



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 effects on the human population associated with the Construction and Operational Phases of the Kimmage to City Centre Core Bus Corridor Scheme (hereafter referred to as the Proposed Scheme).

These potential effects 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 effects on communities (community assessment) as well as economic effects 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 effect from displaced traffic in the AM and PM peak hours (as identified in Chapter 6 (Traffic & Transport)); and
- Appendix A10.2 The Economic Effect of the Core Bus Corridors Report (EY 2021). This report is an assessment of the economic effect of the Core Bus Corridors. The effects 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 effects on the local population, residents, communities and businesses.

10.2.1 Study Area

The population assessment requires potential effects 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 effects from the Proposed Scheme on the local population; residents and communities; and
- **Economic Assessment:** An assessment to capture effects from the Proposed Scheme on commercial receptors. Wider economic effects of all the Core Bus Corridors are discussed in Appendix A10.2 The Economic Effect 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 effects on individual community receptors, including community facilities and recreational resources, as well as individual residential properties and land parcels being acquired on a temporary and 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 effects 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:

- Clogher Road;
- Donore Avenue;
- Francis Street;
- Harold's Cross;
- Harrington Street;
- Rathgar;
- Kimmage Manor;
- Meath Street and Merchants Quay;
- Mount Argus;
- Templeogue;
- Terenure; and
- Whitefriar Street.

The community study area is 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 effects 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 effect 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 Effect Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2022)	This document outlines EPA guidance for conducting Environmental Effect 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.
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 Effect 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 Effect Assessment of Projects – Guidance on the Preparation of the Environmental Effect 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 effects 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 has been used to establish a full list of community receptors, including local educational, recreational and healthcare facilities.

Desktop research was supplemented by a walkover survey on 12 February 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. A validation check of the walkover survey was performed using online mapping and aerial imagery sources in March 2023.

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 effect 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 effect 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 Effect Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2022). The significance of effects matrix, based on the EPA Guidelines (EPA 2022), was used to determine the significance of effect land use and accessibility effects (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 effects 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 effects. The DMRB Guidance (Highways England 2020) provides a framework for assessing the effect on land use and accessibility and has therefore been used to determine the sensitivity and magnitude of effect 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 effect is also adapted from the EPA Guidelines (EPA 2022).

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

10.2.4.1 Community Assessment

The methodology for the assessment of community effects 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' effect 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' effect on community amenity. For example, where there are both visual and air quality effects 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 effect on community amenity, there needs to be an alignment of receptors across the different contributing environmental assessments.

Chapter 6 (Traffic & Transport) assesses the effects on 'general traffic' along the Proposed Scheme. The effect on general traffic has been considered as having the greatest potential to create a wider effect on community amenity, when combined with other environmental effects. The amenity assessment has considered residual effects 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 effect 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 effect on general traffic along the Proposed Scheme is assigned to all receptors located along the Proposed Scheme, while the effect 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 effect 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 effect 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 effects 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 effect has been considered in the amenity assessment. Construction traffic effects were considered when aligning a noise effect 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 effects 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 effect 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 effect to sections of road along the Proposed Scheme. These effects have then been used to align a visual residual effect to all receptors along those sections of road unless Chapter 17 (Landscape (Townscape) & Visual) identified a visual amenity effect 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 effects 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 effects occur, professional judgement has been used to assign the overall effect on amenity.

Whilst the community amenity assessment imposes no duration criteria of its own, where a 'Significant' effect on amenity is identified, the temporal aspects from the environmental effects were examined to determine whether the effects 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 effects that may arise on individual receptors have only been stated separately in the Potential Effects (Section 10.4) for Slight/Moderate, Moderate, Moderate/Significant and Significant amenity impacts. Amenity effects 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 effect are listed in the Residual Effect 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 effect 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	Not significant	Not significant	Not significant	Not significant

*Potential direct effects 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 effects 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 effects 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 effect 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 effect 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 effects 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 effect 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 effects 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 effect 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 effect is identified at any point along the Proposed Scheme.

10.2.4.2 Economic Assessment

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

10.2.4.2.1 Commercial Amenity

The commercial amenity assessment has included consideration of 'direct' and 'indirect' effects on commercial amenity. An indirect amenity effect 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 effects 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 effect 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 effects 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 effect 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 effect 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 effect 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 effect 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 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 effects 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 effect 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 Chapter 6 (Traffic & Transport). These qualitative assessments were considered collectively in order to assess the significance of effects 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 effect 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

Most of the Proposed Scheme is residential in nature, and travels through the community areas of Terenure, Mount Argus and Harold's Cross. The majority of the Proposed Scheme is lined with houses and small commercial premises. There are a number of commercial premises concentrated on the Kimmage Road Lower at Sundrive Road in the Mount Argus community area and at Harold Cross Roads in the Harold's Cross community area. As the Proposed Scheme approaches the City Centre, and particularly as it crosses the Grand Canal, the character

becomes more urban and a larger proportion of commercial properties line the route. Once past the Grand Canal, the Proposed Scheme passes through the community area of Harrington Street and then terminates in the community area of Francis Street. The study area for the Proposed Scheme consists of 12 community areas which have an approximate total population of 82,500 according to the 2016 Census (CSO 2016a). The community study area is presented in Figure 10.1.

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 will pass a number of community and recreation receptors and 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	Place of Worship	Recreation	Hospital / Health Centre	Schools
Templeogue	2	3	0	4
Kimmage Manor	1	0	0	0
Terenure	6	8	2	7
Rathgar	9	4	3	5
Mount Argus	5	3	2	0
Harold's Cross	1	5	1	3
Clogher Road	3	4	1	4
Harrington Street	2	2	3	6
Donore Avenue	4	1	2	3
Francis Street	3	2	0	5
Whitefriar Street	6	0	1	2
Meath Street and Merchants Quay	6	6	1	6
Study Area Total	48	38	16	45

Table 10.4 demonstrates that community receptors are evenly spread across the study area with a slightly higher number of recreational resources in Terenure near the start of the Proposed Scheme. Notable community receptors along the Proposed Scheme include:

- St Glady's Private Nursing Home, Mount Argus;
- Our Lady's Hospice & Care Services, Mount Argus;
- Harold's Cross Park, Harold's Cross; and
- St Clare's Convent National School, Harold's Cross.

10.3.2.2 Residential Land

There are approximately 24,000 residential properties within the community study area (OSI 2020).

10.3.2.3 Commute to Work

There are approximately 39,500 commuters across the Proposed Scheme community study area and 18% of these travel by public transport (bus or train) (CSO 2016b). The method of travel to work by community area is presented in Table 10.5. There are significantly fewer people commuting by car in the study area (33%) compared to the Dublin average (54%), with more than double the proportion commuting by foot or bike (37% compared to 17%). Commuters travelling by bus range from 17% in Kimmage Manor and Templeogue to 10% in Harrington

Street. The proportion that commute to work by bus in the study area is in line with the Dublin average and is broadly consistent across the community areas.

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
Templeogue	12%	63%	1%	17%	8%
Kimmage Manor	15%	59%	1%	17%	8%
Terenure	15%	48%	1%	28%	8%
Rathgar	14%	34%	6%	37%	9%
Mount Argus	17%	43%	1%	32%	6%
Harold's Cross	13%	32%	2%	45%	8%
Clogher Road	17%	45%	3%	28%	6%
Harrington Street	10%	16%	6%	51%	17%
Donore Avenue	13%	23%	5%	50%	8%
Francis Street	14%	16%	6%	52%	12%
Whitefriar Street	11%	10%	5%	37%	37%
Meath Street and Merchants Quay	12%	11%	7%	44%	27%
Study Area Average	14%	33%	4%	37%	13%
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 and metro stops providing an indication of the level of availability of public transport within community areas. There are a total of 333 public transport access points across the study area as shown in Table 10.6. Meath Street and Merchant's Quay has the largest number of public transport access points across the study area with 57 access points (17% of the total). The furthest community area from the City Centre is Templeogue which has 29 access points (9% 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
Templeogue	29	9%
Kimmage Manor	15	5%
Terenure	44	13%
Rathgar	35	11%
Mount Argus	21	6%
Harold's Cross	21	6%
Clogher Road	32	10%
Harrington Street	28	8%
Donore Avenue	17	5%
Francis Street	18	5%
Whitefriar Street	16	5%
Meath Street and Merchants Quay	57	17%
Study Area Total	333	

10.3.3 Economic Baseline

10.3.3.1 Commercial Receptors

The Proposed Scheme will pass a number of commercial clusters and shopfronts. The number of commercial receptors are presented in Table 10.7.

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

Community Area	Commercial Receptors
Templeogue	69
Kimmage Manor	35
Terenure	174
Rathgar	144
Mount Argus	135
Harold's Cross	153
Clogher Road	76
Harrington Street	438
Donore Avenue	88
Francis Street	183
Whitefriar Street	385
Meath Street and Merchants Quay	471
Study Area Total	2,521

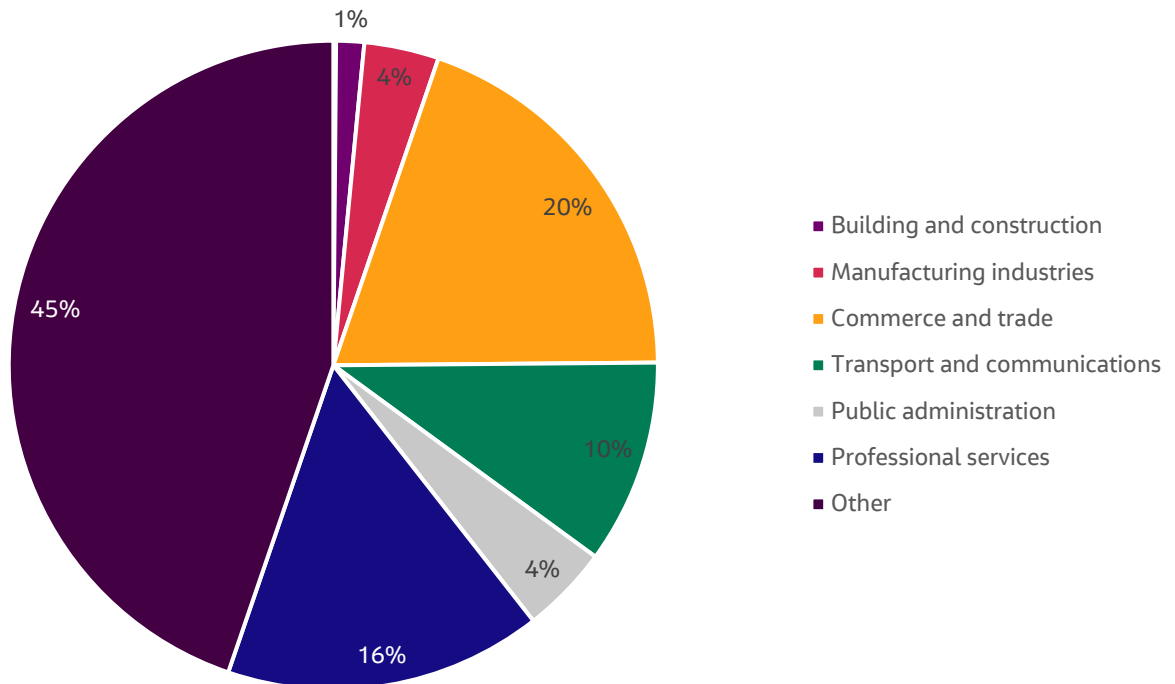
Table 10.7 shows the largest number of commercial receptors is located in Meath Street and Merchant's Quay and the smallest number of commercial receptors is in the Kimmage Manor community area.

10.3.3.2 Employment

Within the study area there are approximately 42,400 people in employment (57% of the total study area population). Of the working age population, over 4,600 people are unemployed (10% of the working age population), across the study area population and this equates to 6% being unemployed (CSO 2016c).

Key centres of employment within the study area include Greenmount Industrial Estate and KCR Industrial Estate.

Graph 10.1 presents a breakdown of employment across the study area. The largest sector of employment is commerce and trade (29%) closely followed by building and construction (24%) and professional services (23%) (CSO 2016c).



Graph 10.1 Employment by Industry within the Study Area (%)

10.4 Potential Effects

10.4.1 Characteristics of the Proposed Scheme

Priority for buses is provided along the entire route consisting of dedicated bus lanes and the use of bus gates. Four Bus Gates are proposed along the Proposed Scheme to ensure bus priority as follows:

- On R817 Kimmage Road Lower, just north of the Ravensdale Park Junction – operating 6am to 10am and 4pm to 8pm, 7 days a week in both directions;
- On R817 Kimmage Road Lower, just south of Harold’s Cross Park – operating 24-hour / 7 days a week;
- On R817 Kimmage Road Lower, at the northern end of Harold’s Cross Park – operating in the northbound direction 6am to 10am; and
- On R137 at Harold’s Cross Road and Kenilworth Park junction – operating 24-hour / 7 days a week.

The Proposed Scheme is approximately 3.7km long and includes approximately 3.5km of segregated cycle tracks (both directions) and 6km of unsegregated cycle lane. These facilities combine with the existing bus lanes to form a continuous link for cyclists. The proposed Poddle Cycleway will run over a length of 1.1km along Poddle Park Road, Bangor Road, Blarney Park, Mount Argus Way, and Mount Argus View where it will re-join R817 Kimmage Road Lower for a distance of 0.9km to Harold’s Cross Park, along Sundrive Road coming from Blarney Park to the shopping centre entrance.

Temporary and permanent land take is required from a number of properties along the Proposed Scheme to facilitate the widening of the carriageway and to allow the provision of improved pedestrian, cycle and bus infrastructure.

The Proposed Scheme has been designed following the guidelines in Building for Everyone – A Universal Design Approach (Centre for Excellence in Universal Design 2020). In general, the Proposed Scheme is likely to improve the street environment, ensuring it will meet current Universal Design good practice standards. An accessibility

audit determined that the majority of footways along the existing route were in a reasonable state of repair and the majority of crossings already have dropped kerbs and tactile paving. However, the Proposed Scheme will address gaps in existing provision, as well as upgrade some pedestrian and cycle routes to a better standard (segregated instead of delineated with painted white lines). The urban environment will be easier and safer for a wider variety of pedestrians, including the visually impaired, wheelchair users and people with mobility difficulties, parents with young children and pushchair users. Details of provision for mobility impaired are set out in Chapter 4 (Proposed Scheme Description). This would help to reduce the impact of accessibility in the urban environment, particularly for people with disabilities.

As per Chapter 5 (Construction), during the Construction Phase, the anticipated site staff numbers working on the Proposed Scheme will be 20 to 30, rising to 50 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 Economic Impact of the Core Bus Corridors Report), 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. Appendix A10.2 (The Economic Impact of the Core Bus Corridors Report) also identifies that there is expected to be an increase in job satisfaction as well as an increase in job retention.

Bus passenger numbers are projected to increase as a result of the Proposed Scheme through the realisation of faster journey times and better reliability, which will be coupled with the opportunity to increase capacity through more frequent services if required. In addition, the provision of enhanced cycling facilities should also increase the number of cyclists utilising the infrastructure.

The Proposed Scheme will have three Construction Compounds along its length, as listed below:

- Construction Compound K1: Existing Car Park adjacent to Sundrive Road;
- Construction Compound K2: Adjacent to the Harold's Cross Road entrance to Our Lady's Hospice; and
- Construction Compound K3: Green space adjacent to St. Patrick's Court along Clanbrassil Street Lower.

10.4.2 'Do Nothing' Scenario

In the 'Do Nothing' scenario the Proposed Scheme would not be implemented and therefore there would 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 effect on land use and potential Negative effects 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 effects arise from a combination of traffic, air quality, noise and visual effects as discussed in Section 10.2.4.1.1.

Chapter 6 (Traffic and Transport) identified a residual Negative, Moderate and Short-term effect on the general traffic along the Proposed Scheme and a Negative, Slight and Short-term effect from construction traffic on the surrounding road network. A Negative, Moderate and Short-term effect is assigned to all community receptors along the Proposed Scheme, while a Negative, Slight, and Short-term effect is assigned to community receptors located in the surrounding road network (see Section 10.2.4.1.1.1).

Chapter 7 (Air Quality) identified residual road traffic air quality effects on human receptors to be Neutral and Short-term during construction.

Chapter 9 (Noise and Vibration) identified a number of noise effects for NSLs at varying distances to the Proposed Scheme:

- A Negative, Slight to Moderate and Temporary effect from general road works and urban realm landscaping at NSLs within 10m of the Proposed Scheme. This effect changes to Negative, Moderate to Significant and Temporary at NSLs within 15m of the Proposed Scheme during night-time hours;
- A Negative Significant to Very Significant and Temporary effect from road widening / and utility diversion works at NSLs within 10m of the Proposed Scheme during night-time hours;
- A Negative, Moderate to Significant and Temporary effect from boundary treatment works, additional works and bored piling at NSLs within 15m of the Proposed Scheme during night-time hours;
- A Negative, Moderate to Significant and Temporary effect from Construction Compounds at NSLs within 10m of Construction Compound boundaries during night-time hours; and
- A Negative, Moderate to Significant and Temporary effect from retaining wall construction works at NSLs within 15m of the Proposed Scheme during night-time hours.

The most adverse residual noise effect rating was that assigned to road widening / and utility diversion works (i.e. Negative Significant to Very Significant and Temporary effect) and given the widespread nature of these works across the Proposed Scheme, this residual effect was assigned to all community receptors along the length of the Proposed Scheme to ensure the worst-case scenario is considered.

In addition to the above effects, Chapter 9 (Noise and Vibration) also identified a Positive, Slight and Temporary to Negative, Slight to Moderate and Temporary residual effect on those NSLs situated within 1km of the Proposed Scheme as a result of construction traffic.

Chapter 17 (Landscape (Townscape) & Visual) identified the following townscape and streetscape effects during construction:

- A Negative, Moderate / Significant and Temporary / Short-term effect on townscape and streetscape character along Kimmage Road Lower from Kimmage Cross Roads to the junction with Harold's Cross Road;
- A Negative, Significant and Temporary / Short-term effect on townscape and streetscape character along Harold's Cross Road between Harold's Cross Park and the Grand Canal; and
- A Negative, Moderate and Temporary / Short-term effect on townscape and streetscape character along Clanbrassil Street Upper and Lower as well as New Street South from the Grand Canal to the junction with Patrick Street.

These impacts on townscape represent the visual effect experienced by community receptors along the Proposed Scheme (Chapter 17 (Landscape (Townscape) & Visual)).

The Grand Canal Conservation Area is expected to experience a Negative, Moderate / Significant and Temporary / Short-term residual visual effect, while similarly, the amenity designations of the Grand Canal and Harold's Cross Park are expected to witness Negative, Significant and Temporary / Short-term and Negative, Moderate and Temporary / Short-term residual visual effects respectively.

The following community receptors are also expected to experience the following landscape and visual effects as a result of the construction of the Proposed Scheme:

- Nos. 14 – 26 Harold's Cross Road, on the west side of Harold's Cross Road and Nos. 33 – 61 on the east side of Harold's Cross Road – A Negative, Very Significant and Temporary / Short-term residual effect;
- No. 32A Clanbrassil Street Upper (at Gordon's Fuels) – A Negative, Profound and Permanent residual effect;

- Other properties included in temporary land acquisition – A Negative, Significant / Very Significant and Temporary / Short-term; and
- Other properties not included in temporary land acquisition or with minimal direct contact with the Proposed Scheme – A Negative, Moderate and Temporary / Short-term.

These environmental effects have been considered together to identify if there is a combination of effects acting upon the same community facilities.

The assessment concluded that these residual traffic, air quality, noise and visual effects will combine to create a Negative, Moderate / Significant and Short-term effect on community amenity within the portions of the community areas located directly along the length of the Proposed Scheme between Lower Kimmage Road and the Grand Canal (i.e. the community areas of Mount Argus and Harold's Cross). The following community receptors are expected to experience this effect on community amenity:

- Harold's Cross Park;
- Saint Patrick's Cathedral Grammar School;
- Mount Argus Park;
- Grand Canal;
- Saint Clare's Convent National School;
- Leinster Park Montessori School;
- Saint Audoen's Church;
- Poddle Park;
- Saint Gladys Private Nursing Home;
- Holy Apostles Peter and Paul Russian Orthodox Church;
- Our Lady's Hospice and Care Services;
- Mount Jerome Cemetery
- The River Poddle Corridor; and
- Sundrive Road Car Park.

A Negative, Moderate and Short-term effect on community amenity was determined for the portion of the community areas located directly along the length of the Proposed Scheme between the Grand Canal and Patrick Street Junction (i.e. Harrington Street and Francis Street).

The wider areas of the aforementioned community areas are not expected to be significantly negatively affected however, as such effects on community amenity resulting from the construction of the Proposed Scheme are considered to be localised. Therefore, the overall impact on the community amenity of community areas along the Proposed Scheme is considered to be Negative, Not Significant and Short-term, while the other community areas situated away from but within proximity to the Proposed Scheme (i.e. Templeogue, Kimmage Manor, Rathgar, Clogher Road, Donore Avenue, Whitefriar Street and Meath Street and Merchants Quay) are expected to experience a Neutral and Short-term effect on community amenity.

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 effects this has on community facilities and residential properties.

A total of 39 community receptors (36 residential properties and 3 community facilities) are impacted by temporary land take (only) as a result of the construction of the Proposed Scheme. The community receptors subject to temporary land take are as follows:

- No. 01 – 21 Mount Argus Square (No. 21 residential properties) (in the community area of Mount Argus);

- No. 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, and 61 Harold's Cross Road (no. 15 dwellings) (in the community area of Harold's Cross);
- The Grand Canal (on west and east side of Robert Emmet Bridge)(in the community area of Harrington Street);
- Existing Car Park adjacent to St. Vincent Street (opposite 62 Clanbrassil Street Lower); and
- Green space at St. Patrick's Court, Clanbrassil Street Lower (in the community area of Harrington Street).

Some of the above community receptors may also be subject to permanent land take (which will typically have a much more reduced land take requirement when compared to temporary land take requirements), please see Section 10.4.4.1.2.1 for further details on permanent land take requirements. It should also be noted that 14 – 26 Harold's Cross Road (Focus Ireland Housing) is also subject to temporary as well as permanent land take however as the extent of land take is similar in both instances, this has been treated as permanent land take and is discussed in Section 10.4.4.1.2.1.

During the Construction Phase, temporary land take will be required in front of the residential properties at no. 01 – 21 Mount Argus Square (No. 21 dwellings) at Mount Argus Square (in the community area of Mount Argus) to accommodate the construction activities to construct the proposed boardwalk structure over the River Poddle at this location (however as noted in Chapter 5 (Construction) most of the construction activities required to construct this structure will be conducted from the car park area adjacent to Sundrive Road. The construction programme for the section of the Proposed Scheme that includes these works is considered to be 6 months. Therefore, in line DMRB guidance and as there is a substantial amendment to the access of these properties during the Construction Phase, the effect of this temporary land take requirement is considered to be Negative, Moderate and Short-term.

Temporary land take is required from the front gardens of No. 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, and 61 Harold's Cross Road (no. 15 dwellings) (in the community area of Harold's Cross) to facilitate the construction of the proposed road widening and new cycle tracks along Harold's Cross Road. As a considerable portion of these front gardens are to be temporarily acquisitioned, and that access is likely to be substantially amended, the effect of this temporary land take is considered to be Negative, Moderate and Short-term.

At the Grand Canal (on the west and east side of Robert Emmet Bridge), temporary land take is required from the Grand Canal itself as well as its embankments to facilitate the proposed road widening, canal bank landscaping, reinstatement of canal towpath, and accommodation of the proposed pedestrian and cycle bridge structures across the canal. Despite the temporary land take requirements, the function and access to Robert Emmet Bridge for all users will not be impeded while only a small area of the Grand Canal will be closed off from public recreational use. Therefore, the effect of this temporary land take is considered to be Negative, Slight and Short-term.

The existing car park adjacent to St. Vincent Street (opposite 62 Clanbrassil Street Lower) is subject to temporary land take during the Construction Phase in order to provide the proposed revised car parking layout arrangement at this site. As such the effect of this temporary land take is considered to be Negative, Slight and Short-term.

The area of green space adjacent to St. Patrick's Court along Clanbrassil Street Lower is temporarily required to facilitate the construction of a Construction Compound (K3). Access to all surrounding buildings will be maintained throughout the duration in which the Construction Compound is in operation. As such, the effect of this temporary land take is considered to be Negative, Slight and Short-term.

Chapter 5 (Construction Strategy) outlines how access will be maintained to residential properties during construction.

The breakdown of receptors impacted by temporary land take requirements by community area and significance is shown in Table 10.8.

Table 10.8: Land Take Effects on Community Facilities during the Construction Phase

Community Area	Nature of Effect / Number of Community Facilities Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Harold's Cross	0	0	15	0
Harrington Street	0	3	0	0
Mount Argus	0	0	21	0
Total	0	3	36	0

Following consideration of the extent of land take within each community area, the overall effect of land take across the community areas within the study area is considered Negative, Not Significant and Short-term during construction.

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 effects will differ based on the mode of travel used. The assessment has therefore separately assessed accessibility effects on walkers and cyclists, bus users and private vehicles (which includes private parking).

Pedestrians and Cyclists

As discussed in Chapter 5 (Construction), there are a number of pedestrian / cyclist safety measures included during construction, for example lighting, signage and fencing. These safety measures are intended to allow the safe continuation of access along the route of the Proposed Scheme during its construction. It is expected that, as roads, cycle lanes and footpaths are being upgraded, that there will be some level of disruption to users and the subsequent ability to access community facilities. As outlined in Section 5.5 of Chapter 5 (Construction), measures will be taken by the Construction Contractor(s) to ensure that access and parking are maintained during construction wherever possible to reduce the effect on accessibility along the Proposed Scheme.

In addition, Chapter 6 (Traffic and Transport) has identified a residual Negative, Slight and Short-term effect on pedestrian access and a Negative, Moderate and Short-term effect on cycling access along the Proposed Scheme during construction. Taking into consideration the measures presented in Chapter 5 (Construction Strategy) access to community receptors along the Proposed Scheme is expected to be Negative, Slight and Short-term for pedestrians and Negative, Moderate and Short-term for cyclists during construction.

Bus Users

As discussed in Chapter 5 (Construction Strategy) existing bus routes will be maintained. Bus stop locations may however need to be temporarily relocated to accommodate the works. It is expected that use of the 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 facilities.

In addition, Chapter 6 (Traffic and Transport) has identified a residual Negative, Moderate and Short-term effect on bus access along the Proposed Scheme. Taking into consideration the measures in Chapter 5 (Construction Strategy) it is expected that access to community receptors along the Proposed Scheme will be Negative, Moderate and Short-term for bus users during construction.

Private Vehicles

Chapter 5 (Construction Strategy) outlines temporary traffic management measures which may effect accessibility along certain parts of the Proposed Scheme to parking provision and community facilities, particularly where road closures or diversions are required. It is expected that as any road closures or diversions are temporary, there may be 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 effect on specific parking and loading provision is discussed in Chapter 6 (Traffic and Transport).

In addition, Chapter 6 (Traffic and Transport) has identified a residual Negative, Moderate and Short-term effect for general traffic travelling along the Proposed Scheme. Taking into consideration the measures in the Chapter 5 (Construction Strategy) it is expected that access to community receptors from private vehicles along the Proposed Scheme, is expected to be Negative, Moderate and Short-term during construction. The effect of bus gates on private vehicles is considered during the operational phase of the Proposed Scheme, see Section 10.4.4.

The effects 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 effect of construction activity will be experienced where the facility is located. The community areas that are expected to experience a Negative, Slight and Short-term (pedestrians) and a Negative, Moderate and Short-term (cyclists, bus users and private vehicles) access effect are Mount Argus, Harold's Cross, Harrington Street and Francis Street. All other community areas: Templeogue, Kimmage Manor, Terenure, Rathgar, Clogher Road, Donore Avenue, Whitefriar Street and Meath Street and Merchants Quay are expected to experience Negative, Not Significant and Short-term changes in access (for pedestrians, cyclists, bus users and private vehicles) 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 10.2.4.1.1, commercial amenity effects can arise indirectly from a combination of traffic, air quality, noise and visual effects or directly where a single environmental effect is significant enough to affect the viability of a commercial business.

Chapter 6 (Traffic and Transport) identified a residual Negative, Moderate and Short-term effect on the general traffic along the Proposed Scheme and a Negative, Slight and Short-term effect from construction traffic on the surrounding road network. A Negative, Moderate and Short-term effect is assigned to all commercial receptors along the Proposed Scheme, while a Negative, Slight and Short-term effect has been assigned to commercial receptors located in the surrounding road network (i.e. away from the Proposed Scheme but within the study area) (see Section 10.2.4.1.1.1).

Chapter 7 (Air Quality) identified road traffic air quality effects on human receptors to be Neutral and Short-term during construction.

Chapter 9 (Noise and Vibration) identified a number of noise effects for NSLs at varying distances to the Proposed Scheme:

- A Negative, Slight to Moderate and Temporary effect from general road works and urban realm landscaping at NSLs within 10m of the Proposed Scheme. This effect changes to Negative, Moderate to Significant and Temporary at NSLs within 15m of the Proposed Scheme during night-time hours;
- A Negative Significant to Very Significant and Temporary effect from road widening / and utility diversion works at NSLs within 10m of the Proposed Scheme during night-time hours;
- A Negative, Moderate to Significant and Temporary effect from boundary treatment works, additional works and bored piling at NSLs within 15m of the Proposed Scheme during night-time hours;
- A Negative, Moderate to Significant and Temporary effect from Construction Compounds at NSLs within 10m of Construction Compound boundaries during night-time hours; and
- A Negative, Moderate to Significant and Temporary effect from retaining wall construction works at NSLs within 15m of the Proposed Scheme during night-time hours.

The most adverse residual noise effect rating was that assigned to road widening / and utility diversion works (i.e. Negative Significant to Very Significant and Temporary effect) and given the widespread nature of these works across the Proposed Scheme, this residual effect was assigned to all commercial receptors along the length of the Proposed Scheme to ensure the worst-case scenario is considered.

In addition to the above effects, Chapter 9 (Noise and Vibration) also identified a Positive, Slight and Temporary to Negative, Slight to Moderate and Temporary residual effect on those NSLs situated within 1km of the Proposed Scheme as a result of construction traffic.

Chapter 17 (Landscape (Townscape) & Visual) identified the following townscape and streetscape effects during construction:

- A Negative, Moderate / Significant and Temporary / Short-term effect on townscape and streetscape character along Kimmage Road Lower from Kimmage Cross Roads to the junction with Harold's Cross Road;
- A Negative, Significant and Temporary / Short-term effect on townscape and streetscape character along Harold's Cross Road between Harold's Cross Park and the Grand Canal; and
- A Negative, Moderate and Temporary effect on townscape and streetscape character along Clanbrassil Street Upper and Lower as well as New Street South from the Grand Canal to the junction with Patrick Street.

These impacts on townscape represent the visual effect experienced by commercial receptors along the Proposed Scheme (Chapter 17 (Landscape (Townscape) & Visual)).

The following commercial receptors are also expected to experience the following landscape and visual effects as a result of the construction of the Proposed Scheme:

- Commercial receptors along Harold's Cross Road – A Negative, Very Significant and Temporary / Short-term residual effect;
- No. 32A Clanbrassil Street Upper (Gordon's Fuels) – A Negative, Profound and Permanent residual effect;
- Other commercial receptors included in temporary land acquisition – A Negative, Significant / Very Significant and Temporary / Short-term; and
- Other commercial receptors not included in temporary land acquisition or with minimal direct contact with the Proposed Scheme – A Negative, Moderate and Temporary / Short-term.

These environmental effects have been considered together to identify if there is a combination of effects acting on the same commercial receptor.

The assessment concluded that these residual significant traffic, air quality, noise, and visual effects combine to create a Negative, Moderate / Significant, and Short-term amenity effect on individual commercial businesses along the portion of the Proposed Scheme between Lower Kimmage Road and the Grand Canal (i.e. within the community areas of Mount Argus and Harold's Cross). Within the portion of the Proposed Scheme between the Grand Canal and Patrick Street Junction (i.e. Harrington Street and Francis Street), individual businesses will experience a Negative, Moderate and Short-term effect on amenity.

The individual commercial businesses within the wider areas of the aforementioned community areas are not expected to be significantly negatively affected however, as such effects on commercial amenity resulting from the construction of the Proposed Scheme are considered to be localised. Therefore, the overall impact on the commercial amenity of community areas along the Proposed Scheme is considered to be Negative, Not Significant and Short-term, while the other community areas situated away from but within proximity to the Proposed Scheme (i.e. Templeogue, Kimmage Manor, Rathgar, Clogher Road, Donore Avenue, Whitefriar Street and Meath Street and Merchants Quay) are expected to experience a Neutral and Short-term effect on community amenity.

As discussed in Section 10.2.4, a single significant environmental effect in isolation can result in a direct effect on commercial amenity where a business has a particular sensitivity. There is the potential for a direct effect on the Maldron Hotel which has been assigned a medium sensitivity to visual disturbance. The hotel is located between Grand Canal and Patrick Street which is expected to experience a Negative, Moderate, and Temporary / Short-term townscape and streetscape impact. Therefore, the effect on this receptor is expected to be direct Negative, Moderate and Temporary / Short-term 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 effects this has on commercial businesses. This assessment also considers the effect 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. Two commercial businesses are impacted by temporary land take as a result of the Proposed Scheme. Harmworth Greenmount Office Park (located in the community area of Harold's Cross) will experience temporary land-take of the garden area beside the garden along Harold's Cross Road and Parnell Road to accommodate the proposed road widening for cycle tracks to be brought as far as the junction. The significance of this temporary land take effect on this commercial receptor has been assessed to have a Negative, Slight and Short-term.

To the immediate north-west of Robert Emmet Bridge is Gordon's Fuels where temporary land take will be required from the yard area to provide enough working room for the necessary construction activities in this location to take place (i.e. construction of new access ramp to Gordon's Fuels, construction of new pedestrian / cyclist bridges adjacent to either side of Robert Emmet Bridge, and carriageway widening, etc.). This land take will not prevent the business from operating during this time, however the land take effect on the business is considered to be Negative, Significant and Short-term.

Table 10.9 summarises the findings of the commercial land take assessment for the Proposed Scheme.

Table 10.9: Land Take Effects on Commercial Receptors during the Construction Phase

Community Area	Nature of Effect / Number of Commercial Receptors Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Harold's Cross	0	1	0	0
Harrington Street	0	0	0	1
Mount Argus	0	0	0	0
Total	0	1	0	1

Overall, the effect of land take across the community areas as a whole is considered Negative, Not Significant and Short-term during construction.

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 works means accessibility effects will differ based on the mode of travel used. The assessment, similar to the community accessibility assessment (Section 10.4.4.1.2), has separately assessed accessibility effects on pedestrians and cyclists, bus users and private vehicles (parking and loading). As the construction mitigation measures presented in Chapter 5 (Construction Strategy) and the residual effects presented in Chapter 6 (Traffic and Transport) are the same for each mode of travel, the effects on commercial accessibility are the same as those reported in Section 10.4.3.1.2.2 for community accessibility.

The effect of the Proposed Scheme on business viability has been considered during operation (see Section 10.4.4.2.2.2) although the bus gates will be in place during construction (Chapter 5 Construction Strategy).

10.4.4 Operational Phase

10.4.4.1 Community Assessment

10.4.4.1.1 Community Amenity

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

Chapter 6 (Traffic and Transport) identified a residual Positive, Slight to Profound and Long-term effect from the reduction of general traffic along the Proposed Scheme and a Negative, Slight and Long-term effect on general traffic along the adjacent road network. A Negative, Moderate and Long-term effect was identified on the junction of Clogher Road / Sundrive Road on Clogher Road during the AM Peak in the Opening Year of the Proposed Scheme (i.e. 2028) as well as at the junction of Clogher Road / Kildare Road on Kildare Road and the junction of Donore Avenue / South Circular Road on the South Circular Road during the PM Peak in 2028. All remaining junctions will be able to accommodate additional general traffic volumes redistributed as a result of the Proposed Scheme and therefore are assessed as Negative, Not Significant and Long-term.

Chapter 7 (Air Quality) identified a Neutral and Long-term residual effect from road traffic impacts on human receptors during the Operational Phase.

Chapter 9 (Noise and Vibration) identified a Positive, Moderate and Short to Medium-term to Neutral and Short to Medium-term direct effect from traffic noise along the Proposed Scheme and a Positive, Moderate and Short to Medium-term to Negative, Slight to Moderate and Short to Medium-term effect from traffic noise on the surrounding road network during the Opening Year of the Proposed Scheme (i.e. 2028). No roads are expected to experience significant noise effects during the Operational Phase.

Chapter 17 (Landscape (Townscape) & Visual) identified the following townscape and streetscape effects during the Operational Phase:

- Positive, Moderate and Long-term effect along Kimmage Road Lower between Kimmage Cross Roads to the junction with Harold's Cross Road;
- Positive, Moderate and Long-term effect along Harold's Cross Road between Harold's Cross Park and the Grand Canal; and
- Positive, Moderate and Long-term effect along Clanbrassil Street Upper and Lower as well as New Street South between the Grand Canal and the junction with Patrick Street.

These effects on townscape represent the visual impact experienced by community receptors along these stretches of road, one year post-construction and are expected to improve over time (see Chapter 17 (Landscape (Townscape) & Visual)). The amenity designation of the Grand Canal is expected to experience a Neutral, Moderate and Long-term (locally) effect, while the following properties are expected to witness Negative, Moderate / Significant and Long-term effects:

- Nos. 14 – 26 on west side of Harold's Cross Road; and
- Nos. 33 – 61 on east side of Harold's Cross Road.

Chapter 17 (Landscape (Townscape) & Visual) also states that No. 32A Clanbrassil Street Upper (at Gordon's Fuels) will experience a Negative, Profound, and Permanent effect as a result of its proposed demolition.

These environmental effects have been considered together to identify if there is a combination of effects acting upon the same community receptors.

The assessment concluded that these residual traffic, air quality, noise, and visual effects combine to create a Negative, Moderate to Positive, Moderate and Long-term amenity effect on all community receptors along the Proposed Scheme. Overall, a Positive, Not Significant and Long-term amenity effect is expected on the following community areas: Mount Argus, Harold's Cross, Harrington Street, and Francis Street. All other community areas (Templeogue, Kimmage Manor, Terenure, Rathgar, Clogher Road, Donore Avenue, Meath Street and Merchants Quay and Whitefriar Street) are expected to experience a Neutral and Long-term amenity effect 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 effect of permanent land take acquisition on community facilities and residential properties.

Permanent land take of the car park at Sundrive Road (and adjacent land over the River Poddle) is required in order to firstly provide for a Construction Compound (K1) during the Construction Phase but also to provide for the proposed boardwalk structure over the River Poddle to Mount Argus Square. This car park will return to public use during the Operational Phase with dedicated parking spaces alongside cycle lane marking to delineate vehicle and cyclist traffic, in keeping with the current private right of way that exists at this location. Therefore, in line with DMRB guidance and as the car park is returning to public use and facilitating improved access to Mount Argus Square, it is considered that the significance of this permanent land take is Positive, Slight and Long-term.

Two community facilities, Our Lady's Hospice (in the community area of Mount Argus) and St Clare's Convent National School (in the community area of Harold's Cross), require permanent land take as a result of the Proposed Scheme during the Operational Phase. The permanent land take at Our Lady's Hospice is required to firstly provide for a Construction Compound (K2) during the Construction Phase but also to facilitate a new public car park at the entrance to the hospice. The location of the proposed car park is on the grassed area rather than land used in the operation of the facility (i.e. access / existing private right of way to the hospice will be maintained at all times during the Construction Phase) and therefore the land take effect is expected to be a Positive, Slight and Long-term. Permanent land take at the access to St Clare's Convent National School is also required to facilitate the widening of the carriageway, however there will be no fundamental change to the access / existing private right of way of the school during either the Construction Phase or Operational Phase of the Proposed Scheme and therefore the land take effect is expected to be a Neutral and Long-term.

Permanent land take is required from the front garden area behind the existing railings at No. 14 – 26 Harold's Cross Road (No. 12 dwellings - Focus Ireland Housing) to the north of the Harold's Cross Road entrance to Our Lady's Hospice to accommodate the construction and operation of the proposed road widening and realigned footpath at this location. There exists a quite minimal garden area at the front of these residential properties currently which negates the ability for many functional uses. As such, in accordance with DMRB guidance, the significance of this permanent land take effect is considered to be Negative, Slight and Long-term.

As mentioned in Section 10.4.3.1.2.1, some community receptors are affected by temporary land take during the Construction Phase and also permanent land take during the Operational Phase. This is the case for the front gardens of the residential properties along Harold's Cross Road (No. 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, and 61 Harold's Cross Road (no. 15 dwellings)). The temporary land take required during the Construction Phase is of a greater extent than what is required in terms of permanent land take during the Operational Phase. As such, the front gardens of these properties will be reinstated once construction activities are complete, however a portion of their front gardens closest to Harold's Cross Road will be permanently acquisitioned to accommodate the widened carriageway and cycle tracks, thereby reducing the overall size of these front gardens as a result of the Proposed Scheme. It is considered that the significance of this permanent land take effect is Negative, Slight and Long-term.

To accommodate the widening of the carriageway to the north of Robert Emmet Bridge, demolition of the residential property at 32A Clanbrassil Street Upper (at Gordon's Fuel) is required. The land take effect on this residential property is Negative, Profound and Long-term.

Table 10.10 summarises the findings of the permanent community land take assessment for the Proposed Scheme.

Table 10.10: Land Take Effects on Commercial Receptors during the Operational Phase

Community Area	Nature of Effect / Number of Commercial Receptors Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Mount Argus	1	14	0	0
Harold's Cross	0	15	0	0
Harrington Street	0	1	0	1
Total	1	30	0	1

Overall, the effect of land take across the community areas is considered Negative, Not Significant and Long-term 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 works means accessibility effects will differ based on the mode of travel used. The assessment has therefore separately assessed accessibility effects on pedestrians, cyclists, bus users and private vehicles.

The significant improvement to the walking, cycling and bus infrastructure included within the Proposed Scheme are anticipated to encourage sustainable modes of transport therefore reducing the demand for private vehicles / parking along the Proposed Scheme.

Pedestrians and Cyclists

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 and Transport) identified a residual Positive, Moderate to Significant and Long-term effect on pedestrian infrastructure and a Positive, Slight to Very Significant and Long-term effect on cycling infrastructure along the Proposed Scheme during the Operational Phase. It is expected that if a beneficial effect on walking and cycling infrastructure is to be experienced, then access to community receptors along the Proposed Scheme will improve for those choosing to walk or cycle. In particular the construction of a new boardwalk at the Stone Boat as part of the Kimmage Cross Roads to Kimmage Road Lower cycleway will improve connectivity for pedestrians and cyclists. The boardwalk offers a new route between Sundrive Park (near the Stone Boat) and Mount Argus Way and will therefore provide a new route to Mount Argus Park.

Bus Users

Full bus priority is proposed along the entire length of the Proposed Scheme, as such Chapter 6 (Traffic and Transport) identified a residual Positive, Moderate to Very Significant and Long-term effect on bus infrastructure along the Proposed Scheme. Chapter 6 (Traffic and Transport) also identified a Positive, Very Significant and Long-term effect 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.

Private Vehicles

Chapter 6 (Traffic and Transport) identified a Positive, Slight to Profound and Long-term effect on general traffic flows along the Proposed Scheme and a Negative, Slight and Long-term effect for redistributed traffic along the adjacent road network. The redistributed traffic assessment did not identify any individual significant effects at junctions during the operational phase.

The most notable changes in accessibility for general traffic would occur as a result of Bus Gates being provided as part of the Proposed Scheme, through which access will only be permitted for public transport, pedestrians and cyclists. As outlined in Chapter 4 (Proposed Scheme Description), four Bus Gates are proposed to ensure bus priority:

- On R817 Kimmage Road Lower, just north of the Ravensdale Park Junction – operating 6am to 10am and 4pm to 8pm, 7 days a week in both directions;
- On R817 Kimmage Road Lower, just south of Harold's Cross Park – operating 24-hour / 7 days a week;
- On R817 Kimmage Road Lower, at the northern end of Harold's Cross Park – operating in the northbound direction 6am to 10am; and
- On R137 at Harold's Cross Road and Kenilworth Park junction – operating 24-hour.

Following the introduction of the southernmost bus gate at the junction of Ravensdale Park and Kimmage Road Lower, northbound private vehicles will be unable to enter the section of Kimmage Road Lower between this junction and Harold's Cross Road in the morning or evening peak periods; likewise, private vehicles will also be unable to travel southbound through this junction at these times.

The bus gate at the junction of Kimmage Road Lower and Harold's Cross Road near the southern end Harold's Cross Park will operate 24-hours per day / 7 days per week and will prevent access for private vehicles travelling southbound and northbound on Kimmage Road Lower. In effect, this bus gate will prevent the use of Kimmage Road Lower by through traffic throughout the entire day, though access will be possible at the southern end outside peak hours. Access will be available at all times to this section of Kimmage Road Lower (i.e. between Ravensdale Park and Harold Cross Road) via alternative surrounding routes. These bus gates will effect private vehicle access to the following community receptors: St Glady's Nursing Home, a GP, dentist, pharmacy and Mount Argus Park.

The other bus gates (i.e. bus gate at northern end of Harold's Cross Park and the bus gate at Kenilworth Park junction) will result in localised re-routeing for private vehicles, with limited effect on community receptors. The bus gate on Harold's Cross Road at the northern end of Harold's Cross Park will only restrict northbound traffic from Harold's Cross Road for private vehicles during morning peak hours. Access to Mount Jerome and Mount Argus Road will be maintained from the eastern and southern side of Harold's Cross Park onto Kimmage Road Lower allowing for access to be unaffected throughout the day by the proposed bus gate at the northern end of Harold's Cross Park on Kimmage Road Lower.

The fourth bus gate at the junction of Harold's Cross Road and Kenilworth Square North will just restrict westbound private vehicle access into the junction from Kenilworth Square North.

The Traffic and Transport assessment considered the effect 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 and Transport). Overall, the effect on parking and loading during operation is a Negative Slight, and Long-term impact.

On the whole, the community areas that are likely to experience the Positive, Slight to Profound and Long-term effects on change in access to community receptors, as a result of the reduction in general traffic, are those situated along the Proposed Scheme, such as Mount Argus, Harold's Cross, Harrington Street, and Francis Street.

Negative, Slight and Long-term effects on changes in access to community receptors, as a result of the redistribution of traffic in the surrounding network, are likely to be experienced in community areas situated away from the Proposed Scheme, namely Kimmage Manor, Templeogue, Terenure, Rathgar, Clogher Road, Donore Avenue, Whitefriar Street and Meath Street and Merchants Quay.

10.4.4.2 Economic Assessment

10.4.4.2.1 Commercial Amenity

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

Chapter 6 (Traffic and Transport) identified a residual Positive, Slight to Profound and Long-term effect from the reduction of general traffic along the Proposed Scheme and a Negative, Slight and Long-term effect on general traffic along the adjacent road network. A Negative, Moderate and Long-term effect was identified on the junction of Clogher Road / Sundrive Road on Clogher Road during the AM Peak in the Opening Year of the Proposed Scheme (i.e. 2028) as well as at the junction of Clogher Road / Kildare Road on Kildare Road and the junction of Donore Avenue / South Circular Road on the South Circular Road during the PM Peak in 2028. All remaining junctions will be able to accommodate additional general traffic volumes redistributed as a result of the Proposed Scheme and therefore are assessed as Negative, Not Significant and Long-term.

Chapter 7 (Air Quality) identified a Neutral and Long-term residual effect on human receptors during the Operational Phase.

Chapter 9 (Noise and Vibration) identified a Positive, Moderate and Short to Medium-term to Neutral and Short to Medium-term direct effect from traffic noise along the Proposed Scheme and a Positive, Moderate and Short to Medium-term to Negative, Slight to Moderate and Short to Medium-term effect from traffic noise on the

surrounding road network during the Opening Year of the Proposed Scheme (i.e. 2028). No roads are expected to experience significant noise during the Operational Phase.

Chapter 17 (Landscape (Townscape) & Visual) identified the following townscape and streetscape effects during the Operational Phase:

- Positive, Moderate and Long-term effect along Kimmage Road Lower between Kimmage Cross Roads to the junction with Harold's Cross Road;
- Positive, Moderate and Long-term effect along Harold's Cross Road between Harold's Cross Park and the Grand Canal; and
- Positive, Moderate and Long-term effect along Clanbrassil Street Upper and Lower as well as New Street South between the Grand Canal and the junction with Patrick Street.

These effects on townscape represent the visual impact experienced by commercial receptors along these stretches of road, one year post-construction and are expected to improve over time (see Chapter 17 (Landscape (Townscape) & Visual)). Chapter 17 (Landscape (Townscape) & Visual) also states that No. 32A Clanbrassil Street Upper (at Gordon's Fuels) will experience a Negative, Profound, and Permanent effect as a result of its proposed demolition.

These environmental effects have been considered together to identify if there is a combination of effects acting upon the same commercial receptors.

The assessment concluded that these residual traffic, air quality, noise, and visual effects combine to create a Negative, Moderate to Positive, Moderate and Long-term amenity effect on all commercial businesses along the Proposed Scheme. Overall, a Positive, Not Significant and Long-term amenity effect is expected on the following community areas: Mount Argus, Harold's Cross, Harrington Street and Francis Street. All other community areas (Templeogue, Kimmage Manor, Terenure, Rathgar, Clogher Road, Donore Avenue, Whitefriar Street and Meath Street and Merchants Quay) are expected to experience a Neutral, and Long-term amenity effect during the Operational Phase.

As no significant environmental effects (traffic, visual, air quality and noise) were identified on any commercial businesses there are no direct amenity effects during operation 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 effects this has on commercial businesses. In the community area of Harold's Cross, a minimal amount of greenspace is required from the front of Greenmount Office Park to facilitate carriageway widening and therefore a Negative, Slight, and Long-term land take effect is expected on this commercial business.

To the immediate north-west of Robert Emmet Bridge, permanent land take is required for the rearrangement of the access road to Mullens Scrap and the yard area of Gordon's Fuels (to preserve the private right of way that currently exists) as well as the widening of the carriageway along Clanbrassil Street Upper to the immediate north of the bridge in the community area of Harrington Street. This land take will not prevent the businesses from operating however, and therefore the land take effect is assessed to be Negative, Slight and Long-term.

Table 10.11 summarises the findings of the commercial land take assessment for the Proposed Scheme.

Table 10.11: Land Take Effects on Commercial Receptors during the Operational Phase

Community Area	Nature of Effect / Number of Commercial Receptors Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Harold's Cross	0	1	0	0
Harrington Street	0	1	0	0

Community Area	Nature of Effect / Number of Commercial Receptors Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Total	0	2	0	0

Overall, the effect on community areas is considered Neutral and Long-term as a result of the Proposed Scheme during the operational phase.

10.4.4.2.2.2 Accessibility

Commercial accessibility relates to the ability of users and employees to access commercial businesses. The nature of the proposed works means accessibility effects will differ based on the mode of travel used. The assessment has therefore separately assessed accessibility effects on walkers, cyclists, bus users and private vehicles.

The results of the commercial accessibility are the same as the community accessibility, with the only difference being the consideration of access to commercial businesses rather than community facilities.

Pedestrians, Cyclists and Bus Users

Overall, the effect on access to commercial businesses for pedestrians, cyclists and bus users is considered to be Positive, Slight to Very significant and Long-term during the Operational Phase. These effects 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. Overall, the community areas that are expected to experience Positive, Slight to Very significant and Long-term access effects for pedestrians, cyclists and bus users are Mount Argus, Harold's Cross, Harrington Street and Francis Street. All other community areas are expected to be experience a Neutral and Long-term changes in access during the Operational Phase of the Proposed Scheme.

Private Vehicles

As described in Section 10.4.4.1.2.2, the introduction of the bus gates is expected to significantly reduce the number of private vehicles travelling along Kimmage Road Lower. The bus gates at either end of Kimmage Road Lower will prohibit through traffic from either end of the route (albeit at different times of the day, see Section 10.4.1 for details); however, access will still be maintained for local residents and those who wish to access businesses along Kimmage Road Lower.

The introduction of the proposed bus gates is expected to reduce passing trade for all businesses along the stretch of the bus gate, however the road will still be accessible to private vehicles allowing users to continue using the services. The community areas of Mount Argus, Harold's Cross, Harrington Street and Francis Street are expected to be experience a Positive, Slight to Profound and Long-term change in access during the Operational Phase of the Proposed Scheme. All other community areas: Templeogue, Kimmage Manor, Terenure, Rathgar, Clogher Road, Donore Avenue, Whitefriar Street and Meath Street and Merchants Quay are expected to experience Neutral and Long-term changes in access during the Operational Phase of the Proposed Scheme.

Business Viability for Individual Receptors

Most of the businesses in-between the bus gates are not reliant on passing trade, which by definition means people use a service because they see it when driving/walking past, not because they planned to go there. There are several car service businesses that require direct vehicle access but do not rely solely on passing trade, these include: Keith Finn Cars, Hennessy Glass, Tyreland, Russell Car Care and Atlas Auto Service. As private vehicle access to these businesses will be maintained there is not expected to be an effect on business viability.

One business, Circle K filling station, is reliant on passing trade and is expected to be affected as a result of the bus gates being proposed along Kimmage Road Lower.

The Circle K filling station is located along Kimmage Road Lower, approximately 460m north of the southernmost proposed bus gate close to the junction of Ravensdale Park and Kimmage Road Lower. This bus gate is to be operational during the morning and evening peaks (i.e. 6am to 10am and 4pm to 8pm, 7 days a week) in both directions. It is also situated approximately 300m south of the junction of Sundrive Road / Kimmage Road Lower and Larkfield Avenue. The proposed 24hr / 7 days bus gate on Kimmage Road Lower at the southern end of Harold's Cross Park is approximately 1.1km north of the Circle K filling station. Whilst it is accepted that the business will likely experience a reduction in passing trade, there are considered to be some ameliorating factors:

- The closest bus gate (just north of the Ravensdale Park and Kimmage Road Lower junction, approximately 460m to the south of the Circle K filling station) only operates during the morning and evening peaks, thereby allowing general traffic access to this section of Kimmage Road Lower during any other time during the day;
- There is the potential for increased local custom from the operation of the southernmost bus gate (i.e. Ravensdale Park bus gate) during the morning and evening peaks as local residents may opt to avail of the Circle K filling station more often due to access restrictions through this bus gate during these periods;
- Access to the business from the north (i.e. from the junction of Sundrive Road / Kimmage Road Lower / Larkfield Avenue) will be unaffected and maintained; and
- The 24hr / 7 days bus gate on Kimmage Road Lower at the southern end of Harold's Cross Park is approximately 1.1km further north of the business.

Therefore, it is considered that the potential effect on the business due to the reduction in passing trade as a result of the operation of the Proposed Scheme is Negative, Moderate and Long-term.

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 effects 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 effects reported in Chapter 6 (Traffic & Transport), Chapter 7 (Air Quality), Chapter 9 (Noise & Vibration) and Chapter 17 (Landscape (Townscape) & Visual). The reported residual effects 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 effects are the same as potential effects detailed in Section 10.4.

10.6.1 Construction Phase

Table 10.12 summarises the potential effects (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 Effects

Assessment Topic	Predicted Effect (Residual Impacts) for Community Areas	Significant Residual Effect (Receptor Specific)
Community Assessment		

Assessment Topic	Predicted Effect (Residual Impacts) for Community Areas	Significant Residual Effect (Receptor Specific)
Community amenity	Negative, Not Significant and Short-term – all community areas	<p>Negative, Moderate / Significant and Short-term:</p> <ul style="list-style-type: none"> • Harold's Cross Park; • Saint Patrick's Cathedral Grammar School; • Mount Argus Park; • Grand Canal; • Saint Clare's Convent National School; • Leinster Park Montessori School; • Saint Audoen's Church; • Poddle Park; • Saint Gladys Private Nursing Home; • Holy Apostles Peter and Paul Russian Orthodox Church; • Our Lady's Hospice and Care Services; • Mount Jerome Cemetery • The River Poddle Corridor; and • Sundrive Road Car Park. <p>Negative, Moderate and Short-term – community receptors located directly along the length of the Proposed Scheme between the Grand Canal and Patrick Street Junction.</p>
Community land take	Negative, Not Significant and Short-term – all community areas	<p>Negative, Moderate and Short-term:</p> <ul style="list-style-type: none"> • No. 01 – 21 Mount Argus Square (No. 21 residential properties); and • No. 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, and 61 Harold's Cross Road (no. 15 dwellings)
Community accessibility	<p><u>Pedestrians</u> Negative, Slight and Short-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street Neutral, Not Significant and Short-term – all other community areas</p> <p><u>Cyclists and Bus Users</u> Negative, Moderate and Short-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street Neutral, Not Significant and Short-term – all other community areas</p> <p><u>Private Vehicles</u> Negative, Moderate and Short-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street Neutral, Not Significant and Short-term – all other community areas</p>	
Economic Assessment		
Commercial amenity	Negative, Not Significant and Short-term – all community areas	<p><u>Direct</u> Negative, moderate, and short-term – Maldron Hotel</p> <p><u>Indirect</u> Negative, Moderate / Significant and Short-term – commercial receptors located along the Proposed Scheme between Lower Kimmage Road and the Grand Canal; and</p> <p>Negative, Moderate and Short-term - commercial receptors located along</p>

Assessment Topic	Predicted Effect (Residual Impacts) for Community Areas	Significant Residual Effect (Receptor Specific)
		the Proposed Scheme between the Grand Canal and Patrick Street Junction.
Commercial land take	Negative, Not Significant and Short-term – all community areas	Negative, Significant and Short-term – Gordon's Fuels
Commercial accessibility	<p><u>Pedestrians</u> Negative, Slight and Short-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street Neutral, Not Significant and Short-term – all other community areas</p> <p><u>Cyclists and Bus Users</u> Negative, Moderate and Short-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street Neutral, Not Significant and Short-term – all other community areas</p> <p><u>Private Vehicles</u> Negative, Moderate and Short-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street Neutral, Not Significant and Short-term – all other community areas</p>	

10.6.2 Operational Phase

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

Table 10.13: Summary of Operational Phase Significant Residual Effects

Assessment Topic	Predicted Effect (Residual Impacts) for Community Areas	Significant Residual Effect (Receptor Specific)
Community Assessment		
Community amenity	Positive, Not Significant and Short-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street. Neutral and long-term - Templeogue, Kimmage Manor, Terenure, Rathgar, Clogher Road, Donore Avenue, Meath and Merchants Quay and Whitefriar Street	Negative, Moderate to Positive, Moderate and Long-term – all community receptors located along the Proposed Scheme.
Community land take	Negative, Not Significant and Long-term – all community areas	Negative, Profound and Long-term – 32A Clanbrassil Street Upper (at Gordon's Fuels)
Community accessibility	<p><u>Pedestrians and Cyclists</u> Positive, Slight to Very Significant and Long-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street Neutral, Not Significant and Long-term – all other community areas.</p> <p><u>Bus Users</u> Positive, Moderate to Very Significant and Long-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street Neutral and long-term – all other community areas</p> <p><u>Private Vehicles</u> Positive, Slight to Profound and Long-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street Negative, Slight and Long-term – all other community areas</p>	
Economic Assessment		
Commercial amenity	Positive, Not Significant and Short-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street. Neutral and long-term - Templeogue, Kimmage Manor, Terenure, Rathgar, Clogher Road, Donore Avenue, Meath and Merchants Quay and Whitefriar Street	Negative, Moderate to Positive, Moderate and Long-term – all commercial receptors located along the Proposed Scheme.
Commercial land take	Neutral and Long-term – all community areas	No significant impacts
Commercial accessibility	<p><u>Pedestrians, Cyclists and Bus Users</u> Positive, Slight to Very Significant and Long-term – Mount Argus, Harold's Cross, Harrington Street and Francis Street</p>	

Assessment Topic	Predicted Effect (Residual Impacts) for Community Areas	Significant Residual Effect (Receptor Specific)
	Neutral and long-term – all other community areas <u>Private Vehicles</u> Positive, Slight to Profound and Long-term – Mount Argus, Harold’s Cross, Harrington Street and Francis Street Neutral and Long-term – all other community areas <u>Business Viability for Individual Receptors</u> Negative, Moderate and Long-term – Circle K Filling Station	

As outlined within Section 10.4.4 and summarised in Table 10.13, the Proposed Scheme will deliver positive effects in terms of accessibility to community facilities and commercial businesses for pedestrians, cyclists and bus users during the Operational Phase. Negative effects are expected on the accessibility of private vehicles as a result of the imposition of proposed bus gates along the length of the Proposed Scheme, however these are not expected to be significant. 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), albeit it is acknowledged that there may be potential effects on some businesses located within the bus gates.

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 Economic Impact of the Core Bus Corridors Report) 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 effects from permanent land take are expected on a small number of properties. Negative effects are expected on private vehicles travelling in the Mount Argus community area, the location of one of the bus gates. 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 Operational Phase 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 effects for community areas in the study area and align with specific objectives identified in Section 10.1.

10.7 References

CSO (2016a). Census 2016 Small Area Population Statistics [Online] Available from www.cso.ie/en/census/census2016reports/census2016smallareapopulationstatistics/

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