



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 Lucan to City Centre Core Bus Corridor Scheme (hereafter referred to as the Proposed Scheme).

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

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

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

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

- Appendix A10.1 Schedule of Commercial Businesses. This is a list of all commercial businesses located along the Proposed Scheme and any businesses in the surrounding road network that are located on a road that is expected to experience a moderate or greater traffic impact from displaced traffic in the AM and PM peak hours (as identified in Chapter 6 (Traffic & Transport)).
- Appendix A10.2 The Economic Impact of the Core Bus Corridors Report (EY 2021). This report is an assessment of the economic impact of the Core Bus Corridors. The impacts have been considered across the short, medium and long term and are based on a review of published literature, including academic papers and 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 will 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 comprehensive design iteration process with particular emphasis on minimising the potential for environmental impacts, where practicable, whilst ensuring the objectives of the Proposed Scheme are attained. In addition, feedback received from the comprehensive consultation

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

10.2 Methodology

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

10.2.1 Study Area

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

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

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

10.2.1.1 Community Assessment - Study Area

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

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

The study area for the assessment of impacts on community amenity consists of 'community areas', which are informed by the Central Statistics Office (CSO) 2016 Census parish boundaries (CSO2016a). Community areas that will either be intersected by or experience displaced traffic as a result of the Proposed Scheme have been included in the study area, and consist of the following:

- Lucan;
- Rowlagh – Quarryvale;
- Palmerstown;
- Ballyfermot Upper;
- Chapelizod;
- Ballyfermot;
- Inchicore (Mary Immaculate);
- Inchicore (St Michael's);
- James's Street; and
- Halston Street.

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

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

10.2.1.2 Economic Assessment - Study Area

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

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

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

10.2.2 Relevant Guidelines, Policy and Legislation

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

Table 10.1: Relevant Guidelines, Policies and Legislation

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

10.2.3 Data Collection and Collation

Baseline data 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);
- 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 has been used to establish the number of community receptors, including local educational, recreational and healthcare facilities (see Section 10.3.2).

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

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

10.2.4 Appraisal Method for the Assessment of Impacts

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

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

Table 10.2: Significance Matrix

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

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

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

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

10.2.4.1 Community Assessment

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

10.2.4.1.1 Community Amenity

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

The community amenity assessment considers the 'indirect' impact of the following environmental effects which are typically expected to contribute to a change in amenity:

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

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

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

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

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

10.2.4.1.1.2 Determining Significance of Effect

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

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

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

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

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

Environmental Effect 1	Environmental Effect 2	Environmental Effect 3	Environmental Effect 4	Combined Impact
Significant	Significant	Significant	Significant	Significant
Significant	Significant	Significant	Moderate	Significant
Significant	Significant	Significant	Slight	Significant
Significant	Significant	Significant	Not Significant	Significant
Significant	Significant	Moderate	Moderate	Significant
Significant	Significant	Moderate	Slight	Moderate / Significant
Significant	Significant	Moderate	Not Significant	Moderate / Significant
Significant	Significant	Slight	Slight	Moderate
Significant	Significant	Slight	Not Significant	Moderate
Significant	Significant	Not Significant	Not Significant	Moderate
Significant	Moderate	Moderate	Moderate	Moderate / Significant
Significant	Moderate	Moderate	Slight	Moderate
Significant	Moderate	Moderate	Not Significant	Moderate
Significant	Moderate	Slight	Slight	Moderate
Significant	Moderate	Slight	Not Significant	Moderate
Significant	Moderate	Not Significant	Not Significant	Moderate
Significant	Slight	Slight	Slight	Slight / Moderate

Environmental Effect 1	Environmental Effect 2	Environmental Effect 3	Environmental Effect 4	Combined Impact
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 (Highways England 2020) and supported by professional judgement. In general, direct acquisition of a property has been categorised with a high or very high magnitude. A medium magnitude would be assigned where there will be changes to access or the acquisition of land, but the changes overall will not compromise the overall ability to use a property. A low magnitude has been assigned where there will be a minor loss of land, or where severance will be introduced but adequate accessibility will be maintained throughout the Construction Phase or provided during the Operational Phase. The assessment has been reported by community area with the nature, significance, and duration of effect assigned using the EPA Guidelines (EPA 2022).

10.2.4.1.2.2 Accessibility

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

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

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

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

10.2.4.2 Economic Assessment

This Section outlines the methodology for the assessment of economic impacts.

10.2.4.2.1 Commercial Amenity

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

In some cases, a single (direct) environmental effect in isolation can result in an impact on commercial amenity where a business has a particular sensitivity. For example, certain activities can be sensitive to noise and vibration

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

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

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

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

10.2.4.2.2 Commercial Land Use and Accessibility

10.2.4.2.2.1 Land Take

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

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

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

10.2.4.2.2.2 Accessibility

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

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

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

10.3 Baseline Environment

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

10.3.1 Overview

Around the major transport corridors of the N4 National Road, the M50 Motorway and R148 Chapelizod Bypass residential areas within the communities of Lucan, Rowlagh – Quarryvale, Palmerstown and Ballyfermot have expanded. The highest number of community and recreational resources in the area are located in the community area of Lucan. Adjacent to the N4 National Road / M50 Motorway interchange, the Liffey Valley Shopping Centre forms a dominating feature in the area as a commercial hub, whilst key recreational resources include the Phoenix Park and the National War Memorial Park.

Towards the City Centre, in the James's Street community area, where a number of sites of archaeological, historical and cultural heritage interest are clustered, including the Royal Hospital Kilmainham, Dr Steevens' Hospital, the War Memorial Gardens, and Heuston Station and associated railway works, the community benefits form a considerable historic character (see Chapter 15 (Archaeological & Cultural Heritage) for more details on the cultural heritage of the area). Today, Heuston Station is a major transport hub for rail, bus and Luas services around which the community has developed and thrived.

The study area for the Proposed Scheme consists of 10 community areas which have an approximate total population of 82,000 according to the 2016 Census (CSO 2016a).

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

10.3.2 Community Baseline

10.3.2.1 Community Facilities and Recreational Receptors

The Proposed Scheme will pass some community and recreational receptors but will largely follow the N4 National Road and R148 Chapelizod Bypass, with a number of areas with off-line cycle provision. The number and type of receptor are presented by community area in Table 10.4.

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

Community and Recreation Receptors	Schools	Hospital / Health Centre	Place of Worship	Recreation
Lucan	11	7	7	8
Rowlagh - Quarryvale	4	0	1	2
Palmerstown	5	2	3	4
Ballyfermot Upper	4	3	2	5
Chapelizod	3	5	4	14
Ballyfermot	5	1	1	2
Inchicore (Mary Immaculate)	2	2	2	1
Inchicore (St Michael's)	3	2	4	4
James's Street	5	3	3	1
Halston Street	4	0	4	2
Study Area Total	46	25	31	43

Table 10.4 demonstrates that there are a much larger number of schools in the community area of Lucan. There is a high concentration of recreational resources in Chapelizod which includes Phoenix Park, the largest park in Dublin stretching over 700 hectares, the War Memorial Gardens, and the grounds of the Royal Hospital, Kilmainham. Other notable community receptors along the Proposed Scheme which draw a large number of users include:

- Hermitage Golf Club, Lucan;
- St Loman's Hospital, Lucan;
- Stewart's Hospital, Palmerstown;
- St Patrick's GAA Club, Palmerstown;
- St Joseph's Nursing Home, Chapelizod; and
- Heuston Station, James's Street.

Within the study area there are a number of national trails used for walking and other recreational activities. These include the National Famine Way and the Royal Canal Way. The Proposed Scheme also interfaces with and reinforces the national cycle network.

10.3.2.2 Residential Land

There are approximately 22,000 residential properties and 280 apartment buildings within the community study area (OSI 2020).

10.3.2.3 Commute to Work

There are approximately 37,000 commuters across the Proposed Scheme community study area and 25% of these travel by public transport (bus or train) (CSO 2016b). The method of travel to work by community area is presented in Table 10.5. On average, 22% of the study area walk or cycle to work, ranging from 6% of residents in Lucan to 48% of residents in Halston Street in the City Centre. Commuters residing in Lucan and Palmerstown, at the furthest distance from the City Centre, have the largest percent of commuters travelling to work by car or van.

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
Lucan	18%	70%	0%	6%	6%
Rowlagh - Quarryvale	17%	56%	1%	15%	12%
Palmerstown	20%	64%	1%	10%	6%
Ballyfermot Upper	19%	60%	1%	13%	7%
Chapelizod	23%	40%	7%	23%	7%

Community Area	Travel by Bus / Minibus or Coach	Travel by Car / Van	Travel by Train	Travel by Foot / Bike	Other
Ballyfermot	24%	47%	2%	17%	11%
Inchicore (Mary Immaculate)	16%	38%	12%	23%	11%
Inchicore (St Michael's)	18%	33%	13%	26%	10%
James's Street	13%	23%	14%	38%	12%
Halston Street	14%	12%	14%	48%	12%
Study Area Average	18%	44%	6%	22%	9%
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 337 public transport access points across the study area, as shown in Table 10.6. The largest proportion of public transport stops are located in Lucan (23%).

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
Lucan	79	23%
Rowlagh - Quarryvale	34	10%
Palmerstown	22	7%
Ballyfermot Upper	34	10%
Chapelizod	35	10%
Ballyfermot	34	10%
Inchicore (Mary Immaculate)	13	4%
Inchicore (St Michael's)	21	6%
James's Street	40	12%
Halston Street	25	7%
Study Area Total	337	

10.3.3 Economic Baseline

10.3.3.1 Commercial Receptors

The Proposed Scheme will pass a number of commercial receptors. These are presented in Table 10.7 (Geodirectory 2019). Appendix A10.1 (Schedule of Commercial Businesses) in Volume 4 of this EIAR provides a list of all commercial businesses along the Proposed Scheme, approximately 68 businesses were identified, which is less than 2.5% of the commercial businesses across the total study area.

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

Community Area	Commercial Receptors
Lucan	421
Rowlagh - Quarryvale	208
Palmerstown	182
Ballyfermot Upper	218
Chapelizod	137
Ballyfermot	127
Inchicore (Mary Immaculate)	155
Inchicore (St Michael's)	157
James's Street	260

Community Area	Commercial Receptors
Halston Street	1,214
Study Area Total	3,079

Table 10.7 shows that the largest number of commercial receptors are located in Halston Street and the smallest number of commercial receptors are in the Ballyfermot and Chapelizod community areas.

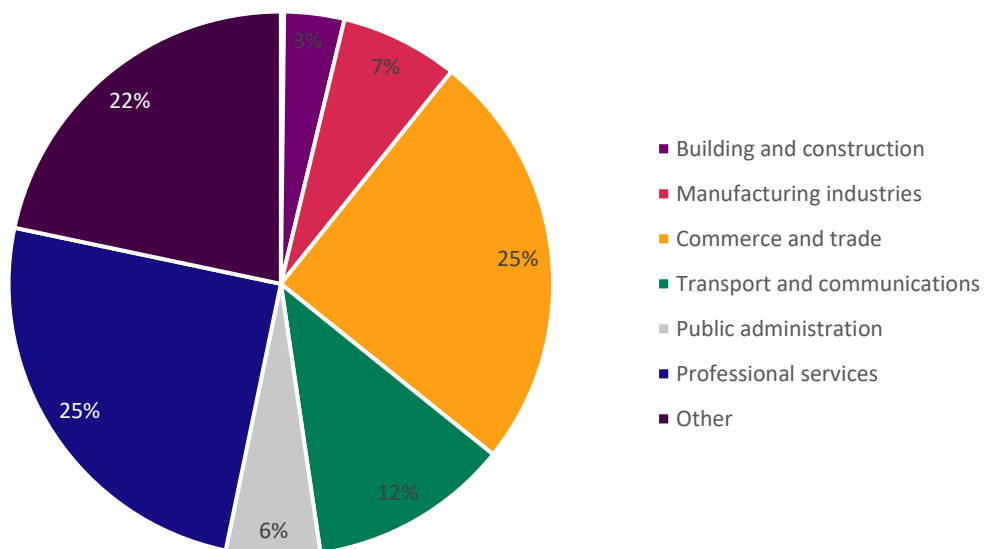
10.3.3.2 Employment

Within the study area, there are approximately 38,500 people in employment (47% of the total study area population). Of the working age population over 5,700 people are unemployed (13% of the working age population); across the study area population this equates to 7% being unemployed (CSO 2016c), just greater than the unemployment rate for Dublin as a whole 6.5% (CSO 2016a).

Key centres of employment within the study area include:

- Liffey Valley Shopping Centre, Rowlagh – Quarryvale;
- Palmerstown Business Park, Palmerstown; and
- Guinness Brewery Diageo, James’s Street.

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



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

10.4 Potential Impacts

10.4.1 Characteristics of the Proposed Scheme

The Proposed Scheme is approximately 9.7km long and includes approximately 7.5km of additional cycle facilities. Quiet Street treatments have been proposed as part of the Proposed Scheme in two locations: a short section on Ballyowen Lane and Hermitage Road with the two roads linked via a short length of shared space in

Hermitage Park. The second quiet street treatment is along the access road to Hermitage Golf Club, helping provide a safe route for cyclists between the proposed two-way cycle track on the Lucan Road and the proposed two-way segregated cycleway on the north side of N4.

Permanent land take along the Proposed Scheme will be required from nine commercial properties, and from three community facilities. All permanent land acquisition will be required to facilitate the widening of the carriageway and allow for the provision of improved bus and cycle infrastructure.

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

The Proposed Scheme will have the following Construction Compounds:

- Construction Compound LU1a and LU1b: N4 Junction 2 and north of Liffey Valley Shopping Centre;
- Construction Compound LU2: R148 Palmerstown Bypass; and
- Construction Compound LU3: Liffey Gaels Park at R148 Chapelizod Bypass / R833 Con Colbert Road Junction.

The Construction Compounds are not located in close proximity to any commercial businesses, though Construction Compound LU3 is located on land adjacent to Liffey Gaels GAA pitches and Clubhouse.

10.4.2 'Do Nothing' Scenario

With respect to Population, the 'Do Nothing' scenario means that there would be no changes to pedestrian, cycling or bus amenity and access, and no change to land use as a result of the Proposed Scheme. Therefore, there would be a Neutral impact on land use and potential Negative impacts on amenity and accessibility under the 'Do Nothing' scenario.

10.4.3 Construction Phase

10.4.3.1 Community Assessment

10.4.3.1.1 Community Amenity

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

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

- A Moderate residual 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 air quality impacts from residual road traffic impacts on local human receptors to be Neutral, Not Significant and Short-Term during the Construction Phase.

Chapter 9 (Noise & Vibration) identified a Negative, Slight to Moderate and Temporary at NSLs within 10m of road widening/utility diversion and retaining wall works, the impact is Not Significant beyond 10m. A Positive, Slight and Temporary to Negative, Moderate and Temporary impact from construction traffic within 1km of the

study area is also expected with Old Lucan Road the only road to be identified as having a Negative, Moderate and Temporary impact during construction. Community receptors located on this road comprise:

- Saint Philomena's Church;
- Palmerstown Parish Centre;
- New Covenant Church;
- St Thomas Indian Orthodox Church; and
- Palmerstown Medical Centre.

Chapter 17 (Landscape (Townscape) & Visual) identified a Negative, Very Significant and Short-Term impact on Hermitage Golf Club, a Negative, Significant and Short-Term impact on the Liffey Valley Gaels GAA Ground and Dr Steeven's Hospital, and a Negative, Moderate and Short-Term impact on the War Memorial Gardens.

The townscape and streetscape character assessment identified a Negative, Moderate and Short-Term impact between the N4 Junction 3 to the M50 Junction 7, a Negative, Moderate / Locally Significant and Short-Term impact between M50 Junction 7 and Con Colbert Road and a Negative, Significant and Short-Term impact between Con Colbert Road to Frank Sherwin Bridge. This impact on townscape represents the visual impact experienced by community receptors along this stretch of road.

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 and Short-Term impact on amenity for all community facilities along the Proposed Scheme. The majority of community facilities located along the Proposed Scheme are situated just away from the Proposed Scheme or are shielded by woodland, these are therefore considered too far away to experience the potential amenity impacts. Notable community facilities allocated adjacent to the Proposed Scheme and likely to experience a Negative, Moderate and Short-Term impact on amenity are:

- St John of God Special School;
- Hermitage Golf Club;
- The King's Hospital School;
- Saint Philomena's Church;
- The Gardens at the Royal Hospital Kilmainham;
- St Dominic's College;
- Irish National War Memorial Park;
- Heuston Railway Station;
- Palmerstown parish Centre;
- Font Hill Lodge Nursery;
- Little Folk Pre-School;
- New Covenant Church;
- St Thomas Indian Orthodox Church;
- Liffey Gaels GAA Club;
- The Oval Park and Garden; and
- Palmerstown Medical Centre.

The community facilities are located in the community areas of Lucan, Rowlagh – Quarryvale, Palmerstown, Chapelizod, Ballyfermot, Inchicore (Mary Immaculate) and James's Street. However, due to the small number of community facilities in each community areas, the overall impact on these community areas is expected to be Negative, Not Significant and Short-Term.

All other community areas (Ballyfermot Upper, Inchicore (St Michael's) and Halston Street) are expected to experience a Neutral, Not Significant and Short-Term amenity impact.

10.4.3.1.2 Community Land Use and Accessibility

10.4.3.1.2.1 Land Take

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

Five community facilities are impacted by temporary land take as a result of the Proposed Scheme. Two residential properties are expected to be impacted by temporary land take as a result of the Proposed Scheme. Table 10.8 shows the breakdown of impacts of land take on community facilities.

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

Community Area	Nature of Effect / Number of Community Receptors Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Lucan	0	2	1	0
Chapelizod	0	0	0	0
Inchicore (Mary Immaculate)	0	0	0	1
James's Street	0	0	0	0
Total	0	3	3	1

Liffey Gaels GAA Club, located in Inchicore (Mary Immaculate), is expected to experience a Negative, Significant and Short-Term impact as it is the location of Construction Compound LU3 during the Construction Phase. The Construction Compound will be located on land that is not the area that is primarily used by the Club.

Hermitage Golf Club, located in Lucan community area, is expected to experience a Negative, Moderate and Short-Term effect during construction due to the larger scale of land take. Hermitage Park and Hermitage Medical Clinic, both also located in Lucan community area, are expected to experience a Negative, Slight and Short-Term effect during the construction phase.

Overall, the impact of land take across the impacted community areas as a whole is considered Negative, Slight and Short-Term during the construction phase. No other community areas are 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 and 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 the subsequent ability to access community facilities. As outlined in Chapter 5 (Construction), measures will be undertaken by the appointed contractor to ensure that access and parking are maintained during construction, wherever possible, to reduce the impact on accessibility along the Proposed Scheme.

Chapter 6 (Traffic & Transport) has identified a Negative, Slight and Temporary impact on pedestrian access and a Negative, Moderate and Temporary impact on cycling access along the Proposed Scheme during the Construction Phase. Taking into consideration the measures presented in Chapter 5 (Construction), it is expected

that access to community receptors along the Proposed Scheme will also likely be negatively impacted during the Construction Phase.

Chapter 5 (Construction) states that bus routes will be maintained and that bus stop locations will need to be temporarily relocated to accommodate the works. It is expected that 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 facilities.

Chapter 6 (Traffic & Transport) has identified a 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 be Negative, Slight and Short-Term for bus users during construction.

The community areas that are expected to experience a Negative, Slight and Short-Term impact on pedestrians and bus users and a Negative, Moderate and Short-Term impact on cyclists as a result in changes to access are Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street.

Walkers, cyclists and bus users in all other community areas (Ballyfermot, Inchicore (St Michael's) and Halston Street) 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.

Private Vehicles

Chapter 5 (Construction) outlines temporary traffic management measures which may impact accessibility along certain parts of the Proposed Scheme to parking provision and community facilities, 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 on 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 upon the surrounding road network are expected to result in a Negative, Slight and Temporary impact on general traffic. This will not include the impact of construction access vehicles which are considered in Chapter 6 (Traffic & Transport). Private vehicles may therefore be negatively affected on the surrounding road network although this is only expected to be Negative, Slight and Short-Term during construction.

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, Moderate and Short-Term impact on private vehicles as a result in changes to access are Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street.

Private vehicles in all other community areas (Ballyfermot, Inchicore (St Michael's) and Halston Street) are expected to 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 viability of a commercial business.

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

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

Chapter 7 (Air Quality) identified air quality impacts from residual road traffic impacts on local human receptors to be Neutral, Not Significant and Short-Term during the Construction Phase.

Chapter 9 (Noise & Vibration) identified a Negative, Slight to Moderate and Temporary at NSLs within 10m of road widening/utility diversion and retaining wall works, the impact is Not Significant beyond 10m. A Positive, Slight and Temporary to Negative, Moderate and Temporary impact from construction traffic within 1km of the study area is also expected with Old Lucan Road the only road to be identified as having a Negative, Moderate and Temporary impact during construction. Commercial businesses on Old Lucan Road include Palmerstown Lower Retail Park, Palmerstown Lodge Hotel and businesses between along the M50 to Con Colbert Road. A Negative, Slight to Moderate and Short-Term impact has been identified on office NSLs to the south of St John's Road West.

Chapter 17 (Landscape (Townscape) & Visual) identified a Negative, Moderate and Short-Term impact on townscape and streetscape character between the N4 Junction 3 to the M50 Junction 7, a Negative, Moderate / Locally Significant and Short-Term impact between M50 Junction 7 and Con Colbert Road and a Negative, Significant and Short-Term impact between Con Colbert Road to Frank Sherwin Bridge. This impact on townscape represents the visual impact experienced by commercial receptors along this stretch of road.

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 Negative, Moderate and Short-Term impact on amenity for all commercial businesses along the Proposed Scheme. Commercial businesses located along the Proposed Scheme are listed in Appendix A10.1 (Schedule of Commercial Businesses) in Volume 4 of this EIAR. The proportion of commercial businesses located along the Proposed Scheme is low compared to the businesses across the entire community areas, see Table 10.7, therefore the impact on community areas along the Proposed Scheme (Lucan, Rowlagh – Quarryvale, Palmerstown, Chapelizod, Inchicore (Mary Immaculate), Ballyfermot and James's Street) is considered to be Negative, Not Significant and Short-Term.

All other community areas (Ballyfermot Upper, Inchicore (St Michael's) and Halston Street) are expected to experience a Neutral, Not Significant and Short-Term amenity impact.

As discussed in Section 10.2.4.2.1, a single significant environmental effect in isolation can result in a direct impact on commercial amenity where a business has a particular sensitivity. Two direct amenity impact have been identified during the Construction Phase. The Hilton Dublin Kilmainham Hotel located between Con Colbert Road and the Frank Sherwin Bridge is subject to the Negative, Significant and Short-Term townscape and streetscape visual impact, see Chapter 17 (Landscape (Townscape) & Visual). As hotels are assigned a medium sensitivity to visual disturbance overall the direct amenity impact is expected to be Negative, Moderate and Short-Term on this business. Hermitage Golf Club, located adjacent to the N4 is expected to experience Negative, Very Significant and Short-Term impact, see Chapter 17 (Landscape (Townscape) & Visual). Golf courses are assigned a medium sensitivity to visual disturbance, therefore overall, the direct amenity impact is expected to be Negative, Moderate and Short-Term on this business.

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.

A total of 12 commercial businesses are impacted by temporary land take as a result of the Proposed Scheme. Table **10.9** summarises the findings of the commercial land take assessment for the Proposed Scheme.

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

Community Area	Nature of Effect / Number of Commercial Receptors Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Lucan	0	1	2	0
Palmerstown	0	0	4	0
James's Street	0	0	3	0
Rowlagh - Quarryvale	0	1	1	0
Total	0	2	10	0

Table 10.9 shows a Negative, Moderate and Short-Term effect is expected on ten of the 12 commercial receptors. These commercial receptors are:

- Sureweld International;
- Palmerstown Lodge;
- Palmerstown House Pub;
- Clarkeville Art and Flowers;
- Liffey Valley Office Campus (Block B);
- Applegreen Petrol Station;
- Dr. Steevens' Hospital Office;
- EIR Office;
- Heuston South Quarter; and
- Restaurants - Wow Burger and Elephant & Castle House, both of which are operating out of the same facility.

In addition, Negative, Slight and Short-Term effects are expected on agricultural land in the ownership of the Governors of Saint Patrick's Hospital in the Lucan Community Area, and at Liffey Valley Shopping Centre. There were no receptors experiencing any significant impacts from temporary land take.

Overall, the impact of land take across the impacted community areas (Lucan, Palmerstown, James's Street and Rowlagh - Quarryvale) as a whole is considered Negative, Moderate 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 works means accessibility impacts will differ based on the mode of travel used. The assessment, similar to the community accessibility assessment (Section 10.4.3.1.2) has separately assessed accessibility impacts on walkers and cyclists, bus users and private vehicles (parking and loading). As the construction mitigation measures presented in Chapter 5 (Construction) and the residual effects presented in Chapter 6 (Traffic & Transport) are the same for each mode of travel the impacts on commercial accessibility are the same as those reported in Section 10.2.4.1.2.2 for community accessibility.

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, Slight and Long-Term impact from a reduction on general traffic flows along the Proposed Scheme and a Negligible impact from redistributed traffic along the surrounding road network.

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

Chapter 9 (Noise & Vibration) identified a Positive, Imperceptible, Short to Medium Term to Negative, Slight, Short to Medium-Term impact from traffic noise along both the Proposed Scheme and in the surrounding road network.

Chapter 17 (Landscape (Townscape) & Visual) identified a Negative, Slight to Long-Term impact on townscape and streetscape character between the N4 Junction 3 and the M50 Junction 7, a Negative, Moderate, and Long-Term impact between M50 Junction 7 and Con Colbert Road and a Negative, Slight and Long-Term impact between Con Colbert Road to Frank Sherwin Bridge. The impacts on townscape represent the visual impact on community facilities along these roads. Amenity designations are expected to experience impacts during the Operational Phase, these are a Negative, Moderate to Significant and Short-Term impact on Dr Steeven's Hospital, and a Negative, Significant and Short-Term impact on Hermitage Golf Club.

These environmental impacts have been considered together to identify if there will be an in-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, Slight and Long-Term impact on all receptors located between the N4 Junction 3 to M50 Junction 7 and M50 Junction 7 and Con Colbert Road, this includes along the Chapelizod Bypass. However, it is acknowledged that the majority of community facilities along this stretch of the Proposed Scheme are sheltered by trees, and therefore do not have direct views of the visual impacts and are only likely to experience the noise impacts. The community areas impacted are Lucan, Palmerstown, Rowlagh – Quarryvale, Chapelizod, Inchicore (Mary Immaculate), Ballyfermot and James's Street are expected to experience a Negative, Not Significant and Long-Term impact.

All other community areas (Ballyfermot Upper, Inchicore (St Michael's) and Halston Street) are expected to experience a Neutral, Not Significant and Short-Term amenity impact.

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.

Table **10.10** shows the breakdown of impacts of land take on community facilities.

Table 10.10: 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
Lucan	1	2	0	0
Chapelizod	0	0	0	0
James's Street	0	0	0	0
Total	1	2	0	0

Hermitage Golf Club and Hermitage Medical Clinic, located in Lucan, require permanent land take as a result of the Proposed Scheme and will experience a Negative, Slight and Long-Term impact. Hermitage Park, located in Lucan, is expected to experience an imperceptible impact as a result of the scheme.

Overall, the impact of land take across the Lucan, Chapelizod and James's Street community areas as a whole is considered Negative, Not Significant and Long-Term during the Operational phase. No other community areas are impacted by land take during the Operational Phase.

10.4.4.1.2.2 Accessibility

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

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

Pedestrians, Cyclists and Bus Users

Fully segregated cycle tracks are proposed as part of the Proposed Scheme in the following locations:

- The principal provision of a two-way cycle-track alongside the bus lanes over a length of 2.2km between the between the start of the Proposed Scheme at Lucan Road / Ballyowen Road, running north of the eastbound N4 carriageway between Junction 3 and Junction 2 and along the Old Lucan Road until the east side of the M50;
- This two-way cycle track will continue for 1.6km along the Old Lucan Road and Kennelsfort Road, continuing to the start of the Chapelizod Bypass; and
- 3.5km of new single way segregated cycle tracks will continue commencing at junction R148 Chapelizod Bypass and R833 Con Colbert Road, continuing through the junction with the South Circular Road and along St. John's Road West to Heuston Station on both the eastbound and westbound sides of the carriageway.

These cycle improvements are located in the Palmerstown, Chapelizod and James's Street community areas.

Chapter 6 (Traffic & Transport) identified a Positive, Moderate to Significant and Long-Term impact on pedestrian infrastructure and a Positive, Moderate and Long-Term impact on cycling infrastructure along the proposed Scheme. It is expected that, if a beneficial impact on walking and cycling infrastructure is to be experienced, then access to community facilities along the Proposed Scheme will improve for those choosing to walk or cycle.

Existing bus priority signals are present at the R148 Kylemore Road westbound off-slip on the R148 Chapelizod Bypass here bus services could conflict with merging vehicles, with no works proposed to existing bus priority signals. There are no sections of Signal Controlled Priority proposed as part of the Proposed Scheme. Chapter 6 (Traffic & Transport) identified a Positive, Very Significant to Profound and Long-Term impact on bus infrastructure and a Positive, Moderate and Long-Term impact on bus network performance (which includes

journey times and journey time reliability). It is therefore expected that ease of access to community facilities via bus will also likely improve along the Proposed Scheme.

The impacts to pedestrians, cyclists and bus users are expected to be experienced by community areas located predominately along the length of the Proposed Scheme, as these will be the locations of the improved bus lanes and cycle and footpaths.

The community areas that are expected to experience a Positive, Moderate to Significant and Long-Term (pedestrians), Positive, Very Significant and Long-Term (cyclists) and a Positive, Very Significant and Long-Term (bus users) impact on changes in access are: Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street.

Notable community facilities located along the Proposed Scheme where accessibility will be improved are: Hermitage Golf Club, Hermitage Medical Clinic, Saint Loman's Hospital, The King's Hospital School, St Lorcan's Boys National School, Saint Dominic's College Ballyfermot, CDELTB at Chapelizod Hill Road, Liffey Gaels GAA Club, Irish National War Memorial Park, St John of God Special School and Heuston Station.

All other community areas (Ballyfermot, Inchicore (St Michael's) and Halston Street) are expected to experience a Positive, Not Significant and Long-Term impact as a result of changes in access during the Operational Phase of the Proposed Scheme.

Private Vehicles

Chapter 6 (Traffic & Transport) identified a Positive, Slight and Long-Term impact from the reduction in general traffic along the Proposed Scheme and a Negligible impact from redistributed traffic in the surrounding road network.

The predicted impact on access to community facilities along the Proposed Scheme for private vehicles is Positive, Slight and Long-Term impact in the community areas of Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street. All other community areas are not expected to experience a change in access as the impact of redistributed traffic is Neutral, Not Significant and Long-Term and is therefore not expected to change accessibility in the surrounding road network.

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, Slight and Long-Term impact from a reduction on general traffic flows along the Proposed Scheme and a Negligible impact from redistributed traffic along the surrounding road network.

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

Chapter 9 (Noise & Vibration) identified a Positive, Imperceptible, Short to Medium Term to Negative, Not Slight to Moderate, Short to Medium-Term impact from traffic noise along both the Proposed Scheme and in the surrounding road network.

Chapter 17 (Landscape (Townscape) & Visual) identified a Negative, Slight to Short-Term impact on townscape and streetscape character between the N4 Junction 3 and the M50 Junction 7, a Neutral, Moderate, and Short-Term impact between M50 Junction 7 and Con Colbert Road and a Positive, Slight to Moderate and Short-Term impact between Con Colbert Road to City Centre. 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 an in-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 Negative, Slight and Long-Term impact on all commercial receptors located between the N4 Junction 3 to M50 Junction 7 and M50 Junction 7 to Con Colbert Road, this includes along the Chapelizod Bypass. Commercial businesses located along the Proposed Scheme are listed in Appendix A10.1 (Schedule of Commercial Businesses) in Volume 4 of this EIAR. The community areas expected to be impacted are Lucan, Rowlagh – Quarryvale, Palmerstown and James’s Street and are expected to experience a Negative, Not Significant and Long-Term impact.

All other community areas (Ballyfermot Upper, Inchicore (St Michael’s) and Halston Street) are expected to experience a Neutral, Not Significant and Short-Term amenity impact.

As discussed in Section 10.2.4.2.1, a single significant environmental effect in isolation can result in a direct impact on commercial amenity where a business has a particular sensitivity. According to Chapter 17 (Landscape (Townscape) & Visual) the Operational Phase of the Proposed Scheme has the most substantial changes at Hermitage Golf Club, where the existing N4 boundary and boundary plantings are removed and setback leaving a portion of the course exposed and open to the N4. With a Negative, Significant and Long-Term visual impact assigned to the Hermitage Golf Course. From an amenity perspective a golf course has been assigned a medium sensitivity to visual disturbance. The direct amenity impact is therefore expected to be Negative, Moderate and Long-Term during the Operational Phase.

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.

Nine commercial receptors require permanent land take as a result of the Proposed Scheme. Table 10.11 summarises the findings of the commercial land take assessment for the Proposed Scheme during the operational phase.

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

Community Area	Nature of Effect / Number of Commercial Receptors Affected			
	Imperceptible / Not Significant	Slight	Moderate	Significant
Lucan	0	1	1	0
Palmerstown	0	0	3	0
James’s Street	0	1	2	0
Rowlagh - Quarryvale	0	1	0	0
Total	0	3	6	0

Table 10.11 shows that no commercial receptors are significantly impacted by permanent land take. The six commercial receptors experiencing a Negative, Moderate and Long-Term impacts from the work are the Sureweld International, Palmerstown Lodge, Palmerstown Lodge at 20 Kennelsfort Road, Applegreen Petrol Station and Dr. Steeven’s Hospital.

The Wow Burger & Elephant and Castle facility, the Liffey Valley Shopping Centre and Liffey Valley Office Campus are all expected to experience a Negative, Slight and Long-Term impact as a consequence of the Operational Phase of the Proposed Scheme. The minor land take from these businesses is not expected to have a significant impact on business viability.

Overall, the impact on impacted community areas (Lucan, Palmerstown, James’s Street and Rowlagh - Quarryvale) 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 works means accessibility impacts will differ based on the mode of travel used. The assessment has therefore separately assessed accessibility impacts on walkers, cyclists, bus users and private vehicles.

The results of the commercial accessibility assessment is similar to the community accessibility assessment (see Section 10.4.4.1.2.2), with the only difference being the consideration of access to commercial businesses rather than community facilities. Chapter 6 (Traffic and Transport) assessed that people movement would significantly increase along the Proposed Scheme. It is therefore expected 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 listed in Appendix A10.1 (Schedule of Commercial Businesses) in Volume 4 of this EIAR.

A parking assessment has been undertaken in Chapter 6 (Traffic and Transport). No significant impacts on specific areas of parking have been identified across the sections of the Proposed Scheme.

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.

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

10.6 Residual Impacts

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

10.6.1 Construction Phase

Table 10.12 summarises the potential 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 - Lucan, Rowlagh – Quarryvale, Palmerstown, Chapelizod, Ballyfermot, Inchicore (Mary Immaculate) and James’s Street Neutral, Not Significant and Short-Term - Ballyfermot Upper, Inchicore (St Michael’s) and Halston Street	No Significant impacts
Community land take	Negative, Slight and Short-Term – Lucan, Chapelizod, Inchicore (Mary Immaculate) and James’s Street	Liffey Gaels GAA Club – Negative, Significant, Short-Term
Community accessibility	<u>Pedestrians and Bus Users</u> Negative, Slight and Short-Term - Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James’s Street.	

Assessment Topic	Predicted Impact (Residual Impacts) for Community Areas	Significant Residual Impact (Receptor Specific)
	<p>Negative, Not Significant and Short-Term - Ballyfermot, Inchicore (St Michael's) and Halston Street.</p> <p><u>Cyclists</u></p> <p>Negative, Moderate and Short-Term - Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street.</p> <p>Negative, Not Significant and Short-Term - Ballyfermot, Inchicore (St Michael's) and Halston Street.</p> <p><u>Private Vehicles</u></p> <p>Negative, Moderate and Short-Term - Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street.</p> <p>Negative, Slight and Short-Term - Ballyfermot, Inchicore (St Michael's) and Halston Street.</p>	
Economic Assessment		
Commercial amenity	<p>Negative, Not Significant and Short-Term - Lucan, Rowlagh – Quarryvale, Palmerstown, Chapelizod, Inchicore (Mary Immaculate), Ballyfermot and James's Street</p> <p>Neutral, Not Significant and Short-Term - Ballyfermot Upper, Inchicore (St Michael's) and Halston Street</p>	<p><u>Direct</u></p> <p>No Significant impacts</p> <p><u>Indirect</u></p> <p>No Significant impacts</p>
Commercial land take	Negative, Moderate and Short-Term – Lucan, Palmerstown, Rowlagh – Quarryvale and James's Street	No Significant impacts
Commercial accessibility	<p><u>Pedestrians and Bus Users</u></p> <p>Negative, Slight and Short-Term - Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street.</p> <p>Negative, Not Significant and Short-Term - Ballyfermot, Inchicore (St Michael's) and Halston Street.</p> <p><u>Cyclists</u></p> <p>Negative, Moderate and Short-Term - Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street.</p> <p>Negative, Not Significant and Short-Term - Ballyfermot, Inchicore (St Michael's) and Halston Street.</p> <p><u>Private Vehicles</u></p> <p>Negative, Moderate and Short-Term - Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street.</p> <p>Negative, Slight and Short-Term - Ballyfermot, Inchicore (St Michael's) and Halston Street.</p>	

10.6.2 Operational Phase

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

Table 10.13: Summary of Operational Phase Significant Residual Impacts

Assessment Topic	Predicted Impact (Residual Impacts) for Community Areas	Significant Residual Impact (Receptor Specific)
Community Assessment		
Community amenity	<p>Negative, Not Significant and Long-Term - Lucan, Palmerstown, Rowlagh – Quarryvale, Chapelizod, Inchicore (Mary Immaculate), Ballyfermot and James's Street</p> <p>Neutral, Not Significant and Short-Term - Ballyfermot Upper, Inchicore (St Michael's) and Halston Street</p>	No Significant impacts
Community land take	Negative, Not Significant and Long-Term – Lucan, Chapelizod, James's Street	No Significant impacts
Community accessibility	<p><u>Pedestrians</u></p> <p>Positive, Moderate to Significant and Long-Term - Lucan, Rowlagh – Quarryvale, Palmerstown, Ballyfermot Upper, Chapelizod, Inchicore (Mary Immaculate) and James's Street</p>	

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

As outlined within Section 10.6 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 will promote a modal shift to walking, cycling and public transport, allowing for greater capacity along the corridor to access residential, community and commercial receptors.

In order to accommodate the Proposed Scheme and to ensure it can be readily utilised by sustainable modes of transport, localised impacts from permanent land take are expected on a small number of properties. No Significant impacts have been identified as a result of permanent land take.

Accordingly, it is concluded that the Proposed Scheme will deliver strong benefits for users of sustainable modes of transport, with positive accessibility impacts expected for community areas located along the Proposed Scheme.

10.7 References

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