

The background is a vibrant yellow. It is decorated with several abstract geometric shapes. In the top right, there are overlapping circles and teardrop shapes in teal, dark blue, and light blue. In the bottom left, there are elongated, rounded shapes in dark blue and teal, some containing white circles. The overall style is modern and graphic.

Chapter 10

Population

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10. Population

10.1 Introduction

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

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

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

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

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

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

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

- Enhance the capacity and potential of the public transport system by improving bus speeds, reliability and punctuality through the provision of bus lanes and other measures to provide priority to bus movement over general traffic movements;
- Enhance the potential for cycling by providing safe infrastructure for cycling, segregated from general traffic wherever practicable; and
- 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.

10.2 Methodology

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

10.2.1 Study Area

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

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

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

10.2.1.1 Community Assessment - Study Area

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

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

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

- Donaghmede;
- Ayrfield;
- Darndale;
- Ardlea;
- Coolock;
- Artane;
- Killester;
- Donnycarney;
- Marino;
- Clontarf (St. Anthony's); and
- Fairview.

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

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

10.2.1.2 Economic Assessment - Study Area

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

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

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

10.2.2 Relevant Guidelines, Policy and Legislation

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

Table 10.1: Relevant Guidelines, Policies and Legislation

Guidance	Description	Relevance to Assessment
Environmental Protection Agency (EPA) Guidelines on the information to be contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2017)	This document outlines EPA guidance for conducting Environmental Impact Assessments (EIAs) / EIARs and provides the fundamental requirements of the EIAR.	<ul style="list-style-type: none"> • 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.	<p>This DMRB Guidance has been used to inform sensitivity and magnitude for the following assessment topics:</p> <ul style="list-style-type: none"> • Community land take; and • Commercial land take.
Guidelines for Planning Authorities and An Bord Pleanála on carrying out an Environmental Impact Assessment (Government of Ireland 2018)	This document outlines Ireland-specific guidance for consenting authorities carrying out EIA.	This report has been used to inform the development of the assessment methodologies.

10.2.3 Data Collection and Collation

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

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

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

As part of the three rounds of public consultation, submissions were reviewed by the BusConnects Infrastructure team. The nature of the submissions varied from business owners, including loss/reduction of parking. Discussions were held with various businesses along the Proposed Scheme to inform them if the Proposed Scheme would impact on their property boundary.

Desktop research was supplemented by a walkover survey in October 2021 to verify baseline data collection including the commercial businesses listed in Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR.

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) Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (hereafter referred to as the EPA Guidelines) (EPA 2017). The significance of impacts matrix, based on the EPA Guidelines, was used to determine the significance of impact for land use and accessibility impacts (see Table 10.2).

Table 10.2: 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, the assessment of land use and accessibility impacts has been informed by the 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 Ireland, for the assessment of environmental impacts. The DMRB Guidance provides a framework for assessing the impact on land use and accessibility and has therefore been used to determine the sensitivity and magnitude of impact for relevant receptors.

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

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

10.2.4.1 Community Assessment

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

10.2.4.1.1 Community Amenity

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

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

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

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

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

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

10.2.4.1.1.1 Aligning Receptors

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

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

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

Chapter 9 (Noise & Vibration) assesses the impact on Noise Sensitive Locations (NSL) which include: residential dwellings, schools and other educational establishments, hospitals and nursing homes, hotels and other short-term accommodation buildings, buildings of religious sensitivity, recreational and noise sensitive amenity areas and offices. During construction, noise impacts at NSLs can occur from a variety of activities including road widening, utility diversion, urban realm landscaping, and at the Construction Compound. In an instance where a NSL is impacted by more than one noise source, the worst impact has been considered in the amenity

assessment. Construction traffic impacts were considered when aligning a noise impact to receptors in the surrounding road network. During operation, two assessment topics are considered in the noise and vibration assessment, namely, traffic noise along the Proposed Scheme and traffic noise on the surrounding road network. The residual impacts reported in respect to these two assessment topics are aligned to community and commercial receptors depending on whether they are situated along the Proposed Scheme or in the surrounding road network.

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

10.2.4.1.1.2 Determining Significance of Effect

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

The amenity significance matrix is closely aligned with the EPA Guidelines. 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 2017). Table 10.3 is used for either negative or positive impacts, but not a combination of both. Where both negative and positive impacts occur, professional judgement has been used to assign the overall impact on amenity.

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

With this determination, the nature, significance and duration of effects for each community area has been reported in line with the EPA Guidelines (EPA 2017). Amenity impacts that may arise on individual receptors have only been stated separately in the Potential Impacts (see Section 10.4) for Slight/Moderate, Moderate, Moderate/Significant and Significant amenity impacts. Amenity impacts on individual receptors that are assessed as less than Moderate (Slight, Not Significant and Imperceptible) are not discussed in the amenity assessment. Only individual receptors that are expected to experience a Moderate/Significant or Significant amenity impact are listed in the Residual Impact tables (see Section 10.6).

Table 10.3: Indirect 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

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

*Potential direct impacts on amenity for commercial businesses is discussed in Section 10.2.4.1.1.

10.2.4.1.2 Community Land Use and Accessibility

10.2.4.1.2.1 Land Take

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

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

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

Some other examples of different sensitivities include:

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

The magnitude of impact of land take has been determined by the degree of loss of the resource including acquisition of gardens and private landings / driveways, as set out in DMRB Guidance 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 2017).

10.2.4.1.2.2 Accessibility

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

During the Construction Phase, temporary diversions and temporary road closures will be required for short periods of time with designated detour routes in place and local access accommodated. Lane closures may be required during different Construction Phases which will reduce traffic capacity. Chapter 6 (Traffic & Transport) has qualitatively assessed the potential impacts on pedestrians, cyclists, bus users and private vehicles as a result of construction activity. The residual effects assigned to each user type within Chapter 6 (Traffic & Transport) informs the qualitative accessibility assessment in this Chapter. As such, the impact on access to community receptors during construction has been reported by each user type and for each community area, in line with EPA Guidelines (EPA 2017).

Changes in access to community receptors as a result of the Operational Phase of the Proposed Scheme were considered in respect to the outcomes of a changed walking environment for pedestrians, cycling provision for cyclists and bus infrastructure for bus users. The community accessibility assessment has drawn on the outcomes of the qualitative assessment metrics identified in Chapter 6 (Traffic & Transport). These qualitative assessments were considered collectively in order to assess the significance of impacts on access for each community area during the Operational Phase. The assessment has been reported by community area and by different user types (bus users, cyclists, pedestrians and private vehicles). Where a road is expected to experience an impact to accessibility, moderate and above, this has been reported individually, alongside the community receptors that are likely to be impacted as a result. The nature, significance and duration of effect for each receptor has been assigned using the EPA Guidelines (EPA 2017).

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

10.2.4.2 Economic Assessment

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

10.2.4.2.1 Commercial Amenity

The commercial amenity assessment has included consideration of 'direct' and 'indirect' impacts on commercial amenity. An indirect amenity impact on commercial receptors has been assessed using the same method as for community amenity (Section 10.2.4.1.1). As before, an indirect amenity assessment matrix has been used to determine the significance of localised impacts on individual receptors (see Table 10.3). The amenity significance matrix is closely aligned with the EPA Guidelines (EPA 2017).

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

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

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

The magnitude of impact on each commercial receptor has been informed by the residual significance of effects identified within each environmental assessment. The nature, significance and duration of effect for each receptor has been assigned using the EPA Guidelines (EPA 2017).

10.2.4.2.2 Commercial Land Use and Accessibility

10.2.4.2.2.1 Land Take

This assessment considers direct land take on commercial properties / land and designated car parking. The impact on private landings, which can be used for a variety of reasons by businesses, has also been considered. This assessment has only considered commercial properties within the Proposed Scheme boundary that would be expected to experience direct land take. This assessment has followed the same approach as set out for community land take (Section 10.2.4.1.2.1). This assessment has only considered commercial businesses identified through a site walkover and desktop research (including businesses operating from residential properties where visible) and has not considered people choosing to work from home.

Large areas of commercial land, such as a business park or shopping centre, were assigned a high sensitivity. Derelict land or unoccupied buildings were assigned a low sensitivity. The magnitude of impact on commercial land has been determined by the degree of loss of the resource as per the DMRB guidance. 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 and EPA Guidelines (EPA 2017).

10.2.4.2.2.2 Accessibility

Commercial accessibility relates to the ability of users and employees to access commercial businesses. Changes in access to commercial business (i.e. changes in traffic flow, public transport services and walking and cycling provision) can significantly affect the level of usage experienced by commercial receptors, which may affect the ability of a business to operate successfully. The accessibility assessment has considered the commercial properties along the Proposed Scheme as well as those areas that are expected to experience positive and negative changes in traffic flows in the surrounding road network. Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR provides a list of all commercial businesses located along the Proposed Scheme and any businesses in the surrounding road network that are located on a road that is expected to experience a moderate or greater traffic impact from displaced traffic in the AM and PM peak hours (as identified in Chapter 6 (Traffic & Transport)) and has been referred to in the assessment section, where appropriate.

During the Construction Phase, temporary diversions may be required for short periods of time, with designated detour routes in place and local access accommodated as required. Lane closures will be required during different Construction Phases which will reduce traffic capacity. Chapter 6 (Traffic & Transport) has qualitatively assessed the potential impacts on pedestrians, cyclists, bus users and private vehicles as a result of construction activity. The residual effects assigned to each user type within Chapter 6 (Traffic & Transport) informs the accessibility assessment in this Chapter. As such, the impact on access to commercial receptors during construction has been reported by each user type and for each community area, in line with EPA Guidelines (EPA 2017).

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, bus infrastructure for bus users, and changes to general traffic for private vehicles. The community accessibility assessment has therefore drawn on the outcomes of the qualitative assessment metrics identified in the Chapter 6 (Traffic & Transport). These qualitative assessments were considered collectively in order to assess the significance of impacts on access during the Operational Phase. The assessment has been reported by community area and by different user types (bus users, cyclists, pedestrians and private vehicles). However, where a road is expected to experience an impact to accessibility, moderate and above, this has been reported individually, alongside the commercial receptors that are likely to be impacted as a result. The nature, significance and duration of effect for each receptor has been assigned using the EPA Guidelines (EPA 2017).

10.3 Baseline Environment

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

10.3.1 Overview

The Proposed Scheme will commence in the community areas of Donaghmede and Darndale, orientating southwards along the R107 Malahide Road through the communities of Ayrfield and Coolock. Initially, this part of the Proposed Scheme will pass through a more industrial and larger scale commercial section of the route before it will continue through the residential community areas of Coolock, Ardlea, Artane, and Donnycarney. At the junction of Marino Mart, the Proposed Scheme will terminate in the community area of Marino where it is planned to tie into the Clontarf to City Centre Cycle & Bus Priority Project, which has been permitted by Dublin City Council (DCC) and is expected to begin construction in 2022. It is intended to provide an alternative cycle route through a parallel, less trafficked route via the junction with Malahide Road-Brian Road along Carleton Road, St Aidan's Park, Haverty Road and Marglann Marino. The study area for the Proposed Scheme consists of 11 community areas which have an approximate total population of 80,000 according to the 2016 Census (CSO 2016a) (see Figure 10.1 in Volume 3 of this EIAR).

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

10.3.2 Community Baseline

10.3.2.1 Community Facilities and Recreational Receptors

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

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

Community and Recreation Receptors	Place of Worship	Hospital / Health Centre	Schools	Recreation
Donaghmede	2	1	4	8
Ayrfield	1	0	1	2
Darndale	1	1	1	4
Ardlea	2	0	3	2
Coolock	2	1	3	3
Artane	1	0	2	1
Killester	2	2	4	2
Donnycarney	1	1	1	4
Marino	6	3	12	4
Clontarf (St. Anthony's)	4	1	2	4
Fairview	2	4	5	3
Study Area Total	24	14	38	37

Table 10.4 demonstrates that there is a high concentration of schools in Marino compared with the other community areas, while the other community facilities are more evenly distributed throughout the study area. Examples of community receptors the vicinity of the Proposed Scheme which may attract a large number of users include:

- Mercy College, Coolock;

- O'Tooles GAA, Ayrfield;
- Chanel Catholic College, Coolock;
- Saint David's C.B.S Secondary School, Ardlea;
- Clontarf Golf Club, Donnycarney;
- Parnell Park GAA, Donnycarney;
- Marino College, Fairview;
- Ardscoil Rís Secondary School, Marino; and
- Nazareth House Care Home, Marino.

Within the study area there appear to be a large number of sports and GAA clubs along the Proposed Scheme which attract large number of residents from local communities during peak times of the seasons, particularly during game days and training days.

10.3.2.2 Residential and Community Land

There are approximately 26,300 residential properties and 150 apartment buildings within the community study area (OSI 2020).

10.3.2.3 Commute to Work

There are approximately 35,000 commuters across the Proposed Scheme community study area and 27% of these commuters travel by public transport (bus or train) (CSO 2016b). The method of travel to work by community area is presented in Table 10.5. On average, nearly half of commuters in the study area use a car or van to travel to work (49%), while similar numbers choose to take either the bus (18%) or walk / cycle (17%). The number of residents travelling by public transport (27%) is larger than the average for County Dublin (20%), reflecting the proximity of part of the study area to the DART line and the Northern Commuter Train.

Table 10.5: Method of Travel to Work for Bus, Train, Car and Foot / Bike (%) (CSO 2016b)

Community Area	Travel by Bus / Minibus or Coach	Travel by Car / Van	Travel by Train	Travel by Foot / Bike	Other
Donaghmede	12%	55%	16%	9%	8%
Ayrfield	17%	62%	6%	9%	6%
Darndale	23%	47%	2%	19%	9%
Ardlea	23%	54%	4%	13%	7%
Coolock	23%	51%	4%	14%	7%
Artane	14%	51%	16%	13%	5%
Killester	8%	47%	23%	14%	8%
Donnycarney	22%	50%	6%	17%	5%
Marino	19%	46%	4%	23%	8%
Clontarf (St. Anthony's)	13%	47%	12%	20%	7%
Fairview	22%	31%	5%	34%	8%
Study Area Average	18%	49%	9%	17%	7%
County Dublin	12%	54%	8%	17%	9%

NaPTAN data published by the NTA (NTA 2020) identifies the access points for bus stops, rail stations, airports, and tram stops, providing an indication of the level of availability of public transport within community areas. There are a total of 269 public transport access points across the study area, as shown in Table 10.6. Donaghmede, Marino and Clontarf (St. Anthony's) have the largest proportion of public transport stops, together making up 43% of the stops in the study area. The furthest community area from the City Centre is Donaghmede which has a total of 44 access points (16% of the total).

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

Community Areas	Number of Public Transport Access Points	Percent of Stops Across the Study Area
Donaghmede	44	16%
Ayrfield	19	7%
Darndale	10	4%
Ardlea	17	6%
Coolock	21	8%
Artane	24	9%
Killester	24	9%
Donnycarney	25	9%
Marino	45	17%
Clontarf (St. Anthony's)	28	10%
Fairview	12	4%
Study Area Total	269	

10.3.3 Economic Baseline

10.3.3.1 Commercial Receptors

The Proposed Scheme will pass Malahide Road Industrial Park, a 34 hectare industrial estate and other smaller shopping centres and leisure complexes. The number of commercial receptors in the study area are presented in Table 10.7 (Geodirectory 2019). Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR lists 140 businesses along the Proposed Scheme, which is 8.2% of businesses identified in the study area.

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

Community Area	Commercial Receptors*
Donaghmede	188
Ayrfield	67
Darndale	134
Ardlea	133
Coolock	245
Artane	86
Killester	83
Donnycarney	94
Marino	241
Clontarf (St. Anthony's)	156
Fairview	271
Study Area Total	1,698

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

Table 10.7 shows the largest number of commercial receptors are located in Fairview, Coolock and Marino and the smallest number of commercial receptors are in the Ayrfield and Artane and Killester community areas.

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

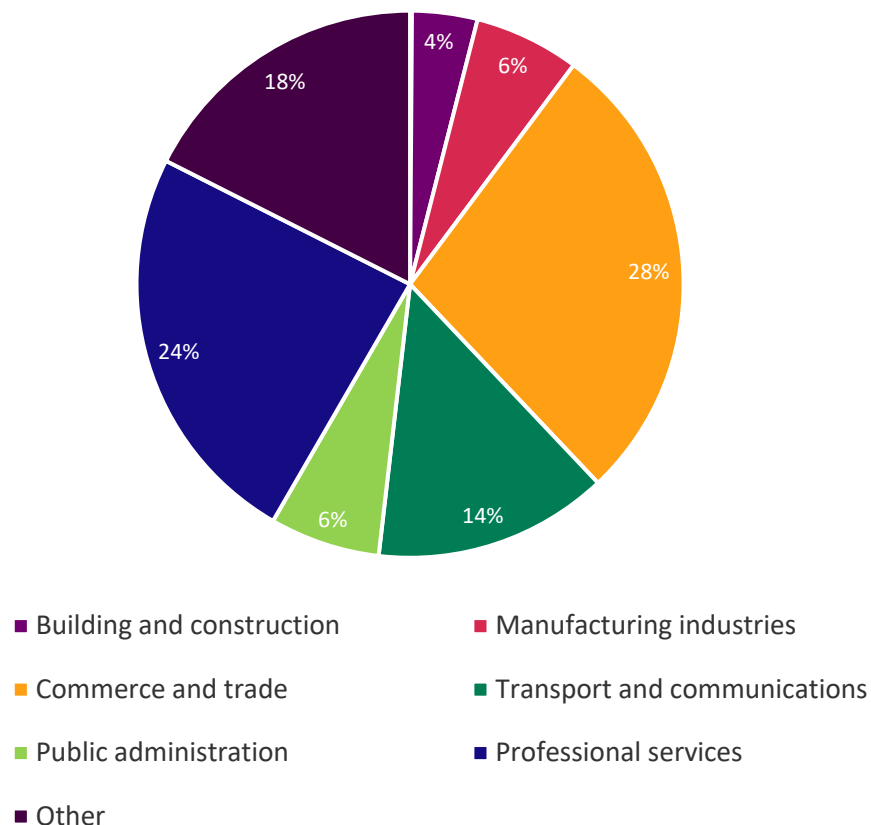
10.3.3.2 Employment

Within the study area there are approximately 36,500 people in employment (46% of the total study area population). Of the working age population, over 3,900 people are unemployed. This equates to 4.9% of the total study area population and this is much less than the unemployment rate for Dublin as a whole (6.5%) (CSO 2016a).

Notable key centres of employment within the study area include:

- Clarehall Retail Centre / Shopping Centre, Ayrfield;
- Leisureplex, Coolock;
- Cadburys, Coolock;
- Malahide Road, Industrial Park, Coolock; and
- Mornington Business Park, Ardlea.

Graph 10.1 presents a breakdown of employment across the study area. The largest sectors of employment across the study area are commerce and trade (28%) and professional services (24%) (CSO 2016c).



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

10.4 Potential Impacts

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

10.4.1 Characteristics of the Proposed Scheme

The Proposed Scheme will be approximately 5.7km (kilometres) long and will include approximately 10km of new cycle tracks. On the Proposed Scheme a Quiet Street treatment (refer to Chapter 4 (Proposed Scheme Description), Section 4.6.3.3) has been proposed along St. Brendan's Avenue, north of the existing Artane Roundabout, and also in Marino, via Carleton Road, St Aidan's Park, Haverty Road and Marglann Marino. Land take along the Proposed Scheme will be required from 80 residential properties and three community facilities (Maypark Dental Practice, Maypark and the Mornington Centre). All permanent land acquisition will be required to facilitate the widening of the carriageway and allow for the provision of improved bus, pedestrian and cycle 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 70 to 80, rising to 100 workers at peak construction. This level of employment will provide a positive economic impact to the economy in terms of associated spending from construction works, although a proportion will already reside locally. As discussed in Appendix A10.2, the operation of the Proposed Scheme will give households along the route access to wider and better job opportunities (EY 2021). The availability of public transport is expected to reduce the time taken to commute to workplaces, this would have a particular impact for low-income households and people with a disability. The Economic Impact of the Core Bus Corridors Report (EY 2021) also identifies that there is expected to be an increase in job satisfaction as well as an increase in job retention (see Appendix A10.2).

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 one main Construction Compound CL1, which will be located in the green open area between Buttercup Park and R107 Malahide Road. This will be located adjacent to a large residential area in the Darndale community area.

10.4.2 'Do Nothing' Scenario

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

10.4.3 Construction Phase

10.4.3.1 Community Assessment

10.4.3.1.1 Community Amenity

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

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

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

Chapter 7 (Air Quality) identified residual road traffic impacts on local human receptors to be Neutral and Short-Term during construction.

Chapter 9 (Noise & Vibration) identified a Negative, Moderate to Significant and Short-Term impact on Nazareth House Nursing Home as a result of general road works. Community facilities within 1km of the Proposed Scheme on Priorswood Road, Elm Road, Oak Road, and Danelli Road are expected to experience a Negative, Moderate and Temporary impact from construction traffic, only one community facility, Or Lady of Consolation is expected to experience a Negative, Moderate and Short-Term impact. Community facilities located along Belmayne Avenue, Adare Road and Adare Park are expected to experience a Negative, Slight to Moderate and Short-Term noise impact from construction traffic. A number of receptors are expected to experience this noise impact including:

- Belmayne Allotments;
- Belmayne Educate Together National School;
- St Francis of Assisi Primary School;
- Belmayne Park and Playground;
- Balgriffin Park;
- Stardust Memorial Park and Playground; and
- St Michaels House Hospital.

Chapter 17 (Landscape (Townscape) & Visual) identified a Negative, Significant and Short-Term impact on Maypark (Donnycarney community area). The townscape and streetscape character assessment identified the following impacts during the Construction Phase:

- Negative, Slight / Moderate and Temporary impact on Malahide Road between Mayne River Avenue and Belcamp Lane;
- Negative, Significant and Temporary/Short-Term impact on Malahide Road between Belcamp Lane and Gracefield Road; and
- Negative, Significant / Very Significant and Temporary/Short-Term impact on Malahide Road between Gracefield Road and Marino Mart / Fairview.

This impact on townscape and streetscape as summarised above represents the visual impact experienced by community receptors along these sections of road (see Chapter 17 (Landscape (Townscape) & Visual)).

These environmental impacts have been considered together to identify if there will be a combination of impacts acting upon the same community facilities. The assessment concluded that these residual air quality, noise, traffic and visual impacts will combine to create a Negative, Moderate to Significant and Short-Term impact on Nazareth House Nursing Home (Marino community area) and a Negative, Moderate and Short-Term impact on all other community facilities along the Proposed Scheme. Community receptors expected to experience this impact are:

- Chanel Catholic College;
- St Brendan’s Catholic Church;
- Our Lady of Consolation Church;
- O’Toole’s GAA pitch;
- Maypark;
- Clontarf Golf Club;
- Maypark Dental Practice;
- Artane Physiotherapy and Acupuncture Clinic;
- Daragh Fagan Dental Surgery;
- Marino Crescent;
- Smart Kids School & Montessori School;
- St Joseph’s CBS Secondary School;
- Ardscoil Rís Sports Grounds; and
- Mornington Centre.

Some of these facilities are likely to become less attractive as a result of negative, visual and traffic impacts due to construction, which could discourage users to visit certain recreational assets such as Clontarf Golf Course and Maypark during the Construction Phase. These community facilities are evenly distributed along Malahide Road within the community areas of Coolock, Donnycarney, Ayrfield, Artane, Marino and Fairview. Due to the small number of community receptors impacted, overall wider amenity in these individual community areas is expected to be Negative, Not Significant and Short-Term during the Construction Phase.

All other community areas (Donaghmede, Darndale, Ardlea, Killester and Clontarf (St Anthony’s)) are expected to experience a Neutral, Not Significant and Short-Term impact on 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 impacts this will have on community facilities and residential properties.

A total of 83 community receptors (80 residential properties and three community facilities) will be impacted by temporary land take as a result of the Proposed Scheme. Table 10.8 summarises the findings of the community land take assessment for residential properties along the Proposed Scheme during the Construction Phase.

Table 10.8: Temporary Land Take Impacts on Residential Properties during the Construction Phase

Community Area	Nature of Effect / Number of Residential Properties Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Artane	0	0	0	21
Donnycarney	0	0	1	28
Marino	0	0	2	28
Total	0	0	3	77

Table 10.8 shows that residential properties that will be impacted by temporary land take are located in the Artane, Donnycarney and Marino community areas. Within each community area the following residential land take impacts are expected:

- Artane: Negative, Significant and Short-Term land take impacts at 1 to 12 Upper Artane Cottages, 44 Malahide Road and eight properties including Villa Maria, Arva, Sunview, Helenville, Upmeads, St Gerard's, Iona and Maria Philomena on R107 Malahide Road. The properties are all located along Malahide Road, and will require temporary land take from front gardens and driveways to construct new boundary walls and hard/ soft landscaping.
- Donnycarney: Negative, Significant and Short-Term land take impacts at 1 to 10 Maypark, Malahide Road and all even numbered properties between 198 and 238 Malahide Road. The properties will require temporary land take from front gardens and driveways to construct new boundary walls and hard/ soft landscaping. Negative, Moderate and Temporary land take impacts at 11 Maypark, Malahide Road as this is currently vacant residential land.
- Marino: Negative, Significant and Short-Term land take impacts at all even numbered properties between 20 and 62 Malahide Road, odd numbered properties between 1 and 21 Malahide Road. The properties will require temporary land take from front gardens and driveways to construct new boundary walls and hard/ soft landscaping. Negative, Moderate and Temporary land take impacts at 64 Malahide Road and 1 to 6, Charlemont Road (communal garden area of the apartment building).

During the Construction Phase, access to residential properties and community facilities will be maintained, as far as reasonably practicable (see Chapter 5 (Construction)). Although access for residents will be maintained during the Construction Phase, in situations where the entirety of the front garden or driveway will be required as temporary land take to accommodate construction activity, parking private vehicles at a residence may not be possible and alternative parking provision in side streets would need to be temporarily used.

Table 10.9 summarises the findings of the community land take assessment for community facilities along the Proposed Scheme during the Construction Phase.

Table 10.9: Temporary Land Take Impacts on Community Facilities during the Construction Phase

Community Area	Nature of Effect / Number of Community Facilities Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Artane	0	1	0	0
Donnycarney	0	0	2	0
Total	0	1	2	0

Table 10.9 shows that three community facilities are expected to be impacted by temporary land take during the Construction Phase of the Proposed Scheme. These are Maypark Dental Practice, Maypark (local park) and the Mornington Centre. Maypark Dental Practice (7 Maypark, Malahide Road) and Maypark (local park) are expected to experience a Negative, Moderate and Short-Term land take impact and are both located in Donnycarney. A Negative, Slight and Short-Term land take impact is expected on the Mornington Centre in Artane.

Overall, the impact of land take across the impacted community areas (Artane, Donnycarney and Marino) as a whole is considered Negative, Not Significant and Short-Term during the Construction Phase. No other community areas are predicted to be impacted by land take during the Construction Phase.

10.4.3.1.2.2 Accessibility

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

Pedestrians, Cyclists and Bus Users

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

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

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

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

Private Vehicles

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

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

The impacts identified above are expected to be experienced by community areas located predominately along the length of the Proposed Scheme where construction activity, road diversions and closures are expected. It is acknowledged that users will travel between community areas to access community facilities within other community areas. However, the impact of construction activity will be experienced where the facility is located. The community areas that are expected to experience a Negative, Slight and Short-Term impact (pedestrians and bus users) and a Negative, Moderate and Short-Term impact (cyclists and private vehicles) as a result in changes to access are Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino.

Pedestrians, cyclists and bus users in all other community areas (Donaghmede, Ardlea, Killester, Clontarf (St Anthony's) and Fairview) are expected to experience a Negative, Not Significant and Short-Term impact as a result of changes to access, while private vehicles will experience a Negative, Slight and Short-Term impact as a result of changes to access during the Construction Phase of the Proposed Scheme.

10.4.3.2 Economic Assessment

10.4.3.2.1 Commercial Amenity

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

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

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

Chapter 7 (Air Quality) identified residual road traffic impacts on local human receptors to be Neutral and Short-Term during construction.

Chapter 9 (Noise & Vibration) identified a Negative, Significant to Very Significant and Short-Term impact on the Hilton Dublin Airport Hotel due to close proximity to road widening and utility diversion works in the evening. Commercial businesses within 1km of the Proposed Scheme on Priorswood Road, Elm Road, Oak Road, and Danelli Road are expected to experience a Negative, Moderate and Temporary impact from construction traffic. Commercial businesses located along Belmayne Avenue, Adare Road and Adare Park are expected to experience a Negative, Slight to Moderate and Temporary noise impact from construction traffic.

Chapter 17 (Landscape (Townscape) & Visual) identified a Negative, Significant and Short-Term impact on Maypark (Donnycarney community area). The townscape and streetscape character assessment identified the following impacts during the Construction Phase:

- Negative, Slight /Moderate and Temporary impact on Malahide Road between Mayne River Avenue and Belcamp Lane;
- Negative, Significant and Temporary/Short-Term impact on Malahide Road between Belcamp Lane and Gracefield Road; and
- Negative, Significant / Very Significant and Temporary/Short-Term impact on Malahide Road between Gracefield Road and Marino Mart / Fairview.

These impacts on townscape and streetscape represent the visual impact on commercial businesses along these sections of road. For example, all businesses located on Malahide Road between Gracefield Road and Marino Mart / Fairview would be assigned a significant/very significant visual impact.

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

- A Negative, Moderate / Significant and Short-Term amenity impact on the Hilton Dublin Airport Hotel (within the Darndale community area). This is due to a combination of a Moderate/Significant visual impact, a Moderate traffic impact and a Significant / Very Significant noise impact. This indirect amenity impact is not expected to have an impact on the ability of the business to operate.
- A Negative, Moderate, Short-Term indirect amenity impact is expected on commercial businesses on Malahide Road between Belcamp Lane and Gracefield Road and between Gracefield Road and Marino Mart / Fairview. These are businesses 9 to 140 in Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR. These businesses are located within the Coolock, Artane, Donnycarney and Marino community areas.

Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR provides a list of all commercial businesses located along the Proposed Scheme and any businesses in the surrounding road network that are located on a road that is expected to experience a moderate or greater traffic impact from displaced traffic in the AM and PM peak hours (as identified in Chapter 6 (Traffic & Transport)). The proportion of commercial businesses located along the Proposed Scheme is low compared to the businesses across the impacted community areas (Darndale, Artane, Donnycarney, Marino, Ayrfield and Coolock), see Table 10.7. Therefore, the impact on these community areas is assessed to be Negative, Slight and Short-Term. All other community areas (Donaghmede, Ardlea, Killester, Clontarf (St Anthony's) and Fairview) are not impacted by a change in amenity and are expected to experience a Neutral, Not Significant and Short-Term amenity impact.

As discussed in Section 10.2.4.2.1, a single significant environmental effect in isolation can also result in a direct impact on commercial amenity where a business has a particular sensitivity to an environmental impact. The Clontarf Golf Course is expected to experience a Negative, Significant / Very Significant and Temporary impact from visual impacts due to its location between Gracefield Road and Marino Mart / Fairview (refer to Chapter 17 (Landscape (Townscape) & Visual)). There is the potential for a direct amenity impact on the golf course which has been assigned a medium sensitivity to visual disturbance. The impact on amenity at this commercial receptor is expected to be Negative, Moderate to Significant and 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 impacts this has on commercial businesses. This assessment also considers the impact on private landings, this is the area in front of businesses that may be used for a variety of reasons including outdoor seating, selling produce or parking.

Eight businesses, located in the Artane community area, are expected to lose the private landing at the front of their business during the construction phase of the Proposed Scheme. The businesses losing their private landings are The Goblet, True Beauty Barbers, Consort Motor Parts, EBS Artane, Spar Artane, O'Reilly's Pharmacy, Hidden Hearing and Domino's Pizza. The use of these front landings varies from business to business. All businesses are expected to experience a Negative, Moderate and Short-Term impact during the Construction Phase. The impact on private landings continues into the Operational Phase and is assessed in Section 10.4.4.2.2.1.

Overall, the impact of land take across the impacted community area (Artane) as a whole is considered Negative, Not Significant and Short-Term during the Construction Phase. No other community areas are impacted by land take during the Construction Phase.

10.4.3.2.2.2 Accessibility

Commercial accessibility relates to the ability of users to access commercial businesses as customers or employees. The nature of the Proposed Scheme means that accessibility impacts will differ based on the mode of travel used. The assessment, similar to the community accessibility assessment (Section 10.2.4.1.2.2), has separately assessed accessibility impacts on pedestrians and cyclists, bus users and private vehicles. As the Construction Phase mitigation measures presented in Chapter 5 (Construction) and the residual effects presented in Chapter 6 (Traffic and Transport) are the same for each mode of travel, the impacts on commercial accessibility are the same as those reported in Section 10.2.4.1.2.2 for community accessibility.

A parking assessment has been undertaken in Chapter 6 (Traffic and Transport). No significant impacts on parking along the Proposed Scheme route were identified.

10.4.4 Operational Phase

10.4.4.1 Community Assessment

10.4.4.1.1 Community Amenity

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

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

- A Positive, Moderate residual impact is assigned to all community facilities along the Proposed Scheme; and
- A Negative, Imperceptible to Not Significant residual impact to all community facilities in the surrounding road network, apart from:
 - a Negative, Slight impact is assigned to all community facilities on Grange Road, Main Street, Coast Road;
 - a Negative, Moderate impact assigned to all community facilities on Clonshaugh Road, Oscar Traynor Road and Baskin Lane; and
 - a Positive, Moderate impact assigned to all community facilities on Kilmore Road.

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

Chapter 9 (Noise & Vibration) identified a Positive, Imperceptible to Slight, Short to Medium Term direct impact along the Proposed Scheme due to a reduction in traffic volumes during the opening year (2028). An indirect Positive, Imperceptible to Slight, Short to Medium Term to Indirect, Negative, Moderate, Short to Medium Term impact has been identified from traffic noise in the surrounding road network. Due to increased traffic noise levels during the opening year (2028), a Negative, Slight to Moderate, Short-Term to Medium-Term indirect impact was identified along Moatfield Avenue and St Brendan's Park, and a Negative, Moderate, Short-Term to Medium-Term indirect impact was identified along Danieli Road and Priorswood Road.

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

- Imperceptible impact on Malahide Road between Mayne River Avenue and Belcamp Lane;
- Positive, Slight and Long-Term impact on Malahide Road between Belcamp Lane and Gracefield Road; and
- Negative, Moderate and Long-Term impact on Malahide Road between Gracefield Road and Marino Mart / Fairview.

The impacts described above from the townscape and streetscape assessment represent the visual impact on community facilities along these affected roads as discussed in Section 10.2.4.1.1.1. Details of the changes to townscape along these roads is detailed in Section 17.4.3.1. in Chapter 17 (Landscape (Townscape) & Visual).

These environmental impacts have been considered together to identify if there will be a combination of impacts acting on the same community receptor. The assessment concluded that these residual air quality, noise, traffic and visual impacts will combine to create a Positive, Slight /Moderate and Long-Term impact on amenity for community receptors on Malahide Road between Belcamp Lane and Gracefield Road. There are only a small number of community facilities along this stretch of road, these comprise Chanel Catholic College, St Brendan's Catholic Church, North City Dental Practice (all located in Coolock community area) and O'Toole's GAA pitch (Ayrfield community area). The community areas impacted (Coolock and Ayrfield) are expected to experience a Positive, Not Significant and Long-Term impact overall.

Overall, a Neutral, Not Significant and Long-Term amenity impact is expected on all other community areas (Darndale, Artane, Donnycarney, Marino, Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede) during the Operational Phase.

10.4.4.1.2 Community Land Use and Accessibility

10.4.4.1.2.1 Land Take

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

A total of 83 community receptors (80 residential properties and three community facilities) will require permanent land take as a result of the Proposed Scheme. Table 10.10 summarises the findings of the community land take assessment for residential properties along the Proposed Scheme during the Operational Phase.

Table 10.10: Land Take Impacts on Residential Properties during the Operational Phase

Community Area	Nature of Effect / Number of Residential Properties Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Artane	0	0	14	7
Donnycarney	0	1	26	2
Marino	0	0	30	0
Total	0	1	70	9

Table 10.10 shows that residential properties that will be impacted by permanent land take are located in Artane, Donnycarney and Marino community areas. Within each community area the following significant land take impacts on residential property are expected:

- Artane: Negative, Significant and Long-Term land take impacts at Arva, Sunview, Helenville, Upmeads, St Gerard's, Iona and Maria Philomena on Malahide Road. Between 3m to 4m of permanent land take will be required from these properties, which will lead to reduced parking space and a discernible change to the front gardens.
- Donnycarney: Negative, Significant and Long-Term land take impacts 236 and 234, Malahide Road. Between 3m to 4m of permanent land take will be required from these properties, which will lead to reduced parking space and a discernible change to the front gardens.
- Marino: No significant impacts.

Table 10.11 summarises the findings of the community land take assessment for community facilities along the Proposed Scheme during the Operational Phase.

Table 10.11: Land Take Impacts on Community Facilities during the Operational Phase

Community Area	Nature of Effect / Number of Community Facilities Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Artane	1	0	0	0
Donnycarney	0	1	1	0
Total	1	1	1	0

Table 10.11 shows that no community facilities are expected to experience a Negative, Significant and Long-Term land take impact during the Operational Phase of the Proposed Scheme. Maypark Dental Practice is

expected to experience a Negative, Moderate and Long-Term impact due to a small amount of land take that will be required from the front of the driveway which may restrict parking, but this is not expected to impact the ability of users to use the facility.

Overall, the impact of land take across the impacted community areas (Artane, Donnycarney and Marino) is considered Negative, Not Significant and Long-Term during the Operation Phase. No other community areas are impacted by land take during the Operational Phase.

10.4.4.1.2.2 Accessibility

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

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

Pedestrians, Cyclists and Bus Users

The Proposed Scheme will include approximately 10km of new cycle tracks, a Quiet Street treatment has been proposed along St. Brendan's Avenue, north of the existing Artane Roundabout, and also in Marino, via Carleton Road, St Aidan's Park, Haverty Road and Marglann Marino. These roads are predominately residential in nature and therefore are unlikely to change access or provide a new access route to any individual community receptors. However, Chapter 6 (Traffic & Transport) identified a significant residual Positive, Moderate to Significant and Long-Term impact on pedestrian infrastructure and a Positive, Significant and Long-Term impact on cycling infrastructure along the Proposed Scheme. The beneficial impacts on walking and cycling infrastructure is expected to lead to improvements in access to community facilities along the Proposed Scheme for those choosing to walk or cycle as there will be increased provision for these modes of travel.

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

The impacts to pedestrians, cyclists and bus users is anticipated to be experienced by community areas located predominately along the length of the Proposed Scheme and where there will be Quiet Street Treatment, as these will be the locations of the improved footpaths and cycle paths. The community areas that are expected to experience a Positive, Moderate to Significant and Long-Term impact on pedestrians, a Positive, Significant and Long-Term impact on cyclists and a Positive, Moderate to Very Significant and Long-Term impact on bus users as a result of changes to access, are Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino. Community facilities located along the Proposed Scheme where accessibility will be improved as a result of reduced traffic are:

- O'Tooles GAA;
- North City Dental;
- Artane Physiotherapy and Acupuncture Clinic;
- Pharmacy O'Reilly;
- Maypark;
- Maypark Dental Practice;
- Our Lady of Consolation Church;
- Daragh Fagan Dental Surgery;

- Nazareth House Care Home;
- Clontarf Golf Club;
- Ardscoil Rís Secondary School;
- Corrigan's Pharmacy; and
- Smart Kids School and Montessori School.

A small section of Quiet Street Treatment will be located in Fairview Community area (at Marino, via Carleton Road, St Aidan's Park, Haverty Road and Marglann Marino), but this is not expected to impact the accessibility across the community area. Fairview, along with the community areas of Clontarf (St Anthony's), Killester, Ardlea and Donaghmede are expected to experience a Positive, Not Significant and Long-Term impact on pedestrians, cyclists and bus users because of changes in access during the Operational Phase of the Proposed Scheme.

Private Vehicles

Chapter 6 (Traffic & Transport) identified a Positive, Moderate and Long-Term impact from the reduction in general traffic along the Proposed Scheme and a Negative, Slight and Long-Term impact from redistributed traffic in the surrounding road network. Chapter 6 (Traffic & Transport) also identified some localised impacts during the PM peak periods on a number of junctions in the surrounding road network as a result of displaced traffic. A Negative, Moderate impact was identified on Clonshaugh Road, Baskin Lane and Oscar Traynor Road while a Positive, Moderate impact was identified on Kilmore Road/Ardlea Road during the Operational Phase. Community facilities expected to experience these impacts are: AUL Complex, Baskin Lane Football Pitch, Oscar Traynor Football Field and Playground, Coolock Garda Station, Rosetree Cottage (School), Artane Beaumont Family Recreation Centre, Happy Ways Preschool Artane, St. David's Boys National School and Happy Days Nursery (Ardlea Road).

The impact on access to community facilities along the Proposed Scheme for private vehicles is considered to be Positive, Moderate and Long-Term. The community areas that are expected to experience a Positive, Moderate and Long-Term impact as a result of changes to access, are Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino.

The impact on access to community facilities in the surrounding road network is considered to be Negative, Slight and Long-Term. The community areas that are expected to experience a Negative, Slight and Long-Term impact as a result of changes to access to commercial facilities are Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede.

10.4.4.2 Economic Assessment

10.4.4.2.1 Commercial Amenity

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

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

- A Positive, Moderate residual impact is assigned to all commercial businesses along the Proposed Scheme; and
- A Negative, Imperceptible to Not Significant residual impact to all commercial businesses in the surrounding road network, apart from:
 - a Negative, Slight impact is assigned to all commercial businesses on Grange Road, Main Street, Coast Road;
 - a Negative, Moderate impact assigned to all commercial businesses on Clonshaugh Road, Oscar Traynor Road and Baskin Lane; and
 - a Positive, Moderate impact assigned to all commercial businesses on Kilmore Road.

Chapter 7 (Air Quality) identified a Neutral and Long-Term residual impact on human receptors during operation.

Chapter 9 (Noise & Vibration) identified a Positive, Imperceptible to Slight, Short to Medium Term direct impact along the Proposed Scheme due to a reduction in traffic volumes during the opening year (2028). An indirect Positive, Imperceptible to Slight, Short to Medium Term to Indirect, Negative, Moderate, Short to Medium Term impact has been identified from traffic noise in the surrounding road network. Due to increased traffic noise levels during the opening year (2028), a Negative, Slight to Moderate, Short-Term to Medium-Term indirect impact was identified along Moatfield Avenue and St Brendan's Park, and a Negative, Moderate, Short-Term to Medium-Term indirect impact was identified along Danieli Road and Priorswood Road. A number of commercial businesses located within the Malahide Industrial Park are located on Priorswood Road.

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

- Imperceptible impact on Malahide Road between Mayne River Avenue and Belcamp Lane;
- Positive, Slight and Long-Term impact on Malahide Road between Belcamp Lane and Gracefield Road; and
- Negative, Moderate and Long-Term impact on Malahide Road between Gracefield Road Marino Mart / Fairview.

The impacts on townscape represent the visual impact on commercial businesses along these roads.

These environmental impacts have been considered together to identify if there will be a combination of impacts acting upon the same commercial businesses. The assessment concluded that these residual air quality, noise, traffic and visual impacts will combine to create a Positive, Slight / Moderate and Long-Term impact on amenity for commercial receptors on Malahide Road between Belcamp Lane and Gracefield Road. Commercial businesses 9 to 50 in Appendix A10.1 Schedule of Commercial Businesses in Volume 4 of this EIAR are expected to experience this positive impact, notable receptors include Coolock Retail park and Malahide Road Industrial Park. The community areas impacted are Coolock and Ayrfield and they are expected to experience a Positive, Not Significant and Long-Term impact overall.

Overall, a Neutral, Not Significant and Long-Term amenity impact is expected on all other community areas (Darndale, Artane, Donnycarney, Marino, Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede) during the Operational Phase.

No Significant direct amenity impacts were identified on any commercial businesses during the Operational Phase of the Proposed Scheme.

10.4.4.2.2 Commercial Land Use and Accessibility

10.4.4.2.2.1 Land Take

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

Eight businesses, located in the Artane community area, are expected to lose the private landing at the front of their business during operation of the Proposed Scheme. The businesses losing their private landings are The Goblet, True Beauty Barbers, Consort Motor Parts, EBS Artane, Spar Artane, O'Reilly's Pharmacy, Hidden Hearing and Domino's Pizza. The use of these front landings varies from business to business and includes staff and customer parking, loading, deliveries, outdoor seating or for selling produce. It is expected that the operation of the businesses could be affected with disruption to parking and loading spaces. Businesses will therefore need to use alternative space on Kilmore Road. The businesses are expected to experience a Negative, Moderate and Long-Term impact.

Overall, the impact on the Artane community area is considered Negative, Not Significant and Long-Term as a result of the Proposed Scheme during the operational phase. No other community areas are impacted by land take during the Operational Phase.

10.4.4.2.2 Accessibility

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

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

Pedestrians, Cyclists and Bus Users

The positive impacts to pedestrians, cyclists and bus users will predominantly be experienced by community areas located along the length of the Proposed Scheme and where there will be Quiet Street Treatment, as these will be the locations of the improved footpaths and cycle paths. The community areas that are expected to experience a Positive, Moderate and Long-Term impact on pedestrians, a Positive, Significant and Long-Term impact on cyclists and a Positive, Very Significant and Long-Term impact on bus users as a result of changes to access, are Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino. Fairview, along with the community areas of Clontarf (St Anthony's), Killester, Ardlea and Donaghmede are expected to experience a Positive, Not Significant and Long-Term impact on pedestrians, cyclists and bus users because of changes in access during the Operational Phase of the Proposed Scheme.

Private Vehicles

Chapter 6 (Traffic & Transport) identified a Positive, Moderate and Long-Term impact from the reduction in general traffic along the Proposed Scheme and a Negative, Slight and Long-Term impact from redistributed traffic in the surrounding road network. Chapter 6 (Traffic & Transport) also identified some localised impacts during the PM peak periods on a number of junctions in the surrounding road network as a result of displaced traffic. A Negative, Moderate impact was identified on Clonshaugh Road, Baskin Lane and Oscar Traynor Road while a Positive, Moderate impact was identified on Kilmore Road/Ardlea Road during the Operational Phase. Commercial businesses expected to experience these impacts are presented in Appendix A10.1 and denoted with an “*”.

The impact on access to commercial businesses along the Proposed Scheme for private vehicles is considered to be Positive, Moderate and Long-Term. The community areas that are expected to experience a Positive, Moderate and Long-Term impact as a result of changes to access, are Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino.

The impact on access to commercial businesses in the surrounding road network is considered to be Negative, Slight and Long-Term. The community areas that are expected to experience a Negative, Slight and Long-Term impact as a result of changes to access to commercial facilities are Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede.

A parking assessment has been undertaken in Chapter 6 (Traffic and Transport). No significant impacts on parking along the Proposed Scheme route were identified.

10.5 Mitigation and Monitoring Measures

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

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

10.6 Residual Impacts

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

10.6.1 Construction Phase

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

Table 10.12: Summary of Construction Phase Significant Residual Impacts

Assessment Topic	Predicted Impact (Residual Impacts) for Community Areas	Significant Residual Impact (Receptor Specific)
Community Assessment		
Community amenity	Negative, Not Significant and Short-Term – Coolock, Donnycarney, Ayrfield, Artane, Marino and Fairview Neutral, Not Significant and Short-Term - Donaghmede, Darndale, Ardlea, Killester and Clontarf (St Anthony's)	Negative, Moderate to Significant and Short-Term – Nazareth House Nursing Home
Community land take	Negative, Not Significant and Short-Term – Artane, Donnycarney and Marino	Negative, Significant and Short-Term – 1 to 12 Artane Cottages Upper, 44 Malahide Road, Villa Maria, Arva, Sunview, Helenville, Upmeads, St Gerard's, Iona and Maria Philomena on Malahide Road, 1 to 11 Maypark Malahide Road, 198 to 238 Malahide Road (even numbers only), 20 to 62 Malahide Road (even numbers only), 1 to 19 Malahide Road (odd numbers only)
Community accessibility	<p><u>Pedestrian and Bus Users</u> Negative, Slight and Short-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Negative, Not Significant and Short-Term - Donaghmede, Ardlea, Killester, Clontarf (St Anthony's) and Fairview</p> <p><u>Cyclists</u> Negative, Moderate and Short-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Negative, Not Significant and Short-Term - Donaghmede, Ardlea, Killester, Clontarf (St Anthony's) and Fairview</p> <p><u>Private Vehicles</u> Negative, Moderate and Short-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Negative, Slight and Short-Term - Donaghmede, Ardlea, Killester, Clontarf (St Anthony's) and Fairview</p>	
Economic Assessment		

Commercial amenity	Negative, Slight and Short-Term – Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Neutral, Not Significant and Short-Term - Donaghmede, Ardlea, Killester, Clontarf (St Anthony's) and Fairview	Direct Negative, Moderate to Significant and Short -Term – Clontarf Golf Course Indirect Negative, Moderate to Significant and Short Term – Hilton Dublin Airport Hotel
Commercial land take	Negative, Not Significant and Short-Term - Artane	
Commercial accessibility	<u>Pedestrians, Cyclists and Bus Users</u> Negative, Slight and Short-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Negative, Not Significant and Short-Term - Donaghmede, Ardlea, Killester, Clontarf (St Anthony's) and Fairview <u>Private Vehicles</u> Negative, Moderate and Short-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Negative, Slight and Short-Term - Donaghmede, Ardlea, Killester, Clontarf (St Anthony's) and Fairview	

10.6.2 Operational Phase

Table 10.13 summarises the predicted impacts (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 Impacts

Assessment Topic	Predicted Impact (Residual Impacts) for Community Areas	Significant Residual Impact (Receptor Specific)
Community Assessment		
Community amenity	Positive, Not Significant and Long-Term – Coolock and Ayrfield Neutral, Not Significant and Long-Term - Darndale, Artane, Donnycarney, Marino, Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede	No significant impacts
Community land take	Negative, Not Significant and Long-Term – Artane, Donnycarney and Marino	Negative, Significant and Long-Term – Arva, Sunview, Helenville, Upmeads, St Gerard's, Iona and Maria Philomena Malahide Road, 236 and 234 Malahide Road
Community accessibility	<u>Pedestrians</u> Positive, Moderate to Significant and Long-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Positive, Not Significant and Long-Term – Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede <u>Cyclists</u> Positive, Significant and Long-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Positive, Not Significant and Long-Term – Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede <u>Bus Users</u> Positive, Moderate to Very Significant and Long-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Positive, Not Significant and Long-Term – Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede <u>Private Vehicles</u> Positive, Moderate and Long-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Negative, Slight and Long-Term - Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede	
Economic Assessment		
Commercial amenity	Positive, Not Significant and Long-Term – Coolock and Ayrfield Neutral, Not Significant and Long-Term - Darndale, Artane, Donnycarney, Marino,	No significant impacts

	Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede
Commercial land take	Negative, Not Significant and Long-Term - Artane
Commercial accessibility	<p><u>Pedestrians</u> Positive, Moderate and Long-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Positive, Not Significant and Long-Term – Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede</p> <p><u>Cyclists</u> Positive, Significant and Long-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Positive, Not Significant and Long-Term – Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede</p> <p><u>Bus Users</u> Positive, Very Significant and Long-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Positive, Not Significant and Long-Term – Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede</p> <p><u>Private Vehicles</u> Positive, Moderate and Long-Term - Darndale, Ayrfield, Coolock, Artane, Donnycarney and Marino Negative, Slight and Long-Term - Fairview, Clontarf (St Anthony's), Killester, Ardlea and Donaghmede</p>

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

These improvements will help to achieve the aims and objectives of the Proposed Scheme by providing an attractive alternative to the use of private vehicles and promoting a modal shift to walking, cycling and public transport, allowing for greater capacity along the corridor to access residential, community and commercial receptors. As discussed in Appendix A10.2 the Proposed Scheme will also ensure to connect people with essential services such as healthcare facilities and jobs (EY 2021).

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

CSO (2016b). Means of Travel to Work [Online] Available from www.cso.ie/en/releasesandpublications/ep/p-cp6ci/p6cii/p6mtw/

CSO (2016c). Persons at work by industry and sex [Online] Available from census2016.geohive.ie/datasets/37cc24559d00445cb3d3364420ff730b_0

Department for Transport (2020). TAG Unit A4.2 Distributional Impact Appraisal

EPA (2017). Guidelines on the information to be contained in Environmental Impact Assessment Reports. Draft. August 2017.

EY (2021). The Economic Impact of the Core Bus Corridors.

Geodirectory (2019).

Government of Ireland (2018). Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment.

Highways England (2020). LA 112 Population and human health, Revision 1, Standards for Highways.

NTA (2020). National Public Transport Access Nodes (NaPTAN) [Online] Available from data.gov.ie/dataset/2017-national-public-transport-access-nodes-naptan

Ordnance Survey Ireland (2018). PRIME2 Concepts [Online] Available from <https://www.osi.ie/wp-content/uploads/2018/04/PRIME2-Client-Documentation-Concepts-V-02.4.pdf>

Ordnance Survey Ireland (2020). PRIME2.