chapter 6 (Traffic & Transport);
- Chapter 7 (Air Quality);
- Chapter 9 (Noise & Vibration); and
- Chapter 17 (Landscape (Townscape) & Visual).

This Chapter is also supported by Figure 10.1 in Volume 3 of this EIAR and in the following two appendices in Volume 4 of this EIAR.

- Appendix A10.1 Schedule of Commercial Businesses. This is a list of all commercial businesses located along the Proposed Scheme and any businesses in the surrounding road network that are located on a road that is expected to experience a moderate or greater traffic impact from displaced traffic in the AM and PM peak hours (as identified in Chapter 6 (Traffic & Transport)).
- Appendix A10.2 The Economic Impact of the Core Bus Corridors Report (EY 2021). This report is an assessment of the economic impact of the Core Bus Corridors. The impacts have been considered across the short, medium and long term and are based on a review of published literature, including academic papers, wider reports and briefings provided on relevant projects globally. The assessment has not considered each individual corridor separately but rather them all together. The assessment identified five areas that could be influenced by the Core Bus Corridors: local businesses, public realm, health and wellbeing, social cohesion, and adapting to the future. This appendix has been referred to within this population assessment where relevant.

The aim of the Proposed Scheme when in operation is to provide enhanced walking, cycling and bus infrastructure on this key access corridor in the Dublin region, which would enable and deliver efficient, safe, and integrated sustainable transport movement along the corridor. The objectives of the Proposed Scheme are described in Chapter 1 (Introduction). The Proposed Scheme as described in Chapter 4 (Proposed Scheme Description) has been designed to meet these objectives. The specific objectives that are applicable to this assessment are:

- Enhance the capacity and potential of the public transport system by improving bus speeds, reliability and punctuality through the provision of bus lanes and other measures to provide priority to bus movement over general traffic movements;
- Enhance the potential for cycling by providing safe infrastructure for cycling, segregated from general traffic wherever practicable;
- Enable compact growth, regeneration opportunities and more effective use of land in Dublin, for present and future generations, through the provision of safe and efficient sustainable transport networks; and
- Improve accessibility to jobs, education and other social and economic opportunities through the provision of improved sustainable connectivity and integration with other public transport services.

The design of the Proposed Scheme has evolved through a comprehensive design iteration process, with particular emphasis on minimising the potential for environmental impacts, where practicable, whilst ensuring the objectives of the Proposed Scheme are attained. In addition, feedback received from the comprehensive

consultation programme undertaken throughout the option selection and design development process have been incorporated, where appropriate.

10.2 Methodology

This Section presents the study area and appraisal method for the assessment of impacts on the local population, communities and businesses.

10.2.1 Study Area

The population assessment requires potential impacts to be considered and assessed for a wide range of receptors, comprising community facilities, recreational resources, tourism assets, residential properties, and commercial businesses. To capture how these receptors are likely to be impacted by the Proposed Scheme, the population assessment has been split into two sub-assessments. The two sub-assessments are:

- **Community Assessment:** An assessment to capture impacts from the Proposed Scheme on the local population; residents and communities; and
- **Economic Assessment:** An assessment to capture impacts from the Proposed Scheme on commercial receptors. Wider economic impacts of all the Core Bus Corridors are discussed in Appendix A10.2 The Economic Impact of the Core Bus Corridors (EY 2021) in Volume 4 of this EIAR.

The study areas for both assessments are described in Section 10.2.1.1 and Section 10.2.1.2.

10.2.1.1 Community Assessment - Study Area

The community assessment considers impacts on individual population receptors, including community facilities and recreational resources, as well as individual residential properties and land parcels being acquired on a temporary and/or permanent basis to accommodate the Proposed Scheme. As such, the community assessment comprises of the following assessment topics:

- Community amenity; and
- Community land use and accessibility.

The study area for the assessment of impacts on community amenity, land take and accessibility consist of 'community areas', which are informed by the Central Statistics Office (CSO) 2016 Census parish boundaries (CSO 2016a). Community areas that would either be intersected by or are adjacent to the Proposed Scheme consist of the following:

- Rowlagh – Quarryvale;
- Palmerstown;
- Ballyfermot Upper;
- Chapelizod;
- Ballyfermot;
- Inchicore (Mary Immaculate);
- Inchicore (St Michael's);
- James's Street;
- Meath Street and Merchants Quay; and
- Francis Street.

These community areas are presented in Figure 10.1 in Volume 3 of this EIAR.

Chapter 6 (Traffic & Transport) assessed changing traffic volumes within an indirect study area for the AM and PM peak periods in the 2028 Opening Year and the 2043 Design Year. The results identified key junctions in the surrounding road network where capacity issues may arise. In this population assessment, the results from the 2028 Opening Year traffic assessment have been considered with respect to accessibility and amenity.

10.2.1.2 Economic Assessment - Study Area

The economic assessment considers impacts on individual commercial businesses along the Proposed Scheme within the community areas listed in Section 10.2.1.1 as well as any businesses in the surrounding road network that are located on a road that is expected to experience a moderate or greater traffic impact from displaced traffic in the AM and PM peak hours. To consider and assess these impacts, the economic assessment has been divided into the follow two assessment topics:

- Commercial amenity; and
- Commercial land use and accessibility.

The study areas for these two assessment topics are the same as those outlined in Section 10.2.1.1.

10.2.2 Relevant Guidelines, Policy and Legislation

Guidelines, policy and legislation specifically relevant to the population assessment are outlined in Table 10.1.

Table 10.1: Relevant Guidelines, Policies and Legislation

Guidance	Description	Relevance to Assessment
Environmental Protection Agency (EPA) Guidelines on the information to be contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2022)	This document outlines EPA guidance for conducting Environmental Impact Assessment (EIAs) / EIARs and provides the fundamental requirements of the EIAR.	This guidance has been used to inform the significance of effect for all topics in the population assessment.
UK Design Manual for Roads and Bridges (DMRB) LA 112 Population and human health (hereafter referred to as the DMRB Guidance) (Highways England 2020)	The DMRB Guidance provides guidance on the assessment of land use and accessibility within an EIA.	This DMRB Guidance has been used to inform sensitivity and magnitude for the following assessment topics: <ul style="list-style-type: none"> • Community land take; and • Commercial land take.
Guidelines for Planning Authorities and An Bord Pleanála on carrying out an Environmental Impact Assessment (Government of Ireland 2018)	This document outlines Ireland specific guidance for consenting authorities carrying out EIA.	This report has been used to inform the development of the assessment methodologies.
Environmental Impact Assessment of Projects – Guidance on the Preparation of the Environmental Impact Assessment Report (European Commission 2017)	This document provides practical insight to those who are involved during the stages of the EIA process, drawing upon experiences in Europe and worldwide.	This guidance has been used to inform the wider EIA methodology as outlined in Chapter 1 (Introduction).

10.2.3 Data Collection and Collation

Baseline data has been collected through carrying out a desk study, availing of the most up-to-date available data, at the time of writing. This comprises, the following sources:

- 2016 Census - Demographic, residential, travel to work and employment statistics (CSO 2016a; CSO 2016b; CSO 2016c; CSO 2018a; CSO 2018b);
- Population scoping reports and impacts assessments for other major linear infrastructure projects;
- Ordnance Survey Ireland (OSI) Prime 2 dataset (OSI 2020);
- Geodirectory data (Geodirectory 2019);
- Google maps (Google 2021);
- Proposed Scheme Design Drawings; and
- National Public Transport Access Nodes (NaPTAN) (NTA 2020).

The baseline for the community assessment is founded on the OSI Prime 2 dataset. The OSI Prime 2 dataset was used to establish the number of community receptors, including local educational, recreational and healthcare facilities (see Section 10.3.2).

Desktop research was supplemented by a walkover survey in January 2022 to verify baseline data collection including the commercial businesses listed in Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR.

As part of the non-statutory public consultation process, submissions received were reviewed by the BusConnects Infrastructure Team. Among the submissions received, there were some from business owners raising issues which they believed could have an effect on their businesses (e.g., loss / reduction of parking and loading bays). Discussions were also held with various businesses along the Proposed Scheme to inform them if the Proposed Scheme would impact on their property boundary. The issues raised were considered during the iterative design development for the Proposed Scheme by the BusConnects Infrastructure Team and where reasonably practicable, measures to reduce the impact of the Proposed Scheme were included.

10.2.4 Appraisal Method for the Assessment of Impacts

This Section sets out how each assessment topic has been undertaken and highlights where input from other environmental disciplines has been included within the population assessment.

The population assessment has been adapted from the Environmental Protection Agency (EPA) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2022). The significance of impacts matrix, based on the EPA Guidelines (EPA 2022), was used to determine the significance of impact for land use and accessibility impacts (see Table 10.2).

Table 10.2: EPA Significance Matrix

		Sensitivity				
		Very Low	Low	Medium	High	Very High
Magnitude	Very Low	Imperceptible	Not significant	Slight	Slight	Slight
	Low	Not significant	Slight	Moderate	Moderate	Moderate
	Medium	Slight	Moderate	Moderate	Significant	Significant
	High	Slight	Moderate	Significant	Very significant	Profound
	Very High	Slight	Moderate	Significant	Profound	Profound

In addition to the EPA Guidelines (EPA 2022), the assessment of land use and accessibility impacts has been informed by the UK Design Manual for Roads and Bridges (DMRB) LA 112 Population and human health (land use and accessibility) (hereafter referred to as the DMRB Guidance) (Highways England 2020). The DMRB Guidance is the standard approach used for road infrastructure schemes across the UK and is appropriate for use in Ireland, for the assessment of environmental impacts. The DMRB Guidance (Highways England 2020) provides a framework for assessing the impact on land use and accessibility and has therefore been used to determine the sensitivity and magnitude of impact for relevant receptors.

There is no prescribed method for determining the significance of effects on receptors as a result of a change in amenity. The methodology for this assessment topic is therefore informed by established best practice and experience on other linear infrastructure projects, while the significance of impact is also adapted from the EPA Guidelines (EPA 2022).

The assessment methodologies were applied to assess both the potential impacts during the Construction Phase and the potential impacts during the Operational Phase of the Proposed Scheme, unless otherwise stated.

10.2.4.1 Community Assessment

The methodology for the assessment of community impacts is outlined in this Section.

10.2.4.1.1 Community Amenity

Community amenity describes the perceived character or attractiveness of an area. This community amenity assessment has assessed the potential for people to change how they perceive their communities or how they use community facilities and recreational resources as a result of the Proposed Scheme.

The community amenity assessment considers the 'indirect' impact of the following environmental effects which may combine to create a change in amenity:

- Air quality;
- Visual;
- Traffic and transport; and
- Noise and vibration.

Where there is a combination of at least two environmental effects on a receptor, or group of receptors, this is classified as an 'indirect' impact on community amenity. For example, where there are both visual and air quality impacts on a receptor, or a group of receptors, the assessed receptor(s) would be indirectly impacted.

The assessment has considered the residual effect reported for each of the environmental effects under consideration. Therefore, specific sensitivity and magnitude criteria are not required for community amenity. The level of significance from each environmental effect was determined by the individual environmental assessments presented in the following chapters:

- Chapter 6 (Traffic & Transport);
- Chapter 7 (Air Quality);
- Chapter 9 (Noise & Vibration); and
- Chapter 17 (Landscape (Townscape) & Visual).

10.2.4.1.1.1 Aligning Receptors

To determine the impact on community amenity, there needs to be an alignment of receptors across the different contributing environmental assessments.

Chapter 6 (Traffic & Transport) assesses the impacts on 'general traffic' along the Proposed Scheme. The impact on general traffic has been considered as having the greatest potential to create a wider impact on community amenity, when combined with other environmental effects. The amenity assessment has considered residual impacts on general traffic (i.e. those after proposed mitigation measures have been implemented). During construction, the amenity assessment has considered the restrictions to general traffic along the Proposed Scheme as well as the residual impact that will arise from additional construction traffic flows on the surrounding road network. During operation, the amenity assessment has considered the reduction in general traffic along the Proposed Scheme and the redistributed general traffic along the surrounding road network. The residual impact on general traffic along the Proposed Scheme is assigned to all receptors located along the Proposed Scheme, while the impact from construction traffic flows (Construction Phase) or redistributed traffic (Operational Phase) is assigned to all receptors on the surrounding road network.

For the assessment of air quality, the residual impact on human receptors identified in Chapter 7 (Air Quality) were used for all receptors along the Proposed Scheme for construction and operation. Construction dust has been excluded from the amenity assessment as it is considered to be sufficiently mitigated during construction, that it will not result in a significant air quality impact.

Chapter 9 (Noise and Vibration) assesses the impact on Noise Sensitive Locations (NSL) which include: residential dwellings, schools and other educational establishments, hospitals and nursing homes, hotels and other short-term accommodation buildings, buildings of religious sensitivity, recreational and noise sensitive amenity areas and offices. During construction, noise impacts at NSLs can occur from a variety of activities including road widening, utility diversion, urban realm landscaping and at the Construction Compounds. In an instance where a NSL is impacted by more than one noise source, the worst impact has been considered in the amenity assessment. Construction traffic impacts were considered when aligning a noise impact to receptors in the surrounding road network. During operation, two assessment topics are considered in the noise and vibration assessment, namely, traffic noise along the Proposed Scheme and traffic noise on the surrounding road network. The residual impacts reported in respect to these two assessment topics are aligned to community and commercial receptors depending on whether they are situated along the Proposed Scheme or in the surrounding road network.

In Chapter 17 (Landscape (Townscape) & Visual), the assessment of townscape and streetscape has been used to assign a visual impact to all receptors along the Proposed Scheme. In Chapter 17 (Landscape (Townscape) & Visual), the term townscape is used to describe built-up areas of a medium to large extent, generally equivalent to neighbourhood scale or larger. Streetscape is used to define built up areas of largely public space within the confines of a street or road corridor. The townscape and streetscape assessment assigned a significance of impact to sections of road along the Proposed Scheme. These impacts have then been used to align a visual residual impact to all receptors along those sections of road unless Chapter 17 (Landscape (Townscape) & Visual) identified a visual amenity impact on a specific receptor.

10.2.4.1.1.2 Determining Significance of Effect

Following alignment of the environmental effects, an indirect amenity assessment matrix has been used to determine the significance of localised impacts on individual receptors (see Table 10.3).

The amenity significance matrix is closely aligned with the EPA Guidelines (EPA 2022). The term 'Significant' in the amenity matrix encompasses the EPA terms 'Profound', 'Very Significant' and 'Significant' while, the term 'Not Significant' encompasses the EPA terms 'Not Significant' and 'Imperceptible' as outlined in the EPA Guidelines (EPA 2022). Table 10.3 is used for either negative or positive impacts, but not a combination of both. Where both negative and positive impacts occur, professional judgement has been used to assign the overall impact on amenity.

Whilst the community amenity assessment imposes no duration criteria of its own, where a 'Significant' impact on amenity is identified, the temporal aspects from the environmental effects were examined to determine whether the impacts are likely to occur simultaneously and result in a 'Significant' indirect impact.

With this determination, the nature, significance and duration of effects for each community area has been reported in line with the EPA Guidelines (EPA 2022). Amenity impacts that may arise on individual receptors have only been stated separately in the Predicted Impacts (Section 10.4) for Slight / Moderate, Moderate, Moderate / Significant and Significant amenity impacts. Amenity impacts on individual receptors that are assessed as less than Moderate (Slight, Not Significant and Imperceptible) are not discussed in the amenity assessment. Only individual receptors that are expected to experience a Moderate / Significant or Significant amenity impact are listed in the Residual Impact tables (Section 10.6).

Table 10.3: In-Combination Amenity Significance Matrix (Construction and Operational Phases)

Environmental Effect 1	Environmental Effect 2	Environmental Effect 3	Environmental Effect 4	Combined Impact
Significant	Significant	Significant	Significant	Significant
Significant	Significant	Significant	Moderate	Significant
Significant	Significant	Significant	Slight	Significant
Significant	Significant	Significant	Not Significant	Significant
Significant	Significant	Moderate	Moderate	Significant
Significant	Significant	Moderate	Slight	Moderate / Significant
Significant	Significant	Moderate	Not Significant	Moderate / Significant
Significant	Significant	Slight	Slight	Moderate
Significant	Significant	Slight	Not Significant	Moderate
Significant	Significant	Not Significant	Not Significant	Moderate
Significant	Moderate	Moderate	Moderate	Moderate / Significant
Significant	Moderate	Moderate	Slight	Moderate
Significant	Moderate	Moderate	Not Significant	Moderate
Significant	Moderate	Slight	Slight	Moderate
Significant	Moderate	Slight	Not Significant	Moderate
Significant	Moderate	Not Significant	Not Significant	Moderate
Significant	Slight	Slight	Slight	Slight / Moderate
Significant	Slight	Slight	Not Significant	Slight / Moderate
Significant	Slight	Not Significant	Not Significant	Slight
Significant	Not Significant	Not Significant	Not Significant	Not Significant / Potential direct impact on amenity*
Moderate	Moderate	Moderate	Moderate	Moderate / Significant
Moderate	Moderate	Moderate	Slight	Moderate / Significant
Moderate	Moderate	Moderate	Not Significant	Moderate
Moderate	Moderate	Slight	Slight	Moderate
Moderate	Moderate	Slight	Not Significant	Moderate
Moderate	Moderate	Not Significant	Not Significant	Moderate
Moderate	Slight	Slight	Slight	Slight / Moderate
Moderate	Slight	Slight	Not Significant	Slight / Moderate
Moderate	Slight	Not Significant	Not Significant	Slight
Moderate	Not Significant	Not Significant	Not Significant	Not Significant
Slight	Slight	Slight	Slight	Slight / Moderate
Slight	Slight	Slight	Not Significant	Slight / Moderate
Slight	Slight	Not Significant	Not Significant	Slight
Slight	Not Significant	Not Significant	Not Significant	Not Significant
Not Significant				

*Potential direct impacts on amenity for commercial businesses is discussed in Section 10.2.4.2.1.

10.2.4.1.2 Community Land Use and Accessibility

10.2.4.1.2.1 Land Take

This assessment considers both temporary and permanent direct land take impacts on community receptors. Temporary land take is considered during the Construction Phase while permanent land take is considered during

the Operational Phase. In this assessment community receptors include community land and assets such as parks and public rights of way as well as residential land, including gardens, paths and driveways within the Proposed Scheme boundary. Direct land take impacts can lead to a temporary or permanent restriction in the ability of a user to use a property or a community facility.

Following the DMRB Guidance (Highways England 2020), residential land has been assigned a high sensitivity. A high sensitivity for residential properties ensures that all populations are considered in the assessment including vulnerable groups such as young children, elderly, and people with disabilities. The sensitivity of community facilities varies, and therefore, specific aspects were considered using professional judgement to assess the sensitivity of these receptors, such as:

- Availability of viable alternatives;
- Frequency of use; and
- Number of users on an average visit.

Some other examples of different sensitivities include:

- A hospital would be assigned a very high sensitivity;
- A nature reserve that attracts visitors from across Dublin City with no alternatives would be assigned a high sensitivity;
- A golf course, frequented daily, with no immediate alternative would be assigned a medium sensitivity;
- A small local park, with no extra amenities or features would be assigned a low sensitivity; and
- Derelict land or unoccupied buildings would be assigned a very low sensitivity.

The magnitude of impact of land take has been determined by the degree of loss of the resource including acquisition of gardens and private landings / driveways, as set out in DMRB Guidance (Highways England 2020) and supported by professional judgement. In general, direct acquisition of a property has been categorised with a high or very high magnitude. A medium magnitude would be assigned where there will be changes to access or the acquisition of land, but the changes overall will not compromise the overall ability to use a property. A low magnitude has been assigned where there will be a minor loss of land, or where severance will be introduced but adequate accessibility will be maintained throughout the Construction Phase or provided during the Operational Phase. The assessment has been reported by community area with the nature, significance, and duration of effect assigned using the EPA Guidelines (EPA 2022).

10.2.4.1.2.2 Accessibility

Community accessibility relates to the ability of users to access community facilities, recreational resources and residential properties. Change in access to facilities can significantly affect users, particularly if these are important facilities (e.g. hospitals), or if there are a lack of alternative facilities available. Changes in traffic flow, parking provision, public transport services and walking and cycling provision can also impact the ability of users to access certain community facilities.

During the Construction Phase, temporary diversions and temporary road closures will be required for short periods of time with designated detour routes in place and local access accommodated. Lane closures may be required during different Construction Phases which will reduce traffic capacity. Chapter 6 (Traffic & Transport) has qualitatively assessed the potential impacts on pedestrians, cyclists, bus users and private vehicles as a result of construction activity. The residual effects assigned to each user type within Chapter 6 (Traffic & Transport) informs the qualitative accessibility assessment in this Chapter. As such, the impact on access to community receptors during construction has been reported by each user type and for each community area, in line with EPA Guidelines (EPA 2022).

Changes in access to community receptors as a result of the Operational Phase of the Proposed Scheme were considered in respect to the outcomes of a changed walking environment for pedestrians, cycling provision for cyclists and bus infrastructure for bus users. The community accessibility assessment has drawn on the outcomes of the qualitative assessment metrics identified in Chapter 6 (Traffic & Transport). These qualitative assessments were considered collectively in order to assess the significance of impacts on access for each community area during the Operational Phase. The assessment has been reported by community area and by different user types

(bus users, cyclists, pedestrians and private vehicles). Where a road is expected to experience an impact to accessibility, moderate and above, this has been reported individually, alongside the community receptors that are likely to be impacted as a result. The nature, significance and duration of effect for each receptor has been assigned using the EPA Guidelines (EPA 2022).

A parking assessment has been undertaken in Chapter 6 (Traffic & Transport) and therefore is not considered further in this Population assessment unless a negative, significant impact is identified at any point along the Proposed Scheme.

10.2.4.2 Economic Assessment

The methodology for the assessment of economic impacts is outlined in this Section.

10.2.4.2.1 Commercial Amenity

The commercial amenity assessment has included consideration of 'direct' and 'indirect' impacts on commercial amenity. An indirect amenity impact on commercial receptors has been assessed using the same method as for community amenity (Section 10.2.4.1.1). As before, an indirect amenity assessment matrix has been used to determine the significance of localised impacts on individual receptors (see Table 10.3). The amenity significance matrix is closely aligned with the EPA Guidelines (EPA 2022).

In some cases, a single (direct) environmental effect in isolation can result in an impact on commercial amenity where a business has a particular sensitivity. For example, certain activities can be sensitive to noise and vibration effects (i.e. performing arts, advanced manufacturing, and sound recording facilities). The assessment has therefore included an assessment of direct impacts on amenity for commercial receptors. Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR provides a list of all commercial businesses located along the Proposed Scheme and any businesses in the surrounding road network that are located on a road that is expected to experience a moderate or greater traffic impact from displaced traffic in the AM and PM peak hours (as identified in Chapter 6 (Traffic & Transport)). This appendix has been referred to in the assessment section, where appropriate.

The following approach has been taken for the assessment of direct amenity:

- The sensitivity of each commercial receptor has been considered from the perspective of the following environmental effects:
 - Air quality;
 - Visual;
 - Noise and vibration; and
 - Traffic.
- The following example questions were posed to assess the sensitivity of commercial receptors:
 - Is this business providing support to vulnerable people or people with disabilities who may be sensitive to noise disturbance?
 - Does the operation of the business rely on the visual landscape to attract trade (e.g. a restaurant, hotel or tourism asset)?

The magnitude of impact on each commercial receptor has been informed by the residual significance of effects identified within each environmental assessment. The nature, significance and duration of effect for each receptor has been assigned using the EPA Guidelines (EPA 2022).

10.2.4.2.2 Commercial Land Use and Accessibility

10.2.4.2.2.1 Land Take

This assessment considers direct land take on commercial properties / land and designated car parking. The impact on private landings, which can be used for a variety of reasons by businesses, has also been considered. This assessment has only considered commercial properties within the Proposed Scheme boundary that would be expected to experience direct land take. This assessment has followed the same approach as set out for

community land take (Section 10.2.4.1.2.1). This assessment has only considered commercial businesses identified through a site walkover and desktop research (including businesses operating from residential properties where visible) and has not considered people choosing to work from home.

Large areas of commercial land, such as a business park or shopping centre, were assigned a high sensitivity. Derelict land or unoccupied buildings were assigned a low sensitivity. The magnitude of impact on commercial land has been determined by the degree of loss of the resource as per the DMRB Guidance (Highways England 2020). Where there will be substantial permanent land take from a commercial land holding, a high magnitude has been assigned. A low magnitude would be assigned where there will be minimal disruption to non-operational land or a car park.

The nature, significance and duration of effect for each receptor has been assigned using the DMRB Guidance (Highways England 2020) and EPA Guidelines (EPA 2022).

10.2.4.2.2.2 Accessibility

Commercial accessibility relates to the ability of users and employees to access commercial businesses. Changes in access to commercial business (i.e. changes in traffic flow, public transport services and walking and cycling provision) can significantly affect the level of usage experienced by commercial receptors, which may affect the ability of a business to operate successfully. The accessibility assessment has considered the commercial properties along the Proposed Scheme as well as those areas that are expected to experience positive and negative changes in traffic flows in the surrounding road network. Appendix A10.1 (Schedule of Commercial Businesses) in Volume 4 of this EIAR provides a list of all commercial businesses along the Proposed Scheme and has been referred to in the assessment section, where appropriate.

During the Construction Phase, temporary diversions may be required for short periods of time with designated detour routes in place and local access accommodated as required. Lane closures will be required during different Construction Phases which will reduce traffic capacity. Chapter 6 (Traffic & Transport) has qualitatively assessed the potential impacts on pedestrians, cyclists and bus users and private vehicles as a result of construction activity. The residual effects assigned to each user type within Chapter 6 (Traffic & Transport) informs the accessibility assessment in this Chapter. As such, the impact on access to commercial receptors during construction has been reported by each user type and for each community area, in line with EPA Guidelines (EPA 2022).

Changes in access to commercial receptors as a result of the Operational Phase of the Proposed Scheme were considered in respect to the outcomes of a changed walking environment for pedestrians, cycling provision for cyclists and bus infrastructure for bus users and changes to general traffic for private vehicles. The community accessibility assessment has therefore drawn on the outcomes of the qualitative assessment metrics identified in the Chapter 6 (Traffic & Transport). These qualitative assessments were considered collectively in order to assess the significance of impacts on access during the Operational Phase. The assessment has been reported by community area and by different user types (bus users, cyclists, pedestrians and private vehicles). However, where a road is expected to experience an impact to accessibility, moderate and above, this has been reported individually, alongside the commercial receptors that are likely to be impacted as a result. The nature, significance and duration of effect for each receptor has been assigned using the EPA Guidelines (EPA 2022).

10.3 Baseline Environment

This Section presents the baseline environment for the community and economic assessments. The baseline includes a brief description of the community areas near or intercepted by the Proposed Scheme, details about the different types of community and commercial receptors in the study area and any notable features along the Proposed Scheme.

10.3.1 Overview

The Proposed Scheme will commence on the Fonthill Road at the tie in point with the new Liffey Valley Shopping Centre Bus Interchange and Road Improvement Scheme, in the community area of Rowlagh – Quarryvale, just west of the M50 Motorway which it then crosses on the R833 Coldcut Road. The Proposed Scheme continues between a series of housing estates before entering Ballyfermot Upper on the R833 Ballyfermot Road running in between Cherry Orchard Industrial Estate and Cherry Orchard Hospital. The Proposed Scheme continues

towards the community area of Ballyfermot and the route is mainly residential in character, with a mixture of houses lining the road and entrances to adjacent housing estates. The Proposed Scheme continues towards Inchicore (Mary Immaculate and St Michael's) and continues to pass mostly residential or mixed residential / commercial properties lining both sides of the route. The Proposed Scheme continues east along R810 Emmet Road towards the community area of R810 James Street where the nature of the route changes from a predominantly suburban residential character to a more urban character with fewer houses and an increasing number of commercial properties and apartments lining the route. The Proposed Scheme terminates in the community area of Meath Street and Merchants Quay in Dublin City Centre. The study area for the Proposed Scheme consists of 10 community areas which have an approximate total population of 71,000 according to the 2016 Census (CSO 2016a) (see Figure 10.1 in Volume 3 of this EIAR).

For more details on the extent of the Proposed Scheme in the areas outlined above, please see Chapter 4 (Proposed Scheme Description).

10.3.2 Community Baseline

10.3.2.1 Community Facilities and Recreational Receptors

The Proposed Scheme is located in the vicinity of a number of community and recreational receptors, the number and type of receptor are presented by community area in Table 10.4.

Table 10.4: Community Receptor Type by Community Area (OSI 2020)

Community and Recreation Receptors	Schools	Hospital / Health Centre	Places of Worship	Recreation
Rowlagh - Quarryvale	4	0	1	2
Palmerstown	5	2	3	4
Ballyfermot Upper	4	3	2	5
Chapelizod	3	5	4	14
Ballyfermot	5	1	1	2
Inchicore (Mary Immaculate)	2	2	2	1
Inchicore (St Michael's)	3	2	4	4
James's Street	5	3	3	1
Meath Street and Merchants Quay	6	1	6	6
Francis Street	5	0	3	2
Study Area Total	42	19	29	41

Table 10.4 demonstrates that there is a high concentration of recreational resources in Chapelizod compared to the rest of the study area. This includes Phoenix Park, the largest park in Dublin stretching over 700 hectares. Table 10.4 also shows that schools appear to be evenly distributed across the study area. Examples of community receptors in the vicinity of the Proposed Scheme which may attract a large number of users include:

- Liffey Valley Shopping Centre, Rowlagh – Quarryvale;
- Ballyfermot Community Civic Centre, Ballyfermot Upper;
- Cherry Orchard Hospital, Ballyfermot Upper;
- St Michael's National School, Ballyfermot;
- St Raphael's National School and St Gabriel's Primary School, Ballyfermot;
- Long Meadows Pitch and Putt, Ballyfermot;
- Markievicz Park, Ballyfermot;
- Sarsfield Medical Centre, Ballyfermot;
- National War Memorial Park, Island Bridge;
- Richmond Park, Inchicore (St Michael's);
- Inchicore College of Further Education, Inchicore (St Michael's); and
- Saint James' Hospital, James Street.

10.3.2.2 Residential Land

There are approximately 18,300 residential properties and 300 apartment buildings within the community study area (OSI 2020).

10.3.2.3 Commute to Work

There are approximately 31,700 commuters across the Proposed Scheme community study area and 24% of these commuters travel by public transport (bus or train) (CSO 2016b). The method of travel to work by community area is presented in Table 10.5. Overall, the primary mode of transport for commuting is by car, or by active mode (walking and cycling). On average, over a quarter of the commuters in the study area walk or cycle to work, ranging from 10% of residents in Palmerstown to 52% of residents of in the Francis Street community area. Commuters residing in Palmerstown and Ballyfermot Upper, at the furthest distance from the City Centre, have the largest percentage of commuters travelling to work by car or van.

Table 10.5: Method of Travel to Work for Bus, Train, Car and Foot / Bike (%)

Community Area	Travel by Bus / Minibus or Coach	Travel by Car / Van	Travel by Train	Travel by Foot / Bike	Other
Rowlagh - Quarryvale	17%	56%	1%	15%	12%
Palmerstown	20%	64%	1%	10%	6%
Ballyfermot Upper	19%	60%	1%	13%	7%
Chapelizod	23%	40%	7%	23%	7%
Ballyfermot	24%	47%	2%	17%	11%
Inchicore (Mary Immaculate)	16%	38%	12%	23%	11%
Inchicore (St Michael's)	18%	33%	13%	26%	10%
James Street	13%	23%	14%	38%	12%
Meath Street and Merchants Quay	12%	11%	7%	44%	27%
Francis Street	14%	16%	6%	52%	12%
Study Area Average	18%	39%	6%	26%	11%
County Dublin	12%	54%	8%	17%	9%

NaPTAN data published by the NTA (NTA 2020) identifies the access points for bus stops, rail stations, airports, and tram stops, providing an indication of the level of availability of public transport within community areas. There are a total of 308 public transport access points across the study area, as shown in Table 10.6. The largest number of public transport stops (57 access points) are located in the community area of Meath Street and Merchant's Quay in the heart of Dublin, representing 19% of access points across all community areas. The furthest community areas from the City Centre are Palmerstown and Rowlagh - Quarryvale, which have a total of 56 access points between them (18% of the total).

Table 10.6: Number of Public Transport Access Points Across the Study Area

Community Areas	Number of Public Transport Access Points	Percentage of Stops Across the Study Area
Rowlagh - Quarryvale	34	11%
Palmerstown	22	7%
Ballyfermot Upper	34	11%
Chapelizod	35	11%
Ballyfermot	34	11%
Inchicore (Mary Immaculate)	13	4%
Inchicore (St Michael's)	21	7%
James's Street	40	13%
Meath Street and Merchants Quay	57	19%
Francis Street	18	6%
Study Area Total	308	

10.3.3 Economic Baseline

10.3.3.1 Commercial Receptors

The Proposed Scheme will pass commercial hubs with large numbers of small local businesses. The number of commercial receptors in the study area as a whole are presented in Table 10.7 (Geodirectory 2019). Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR lists over 300 businesses along the Proposed Scheme, which equates to almost 10% of all businesses identified in the study area.

Table 10.7: Commercial Receptors within each Community Area (Geodirectory 2019)

Community Area	Commercial Receptors
Rowlagh - Quarryvale	208
Palmerstown	182
Ballyfermot Upper	218
Chapelizod	137
Ballyfermot	127
Inchicore (Mary Immaculate)	155
Inchicore (St Michael's)	157
James's Street	260
Meath Street and Merchants Quay	1,572
Francis Street	264
Study Area Total	3,280

*Geodirectory data can count commercial businesses that are in the same location e.g. a shopping centre, as one commercial business, which may skew the commercial receptor count.

Table 10.7 shows the largest number of commercial receptors is located in Meath Street and Merchants Quay community area. Commercial businesses are evenly split across the remaining nine community areas.

Appendix A10.2 in Volume 4 of this EIAR provides additional baseline data on footfall, modes of transport to commercial hubs and expenditure by mode of transport (EY 2021).

10.3.3.2 Employment

Within the study area there are approximately 33,400 people in employment (47% of the total study area population). Of the working age population, over 5,800 people are unemployed (15% of the working age population) across the study area population and this equates to 8% being unemployed (CSO 2016c).

Key centres of employment within the study area include:

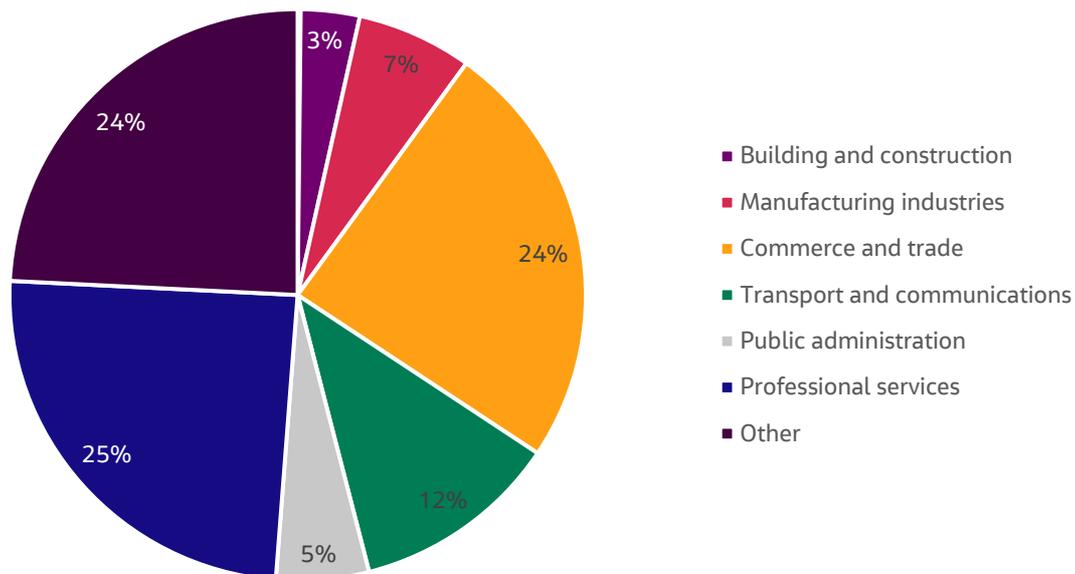
- Liffey Valley Retail Park (Rowlagh – Quarryvale)
- Cherry Orchard Industrial Estate (Ballyfermot Upper)
- Ballyfermot Village (Ballyfermot)
- Saint James Hospital (James's Street)
- Guinness Brewery (James's Street).

City Centre tourism also provides significant employment opportunities and the Proposed Scheme will terminate in close proximity to the following tourist attractions:

- Guinness Storehouse, James's Street;
- St Patricks Tower, Meath Street and Merchants Quay;
- Dublinia, Meath Street and Merchants Quay;
- Wood Quay Amphitheatre and Viking Area, Meath Street and Merchants Quay; and
- Christ Church Cathedral.

According to Fáilte Ireland the Guinness Storehouse attracted 1.7 million visitors in 2018, while Dublinia recorded 201,650 visitors in 2018 (Fáilte Ireland 2018). The Guinness Storehouse is Ireland’s top international tourist attraction, generating over €360 million for the Irish economy in 2017, employing 320 full-time staff and supporting a further 8,907 jobs (Guinness Storehouse 2018).

Graph 10.1 presents a breakdown of employment across the study area. The largest sectors of employment are professional services (25%); commerce and trade (24%); and other (24%) (CSO 2016c).



Graph 10.1: Employment by Industry within the Study Area (%) CSO 2016c

10.4 Potential Impacts

Potential impacts are typically those that could occur in the absence of mitigation, which then inform the need for mitigation or monitoring (refer to Section 10.5) and enables residual impacts to be determined. However, as explained in Section 10.2, the population assessment presented in this chapter is partly informed by the residual impacts identified in other topic chapters forming part of this EIAR, and as such the potential impacts in the following section already take into account mitigation proposed in those chapters.

10.4.1 Characteristics of the Proposed Scheme

The Proposed Scheme is approximately 9.2km long from end to end. Bus Gates are proposed in the westbound direction on Mount Brown at the proposed entrance to National Children’s Hospital underground car park and in the eastbound direction at the St James’s Street entrance to the hospital campus. The eastbound bus gate will only be operating during the AM period (06:00 – 10:00), whilst the westbound bus gate will only operate during the PM period (16:00 – 20:00). These Bus Gates will prevent general through-traffic using Old Kilmainham / Mount Brown when in operation. Journey time savings of up to 40-50% on the corridor are demonstrated for inbound and outbound travel in Efficiency of Bus Priority before and after implementation of the Proposed Scheme (see Chapter 4 (Proposed Scheme Description)).

Fully segregated cycle tracks are being provided in the following locations: the vicinity of Fonthill Road and Liffey Valley Shopping Centre; Coldcut Road; Ballyfermot Road; Sarsfield Road; Kylemore Road; and Memorial Road, James’s Street and Thomas Street. An offline cycle route linking St James’s Street and the St James’s hospital campus which avoids the Luas tracks has been provided as part of the Proposed Scheme.

As per Chapter 5 (Construction) during the Construction Phase, the anticipated site staff numbers working on the Proposed Scheme will be 250 to 270 rising to 300 workers at peak construction. This level of employment will provide a positive economic impact to the economy in terms of associated spending from construction works, although a proportion will already reside locally. As discussed in Appendix A10.2, the operation of the Proposed Scheme will give households along the route access to wider and better job opportunities (EY 2021). The availability of public transport is expected to reduce the time taken to commute to workplaces, this would have a particular impact for low-income households and people with a disability. The Economic Impact of the Core Bus Corridors Report (EY 2021) also identifies that there is expected to be an increase in job satisfaction as well as an increase in job retention (see Appendix A10.2 in Volume 4 of this EIAR).

The Proposed Scheme will have three Construction Compounds:

- Construction Compound LV1 on Fonthill Road;
- Construction Compound LV2 on Coldcut Road; and
- Construction Compound LV3 on Con Colbert Road.

LV1 at Fonthill Road is located in grounds adjacent to Fonthill Road. LV2 on Coldcut Road will be located on land adjacent to the Eir exchange building on the Coldcut Road. LV3 on Con Colbert Road will be located within Liffey Gaels Park. Permanent land take along the Proposed Scheme is minimal with permanent land take required at four residential properties along Sarsfield Road and Ballyfermot Road.

10.4.2 'Do Nothing' Scenario

In the 'Do Nothing' scenario the Proposed Scheme would not be implemented and therefore be no changes to pedestrian, cycling or bus amenity and access, and no change to land use as a result of the Proposed Scheme. Therefore, there would be a Neutral impact on land use and potential Negative impacts on amenity and accessibility under the 'Do Nothing' scenario.

10.4.3 Construction Phase

10.4.3.1 Community Assessment

10.4.3.1.1 Community Amenity

Community amenity impacts arise from a combination of traffic, air quality, noise and visual impacts as discussed in Section 10.2.4.1.1.

Chapter 6 (Traffic & Transport) identified a residual Negative, Moderate and Short-Term impact on general traffic along the Proposed Scheme and a Negative, Slight and Short-Term impact from additional construction traffic flows in the surrounding road network. The following impacts have been identified on community facilities:

- A Moderate impact is assigned to all community receptors along the Proposed Scheme; and
- A Slight impact is assigned to community receptors located in the surrounding road network.

Chapter 7 (Air Quality) identified residual road traffic impacts on local human receptors to be Neutral, Not Significant and Short-Term during construction.

Chapter 9 (Noise & Vibration) identified a Negative, Slight to Moderate and Temporary impact from general road works, road widening and utility diversions and boundary wall construction at educational receptors within 10m of R833 Ballyfermot Road, these include Kylemore Music College, Ballyfermot College of Further Education Technical School, St Raphael's, St Gabriel's and St Michael's National Schools. Bus Gate construction noise is expected to have a Negative, Not Significant to Significant, and Temporary impact during the daytime period and Negative, Moderate to Very Significant and Temporary impact during the evening and weekend periods on St James's Hospital and the National Children's Hospital. The Cherry Orchard Hospital is expected to experience a Negative, Moderate to Significant and Temporary impact from boundary wall construction during the evening. Construction traffic noise within 1km of the study area is assessed between Positive, Slight and Temporary to Negative, Slight to Moderate and Temporary, the worst-case impact (Negative Slight to Moderate) has therefore been assigned to all community receptors within 1km in the surrounding road network.

Chapter 17 (Landscape (Townscape) & Visual) townscape and streetscape character assessment identified a Negative, Significant and Temporary / Short-Term impact on Liffey Valley to Le Fanu Road and on Sarsfield Road to the City Centre, and a Negative, Very Significant and Temporary / Short-Term impact on Le Fanu Road to Sarsfield Road. This impact on townscape represents the visual impact experienced by community receptors along each of these stretches of road. For example, Long Meadows Pitch and Putt is located on Sarsfield Road and is therefore assigned a Negative, Significant and Temporary visual impact.

These environmental impacts have been considered together to identify if there will be an combination of impacts acting upon the same community facilities. The assessment concluded that these residual air quality, noise, traffic and visual impacts will combine to create a Negative, Moderate and Short-Term impact on amenity for all community facilities along the Proposed Scheme. Community facilities are evenly spread along the length of the Proposed Scheme in the community areas of Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), Chapelizod, Rowlagh – Quarryvale, James's Street and Meath Street and Merchants Quay. Notable community facilities along the Proposed Scheme expected to experience this Negative, Moderate and Short-Term impact on amenity are:

- Cherry Orchard Hospital;
- Ballyfermot and Palmerstown Primary Care Centre;
- St. Matthew's Church;
- Kylemore Music College;
- Ballyfermot College of Further Education Technical School;
- St Raphael's, St Gabriel's and St Michael's National Schools;
- Ballyfermot Family Resource Centre;
- Church of Our Lady of the Assumption;
- Inchicore National School;
- Inchicore College of Further Education;
- National College of Art and Design;
- Corvin Medical Centre;
- Inchicore Medical Centre;
- Trinity Centre for Health Sciences;
- Markievicz Park;
- Longmeadows Park;
- St Michael's Church Inchicore;
- St. Augustine & St. John The Baptist Catholic Church;
- St. Audoen's Church;
- Ballyfermot Community Centre;
- Ballyfermot Family Practice;
- Liffey Gaels GAA Club;
- Sarsfield Medical Centre;
- Saint Catherine's Church of Ireland;
- St. Audeon's Park;
- Saint Michael's Parish Church and Community Centre;
- The Coldcut Club;
- Grattan Crescent Park and allotments;
- Richmond Park;
- CDETB Ballyfermot Training Centre;
- CIE Hall / Inchicore Sports and Social Club;
- Christ Church Cathedral;
- Saint Patrick's University Hospital;
- Saint James's Roman Catholic Church; and

- Inchicore Library.

All other community areas (Palmerstown and Francis Street) are expected to experience a Neutral, Not Significant and Short-Term amenity impact.

10.4.3.1.2 Community Land Use and Accessibility

10.4.3.1.2.1 Land Take

The assessment of community land take during the Construction Phase assesses the temporary land take acquired to accommodate construction works and the potential impacts this will have on community facilities and residential properties.

A total of 10 receptors (four residential properties and six community facilities) will be impacted by temporary land take as a result of the Proposed Scheme. One residential property, The Steeples Apartment Block located in Ballyfermot is expected to experience a Negative, Significant and Short-Term land take impacts during the Construction Phase. The residential building requires a large proportion of the front communal garden to be acquired to accommodate construction activity. The remaining three residential dwellings, 3/3a Ballyfermot Road, St Lawrence's Glen and St Lawrence's Court are all expected to experience a Negative, Moderate and Short-Term land take impact.

Temporary land take at Palmers Lawn and Palmers Walk is expected to indirectly impact the dwellings on these roads due to land take of community green space.

Table 10.8 summarises the findings of the land take assessment for community facilities and residential buildings along the Proposed Scheme during the Construction Phase.

Table 10.8 Land Take Impacts on Community Facilities and Residential Properties during the Construction Phase

Community Area	Nature of Effect / Number of Community Facilities Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Ballyfermot Upper	0	0	1	0
Ballyfermot	0	0	4	3
Inchicore (Mary Immaculate)	0	0	0	1
James's Street	0	0	0	1
Total	0	0	5	5

Of the six impacted community receptors, four receptors are expected to experience Negative, Significant and Short-Term impacts. Two of these receptors are schools, St Michael's and St Gabriel's Primary Schools, both of which are to experience a similar temporary land take from green space surrounding the schools. The other receptors expected to experience a Negative, Significant and Short-Term are St James's Hospital due to its regular use, and Liffey Gaels Park, due to the magnitude of land being taken.

The other receptors comprise Ballyfermot Resource Centre and Cherry Orchard Hospital both of which are expected to experience Negative, Moderate and Short-Term impacts from land-take during construction due to the alteration of outdoor green space only.

Overall, the impact of land take across the impacted community areas as a whole is considered Negative, Moderate to Significant and Short-Term during the Construction Phase. No other community areas are predicted to be impacted by land take during the Construction Phase.

10.4.3.1.2.2 Accessibility

Community accessibility relates to the ability of users to access community facilities, recreational resources and residential properties. The nature of the proposed works means accessibility impacts will differ based on the mode of travel used. The assessment has therefore separately assessed accessibility impacts on pedestrians, cyclists, bus users and private vehicles.

Pedestrians, Cyclists and Bus Users

Pedestrian and cyclist safety measures are discussed in Chapter 5 (Construction). These safety measures are intended to allow the safe continuation of access along the route of the Proposed Scheme during the Construction Phase. It is expected that, as roads, cycle lanes and footpaths are being upgraded, that there will be some level of disruption to users and their ability to access community facilities. As outlined in Section 5.5 of Chapter 5 (Construction), measures will be undertaken by the appointed contractor to ensure that access and parking are maintained during construction wherever practical, to reduce the impact on accessibility along the Proposed Scheme.

Chapter 6 (Traffic & Transport) has identified a residual Negative, Slight and Temporary impact on walking and a Negative, Moderate and Temporary impact on cycling along the Proposed Scheme during the Construction Phase. Taking into consideration the mitigation measures presented in Chapter 5 (Construction) and Appendix A5.1 Construction Environmental Management Plan (CEMP) in Volume 4 of this EIAR, it is expected that access to community receptors along the Proposed Scheme, will also likely be negatively impacted during the Construction Phase.

As confirmed in Chapter 5 (Construction) existing bus routes will be maintained during the Construction Phase. Bus stop locations may need to be temporarily relocated to accommodate the works. Use of buses to access community facilities will continue throughout construction albeit there may be a change in the distance required to walk between the temporary bus stops and the community facilities.

Chapter 6 (Traffic & Transport) has identified a residual Negative, Slight and Temporary impact on bus users along the Proposed Scheme. Taking into consideration the measures in Chapter 5 (Construction) it is expected that the impact on access to community receptors along the Proposed Scheme will also likely be negatively impacted during the Construction Phase.

The community areas that are expected to experience a Negative, Slight and Short-Term impact on pedestrians, cyclists and bus users as a result in changes to access are Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchant's Quay.

Pedestrians, cyclists, bus users in all other community areas (Palmerstown, Rowlagh – Quarryvale, Chapelizod and Francis Street) are expected to experience a Negative, Not Significant, and Short-Term impact as a result of changes to access during the Construction Phase of the Proposed Scheme.

Private Vehicles

Chapter 5 (Construction) outlines temporary traffic management measures which may impact accessibility to parking provision and community facilities along certain parts of the Proposed Scheme particularly where road closures or diversions are required. Road diversions will be temporary and may result in an increase in the time taken to get to a community facility via private vehicle but that overall access to that facility will not be prohibited. The impact on specific parking and loading provision is discussed in Chapter 6 (Traffic & Transport).

Chapter 6 (Traffic & Transport) has identified a residual Negative, Moderate and Temporary impact for general traffic travelling along the Proposed Scheme. Taking into consideration the measures in Chapter 5 (Construction) it is expected that the impact on access to community receptors from private vehicles along the Proposed Scheme, will be Negative, Moderate and Short-Term during construction. The impact of the Bus Gates on Mount Brown and James's Street are considered during the Operational Phase of the Proposed Scheme, see Section 10.4.4. Additional construction traffic flows on the surrounding road network are expected to result in a Negative, Slight and Temporary impact on general traffic. This will not include the impact of construction access vehicles which are considered in Chapter 6 (Traffic & Transport). Private vehicles may therefore be negatively affected on the surrounding road network although this is only expected to be Negative, Slight and Short-Term during the Construction Phase.

The impacts identified above are expected to be experienced by community areas located predominantly along the length of the Proposed Scheme where construction activity, road diversions and closures are expected. It is acknowledged that users will travel between community areas to access community facilities within other community areas. However, the impact of construction activity will be experienced where the facility is located.

The community areas that are expected to experience a Negative, Moderate and Short-Term impact on private vehicles as a result in changes to access are Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchant's Quay. Specifically, community areas Ballyfermot, Inchicore (Mary Immaculate) and Inchicore (St Michael's) are impacted by the proposed one-way systems in Ballyfermot Village and Grattan Crescent and the closure of O'Hogan Road.

Private vehicles in all other community areas (Palmerstown, Rowlagh – Quarryvale, Chapelizod and Francis Street) are expected to experience a Negative, Not Significant, and Short-Term impact as a result of changes to access during the Construction Phase of the Proposed Scheme.

10.4.3.2 Economic Assessment

10.4.3.2.1 Commercial Amenity

As outlined above in Section 10.2.4.2.1, commercial amenity impacts can arise indirectly from a combination of traffic, air quality, noise and visual impacts or directly where a single environmental impact is significant enough to affect the amenity of a commercial business and potentially having implications on the ability of the business to operate successfully.

Chapter 6 (Traffic & Transport) identified a Negative, Moderate and Short-Term impact on general traffic along the Proposed Scheme and a Negative, Slight and Short-Term impact from additional construction traffic flows in the surrounding road network. The following impacts have been identified:

- A Negative, Moderate impact is assigned to all commercial receptors along the Proposed Scheme; and
- A Negative, Slight impact is assigned to commercial receptors located in the surrounding road network.

Chapter 7 (Air Quality) identified residual road traffic impacts on local human receptors to be Neutral, Not Significant and Short-Term during construction.

Chapter 9 (Noise & Vibration) identified a Negative, Slight to Moderate and Temporary impact from road widening and utility diversions on office NSLs to the west and east of R839 Memorial Road. Construction traffic noise within 1km of the study area is assessed between Positive, Slight and Temporary to Negative, Slight to Moderate and Temporary, the worst-case impact (Negative, Slight to Moderate) has therefore been assigned to all commercial receptors within 1km in the surrounding road network.

Chapter 17 (Landscape (Townscape) & Visual) townscape and streetscape character assessment identified a Negative, Significant and Short-Term impact on Liffey Valley to Le Fanu Road and on Sarsfield Road to the City Centre, and a Negative, Very Significant and Short-Term impact on Le Fanu Road to Sarsfield Road. This impact on townscape represents the visual impact experienced by commercial receptors along each of these stretches of road. For example, Ruby Finnegan's pub is located on Sarsfield Road and is therefore assigned a Negative, Significant and Temporary visual impact.

These environmental impacts have been considered together to identify if there will be a combination of impacts acting upon the same commercial receptor. The assessment concluded that these residual significant noise, traffic and visual impacts will combine to create Negative, Moderate and Short-Term impact on amenity for all commercial businesses along the Proposed Scheme. Commercial businesses located along the Proposed Scheme are listed in Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR.

The proportion of commercial businesses located along the Proposed Scheme is low compared to the businesses across the entire community areas, see Table 10.7, with a large number in the Rowlagh – Quarryvale community area, the location of Liffey Valley Shopping Centre. The impact on community areas along the Proposed Scheme (Rowlagh – Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchants Quay) are Negative, Slight and Short-Term. All other community areas (Palmerstown, Chapelizod and Francis Street) are expected to experience a Neutral, Not Significant and Short-Term amenity impact.

As discussed in Section 10.2.4.2.1, a single significant environmental effect in isolation can result in a direct impact on commercial amenity where a business has a particular sensitivity to an environmental impact. The only Negative, Significant and Short-Term impacts on commercial amenities are identified in Chapter 17 (Landscape (Townscape) & Visual) however no receptors have been identified as being particularly sensitive to this environmental impact. Therefore it is not expected that there will be any direct amenity impacts expected to have an impact on business viability during the Construction Phase.

10.4.3.2.2 Commercial Land Use and Accessibility

10.4.3.2.2.1 Land Take

The assessment of commercial land take during the Construction Phase assesses the temporary land take acquired and the potential impacts this has on commercial businesses. This assessment also considers the impact on private landings, this is the area in front of businesses that may be used for a variety of reasons including outdoor seating, selling produce or parking.

A total of 14 commercial receptors are impacted by temporary land take as a result of the Proposed Scheme. Table 10.9 summarises the findings of the commercial land take assessment for the Proposed Scheme.

Table 10.9 Land Take Impacts on Commercial Receptors during the Construction Phase

Community Area	Nature of Effect / Number of Commercial Receptors Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Ballyfermot Upper	0	0	2	2
Ballyfermot	0	0	2	0
Inchicore (Mary Immaculate)	0	0	5	0
Chapelizod	0	0	0	1
Rowlagh – Quarryvale	0	1	1	0
Total	0	1	10	3

Table 10.9 shows three commercial receptors are expected to experience a significant land take effect during the Construction Phase. The land take at Cherry Orchard Service Station and neighbouring business, First Stop Tyres would see the temporary and permanent removal of several car parking spaces and impacts on the exits the station but will not affect the pumps. The overall impact on these two businesses has been assessed as Negative, Significant and Short-Term land take impact.

At Long Meadows Pitch and Putt Course a large area of temporary and permanent land take is required to accommodate the construction work, at the largest point approximately 30m of land is taken. Construction works directly across the entrance are also expected to be required. The overall impact on this business has been assessed as Negative, Significant and Short-Term land take impact.

Overall, the impact of land take across the impacted community areas as a whole is considered Negative, Moderate, Short-Term during the Construction Phase. No commercial receptors in other community areas are impacted by land take during the Construction Phase.

10.4.3.2.2.2 Accessibility

Commercial accessibility relates to the ability of users to access commercial businesses as customers or employees. The nature of the Proposed Scheme means that accessibility impacts will differ based on the mode of travel used. The assessment, similar to the community accessibility assessment (Section 10.4.3.1.2.2), has separately assessed accessibility impacts on pedestrians and cyclists, bus users and private vehicles. As the Construction Phase mitigation measures presented in Chapter 5 (Construction) and the residual effects presented in Chapter 6 (Traffic & Transport) are the same for each mode of travel the impacts on commercial accessibility are the same as those reported in Section 10.4.3.1.2.2 for community accessibility. The only difference is due to the location of the Liffey Valley Shopping Centre in the Rowlagh – Quarryvale community area, the impact on change in access in this community area to commercial businesses is expected to be Negative, Slight and Short-Term for walkers, cyclists and bus users and Negative, Moderate and Short-Term for private vehicles.

The impact of the Proposed Scheme on business viability has been considered during operation (see Section 10.4.4.2) although the Bus Gates will be in place during construction Chapter 5 (Construction).

10.4.4 Operational Phase

10.4.4.1 Community Assessment

10.4.4.1.1 Community Amenity

Community amenity impacts arise from a combination of traffic, air quality, noise and visual impacts as discussed in Section 10.2.4.1.1.

Chapter 6 (Traffic & Transport) identified a Positive, Moderate and Long-Term impact from a reduction in general traffic along the Proposed Scheme and a Negative, Moderate and Long-Term impact from redistributed traffic along the surrounding road network. The following impacts have been identified:

- A Positive, Moderate impact is assigned to all community facilities along the Proposed Scheme; and
- A Negative, Moderate impact assigned to community facilities in the surrounding road network (not directly adjacent to the Proposed Scheme).

Chapter 7 (Air Quality) identified a Neutral, Not Significant and Long-Term residual impact on human receptors during the Operational Phase.

Chapter 9 (Noise & Vibration) identified a Positive, Slight, Short to Medium Term to Negative, Not Significant to Slight, Short to Medium Term impact from traffic noise along the Proposed Scheme. A Positive, Slight Short to Medium Term to Negative, Moderate, Short to Medium Term impact from traffic noise in the surrounding road network. A Negative, Not Significant-Slight Short to Medium Term impact was identified on Oranmore Road and Decies Road, while a Negative, Moderate, Short to Medium Term impact was identified on Mary's Lane and St Augustine Street. Markievicz Park is located on Decies Road.

Chapter 17 (Landscape (Townscape) & Visual) identified a Positive, Slight and Short-Term impact on townscape and streetscape character from Liffey Valley to Le Fanu Road. A Neutral, Moderate to Significant and Short-Term impact on Le Fanu Road to Sarsfield Road and a Positive, Slight and Short-Term impact on Sarsfield Road to the City Centre is expected. The impacts on townscape represent the visual impact on community facilities along these roads.

These environmental impacts have been considered together to identify if there will be a combination of impacts acting upon the same community facilities. The assessment concluded that these residual air quality, noise, traffic and visual impacts will combine to create:

- Positive, Moderate and Long-Term impact on amenity for community facilities between Liffey Valley and Le Fanu Road with the exception of Cherry Orchard Hospital and Ballyfermot United Sports and Social Club. Cherry Orchard Hospital is expected to experience a Negative, Slight and Long-Term impact on amenity due the Negative, Significant and Long-Term visual disturbance from permanent land acquisition (Chapter 17 (Landscape (Townscape) & Visual)). Ballyfermot United Sports and Social Club is expected to experience a Negative, Slight and Long-Term impact on amenity due to the redistribution of traffic along Le Fanu Road (Chapter 6 (Traffic & Transport));
- Negative, Slight and Long-Term impact on amenity for community facilities between Le Fanu Road and Sarsfield Road; and
- Positive, Slight / Moderate and Long-Term impact on amenity for community facilities on Sarsfield Road to the City Centre.

The location of the community facilities along the Proposed Scheme are in the community areas of Rowlagh – Quarryvale, Ballyfermot Upper, Chapelizod, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchant's Quay. Overall, the impact on amenity within these community areas is expected to be Positive, Not Significant and Long-Term.

Overall, a Neutral, Not Significant and Long-Term impact is expected on all other community areas (Palmerstown and Francis Street) during the Operational Phase.

10.4.4.1.2 Community Land Use and Accessibility

10.4.4.1.2.1 Land Take

The assessment of community land take during the Operational Phase assesses the impact of permanent land take acquisition on community facilities and residential properties.

A total of nine receptors (four residential properties and five community facilities) require permanent land take as a result of the Proposed Scheme. All four residential receptors, St Laurence's Glen Apartment Block, The Steeples Apartment, 3/3a Ballyfermot Road and St Laurence's Court, are expected to experience a Negative, Moderate and Long-Term impact as a result of losing a small proportion of land during the Operational Phase of the Proposed Scheme.

Table 10.10 summarises the findings of the community land take assessment for community facilities along the Proposed Scheme during the Operational Phase.

Table 10.10 Land Take Impacts on Community Facilities and Residential Properties during the Operational Phase

Community Area	Nature of Effect / Number of Community Facilities Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Ballyfermot Upper	0	0	1	0
Ballyfermot	0	0	7	0
James's Street	0	0	1	0
Total	0	0	9	0

Table 10.10 shows there are five community facilities that are expected to experience moderate permanent land take during the Operational Phase of the Proposed Scheme (St Gabriel's School, St Michael's School, Ballyfermot Resource Centre, Cherry Orchard Hospital and St James's Hospital). These facilities are only expected to lose a small amount of land that has no impact on the ability of users to use the facilities.

The nine community and residential receptors referenced in Table 10.10 are the same as the facilities and residential buildings experiencing temporary land take in Table 10.8.

Overall, the impact of land take across the impacted community areas is considered Negative, Moderate and Long-Term during the Operational Phase. No other community areas are impacted by land take during the Operational Phase.

10.4.4.1.2.2 Accessibility

Community accessibility relates to the ability of users to access community facilities, recreational resources and residential properties. The nature of the Proposed Scheme means that accessibility impacts will differ based on the mode of travel used. The assessment has therefore separately assessed accessibility impacts on pedestrians, cyclists, bus users and private vehicles.

The significant improvement to the walking, cycling and bus facilities included within the Proposed Scheme will encourage sustainable modes of transport, therefore reducing the demand for private vehicles / parking along the Proposed Scheme. Improved accessibility is also expected to increase social cohesion within the local community as discussed further in Appendix A10.2 in Volume 4 of this EIAR (EY 2021).

Pedestrians, Cyclists and Bus Users

The purpose of the Proposed Scheme is to improve the accessibility for all users in and out of the City Centre. It is therefore expected that during operation there will be beneficial impacts. Chapter 6 (Traffic & Transport) identified a significant residual Positive, Significant and Long-Term impact on pedestrian infrastructure and a Positive, Moderate to Profound Long-Term impact on cycling infrastructure along the Proposed Scheme. The beneficial impacts on walking and cycling infrastructure is expected to lead to improvements in access to

community facilities along the Proposed Scheme for those choosing to walk or cycle as there will be increased provision for those modes of travel.

Chapter 6 (Traffic & Transport) identified a Positive, Moderate and Long-Term impact on bus network performance indicators (which includes journey times and journey time reliability), as such, ease of access to community facilities via bus is also likely to improve along the Proposed Scheme. Chapter 6 (Traffic & Transport) also identified a significant residual Positive, Very Significant to Profound and Long-Term impact on bus infrastructure along the Proposed Scheme.

The impacts described above are expected to be experienced by community areas located predominately along the length of the Proposed Scheme and where there is Quiet Street Treatment as these are the locations of the improved footpaths, cycle paths and bus lanes. The community areas that are expected to experience a Positive, Moderate to Significant impact on walking, a Moderate to Very Significant impact on cycling and a Very Significant to Profound impact on bus users are Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchant's Quay. Palmerstown, Chapelizod and Francis Street are expected to experience a Positive, Not Significant and Long-Term change in access for walkers, cyclists and bus users during the Operational Phase of the Proposed Scheme.

Private Vehicles

Chapter 6 (Traffic & Transport) identified a Positive, Moderate and Long-Term impact from the reduction in general traffic along the Proposed Scheme and a Negative, Moderate, Long-Term impact for redistributed traffic in the surrounding road network. The redistributed traffic assessment did not identify any individual significant impacts at junctions during the Operational Phase.

The Bus Gates on Mount Brown and James's Street, located in the James's Street Community area (see Figure 10.1), are staggered across different time periods. In the AM peak (06:00 – 10:00), access will be restricted for traffic heading eastbound, and in the PM peak (16:00 – 20:00), access will be restricted for general traffic heading westbound. However, during the daytime interpeak (10:00 – 16:00) and evening off peak (20:00 – 06:00) there will be no impact on access. Therefore, the impact on private vehicles is less severe than it would be if both Bus Gates were in operation 24 hours per day / 7 days per week. The impact on private vehicles passing through James's Street community area is considered Negative, Slight and Long-Term.

The impact on community areas that are located predominately along the length of the Proposed Scheme (Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchant's Quay) is expected to be Positive, Moderate and Long-Term. As a result of increased congestion from redistributed traffic in the surrounding road network the impact on the community areas of Palmerstown, Chapelizod and Francis Street is Negative, Moderate and Long-Term during the Operational Phase.

The Traffic and Transport assessment considered the impact on parking and loading spaces along the Proposed Scheme. A detailed description of where parking is suspended /altered is provided in Section 6.4 of Chapter 6 (Traffic & Transport). Overall, the impact on parking and loading during operation is a Negative Slight, and Long-Term impact.

10.4.4.2 Economic Assessment

10.4.4.2.1 Commercial Amenity

Commercial amenity impacts arise from a combination of traffic, air quality, noise and visual impacts as discussed in Section 10.2.4.2.1.

Chapter 6 (Traffic & Transport) identified a Positive, Moderate and Long-Term impact from a reduction in general traffic along the Proposed Scheme and a Negative, Moderate and Long-Term impact from redistributed traffic along the surrounding road network. The following impacts have been identified:

- A Positive, Moderate residual impact is assigned to all commercial businesses along the Proposed Scheme; and
- A Negative, Moderate residual impact to all commercial businesses in the surrounding road network (not directly adjacent to the Proposed Scheme)

Chapter 7 (Air Quality) identified a Neutral, Not Significant and Long-Term impact on human receptors during the Operational Phase.

Chapter 9 (Noise & Vibration) identified a Positive, Slight, Short to Medium Term to Negative, Not Significant to Slight, Short to Medium Term impact from traffic noise along the Proposed Scheme. A Positive, Slight Short to Medium Term to Negative, Moderate, Short to Medium Term impact from traffic noise in the surrounding road network. A Negative, Not Significant-Slight Short to Medium Term impact was identified on Oranmore Road and Decies Road, while a Negative, Moderate, Short to Medium Term impact was identified on Mary's Lane and St Augustine Street. Commercial businesses are present on Decies Road and St Augustine Street.

Chapter 17 (Landscape (Townscape) & Visual) identified a Positive, Slight to Moderate and Short-Term impact on townscape and streetscape character from Liffey Valley to Le Fanu Road. A Negative, Moderate / Significant and Short-Term impact on Le Fanu Road to Sarsfield Road and a Positive, Slight and Short-Term impact on Sarsfield Road to the City Centre is expected. The impacts on townscape represent the visual impact on commercial businesses along these roads.

These environmental impacts have been considered together to identify if there will be a combination of impacts acting upon the same commercial businesses. The assessment concluded that these residual air quality, noise, traffic and visual impacts will combine to create:

- Positive, Slight and Long-Term impact on amenity for all commercial businesses between Liffey Valley and Le Fanu Road, including Liffey Valley Shopping Centre. The exception is Cherry Orchard Industrial Estate which is expected to experience a Negative, Moderate and Long-Term impact;
- Positive, Slight and Long-Term impact for commercial businesses on amenity for all commercial businesses between Le Fanu Road and Sarsfield Road;
- Positive, Slight / Moderate and Long-Term impact on amenity for all commercial businesses on Sarsfield Road to the City Centre; and
- Negative, Slight and Long-Term impact on amenity for commercial businesses located on St Augustine Street (James's Street) and Decies Road (Ballyfermot), these businesses will experience a combination of Negative, Moderate impact from redistributed traffic and a worst case Negative, Slight impact on noise. Part of this impact is due to the proposed implementation of the bus gates on Mount Brown and James's Street. The small number of commercial businesses on these roads means that this negative impact is not expected to have an impact on wider amenity across the community areas of Ballyfermot and James's Street.

Commercial businesses located along the Proposed Scheme are listed in Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR. The commercial businesses are evenly distributed along the length of the Proposed Scheme within the community areas of Rowlagh – Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchant's Quay. As the proportion of commercial businesses located along the Proposed Scheme is low compared to the businesses across the entire community areas, see Table 10.7, overall, the impact on amenity within these community areas is expected to be Positive, Not Significant and Long-Term.

All other community areas (Palmerstown, Chapelizod and Francis Street) are expected to experience a Neutral, Not Significant and Long-Term impact on indirect amenity during the Operational Phase.

As discussed in Section 10.2.4.2.1, a single significant environmental effect in isolation can result in a direct impact on commercial amenity where a business has a particular sensitivity. No direct amenity impacts were identified on any commercial businesses during the Operational Phase of the Proposed Scheme.

10.4.4.2.2 Commercial Land Use and Accessibility

10.4.4.2.2.1 Land Take

The assessment of commercial land take during the Operational Phase assesses the permanent land take acquired and the potential impacts this has on commercial businesses.

A total of 14 commercial receptors require permanent land take as a result of the Proposed Scheme. Table 10.11 summarises the findings of the commercial land take assessment for the Proposed Scheme during the Operational Phase.

Table 10.11 Land Take Impacts on Commercial Receptors during the Operational Phase

Community Area	Nature of Effect / Number of Commercial Receptors Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Ballyfermot Upper	0	0	4	0
Ballyfermot	0	1	1	0
Inchicore (Mary Immaculate)	0	0	5	0
Chapelizod	0	0	1	0
Rowlagh – Quarryvale	0	1	1	0
Total	0	2	12	0

Table 10.11 shows that no commercial receptors are significantly impacted by permanent land take.

Overall, the impact on impacted community areas is considered Negative, Moderate and Long-Term as a result of the Proposed Scheme during the Operational Phase. No other community areas are impacted by land take during the Operational Phase.

The 14 commercial receptors referenced in Table 10.11 the same as the facilities experiencing temporary land take in Table 10.9.

10.4.4.2.2 Accessibility

Commercial accessibility relates to the ability of users and employees to access commercial businesses. The nature of the Proposed Scheme means that accessibility impacts will differ based on the mode of travel used. The assessment has therefore separately assessed accessibility impacts on pedestrians, cyclists, bus users and private vehicles.

Chapter 6 (Traffic & Transport) assessed that people movement would significantly increase along the Proposed Scheme. It is therefore anticipated that all businesses along the Proposed Scheme will, to some extent, benefit from the increase in passing trade. Commercial businesses located along the Proposed Scheme numbered in Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR.

Pedestrians, Cyclists and Bus Users

The positive impacts to pedestrians, cyclists and bus users will predominantly be experienced by community areas located along the length of the Proposed Scheme and where there will be Quiet Street Treatment, as these will be the locations of the improved footpaths and cycle paths. The community areas that are expected to experience a Positive, Moderate to Significant impact on pedestrians, a Moderate to Very Significant impact on cyclists and a Very Significant to Profound impact on bus users as a result of changes to access, are Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchant's Quay. Palmerstown, Chapelizod and Francis Street are expected to experience a Positive, Not Significant and Long-Term impact on pedestrians, cyclists and bus users because of changes in access during the Operational Phase of the Proposed Scheme.

Private Vehicles

The impacts to private vehicles are the same as those identified in the community accessibility assessment. The impact on private vehicles passing through James's Street community area is considered Negative, Slight and Long-Term, this is due to the proposed introduction of the bus gates on Mount Brown and James's Street reducing accessibility in the AM and PM peaks.

The impact on community areas that are located predominately along the length of the Proposed Scheme (Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchant's Quay) is expected to be Positive, Moderate and Long-Term.

The impact on the community areas of Palmerstown, Chapelizod and Francis Street is Negative, Moderate and Long-Term due to the impact from distributed traffic during the Operational Phase.

A parking assessment has been undertaken in Chapter 6 (Traffic & Transport). No Significant impacts on parking were identified along the proposed Scheme.

Business Viability on Individual Receptors

The proposed Bus Gates on Mount Brown and James's Street are expected to reduce access to commercial businesses from passing trade along this stretch of road. Most of the businesses along Mount Brown, adjacent to the Bus Gate are not reliant on passing trade, which by definition means people use a service because they see when driving / walking past, not because they planned to go there. Only one business, Mount Brown Services (filling station and car wash), has been identified as potentially being negatively impacted by this reduction in passing trade.

However, as the Bus Gate operational times and locations are staggered and are not in operation 24/7, private vehicles will be able to continue to access this business unrestricted throughout the daytime interpeak and evening off-peak. However, the overall number of vehicles will be somewhat reduced due to the restricted access during the AM and PM peaks where greater negative impact will be observed. The impact on business viability is expected to be Negative, Slight and Long-Term during the Operation Phase of the Proposed Scheme.

The proposed citybound traffic diversion along Le Fanu Road and Kylemore Road, making the short stretch of Ballyfermot Road a one-way in the westbound direction, is not expected to have a significant impact on commercial businesses as the existing access road in-front of the shops is already one-way, and this is not proposed to change. Therefore, the impact on business viability is expected to be Negative, Slight, Long-Term.

The southbound one-way proposal along Grattan Crescent is expected to experience an overall Negative, Slight, Long-Term impact during Operation due to the re-distribution of traffic around the one-way system. Business viability is unlikely to be affected as the majority of businesses along this stretch of road are mostly located to the south of Inchicore Terrace South, where the road remains two-way access.

10.5 Mitigation and Monitoring Measures

The design of the Proposed Scheme has evolved through comprehensive design iteration, with particular emphasis on minimising the potential for environmental impacts, where practicable, whilst ensuring the objectives of the Proposed Scheme are attained. This population assessment takes account of the design outlined in Chapter 4 (Proposed Scheme Description) which minimises negative population impacts including: improving safety for cyclists with additional road closures; minimising cycle track widths to reduce land take from residential properties; modifying junction layouts to protect cyclists and altering layout and signal timings of major junctions to minimise traffic redistribution into side roads.

The population assessment presented in Section 10.4 has been informed by the residual impacts reported in Chapter 6 (Traffic & Transport), Chapter 7 (Air Quality), Chapter 9 (Noise & Vibration) and Chapter 17 (Landscape (Townscape) & Visual). The reported residual impacts in these chapters take into account any topic-specific mitigation identified within the respective chapters. No further mitigation is proposed over and above that set out in individual topic chapters.

10.6 Residual Impacts

No additional mitigation measures have been proposed for this population assessment therefore the residual impacts are the same as potential effects detailed in Section 10.4.

10.6.1 Construction Phase

Table 10.12 summarises the predicted impacts (same as residual impacts) of the population assessment during Construction Phase of the Proposed Scheme. This includes all community and economic assessment topics.

Table 10.12: Summary of Construction Phase Significant Residual Impacts

Assessment Topic	Predicted Impact (Residual Impacts) for Community Areas	Significant Residual Impact (Receptor Specific)
Community Assessment		
Community amenity	Negative, Not Significant and Short-Term - Rowlagh - Quarryvale, Ballyfermot Upper, Chapelizod, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street and Meath Street and Merchants Quay Neutral, Not Significant and Short-Term - Palmerstown and Francis Street	No Significant impacts
Community land take	Negative, Moderate and Short-Term – Ballyfermot Upper, Ballyfermot and James's Street	Negative, Significant and Short-Term – St James's Hospital, St Michael's and St Gabriel's Primary Schools, and Liffey Gaels Park
Community accessibility	<u>Pedestrians, Cyclists and Bus Users</u> Negative, Slight / Moderate and Short-Term - Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Negative, Not Significant and Short-Term - Palmerstown, Rowlagh – Quarryvale, Chapelizod and Francis Street <u>Private Vehicles</u> Negative, Moderate and Short-Term - Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Negative, Not Significant and Short-Term - Palmerstown, Rowlagh – Quarryvale, Chapelizod and Francis Street	
Economic Assessment		
Commercial amenity	Negative, Slight and Short-Term - Rowlagh – Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchants Quay Neutral, Not Significant and Short-Term - Palmerstown, Chapelizod and Francis Street	<u>Direct</u> Ruby Finnegans Guinness Brewery <u>Indirect</u> No Significant impacts
Commercial land take	Negative, Moderate and Short-Term – Rowlagh – Quarryvale, Ballyfermot Upper, Chapelizod, Ballyfermot, and Inchicore (Mary Immaculate)	Negative, Significant and Short-Term – Cherry Orchard Service Station, First Stop Tyres, and Long Meadows Pitch and Putt
Commercial accessibility	<u>Pedestrians, Cyclists and Bus Users</u> Negative, Slight and Short-Term - Rowlagh – Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Negative, Not Significant and Short-Term - Palmerstown, Chapelizod and Francis Street <u>Private Vehicles</u> Negative, Moderate and Short-Term - Rowlagh – Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Negative, Not Significant and Short-Term - Palmerstown, Chapelizod and Francis Street	

10.6.2 Operational Phase

Table 10.13 summarises the predicted impacts (same as residual impacts) of the population assessment during operation of the Proposed Scheme. This includes all community and economic assessment topics.

Table 10.13: Summary of Operational Phase Significant Residual Impacts

Assessment Topic	Predicted Impact (Residual Impacts) for Community Areas	Significant Residual Impact (Receptor Specific)
Community Assessment		
Community amenity (Indirect)	Positive, Not Significant and Long-Term - Rowlagh – Quarryvale, Ballyfermot Upper, Chapelizod, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Neutral, Not Significant and Long-Term - Palmerstown and Francis Street	No Significant impacts
Community land take	Negative, Moderate and Long-Term – Ballyfermot Upper, Ballyfermot and James's Street	No Significant impacts

Assessment Topic	Predicted Impact (Residual Impacts) for Community Areas	Significant Residual Impact (Receptor Specific)
Community accessibility	<p><u>Pedestrians</u> Positive, Significant and Long-Term - Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Positive, Not Significant and Long Term - Palmerstown, Chapelizod and Francis Street</p> <p><u>Cyclists</u> Positive, Moderate to Very Significant and Long-Term - Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Positive, Not Significant and Long Term - Palmerstown, Chapelizod and Francis Street</p> <p><u>Bus Users</u> Positive, Very Significant to Profound and Long-Term - Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Positive, Not Significant and Long Term - Palmerstown, Chapelizod and Francis Street</p> <p><u>Private Vehicles</u> Positive, Moderate and Long-Term - Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Negative, Slight and Long-Term – James's Street Negative, Moderate and Long-Term - Palmerstown, Chapelizod and Francis Street</p>	
Economic Assessment		
Commercial amenity (direct and indirect)	<p>Positive, Not Significant and Long-Term - Rowlagh – Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Neutral, Not Significant and Long-Term - Palmerstown, Chapelizod and Francis Street</p>	<p><u>Direct</u> No Significant impacts <u>Indirect</u> No Significant impacts</p>
Commercial land take	Negative, Moderate and Long-Term – Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Chapelizod and Rowlagh – Quarryvale	No Significant impacts
Commercial accessibility	<p><u>Pedestrians</u> Positive, Moderate to Significant and Long-Term - Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Positive, Not Significant and Long Term - Palmerstown, Chapelizod and Francis Street</p> <p><u>Cyclists</u> Positive, Moderate to Very Significant and Long-Term - Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Positive, Not Significant and Long Term - Palmerstown, Chapelizod and Francis Street</p> <p><u>Bus Users</u> Positive, Very Significant to Profound and Long-Term - Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Positive, Not Significant and Long Term - Palmerstown, Chapelizod and Francis Street</p> <p><u>Private Vehicles</u> Positive, Moderate and Long-Term - Rowlagh-Quarryvale, Ballyfermot Upper, Ballyfermot, Inchicore (Mary Immaculate), Inchicore (St Michael's), James's Street, and Meath Street and Merchant's Quay Negative, Slight and Long-Term – James's Street Negative, Moderate and Long-Term - Palmerstown, Chapelizod and Francis Street</p> <p><u>Business Viability on Individual Receptors</u> No Significant impacts</p>	

As outlined within Section 10.4.4 and summarised in Table 10.13 the Proposed Scheme will deliver positive impacts in terms of accessibility to community facilities and commercial businesses for pedestrians, cyclists and bus users during the Operational Phase. The Proposed Scheme is also expected to benefit individuals and businesses whose workers live along the corridor. Retail and leisure businesses along the route could gain a double benefit from both increased sales and improved staff productivity (see Appendix A10.2 in Volume 4 of this EIAR).

These improvements will help to achieve the aims and objectives of the Proposed Scheme by providing an attractive alternative to the use of private vehicles and promoting a modal shift to walking, cycling and public transport, allowing for greater capacity along the corridor to access residential, community and commercial

receptors. As discussed in Appendix A10.2 the Proposed Scheme will also ensure to connect people with essential services such as healthcare facilities and jobs (EY 2021).

In order to accommodate the Proposed Scheme and to ensure it can be readily utilised by sustainable modes of transport, localised significant impacts from permanent land take are expected on a small number of properties. Negative (not significant) impacts are expected on private vehicles travelling in the surrounding road network. However, the design of the Proposed Scheme, which is a result of a detailed design iteration process, ensures that the surrounding road network will have the capacity to accommodate the redistributed traffic during the operation whilst still achieving the aims and objectives of the Proposed Scheme.

Accordingly, it is concluded that the Proposed Scheme will deliver strong benefits for users of sustainable modes of transport, with positive accessibility and amenity impacts for community areas in the study area and align with specific objectives identified in Section 10.1.

10.7 References

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