



Environmental Impact Assessment Report (EIAR) Volume 1 Non-Technical Summary (NTS)

In respect of
The Royal Canal Urban Greenway

On behalf of
Fingal County Council

October 2026

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1 Introduction (Chapter 1)

This is a Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIAR) in respect of the Royal Canal Urban Greenway, the Proposed Development. The Proposed Development is a shared pedestrian and cycle route extending for approximately 8.1km along and adjacent to the Royal Canal corridor in west Dublin. The scheme extends from the Kildare County Boundary in the west to Talbot Bridge on the Old Navan Road in the east, where it will connect with the existing Ashtown Greenway. Fingal County Council is promoting the scheme in partnership with the National Transport Authority and Waterways Ireland. The Greenway will provide a continuous active travel corridor serving the communities of Clonsilla, Coolmine, Castleknock and Blanchardstown while improving access to schools, employment areas, public transport services, recreational amenities and local services.

The EIAR for the Proposed Development comprises the following:

Volume 1 EIAR Non-Technical Summary (NTS)

Volume 2: EIAR Main Body

- Part 1 Chapters 1-7
- Part 2 Chapter 8
- Part 3 Chapters 9-19

Volume 3 Appendices

The purpose of the NTS is to summarise and explain in non-technical language the likely direct and indirect environmental impacts arising from the Proposed Development. The below environmental topics have been included in the NTS due to the technical nature of the Chapters:

- Air Quality
- Climate Factors
- Noise
- Biodiversity
- Archaeological, Architectural and Cultural Heritage
- Landscape and Visual
- Land, Soils and Geology
- Water
- Population and Human Health
- Material Assets – Traffic and Transport
- Material Assets – Waste Management
- Material Assets – Utilities
- Material Assets – Land Use and Property
- Interactions
- Summary of Mitigation and Monitoring Measures

This NTS has been prepared by KPMG Planning in conjunction with a multi-disciplinary EIAR team for Fingal County Council.

1.1 Location

The Proposed Development is located alongside the Royal Canal and extends from the Fingal/Kildare County boundary at St. Catherine's Park in the west to Talbot Bridge at the Old Navan Road in the east. The route has been divided into three sections reflecting the differing character of the surrounding environment, ranging from rural and agricultural landscapes in the west to established suburban communities in the east. The Greenway will connect with the existing Royal Canal Greenway network

to the west and the completed Ashtown Greenway to the east, completing a significant missing section of the route.

1.2 Description of Proposed Development

The Royal Canal Urban Greenway, hereafter referred to as the 'Proposed Development', is a pedestrian and cycle route approximately 8.1km in length to be constructed along and adjacent to the Royal Canal. The route extends eastwards from the Kildare County Boundary to the Old Navan Road, near the 12th Lock, where it will connect with the previously constructed Ashtown Greenway. Fingal County Council is the scheme promoter, in conjunction with the National Transport Authority as the funding body and Waterways Ireland as the principal property owner.

The Royal Canal links the River Shannon in County Longford to the River Liffey in Dublin City's Docklands. It passes close to a number of towns, including Mullingar, Kilcock, Maynooth and Leixlip, before entering Fingal where it passes through the built-up areas of Clonsilla, Coolmine, Castleknock and Blanchardstown on its way towards Dublin city.

The Proposed Development will provide a continuous, high-quality active travel corridor serving the communities of Clonsilla, Coolmine, Castleknock and Blanchardstown and will improve accessibility to schools, public transport, employment centres, recreational amenities and local services. The scheme will encourage a modal shift towards walking and cycling, while supporting recreation, health and wellbeing, sustainable transport objectives and climate action policies at national, regional and local level.

The extent of the scheme is illustrated in **Figure 1.1** below.

The scheme has been divided into three distinct sections based on their different geographical and physical characteristics to simplify the assessment process as follows:

- Section 1 – Kildare County Border to Hansfield Railway Bridge (Ch. 0000m – 3200m)
- Section 2 – Hansfield Railway Bridge to Kennan Bridge (Ch. 3200m – 5300m)
- Section 3 – Kennan Bridge to Talbot Bridge (Ch 5300m – 8100m)

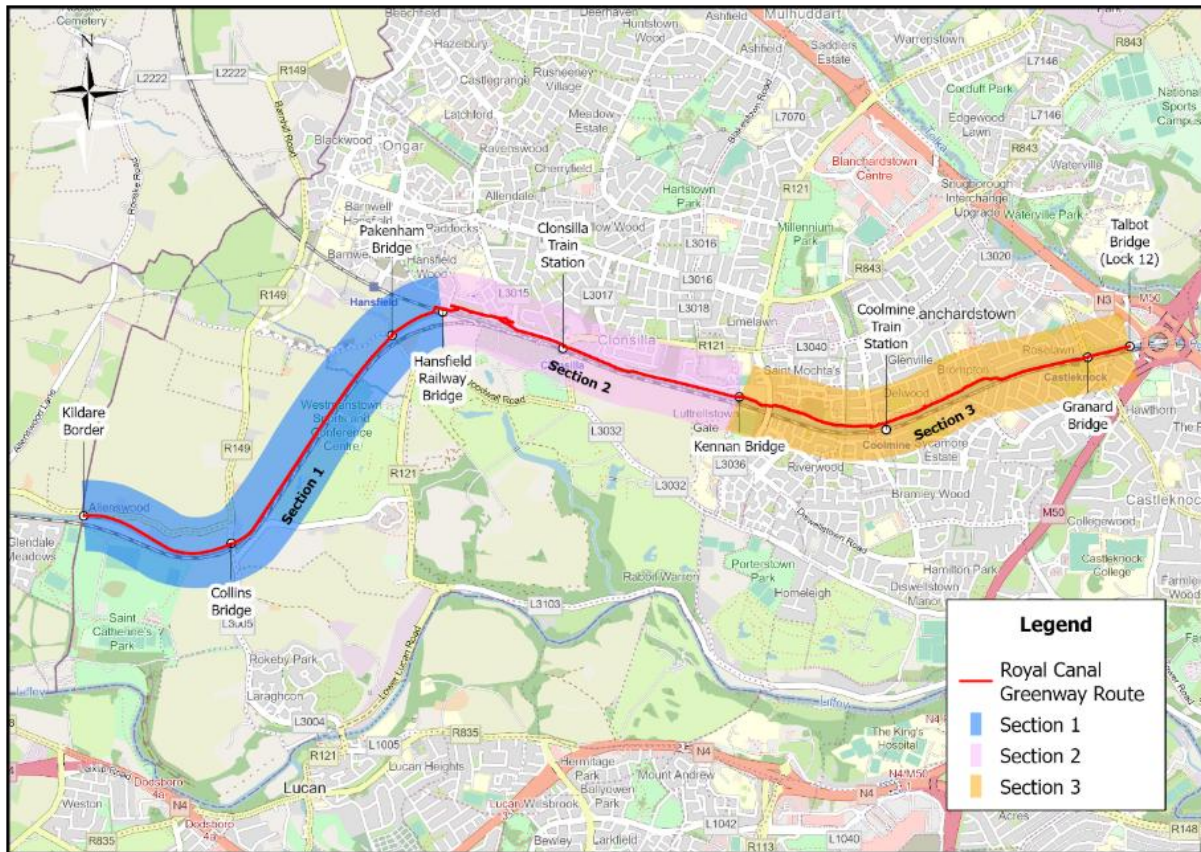


Figure 1.1 Sections of the Proposed Route

Section 1 extends from the Kildare/Dublin County Boundary to Hansfield Railway Bridge. This section is rural/peri-urban in nature and is predominantly characterised by farmland, with local amenities including Westmanstown Golf Club and Westmanstown Sports Centre located nearby.

Section 2 extends from Hansfield Railway Bridge, through Clonsilla under Callaghan Bridge to Kennan Bridge at Porterstown Road. In Section 2, the character of the area changes from rural to predominantly suburban in nature. This section is predominantly residential on the northern side of the canal with farmlands on the southern side.

Section 3 runs from Kennan Bridge (Porterstown Road) to Talbot Bridge (Old Navan Road). This section is predominantly urban with extensive residential catchments on both sides of the Canal.

Proposed Works

The proposed greenway route is approximately 8.1km in length. Approximately 5km of the route will be along the canal towpath, while 3.1km of the greenway will be away from the towpath, reflecting local constraints including trees, habitats and existing topography. The greenway route will also tie into the recently constructed pedestrian/cycle routes at St. Joseph's and Windmill Court residential developments, which have a combined length of approximately 800m.

The Proposed Development will include the following works:

- Construction of the greenway route, including the following pavements and surfacing:
 - Section 1 – unbound surface (width 2-3m) from Kildare County Border to Hansfield Railway Bridge (Ch. 0 – 3200m).
 - Section 2 – bituminous surface (3-4m width) for the majority of the section, with the exception of pre-cast concrete cantilevered boardwalk from approx. Ch. 4235-4610
 - Section 3 - bituminous surface (4m width) for the majority of the section, in-situ concrete surfacing and portions of raised boardwalk due to local topography.
- Embankments and retaining structures at various locations to stabilise ground conditions.
- 3 no. toucan signalised crossings (4m wide) and 1 no. zebra crossing at road interfaces along the route.
- Lighting installation between Hansfield Railway Bridge and the 12th Lock (approx Ch. 3200m to Ch. 8100m).
- Ground level adjustments along the interface with Delwood Park including lowering of path levels and the construction of a 2m high timber palisade fence with anti-climb mesh (Ch. 6200 – 6800).
- Construction of the Quarry Bridge, a 30m single-span composite steel beam and concrete deck bridge spanning a historic quarry on the northern bank of the Royal Canal (Ch. +6500m) and associated boardwalk sections.
- Privacy planting and railings along the Brompton green area to supplement existing boundary fencing.
- Construction of the Landmark Bridge, a steel bridge approximately 235m in length with a maximum single span of 30m, traversing the Royal Canal (Ch. 7115m to 7350m) and associated ramped sections.
- Excavation and construction of an underpass beneath Castleknock Road on the southern side of Granard Bridge (Ch. +7820).
- Development of a Pocket Park at Hansfield, incorporating a wildflower meadow, native hedgerow, embankment slide, informal play area, benches and associated landscaping.
- Provision of rest areas along the route, including bicycle parking stands, benches and associated landscaping.
- Removal of two existing residential properties and associated ancillary structures in the vicinity of Hansfield Road in order to facilitate the delivery of the greenway alignment and associated pocket park infrastructure.
- Landscape and reinstatement works, including removal of selected trees, hedgerows and vegetation, where required and replacement planting using native and naturalised species.
- Temporary site compounds, storage areas, and construction access arrangements will be reinstated upon completion of the works.
- All associated and ancillary works, including excavation and earthworks, installation, diversion and protection of utilities and services including drainage, fencing, boundaries, roadworks including signage, public lighting, road markings and traffic signals.

Construction Phase Overview

The principal construction activities associated with the Proposed Development are anticipated to include site establishment, fencing of works areas, temporary traffic management, temporary surface water management, vegetation clearance, topsoil stripping, earthworks, utilities works, pavement construction, construction of the proposed bridges, boardwalks and underpass, ancillary roadworks, accommodation works, landscaping and reinstatement. These activities are described at a level appropriate to the scheme description, with further detail provided in the Outline Construction Management Plan and the relevant technical chapters of the EIAR Volume 2 Main Body.

1. Fencing of construction areas and establishment of temporary site compounds.
2. Implementation of temporary traffic management measures.
3. Establishment of temporary surface water management and pollution prevention measures.
4. Stripping and management of topsoil and existing surfacing, as required.
5. Earthworks to formation level, including excavation, filling, regrading, profiling and management of surplus or unsuitable material.
6. Clearance of selected trees, hedgerows and vegetation where required to facilitate the works.
7. Construction of Quarry Bridge and associated boardwalk sections.
8. Construction of Landmark Bridge and associated ramped sections.
9. Excavation and construction works at Granard Bridge to facilitate the proposed underpass, including associated reinstatement works.
10. Installation, diversion and protection of utilities and services, including associated drainage works.
11. Construction of pavement foundations, concrete surfaces, kerbs and surfacing.
12. Implementation of environmental design and mitigation measures identified in the EIAR, including badger underpasses and compensatory planting, where required.
13. Ancillary roadworks, including signage, public lighting, road markings and traffic signals.
14. Accommodation works associated with affected properties, including fencing, boundary treatments and planting.
15. Landscaping and reinstatement works, including verge formation, seeding, tree and shrub planting, and permanent boundary treatments.
16. Temporary site compounds, storage areas, and construction access arrangements will be reinstated upon completion of the works.

1.3 Requirement for an EIAR

Environmental Impact Assessment (EIA) is a process used to identify, assess and describe the likely significant effects of a proposed development on the environment before a decision is made on whether the development should proceed.

The Proposed Development requires Environmental Impact Assessment under the Roads Act 1993 (as amended) and the Roads Regulations 1994 (as amended). This requirement arises because the scheme includes the construction of a new pedestrian and cycle bridge greater than 100 metres in length. An Environmental Impact Assessment Report (EIAR) has therefore been prepared to assess the likely environmental effects of the Proposed Development during both construction and operation and to identify appropriate mitigation measures where necessary.

In any event, having regard to the nature, scale and location of the Proposed Development and the potential for significant effects on the receiving environment, Fingal County Council determined that the Proposed Development should be subject to Environmental Impact Assessment.

1.4 Format and Structure of EIAR

The EIAR has been prepared in accordance with the requirements of European and Irish environmental assessment legislation. It describes the Proposed Development, the existing receiving environment, the likely environmental effects during construction and operation, the mitigation measures proposed and the residual effects that may remain following implementation of mitigation measures.

The assessment addresses environmental topics including air quality, climate, noise and vibration, biodiversity, cultural heritage, landscape and visual impacts, land and soils, water, population and human health, traffic and transport, waste management, utilities and land use and property.

1.5 EIAR Methodology

The EIAR was prepared using a structured assessment process. This involved establishing baseline environmental conditions, identifying potential impacts associated with the Proposed Development, assessing the significance of these impacts and identifying mitigation measures where required. Following the implementation of mitigation measures, any remaining residual effects were assessed. The assessment has been undertaken by suitably qualified specialists using recognised assessment methodologies and relevant national and international guidance.

1.6 Cumulative Effects

The EIAR assessed the potential for cumulative effects arising from the Proposed Development in combination with other existing, permitted, approved and reasonably foreseeable developments within the study area, including residential developments, active travel projects, the DART+ West Railway Order project, BusConnects infrastructure and other sections of the Royal Canal Greenway. During the construction phase, temporary cumulative effects may arise where construction activities overlap with other projects and may relate to traffic, noise, vibration, dust, water quality and temporary disturbance. These effects are generally localised, short-term and not significant following the implementation of mitigation measures. During operation, the Proposed Development will act cumulatively with existing and planned active travel, public transport and development projects to improve accessibility, connectivity, recreation and sustainable mobility. The cumulative operational effects are considered positive and supportive of sustainable development objectives for the area. Overall, no likely significant adverse cumulative effects have been identified.

1.7 Risk of Major Accidents and/or Disasters

The vulnerability of the Proposed Development to major accidents and disasters has been assessed as part of the EIAR process. The assessment considered issues such as flood risk, interaction with utilities, traffic safety and proximity to Seveso sites. The Proposed Development is not located within the consultation distance of any Seveso establishment and is not considered to be at significant risk from major accidents or disasters. Appropriate design measures, construction management procedures and environmental protection measures have been incorporated into the scheme to minimise potential risks during both construction and operation.

1.8 EIAR Team

This EIAR has been prepared by KPMG Planning, DBFL Consulting Engineers and a multidisciplinary team of specialist EIA consultants supported by and on behalf of Fingal County Council. The assessment has been undertaken by qualified experts in environmental disciplines including air quality, climate, noise and vibration, biodiversity, archaeology and cultural heritage, landscape and visual assessment, water, land and soils, traffic and transport, waste management, utilities, population and human health and land use and property.

Table 1-1 EIAR Team

Chapter	Organisation
Vol 1: Non – Technical Summary	KPMG Planning
Vol 2. Part 1 Chapter 1 Introduction	KPMG Planning
Vol 2. Part 1 Chapter 2 Background to the Proposed Development	DBFL Consulting Engineers (DBFL) & KPMG Planning
Vol 2. Part 1 Chapter 3 Policy Context	KPMG Planning
Vol 2. Part 1 Chapter 4 Alternatives Considered	DBFL
Vol 2. Part 1 Chapter 5 Air Quality	AWN Consulting (AWN)
Vol 2. Part 1 Chapter 6 Climate	AWN Consulting (AWN)
Vol 2. Part 1 Chapter 7 Noise & Vibration	AWN
Vol 2. Part 2 Chapter 8 Biodiversity	JBA Consulting (JBA)
Vol 2. Part 3 Chapter 9 Archaeological, Architectural and Cultural Heritage	IAC Archaeological Consultancy (IAC)
Vol 2. Part 3 Chapter 10 Landscape & Visual	Áit Urbanism + Landscape Ltd.
Vol 2. Part 3 Chapter 11 Land and Soils	DBFL
Vol 2. Part 3 Chapter 12 Water	DBFL
Vol 2. Part 3 Chapter 13 Population and Human Health	KPMG Planning
Vol 2. Part 3 Chapter 14 Material Assets - Traffic and Transportation	DBFL
Vol 2. Part 3 Chapter 15 Material Assets - Waste Management	DBFL
Vol 2. Part 3 Chapter 16 Material Assets: Utilities	DBFL
Vol 2. Part 3 Chapter 17 Material Assets: Land Use and Property	KPMG Planning
Vol 2. Part 3 Chapter 18 Interactions	KPMG Planning
Vol 2. Part 3 Chapter 19 Summary of Mitigation and Monitoring Measures	KPMG Planning
Vol 3. Appendices	All (as relevant)

2 Background to the Proposed Development (Chapter 2)

2.1 Scheme Context

The Royal Canal Greenway is a strategic walking and cycling corridor connecting Dublin with the Midlands and the River Shannon. Approximately 134km of the Royal Canal Greenway has already been completed from Longford to Kildare, while a separate urban section has been completed between Ashtown and Dublin City Centre. The Proposed Development will complete the important missing link between these existing sections, creating a more continuous and connected greenway network and strengthening active travel infrastructure across the Greater Dublin Area.

2.2 Need for the Proposed Development

The Proposed Development is required to complete a critical missing link within the Royal Canal Greenway corridor and to support wider national, regional and local policy objectives relating to active travel, climate action, recreation and sustainable mobility.

The Greenway will improve connectivity between communities, schools, employment areas, public transport services and recreational destinations. It will encourage walking and cycling, reduce reliance on private cars, support healthier lifestyles and contribute towards achieving national climate and sustainable transport objectives. The route will also form part of wider strategic networks including the National Cycle Network, the Greater Dublin Area Cycle Network and EuroVelo 2.

2.3 Stakeholder Consultation

Extensive stakeholder engagement and public consultation has been undertaken throughout the development of the scheme. Consultation has included engagement with local communities, residents, elected representatives, Waterways Ireland, the National Transport Authority, National Parks and Wildlife Service, Iarnród Éireann and other key stakeholders.

Two non-statutory public consultations were undertaken in 2019 and 2021. Feedback received during the consultation process informed the refinement of route options, environmental mitigation measures, ecological protection measures, lighting proposals and design solutions at sensitive locations along the route. Consultation has therefore played an important role in shaping the final design of the Proposed Development.

3 Policy Context (Chapter 3)

3.1 National

The Proposed Development aligns with a broad range of national policies relating to sustainable mobility, climate action, healthy placemaking and regional connectivity. Relevant policy documents include the National Planning Framework, the National Development Plan 2021-2030, the Climate Action Plan 2025 and the National Sustainable Mobility Policy. These policies support the delivery of high-quality walking and cycling infrastructure that reduces reliance on private cars, encourages active travel, promotes healthier communities and contributes to national climate objectives.

3.2 Regional

At a regional level, the Proposed Development is supported by the Regional Spatial and Economic Strategy for the Eastern and Midland Region, the Transport Strategy for the Greater Dublin Area 2022-2042, the Greater Dublin Area Cycle Network Plan and the National Cycle Network Plan.

The Greenway is recognised as an important strategic active travel corridor that will strengthen regional connectivity, support sustainable transport, enhance recreational opportunities and contribute to the wider active travel network across the Greater Dublin Area.

3.3 Local

The Proposed Development is consistent with the objectives of the Fingal County Development Plan 2023-2029 and supports local objectives relating to sustainable mobility, active travel, climate action, public realm improvement, green infrastructure and biodiversity enhancement.

The Greenway will improve pedestrian and cycle connectivity across Dublin 15, enhance access to public transport and recreational facilities and strengthen the role of the Royal Canal as an important recreational, environmental and heritage asset. It also supports the objectives of local planning frameworks including the Hansfield SDZ, Kellystown LAP and Barnhill LAP.

4 Alternatives Considered (Chapter 4)

4.1 Approach to Considering Alternatives

The alternatives assessment explains how Fingal County Council developed the Proposed Development and why the preferred route and design were selected. Reasonable alternatives were considered through an iterative process informed by the 2012 feasibility and constraints assessment, route options work undertaken between 2018 and 2023, engineering and environmental surveys, ground investigations, stakeholder engagement, independent technical review and two rounds of non-statutory public consultation. The assessment considered environmental effects alongside cost, constructability, quality of service, integration, safety, land requirements, residential amenity and effects on canal and railway operations.

4.2 'Do-Nothing' Alternative

Under the 'Do-Nothing' Alternative, the existing towpath would remain in use with routine maintenance and localised improvements only. This would avoid the construction effects of the Proposed Development, but the route would remain discontinuous and constrained in places, particularly through the Deep Sinking. Opportunities to improve safety, accessibility, connectivity, recreation, public health and sustainable travel would not be realised. As it would not meet the identified need or scheme objectives, the 'Do-Nothing' Alternative was not selected.

4.3 Alternative Route Options

Route options were compared using a Multi-Criteria Analysis under four main headings: economy, integration, safety and environment. The environmental assessment considered archaeology and cultural heritage, architectural heritage, flora and fauna, soils, geology and hydrology, landscape and visual effects, and land use. The colour-coded appraisal was comparative rather than points-based, and no numerical weighting was applied. The preferred options were selected through a balanced review of the criteria, with particular regard to avoiding or reducing environmental effects while providing a safe, continuous and deliverable route.

For Section 1, between the Kildare/Fingal county boundary and Hansfield Railway Bridge, the preferred option follows the northern canal towpath. It provides the most direct route, avoids private land acquisition and railway infrastructure, limits interaction with traffic and has lower potential landscape, visual and land-use effects than the alternative route via Kellystown Bridge.

For Section 2, between Hansfield Railway Bridge and Kennan Bridge, the preferred option uses existing pedestrian and cycle routes through Piper's Court and St Joseph's before reconnecting with the towpath, and continues via the Porterstown Old School House lands. This option avoids the extensive canal-side structures, tree removal, ground disturbance and landscape and visual effects associated with a continuous Deep Sinking towpath option, while providing a safe, largely segregated and well-connected route.

Section 3, between Kennan Bridge and Talbot Bridge, was divided into three parts because of the constraints within the Deep Sinking. Between Kennan Bridge and Kirkpatrick Bridge, the preferred route is on the northern side via Windmill Court and Sheepmoor Lane, positioned to reduce effects on sensitive woodland and avoid extensive canal-side structures. Between Kirkpatrick Bridge and Granard Bridge, the preferred route follows the northern embankment, passes through the Brompton green area and crosses to the southern bank by a new pedestrian and cycle bridge. This option avoids the operational railway interface and extensive cantilevered works required on the southern towpath, while providing a relatively direct and largely segregated route. Between Granard Bridge and Talbot Bridge, the preferred route follows the southern towpath, using an underpass at Granard Bridge. It is more

direct, less costly and safer than the northern alternative, which would require a new bridge and a toucan crossing at Castleknock Road.

4.4 Design and Construction Alternatives

The preferred route was refined through consultation and further technical assessment. Changes included reducing the number of accesses in the Delwood and Brompton areas, moving alignments and the proposed canal bridge to improve separation from homes and third-party lands, lowering the route and providing fencing and planting near rear gardens, using existing infrastructure near Hansfield Road, providing a pocket park, incorporating badger crossings, and making minor road safety improvements. These changes sought to balance residential amenity, security, land ownership, ecology, tree retention, landscape and engineering constraints.

Alternative construction approaches were also considered, including access arrangements, sequencing, temporary working areas and the use of lightweight or prefabricated elements in constrained locations. Where practicable, consideration was given to reducing excavation, material quantities, transport movements and the extent of new structural works, and to reusing excavated material within the Proposed Development. The construction approach will be developed further by the appointed contractor, subject to the mitigation measures and commitments set out in the EIAR. Alternative mitigation measures were considered by the relevant environmental specialists and incorporated into the design and construction controls. Other transport measures, such as bus, rail or road improvements, would not provide the continuous Royal Canal walking and cycling corridor required by the scheme objectives and were not considered functionally equivalent alternatives.

4.5 Preferred Option

Overall, the selected route and design provide the best balance of environmental effects, safety, accessibility, route quality, integration, constructability, land requirements and stakeholder needs. The Proposed Development will deliver a continuous shared pedestrian and cycle route while avoiding or reducing effects on the Royal Canal corridor, the operational railway, heritage assets, woodland, residential areas and third-party lands where practicable.

5 Air Quality (Chapter 5)

5.1 Introduction

The assessment of Air Quality is contained within Chapter 5. The air quality assessment has focused on:

- Potential construction dust emissions and impacts to nearby sensitive receptors such as residential properties, schools, hospitals, etc and designated ecology sites (Natura 2000 and National sites); and
- Potential vehicle emissions from traffic accessing the site for construction works and during operation.

5.2 Methodology

Construction

An assessment of the potential dust impacts as a result of the construction phase of the proposed development was carried out based on the UK Institute for Air Quality Management 2024 guidance document 'Guidance on the Assessment of Dust from Demolition and Construction'. This established the sensitivity of the area to impacts from construction dust in terms of dust soiling of property, human health effects and ecology effects.

Operational

Operational phase traffic has the potential to impact air quality due to vehicle exhaust emissions as a result of the increased number of vehicles accessing the site. The change in traffic associated with the operational phase of the proposed development did not meet the scoping criteria for a detailed modelling assessment outlined in Transport Infrastructure Ireland's 2025 guidance document 'Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106 requiring a detailed air dispersion modelling assessment.

5.3 Receiving Environment

Baseline data and data available from similar environments indicates that levels of nitrogen dioxide (NO₂), particulate matter less than 10 microns (PM₁₀) and particulate matter less than 2.5 microns (PM_{2.5}) are generally well below the current National and European Union (EU) ambient air quality standards.

5.4 Predicted Impacts

Construction

The surrounding area was assessed as being of high sensitivity to dust soiling, a low sensitivity to dust-related human health effects and high sensitivity to dust-related ecology effects.

The sensitivity of the area was combined with the dust emission magnitude for the site under four distinct categories: demolition, earthworks, construction and trackout (movement of vehicles) to determine the mitigation measures necessary to avoid significant dust impacts. It was determined that there is a medium risk of dust related impacts associated with the Proposed Development. In the absence of mitigation there is the potential for direct, short-term, localised, negative and moderate impacts to air quality, which is potentially an overall significant effect in EIA terms.

In addition, construction phase traffic emissions have the potential to impact air quality, particularly due to the increase in the number of HDVs accessing the site. Construction stage traffic did not meet the scoping criteria for a detailed modelling assessment outlined in Transport Infrastructure Ireland's 2025 guidance document 'Air Quality Assessment of Specified Infrastructure Projects – PE-ENV-01106'. As a result, a detailed air assessment of construction stage traffic emissions was scoped out and the

construction stage traffic emissions will have a short-term, neutral and not significant impact on air quality, which is an overall not significant effect in EIA terms.

Operational

As the Proposed Development is a greenway with no associated traffic increase (the traffic will decrease slightly, but not by enough to meet the TII scoping criteria), there is no potential for significant air quality effects from operational phase traffic and no further assessment is required.

5.5 Residual Impacts (Post Mitigation)

Provided the mitigation measures outlined in Section 5.6.1 are implemented throughout the construction phase of the Proposed Development, construction phase effects are predicted to be short-term, direct, localised, negative and not significant.

As the Proposed Development is a greenway with no associated traffic increase (the traffic will decrease slightly, but not by enough to meet the TII scoping criteria), there is no potential for significant air quality effects from operational traffic. Therefore, the operational phase effects are predicted to be long-term, direct, localised, neutral and not significant.

6 Climate (Chapter 6)

6.1 Introduction

AWN Consulting Limited, a Trinity Consultants Company, has been commissioned to assess the likely impact on climate associated with the proposed Royal Canal Urban Greenway, which is to be constructed along / adjacent to the Royal Canal as it heads eastwards from the Kildare County Boundary to the Old Navan Road (near 12th Lock) to connect with a previously constructed section of the greenway.

The climate assessment has incorporated the following assessments:

- Assessment of the potential greenhouse gas emissions during the construction and operational phases of the development.
- Assessment of the vulnerability of the project to climate change, including considerations for increased rainfall and other projected climate impacts.

6.2 Methodology

The potential impacts on climate have been assessed in two distinct ways – a greenhouse gas assessment (GHGA) and a climate change risk assessment (CCRA). The GHGA quantifies the GHG emissions from a project over its lifetime and compares these emissions to relevant carbon budgets, targets and policy to contextualise magnitude. The CCRA considers a projects vulnerability to climate change and identifies mitigation measures to increase project resilience to identified risk.

6.3 Existing Environment

The existing climate baseline can be determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions and alignment with Ireland's 2030 sectoral emissions ceilings and carbon budgets. Data published by the EPA in July 2026 indicates that Ireland exceeded its 2025 annual limit set under EU's Effort Sharing Regulation (ESR) (EU 2018/842) by 5.01 MtCO_{2e}. The current estimates of National greenhouse gas emissions in 2025 are 14.5% below 2018 levels, at considerable variance from the National Climate ambition of a 51% reduction by 2030. The data indicates that from 2021 to 2025 Ireland has used 99.6%, or 293.9 MtCO_{2e}, of the 295 MtCO_{2e} Carbon Budget for the five-year period 2021-2025. This leaves 1.1 MtCO_{2e} of the budget available to be carried over into budget 2 for 2026-2030. In order to achieve Ireland's climate ambition of a 51% reduction by 2030, annual emission reductions of over 10% are required for the next 5 years.

6.4 Impact Assessment

6.4.1 Do Nothing Scenario

In the Do-Nothing scenario, the site will remain as per the baseline and will change in accordance with trends within the wider area. The Do-Nothing scenario is considered neutral in terms of the climate assessment. Due to the nature of the Proposed Development, the benefits of active travel, such as the modal shift from GHG emitting vehicles, which is facilitated by the greenway, would not be applicable in the Do-Nothing scenario.

6.4.2 Greenhouse Gas Assessment

The potential impact of the construction and operation of the Proposed Development on Ireland's national GHG emissions has been assessed against Ireland's 2025 total emissions, the relevant sectoral ceilings, and the 2030 carbon budgets. Any adverse impacts are expected to occur primarily during the construction phase with the embodied carbon of materials required for construction of the Proposed Development accounting for the majority of GHG emissions. When considered over the full lifecycle of the development, these emissions represent a minimal contribution to national GHG budgets. In addition, the Proposed Development will result in a modal shift by providing a facility for

active travel thereby reducing vehicle-related emissions. However, the change in traffic is expected to be minimal.

Impacts to climate from the construction and operational phases are deemed **direct, long-term, negative** and **slight**, which is considered **not significant**.

6.4.3 Climate Change Risk Assessment

A CCRA was conducted to consider the vulnerability of the Proposed Development to climate change, as per the TII 2022 PE-ENV-01104 guidance. This involves an analysis of the sensitivity and exposure of the development to future climate hazards which together provide a measure of vulnerability. The hazards assessed included flooding (pluvial, fluvial); extreme heat; extreme cold; and extreme wind. The Proposed Development is predicted to have at most low vulnerabilities to the various climate hazards and therefore climate change risk is considered **direct, long-term, negative** and **not significant**, with regard to the construction and operational phases.

6.4.4 Cumulative Impact

With respect to the requirement for a cumulative assessment PE-ENV-01104 states that *“the identified receptor for the GHG Assessment is the global climate and impacts on the receptor from a project are not geographically constrained, the normal approach for cumulative assessment in EIA is not considered applicable. By presenting the GHG impact of a project in the context of its alignment to Ireland’s trajectory of net zero and any sectoral carbon budgets, this assessment will demonstrate the potential for the project to affect Ireland’s ability to meet its national carbon reduction target. This assessment approach is considered to be inherently cumulative”*.

As a result, the cumulative impact of the Proposed Development in relation to GHG emissions is considered direct, long-term, negative and slight, which is overall not significant in EIA terms.

6.5 Mitigation

6.5.1 Construction Phase

A number of best practice mitigation measures are proposed for the construction phase of the Proposed Development to ensure that impacts to climate are minimised. Best practices will be implemented to prevent significant GHG emissions which include minimising waste, recycling, cut/fill balancing, sourcing materials locally where feasible, adherence with the *Green Public Procurement Strategy and Action Plan 2024 – 2027*.

6.5.2 Operational Phase

The primary contributor to emissions during the operational phase of the Proposed Development will be maintenance materials. Lower carbon maintenance materials will be the preferred choice throughout the lifetime of the development. Routine monitoring of all infrastructure will be undertaken in line with best practice to ensure timely repairs and effective maintenance, thereby maximizing the full lifecycle value of all assets.

The Proposed Development has been designed to reduce the impact on climate change through the promotion and opportunity for active travel.

To address climate change vulnerability and risk, the Proposed Development will incorporate permeable surfaces which will help slow runoff rates. For fluvial and pluvial flood risk, the greenway will be constructed using flood-resilient design standards.

The design and landscaping also account for extreme wind events. Bridge structures will be engineered to meet standards for high wind speeds, and landscaping will feature deep-rooted native plants to enhance stability and resilience.

6.6 Residual Impact Assessment

The impact to climate due to a proposed development must be assessed as a whole for all phases. Although the nature of the Proposed Development will lead to avoided GHG emissions through the modal shift to active travel, these are not of a great enough magnitude to completely offset the construction and operational phase GHG emissions and thus, the Proposed Development will result in a net negative impact on climate through the release of GHG emissions.

The ISEP GHG guidance¹ (which has been embraced by the updated TII PE-ENV-01104 Guidance in Section 6.7.2²) states as follows:

“A minor adverse not significant impact is described with: A project that is compatible with the budgeted, science based 1.5°C trajectory (in terms of rate of emissions reduction) and which complies with up-to-date policy and ‘good practice’ reduction measures to achieve that has a minor adverse effect that is not significant. The project may have residual impacts but is doing enough to align with and contribute to the relevant transition scenario. A ‘minor adverse’ or ‘negligible’ non-significant effect conclusion does not necessarily refer to the magnitude of GHG emissions being carbon neutral (i.e. zero on balance) but refers to the likelihood of avoiding severe climate change and achieving net zero by 2050. A ‘minor adverse’ effect or better is a high bar and indicates exemplary performance where a project meets or exceeds measures to achieve net zero earlier than 2050.”

TII PE-ENV-01104 guidance references the IESP guidance which states that the crux of assessing significance is *“not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050”*.

The Proposed Development has incorporated some best practice mitigation measures and is committing to reducing climate impacts where feasible. Once mitigation measures are put in place, the effect of the Proposed Development in relation to GHG emissions is considered **direct, long-term, negative** and **slight**, which is overall **not significant** in EIA terms.

In relation to climate change vulnerability, it has been assessed that given the level of mitigation integrated into the design there are no significant risks to the Proposed Development because of climate change. The residual effect of climate change on the Proposed Development is **direct, long-term, negative** and **not significant**.

¹ Institute of Sustainability and Environmental Professionals (ISEP) (formerly known as Institute of Environmental Management & Assessment (ISEP)) (2022) Environmental Impact Assessment Guide to: Assessing GHG Emissions and Evaluating their Significance

² Transport Infrastructure Ireland (2022a) PE-ENV-01104: Climate Guidance for National Roads, Light Rail and Rural Cycleways (Offline & Greenways) – Overarching Technical Document

7 Noise and Vibration (Chapter 7)

7.1 Introduction

AWN Consulting Limited, a Trinity Consultants Company, has been commissioned to assess the likely noise and vibration effects associated with the proposed Royal Canal Urban Greenway, which is to be constructed along / adjacent to the Royal Canal as it heads eastwards from the Kildare County Boundary to the Old Navan Road (near 12th Lock) to connect with a previously constructed section of the greenway.

7.2 Methodology

The noise impact assessment has focused on the potential outward impacts associated with the construction and operational phases of the Proposed Development on its surrounding environment. Reference has been made to relevant guidelines and appropriate criteria adopted in order to describe potential effects resulting from the construction and the operation of the Proposed Development.

7.3 Receiving Environment

The expected existing noise and vibration environment has been quantified through review of publicly available strategic noise mapping. Prevailing noise levels are primarily due to agricultural activity, rail and aircraft movements, local road traffic, water noise from the river and residential activity.

7.4 Predicted Impacts

Construction

During the construction phase the assessment has determined that for construction works taking place close to the site boundaries, the predicted noise levels, in the absence of mitigation will be above the construction noise criteria at the nearest sensitive properties. During periods of construction in these areas of the site it is predicted that short term significant effects are likely. As works move further away from off site receptors, predicted noise levels are lower.

Operational

Once operational, potential effects associated with the Proposed Development will be low in noise, i.e. people cycling and walking, limited vehicular activity at car parking areas, occasional maintenance works comprising management of surface, scheduled maintenance as necessary to the bridge structures and vegetation.

Change in noise level associated with traffic during the operational phase is predicted to be imperceptible and expected to decrease in some instances.

7.5 Residual Impacts (Post Mitigation)

Construction

Mitigation measures are recommended during the construction phase so that effects are reduced. There is potential for significant effects associated with the most intensive construction works and where works take place close to dwellings located adjacent to the site boundary.

Operational

With respect to traffic movements and scheduled maintenance, no mitigation measures are determined to be necessary and therefore residual effects do not differ from those outlined above.

8 Biodiversity (Chapter 8)

8.1 Introduction

This Chapter assesses the impact of the Proposed Development on Biodiversity, with a particular focus on potential construction and operational phase impacts which may negatively affect protected designated site, habitats and species. A series of mitigation measures have been proposed in order to safeguard these protected ecological receptors from these potential impacts.

8.2 Methodology

An extensive desktop study and a series of ecological surveys, conducted between May 2022 and June 2026 within the Zone of Influence (Zol), have provided the necessary data to establish an extensive baseline on the designated sites, habitats, flora and fauna located within and adjacent to the Proposed Development along the Royal Canal, allowing the ecological assessors to conduct a robust biodiversity impact assessment.

The Zol for the project is based on a judgement of the likely extent of the ecological impacts on key ecological receptors (KERs, i.e., protected designated sites, habitats and species). This will vary for different KERs, depending on their sensitivities to environmental change. For all sensitive receptors, the source-pathway-receptor model is applied, which uses an examination of the construction methods or project description to determine sources of direct and indirect impact. See below the Zol list for KERs:

- Terrestrial Habitats - Impacts will be limited to the lands within the route of the Proposed Development, as well as the immediate surrounding environs. This includes the existing ecological corridor running on either bank of the Royal Canal.
- Surface Water - Given difficulty to precisely predict the likely significance of water-borne pollutants as they travel downstream from the pollution point source, designated sites, protected habitats or species located downstream of the Royal Canal, including the Rusk Stream, Liffey Estuary Lower transitional waterbody, and Dublin Bay coastal waterbody, will be considered under the precautionary principle to be within the surface water Zol.
- Groundwater – As the characteristics of the aquifer underlying the Proposed Development result in groundwater flow paths only extending a few hundred metres the Zol for groundwater was set at 300m.
- Air – KERs within a 250m buffer zone of the development were considered as per the Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction (2024).
- Physical (Vibration and Clearance Works), Audible and Visual Disturbance – The Zol for physical (vibration and clearance works); audible and visual disturbance, was assessed on a faunal species-by-species basis. For smaller non-volant mammal species, i.e. Pygmy Shrew, a 100m disturbance Zol was set based on their smaller territories, while for larger non-volant mammals, such as Badger and Otter, a 150m Zol was set to account for their larger territories and given the sensitivities of their resting / breeding locations.
- Bats – The Zol was set to 300m, as well as downstream sections of the Royal Canal as habitat degradation will be the most far-reaching potential impact on bats resulting from the Proposed Development.
- Birds – The Zol was set to 500m to account for area where birds are likely to be disturbed during any construction works.
- Amphibians – The Zol for amphibians is directly linked to freshwater habitat, which will mirror the surface water and ground-to-surface water Zols, i.e. the Royal Canal downstream from the Dublin/Kildare County border (i.e. the Scheme's westernmost point).
- Freshwater Species – The Zol for freshwater species, i.e. fish, aquatic invertebrates, and macrophytes, is linked to freshwater habitats, which will mirror that of the Zol for surface water,

which includes the Royal Canal downstream from the Dublin/Kildare County border (i.e. the Scheme's westernmost point) and Rusk Stream.

- Terrestrial Invertebrates – The Zol will be linked to direct habitat loss and degradation, which will mirror that of the terrestrial habitat Zol, i.e. the lands within the route of the Proposed Development, as well as the immediate surrounding environs.
- Designated Sites – The Zol for these sites was determined using the S-P-R model. All sites connected hydrologically directly or indirectly to the Proposed Development were included within the Zol, which includes all sites linked via the Royal Canal, Rusk Stream, and/or Liffey Estuary Lower transitional waterbody.

8.3 Receiving Environment

A total of 12 designated sites were determined to be within the Zol of the Proposed development, including the Royal Canal pNHA, Liffey Valley pNHA, Rye Water Valley/Carton SAC, North Bull Island SPA, North Dublin Bay SAC, South Dublin Bay and River Tolka Estuary SPA, South Dublin Bay SAC, North-west Irish Sea SPA, Sandymount Strand/Tolka Estuary Ramsar Site, North Bull Island Ramsar Site, North Bull Island SAAO site and the UNESCO Dublin Bay Biosphere. Of these sites, only the Royal Canal and Liffey Valley pNHA were determined to be at risk of adverse impacts from the Proposed Development, while the remaining 10 were not included for further assessment due to their hydrological distance from the Proposed Development and/or a lack of supporting habitat for their respective Qualifying Interests/Special Conservation Interests/associated species and habitat.

The Proposed Development area, which includes the Royal Canal bankside habitats, is comprised of a wide range of habitats, including artificial surfaces, earth banks, stonewalls, recolonising bare ground, calcareous springs, reed and large sedge swamps, drainage ditches, agricultural grassland, amenity grassland, dry meadows and grassy verges, dry meadow and scrub mosaic, mixed broadleaved woodland, hedgerows, hedgerows and treelines over drainage ditches, mixed grassy verges and treelines, treelines, and scrub, as well as the Royal Canal itself.

Key ecological receptors supported by the habitats with the Zol include the Protected flora Opposite-leaved pond weed and the following faunal species or groups of species: Badger Otter and other non-volant Mammals (Hedgehog, Pygmy Shrew, Pine Marten and Red Squirrel), bats, birds, amphibians, reptiles, terrestrial and aquatic invertebrates, European Eel and fish.

8.4 Predicted Impacts

Construction

In the absence of mitigation measures, the potential construction-based impacts anticipated from the Proposed Development on the existing biodiversity / ecological receptors within and adjacent to the Greenway route are those associated with direct habitat loss and fragmentation; physical degradation of habitats; disturbance and displacement of protected faunal species (visual and audible); pollution of surface and groundwater networks; air pollution; and the spread of invasive non-native species.

Operational

The potential operational impacts anticipated from the Proposed Development on the existing biodiversity / ecological features are mainly focused on the disturbance of protected faunal species, i.e. non-volant mammals, bats, and birds, due to increased footfall associated with the Proposed Development and the introduction of operational lighting, as well as changes in the surface water run-off rates associated with the new Greenway route.

8.5 Mitigation

The potential impacts of the Proposed Development have been avoided, reduced, and where required, offset following the mitigation hierarchy. A number of design considerations were made, including the

route of the Proposed Development, the operational drainage layout, proposed lighting and landscape plans, and the construction methodology for the Development in order to minimise potential impacts to biodiversity, with specific emphasis on surface water impacts due to the highly sensitive nature of the Royal Canal. Additional measures to minimise impacts during the construction and operational phases of the Proposed are detailed in the Biodiversity Chapter.

The mitigation measures outlined below will be implemented for both the construction and operational phases. While certain impacts such as temporary habitat loss and fragmentation are unavoidable due to the physical footprint of the Proposed Development, the remainder of the potential impacts on KERs will be mitigated for through a series of highly detailed mitigation measures, and avoidance wherever possible. These include the following:

- Detailed pre-construction ecological surveying of KERs;
- Appropriate management of and selection of areas for Site Compounds;
- Surface Water Management and Monitoring Plan;
- Groundwater Management Plan;
- Dust Management Plan;
- Specific measures to the construction of the Proposed Landmark bridge;
- Flood event planning for the works in the vicinity of the Rusk Stream;
- Invasive Non-native Management Plan;
- Protection of ecological features to be retained within and adjacent to the works site (e.g., fencing off of trees to be retained, seasonal restriction for vegetation clearance works); and
- Species specific mitigation measures, such as appropriate construction lighting plan to minimise impacts on crepuscular/nocturnal mammals, guidance for works near Otter/Badger holts/setts.

Additionally, these measures will be incorporated into the final site-specific Construction and Environment Management Plan (CEMP) and Construction Method Statement (CMS), which will be submitted and strictly adhered to by the appointed contractor prior to the start of the construction phase.

A combination of on-going and new plans and mitigations measures form the basis of the operational phase ecological safeguards. A non-exhaustive list of these protective measures is shown below:

- Invasive Non-native Management Plan (on-going);
- Long-term ecological monitoring of the most sensitive KERs;
- Mammal underpasses to prevent the fragmentation of the Royal Canal bankside habitats;
- Landscape plan which includes a new pocket park and offset planting of new woodland adjacent to the scheme to the east of St Catherine's Park as well as the appropriate management of landscaped habitats;
- Installation of artificial roosting/nesting habitat for bats/birds to minimise impacts of short-term habitat loss while landscaped habitats mature; and
- An ecologically reviewed lighting design plan for the development, which ensures continued landscape connectivity for local bat species.

8.6 Residual Impact Assessment

The residual ecological impacts are those that remain once the Proposed Development has been constructed. Following the implementation of the described mitigation measures and short to medium-term ecological lag (maturation of the landscaped habitats), the Proposed Development is likely to have a **long-term adverse residual ecological impact of slight significance on local biodiversity** due to the loss of habitats within the Royal Canal ecological corridor during the construction phase. However, these impacts will be mainly limited to the woodland habitat along the Royal Canal, with the loss of these habitats offset by the proposed planting of 7000m² of woodland habitat adjacent to the Royal Canal to the east of St Catherine's Park. FCC have also committed to conduct a full BNG assessment for the Proposed Development utilising Transport Infrastructure Ireland's BNG Toolkit (TII, 2026). These measures aim to satisfy Objective GINHO9 – Greenways and Net Gain and Objective GINHO30 – Infrastructure and Net Biodiversity Gain of the FCC Development Plan with further planting planned.

Furthermore, while there will be **long-term adverse residual impacts of slight significance** to light-sensitive bat species as a result of the introduction of operational phase lighting, the Royal Canal will retain its function as an ecological corridor for all local faunal groups due to the mitigation measures. Furthermore, the removal and long-term management of the invasive species present will have significant benefits for local habitats, with knock-on positive impacts for local fauna.

9 Archaeological, Architectural & Cultural Heritage (Chapter 9)

9.1 Introduction

Chapter 9 details an archaeological, architectural and cultural heritage assessment undertaken in advance of the proposed Royal Canal Urban Greenway, which is to be constructed along / adjacent to the Royal Canal as it heads eastwards from the Kildare County Boundary to the Old Navan Road (near 12th Lock) to connect with a previously constructed section of the greenway. This assessment has been carried out to ascertain the potential impact of the Proposed Development on the archaeological, architectural and cultural heritage resource that may exist within the area and was undertaken by Faith Bailey (MA, BA (Hons), MIAI, MCIfA) of IAC Archaeology.

9.2 Methodology

The archaeological, architectural and cultural heritage impact assessment has focused on the potential direct and indirect impacts associated with the construction and operational phases of the Proposed Development and its study area. Reference has been made to relevant guidelines and appropriate criteria has been adopted in order to describe potential effects resulting from the construction and the operation of the Proposed Development.

9.3 Receiving Environment

There are three groups or individual recorded archaeological sites within 250m of the Proposed Development. The closest recorded archaeological site to the Proposed Development is a ring-barrow (DU013-018), located in the townland of Kellystown c. 58m south of the middle section of the Proposed Development scheme.

There are 14 Protected Structures listed in the Fingal Development Plan 2023-2029 that are located within a 100m study area of the Proposed Development. Of these 14 Protected Structures, 12 are also listed in the NIAH Survey of County Dublin and one site is also listed in the RMP for County Dublin. While the study area of the Proposed Development extends within County Kildare at its western extent, there are no protected structures located within this area.

The route of the Proposed Development follows and crosses the Royal Canal, which is listed as a Protected Structure in its own right (BH-01, RPS Ref.: 944a). Also included in the curtilage for this record for the Royal Canal within Fingal County are the tow paths, the canal channel with its stone and earth banks and the canal locks (10th, 11th and 12th Lock).

There are no ACAs within the development area or its study area. The closest is located c. 270m southeast of the Proposed Development area and comprises the demesne landscape surrounding Luttrellstown Castle.

Two significant (self-guided) trail routes, which already utilise the towpaths of the Royal Canal, are located in the study area of the Proposed Development, including the Royal Canal Way (CH-02) and the National Famine Way (CH-01). The Royal Canal Way (CH-02) follows the course of Royal Canal for 130km from Ashtown to Abbeyshrule in County Longford. The National Famine Way (CH-01) has national importance as it forms Ireland's Official Famine Heritage Trail. This trail covers a longer distance of 167km and stretches from Strokestown, County Roscommon to Dublin Port. The trail is marked by mounted bronze shoe sculptures with associated plaques along its entire route (two of these are located immediately adjacent to the Proposed Development CH-01a and CH-01b).

9.4 Predicted Impacts

Construction

Overall, the Proposed Development will be relatively low impact in terms of required excavations. This is due to the fact that much of the route way is already in use as a path and has been since the establishment of the canal. No recorded monuments will be impacted by the Proposed Development and no previously unrecorded features of archaeological potential will be affected.

It remains possible that significant excavations, including those within proposed compound areas, which have not been previously developed, may result in direct, negative and permanent impacts on archaeological remains that may survive in these areas with no surface expression. Any such remains are likely to possess a moderate to high importance. The magnitude of impact may vary from high to very high, resulting in a significance of effect that may vary from moderate to very significant in terms of significance.

The construction of the Proposed Development will involve the construction of new footpaths along sections of banks associated with the Royal Canal, which is a protected structure (BH-01). As such, direct, negative, permanent impacts will occur during construction although this will represent an upgrade to the existing footpath network. Where the Proposed Development cannot be accommodated within the existing footpath network, it will be established setback from the canal. The Royal Canal possesses high importance with the magnitude of impact considered to be medium. This will result in an overall significance of effect that is determined to be moderate.

A new landmark bridge will cross the canal, but this will be by means of a clear span structure due to the fact that the canal is a significant heritage and ecological constraint. The construction of the bridge will result in an indirect short-term, negative impact on the canal, of medium magnitude. This will result in an overall significance of effect that is determined to be moderate.

A new underpass will be constructed through the embankment to the immediate north of the railway bridge at Castleknock (beneath the Old Navan Road) (CH-06). The construction activities (cut and cover) may result in a direct, negative, permanent impact on the bridge structure. The magnitude of impact may be high, and the importance of the structure is medium, resulting in a moderate significance of effect.

The construction of the Proposed Development will result in indirect short-term negative impacts on the setting of the built heritage assets that are immediate to the Greenway (BH02-06, 08, 10, 13-14). These structures have a high importance with the magnitude of impact being low. This will result in a moderate significance of effect.

During the construction of the Proposed Development there will be a direct, short-term and temporary negative impact upon the route of the National Famine Way (CH-01), as sections of the route will be closed during construction. The importance of the route is very high and the magnitude of the impact is low, resulting in a moderate significance of effect. The bronze shoe sculptures that form part of the famine route (CH-01a and 01b) are located adjacent to the Proposed Development and will not be impacted by construction works.

During the construction of the Proposed Development there will be a direct, short-term and temporary negative impact upon the route of the Royal Canal Way (CH-02), as sections will be closed during construction. The importance of the route is high and the magnitude of the impact is low, resulting in a moderate significance of effect.

No other impacts upon cultural heritage sites or areas are predicted during the construction of the Proposed Development.

Operational

No direct or indirect impacts are predicted upon the archaeological resource during the operation of the Proposed Development.

The operation of the landmark bridge across the Royal Canal will result in a permanent direct impact on the setting of the industrial heritage feature. The magnitude of impact is low (given the overall scale of the feature) and the importance of the canal is high. This will result in moderate significance of effect for this section of the canal.

The operation of the Proposed Development will result in an indirect, positive, permanent impact on the built heritage resource of the Royal Canal and associated historic infrastructure. The architectural heritage resource will be more accessible and visible to the public and will promote better appreciation for same. The magnitude of impact will be high and the importance of the built heritage resource is high, resulting in a significant effect.

The operation of the Proposed Development will result in an indirect, positive, permanent impact on the cultural heritage resource of the Royal Canal, including the two designated route ways. The cultural heritage resource and route ways will be more accessible and visible to the public and will promote better appreciation for same. The magnitude of impact will be high and the importance of the cultural heritage resource varies from medium to very high, resulting in a moderate to very significant effect.

9.5 Residual Impacts (Post Mitigation)

There will be no significant negative residual impacts upon the archaeological, architectural and cultural heritage resource, following the implementation of the mitigation measures. There will be a significant positive residual impact on the architectural and cultural heritage resource, due to the fact that the heritage of the area will be more accessible to the public.

10 Landscape & Visual (Chapter 10)

10.1 Introduction

The Landscape and Visual chapter of the EIAR was prepared to assess the potential significant effects of the Proposed Development on the landscape, views and visual amenity of the study area of the subject site of the Royal Canal Greenway, of approximately 8.1km overall length, from the Kildare County Boundary to the Old Navan Road (near the 12th Lock), as well as the surrounding landscape context including any views to and from the site from the wider landscape that are considered as representative sensitive receptors.

This chapter should be read in conjunction with the verified views/photomontage document which forms an appendix to this EIAR (See Chapter 10, Appendix 10. of this Verified View Photomontages for Proposed Royal Canal Greenway by G-NET 3D). The chapter has been prepared by Margaret Egan MILI, Director of Áit Urbanism + Landscape Ltd, who has extensive experience in the preparation of Landscape and Visual Impact Assessments.

10.2 Methodology

The Landscape and Visual Impact Assessment follows guidance outlined in the Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022) and the Guidelines for Landscape and Visual Impact Assessment (GLVIA), (Landscape Institute and Institute of Environmental Management & Assessment, 2013).

Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right, and on people's views and visual amenity.

The Landscape Baseline is first established with the aim of provide an understanding of the landscape in the area that may be affected – its constituent elements, its character and the way this varies spatially, its geographic extent, its history (which is dealt with in detail in Chapter 9, Archaeology and Cultural Heritage), the way the landscape is experienced, and the value attached to it.

The Visual Baseline is then established which identifies the area in which the development may be visible, the different groups of people who may experience views of the development, the places where they will be affected and the nature of the views and visual amenity at those points.

Given the nature of the Proposed Development which is a linear corridor with substantial visual enclosure by boundary trees and hedgerows, the Zone of Theoretical Visibility, the visual baseline focused on views along the immediate route of the Royal Canal, representing user groups such as local residents living immediately adjacent to the Royal Canal, along with a variety of users of the Royal Canal (amenity, recreational, commuters etc). 38 key views were identified along the route of the Proposed Development from Confey in the west to the 12th Lock and Talbot Bridge in the east. These view locations formed the 'baseline' views. G-NET 3D, the project photomontage consultants then prepared draft photomontages, 'proposed views' of the Proposed Development as the project progressed.

10.3 Receiving Environment

Baseline Planning Context

A full review of the Fingal County Development Plan 2023-2029 (Consolidated version, March 2026) was undertaken. The Proposed Development has been designed to support and fulfil the planning policies and objectives reviewed and are presented in section 10.3.1 of Chapter 10 Landscape and Visual, including planning policy interactions with the Proposed Development.

Landscape Baseline

The landscape baseline assessment is divided into three sections following the project area subdivisions:

Section 1: Kildare County border (Royal Canal Amenity Group) to Hansfield Railway Bridge

Section 2: Hansfield Railway Bridge to Kennan Bridge (Porterstown Road)

Section 3: Kennan Bridge (Porterstown Road) to Talbot Bridge (Old Navan Road)

The landscape baseline has reviewed the ecology and biodiversity of the route (landscape, environmental designations, protected species, flora and fauna); the cultural heritage of the route due to the number of protected structures along the route, The Royal Canal itself, along with historical bridge structures. Trees and hedgerows form an important part of the landscape fabric; a full tree survey arboricultural assessment of the trees and hedgerows has been undertaken. All of these elements are recognised as having a high sensitivity and high value and have informed the finalised layout of the Proposed Development. Landscape and Visual Baseline Receptors are presented in section 10.3.5 of Chapter 10 Landscape and Visual:

- Local residents
- Local commuters including the rail line
- Local users of adjacent educational, commercial, sport and recreational facilities
- Environmental Designations
- Landscape Character
- Trees and hedgerows
- Habitats and Biodiversity
- Designated Open Spaces and High Amenity Areas
- Protected Structures

A summary of the sensitivity associated with these receptors is presented in Table 10.12 of Chapter 10 Landscape and Visual. The sensitivity rating varies from 'Medium' to 'Very High'.

Landscape Plan and Landscape Report

A Landscape Plan and Landscape Report has been prepared by Landscape Architects Áit Urbanism + Landscape Ltd. The landscape design approach to the proposed greenway has been developed around the principle of retaining and reinforcing the established character of the Royal Canal corridor, with limited intervention along much of the route. The more detailed landscape proposals are concentrated at specific locations where there is a clear need or opportunity for enhancement. Many of these interventions focus on areas adjacent to residential areas along the route that will be impacted by the Proposed Development; landscape proposals include landscape interventions at Hansfield (Pocket Park), Nature Development Areas, Delwood and Brompton Estates, Badger Mitigation Measures and Greenway resting points. A planting strategy provides for wildflower meadow establishment, climbing plants to security fencing and tree planting. Outside these areas, the landscape treatment will be intentionally light touch. Existing woodland, hedgerows, grassland and canal-side vegetation will be retained wherever possible, with new planting introduced only where required to provide screening, habitat enhancement, visual amenity or reinforcement of existing landscape structure. Where construction of the greenway results in unavoidable disturbance to peripheral areas of existing vegetation, these areas will be carefully reinstated and allowed to re-establish in a manner consistent

with the surrounding canal landscape. The landscape strategy seeks to avoid unnecessary intervention and ensure that the established character of the Royal Canal corridor remains the dominant landscape influence along the route.

10.4 Predicted Impacts

Predicted Impacts Construction Stage

The construction works are anticipated to be carried out in a number of phases over an approximate 2-year construction period. An Outline Construction and Environmental Management Plan (OCEMP) has been prepared by DBFL Consulting Engineers which will inform the Construction and Environmental Management Plan (CEMP) by the site contractor. Possible construction compound locations have been identified at three locations along the Proposed Development route at Hansfield Castleknock (Section 3). (Refer to Outline Construction Environmental Management Plan, Section 4.7 Compound Locations for further details). It is anticipated that the Proposed Development at construction stage will give rise to substantial changes and impacts on the local landscape and on views from properties adjacent to or over-looking the site, as well as from elevated views on bridges located along the route.

Landscape Effects - Construction Stage

The potential construction stage effects are summarised in Table 10.13 of Chapter 10 Landscape and Visual. The significance, quality and duration range from very significant, negative and short term to moderate, negative, short term across all sensitive receptor types.

Landscape Mitigation Measures

'Designed In' or incorporated mitigation will ensure that the Proposed Developments' landscape effects will be considered positive once construction phase is completed and the development is operational.

There are no operational phase mitigation measures bar the future maintenance and management of the existing and proposed tree and hedgerow canopy along with all future soft landscaping proposals within the scheme. Table 10.14, Chapter 10 Landscape and Visual, presents potential operation stage landscape effects, which range from significant, positive, long term to slight, neutral, long term. There are no significant, negative, long-term effects identified.

It is anticipated that the proposed greenway development from Confey to the 12th Lock, will, when complete and in its totality, be seen as a positive landscape addition to the green infrastructure network of Dublin 15, completing the strategic infrastructure of the Royal Canal Greenway between Maynooth and Spenser Dock. The Proposed Development will, when operational provide a high quality, sustainable, accessible and safe walking and cycling corridor in the Dublin 15 area, set within a high quality and valued landscape setting. It will open up this section of the Royal Canal as a new recreational amenity and provide an alternative option for commuters who cycle or walk within the local area.

Visual Effects

The visual effects of the Proposed Development are assessed in section 10.4.3 of Chapter 10, Landscape and Visual. The photomontages presented provide an accurate visual representation of the changes that are predicted to occur at the operational stage of the project, post construction stage. The cumulative effects of the DART+West (Railway Order ABP-314232-22) rail infrastructure have been modelled in a number of the views. Only proposed rail line infrastructure and overhead wire have been modelled. A Technical note, issued to Fingal County Council, by DART+West, regarding ongoing design of infrastructure, is included in Appendix 10.4 of this Chapter. The photomontages have been prepared by G-NET 3D and are included in Appendix 10.3 of this Chapter. The summary of the potential visual effects of the Proposed Development, and Cumulative Effect of the Dart+West are presented in Table 10.15 of Chapter 10 Landscape and Visual. The magnitude of change, quality, significance and duration of effect of the Proposed Development, range from none to medium to high, none to positive, not

significant to slight and moderate to significant in the long term. It is anticipated that there will be no negative, significant effects on the visual resources identified along the Proposed Development route.

Cumulative Visual Effects

The cumulative visual effects of the Proposed Development with the DART+West rail infrastructure, ranges from none to medium, neutral, moderate and long term.

Cumulative Landscape Effects

A further review of planning applications with a 500m zone of the Proposed Development site is presented in section 10.4.4. It is considered that there is potential for cumulative positive effects of the Proposed Development in the provision of new greenway infrastructure and recreational amenity open space in the wider Dublin 15 area.

10.5 Residual Impacts

There are no landscape or visual mitigation measures outside those that have been designed-in to the scheme as a whole. The residual landscape effects would be the same as those identified Table 10.15 Summary of Potential Visual Effects and Cumulative Effects (DART+West). There will be no significant negative residual impacts on the Landscape and Visual Resource. There will be no significant negative impacts on trees along the route. There will be a moderate positive residual impact on the Landscape and Visual resource when the project is complete and there is a new greenway infrastructure providing access to recreational amenity and open space, with new landscape plantings, and a high-quality public realm. Landscape interventions such as the Pocket Park in Hansfield will be beneficial to the local community.

11 Land, Soils & Geology (Chapter 11)

11.1 Introduction

This chapter of the EIAR assesses the likely significant effects of the Proposed Development on land, soils and geology during both the construction and operational phases. The assessment characterises the existing receiving environment and evaluates how the proposed works may interact with soils, subsoils, bedrock geology and other geological features within the study area. The assessment has been undertaken in accordance with the relevant Environmental Protection Agency (EPA), Transport Infrastructure Ireland (TII), and Institute of Geologists of Ireland (IGI) guidance.

The Proposed Development comprises an approximately 8.1 km shared walking and cycling route along the Royal Canal corridor. Elements with the potential to interact with land, soils and geology include earthworks, retaining structures, bridge structures, a cantilevered boardwalk and an underpass.

11.2 Methodology

The assessment was based on a combination of desk studies, published geological and soils information, site walkovers and a detailed ground investigation. Information was obtained from sources including Geological Survey Ireland mapping, EPA databases, historical mapping, site surveys and ground investigation records.

The study area was defined according to the potential zone of influence of the development and included the project footprint, surrounding geological and soil environments, geological hazards and designated sites. Potential effects were assessed by considering the sensitivity of identified receptors and the magnitude, duration and significance of any predicted effects.

11.3 Receiving Environment

The assessment identified a number of land, soils and geology receptors within and adjacent to the Proposed Development. The route corridor is generally underlain by glacial tills, areas of made ground, limestone-derived soils and Carboniferous limestone bedrock. Ground investigations confirmed that typical ground conditions comprise topsoil or surfacing, made ground, cohesive glacial deposits and, in some locations, shallow limestone bedrock.

The surrounding landscape is generally flat and follows the Royal Canal corridor. The Royal Canal, which is designated as a proposed Natural Heritage Area (pNHA), forms an important environmental feature within the receiving environment. No Special Areas of Conservation (SACs) or Special Protection Areas (SPAs) occur within the project footprint.

No Geological Heritage Sites occur within the Proposed Development boundary, while the nearest identified Geological Heritage Site is located more than 2 km from the scheme. The assessment also identified no significant geological hazards affecting the site, with no recorded landslides within 1 km of the Proposed Development and a low landslide susceptibility classification across the study area.

Ground investigation works undertaken along the route corridor confirmed that soils and subsoils are generally suitable for the proposed works. Areas of made ground were identified in some locations, reflecting historical development activities along the canal corridor.

11.4 Predicted Impacts

Construction

Construction activities will involve topsoil stripping, excavation of subsoils, installation of structures, handling and reuse of excavated material, importation of construction aggregates and the operation of construction plant. These activities will result in temporary disturbance of soils and geological materials within the construction footprint.

Potential effects relate principally to the disturbance and management of soils, subsoils and made ground, localised excavation within geological materials, and activities adjacent to the Royal Canal embankments. The majority of excavated material is intended to be reused within the scheme where suitable, reducing the need for disposal and minimising the demand for imported materials. Approximately 80% of stripped topsoil is proposed to be reused within landscaping areas.

The assessment concluded that unmitigated construction stage effects would generally range from imperceptible to slight in significance and would be localised to the development footprint.

Operational

During operation, interactions with land, soils and geology are expected to be limited. The principal permanent change relates to the presence of new paved surfaces, boardwalk approaches, bridge tie-ins and associated infrastructure within the route corridor. Operational activities will largely comprise routine maintenance and inspection works.

Operational phase effects are predicted to be limited to occasional localised maintenance activities and are generally assessed as imperceptible to slight in significance prior to mitigation.

11.5 Residual Impacts (Post Mitigation)

A range of mitigation measures has been incorporated into the project design and construction methodology. These include implementation of an Outline Construction Environmental Management Plan (OCEMP), controlled management and reuse of soils, protection of stockpiled material, erosion and sediment control measures, pollution prevention procedures, management of construction traffic and protection of canal embankments.

Following implementation of the proposed mitigation measures, the assessment concludes that there will be no likely significant residual effects on land, soils or geological receptors during either the construction or operational phases of the Proposed Development. Residual effects are predicted to be not significant, with any remaining effects being localised and temporary in nature.

The cumulative assessment also concluded that no likely significant cumulative effects on land, soils or geology are predicted to arise in combination with other identified plans or projects.

12 Water (Chapter 12)

12.1 Introduction

This chapter assesses the likely significant effects of the Proposed Development on the water environment, including surface water, groundwater, drainage, flood risk and Water Framework Directive (WFD) objectives. The Proposed Development comprises an approximately 8.1 km long greenway and active travel route extending along and adjacent to the Royal Canal between the Kildare County Boundary and the 12th Lock at Castleknock. The assessment considered potential impacts during both the construction and operational phases.

12.2 Methodology

The assessment was undertaken in accordance with EPA Guidelines on Information to be Contained in EIARs (2022), relevant Transport Infrastructure Ireland guidance and a project-specific Water Framework Directive Assessment. Baseline information was informed by site surveys, ecological surveys, utility records, EPA datasets, OPW flood mapping and Geological Survey Ireland data.

12.3 Receiving Environment

The Royal Canal is the principal water feature within the study area and represents the most sensitive water receptor associated with the Proposed Development. The canal provides ecological, recreational and heritage value and forms part of the Royal Canal proposed Natural Heritage Area (pNHA). Other important water receptors include the Rusk River, which passes beneath the canal corridor, local drainage infrastructure and the underlying groundwater body.

The assessment found that surface water and groundwater within the study area are generally of good environmental quality. The area is located within a catchment where waterbodies are protected under European water quality legislation. A separate Water Framework Directive (WFD) Assessment was undertaken and concluded that the Proposed Development would not adversely affect the ecological objectives established for these waterbodies.

Flood risk within the study area is generally low. A Site-Specific Flood Risk Assessment was completed and confirmed that the Proposed Development can be delivered without increasing flood risk elsewhere.

12.4 Predicted Impacts

Construction

The principal potential effects on the water environment are associated with the construction phase of the Proposed Development.

Construction activities, including excavation, earthworks, construction traffic and the use of fuels, oils and other materials, could result in sediment or pollutants entering nearby watercourses if not properly managed. There is also the potential for accidental spillages during construction works. Such incidents could temporarily affect the water quality of the Royal Canal, the Rusk River or local groundwater.

Construction works may also temporarily alter local drainage patterns and increase surface water runoff from disturbed ground. However, these effects would be localised and temporary in nature.

Operational

During operation, the Proposed Development will function as a greenway and active travel route and will not generate significant emissions or discharges. Potential operational effects are primarily limited to runoff from hard surfaces following rainfall events and routine maintenance activities. Due to the nature of the development, these effects are expected to be minor.

12.5 Mitigation Measures

A range of measures will be implemented during construction to protect surface water and groundwater.

These measures include the use of silt control and sediment management systems, appropriate storage and handling of fuels and chemicals, designated refuelling areas, spill prevention procedures, and emergency response measures. Construction activities will be carefully managed to minimise exposed ground and reduce the potential for sediment-laden runoff entering nearby watercourses.

The Contractor will be required to implement environmental management procedures through a Construction Environmental Management Plan (CEMP). Water quality protection measures will be monitored throughout the construction period.

The permanent drainage design for the Proposed Development incorporates Sustainable Drainage Systems (SuDS) principles to control runoff and maintain water quality during operation.

12.6 Residual Impacts (Post Mitigation)

Following the implementation of the proposed mitigation measures, no significant adverse effects on surface water quality, groundwater quality, hydrology, hydrogeology or flood risk are predicted.

The assessment concluded that the Proposed Development will not adversely affect compliance with Water Framework Directive objectives and will not result in any significant residual effects on the water environment during either the construction or operational phases.

Potential cumulative effects with other planned developments in the surrounding area were also assessed. Taking account of the mitigation measures proposed, no significant cumulative effects on the water environment are anticipated.

13 Population & Human Health (Chapter 13)

13.1 Introduction

The Population and Human Health assessment considers the likely effects of the Proposed Development on people, communities and human health during both construction and operation. It examines socio-economic conditions, equality and inclusion, environmental and public health, social infrastructure, accessibility, recreation, community interaction and quality of life.

The Proposed Development comprises an approximately 8.1 km pedestrian and cycle route extending along and adjacent to the Royal Canal from the Kildare County Boundary to the Old Navan Road, near the 12th Lock. It will provide a continuous active travel and recreational corridor serving communities including Hansfield, Clonsilla, Porterstown, Coolmine, Carpenterstown, Roselawn and Castleknock.

13.2 Methodology

The assessment was undertaken in accordance with relevant national and European guidance on Environmental Impact Assessment, population and human health. It considered the wider factors that can influence health and wellbeing, including socio-economic conditions, equality and inclusion, environmental quality, social infrastructure, social interaction, accessibility and connectivity.

A source–pathway–receptor approach was used to identify project activities that could affect people, the pathways through which effects could arise, and the individuals, communities or facilities that could be affected. Particular consideration was given to residents, schools, healthcare and community facilities, businesses, recreational users, public transport users, children, older persons and people with disabilities or reduced mobility.

The Study Area generally comprised a 500 m buffer on either side of the Proposed Development. Baseline conditions were established using Census 2016 and 2022 data, the Pobal HP Deprivation Index, GeoDirectory business data, information on schools and community facilities, planning records, site visits and aerial photography. The findings of the other relevant EIAR assessments, including air quality, noise and vibration, water, landscape and visual, traffic and transportation, and land use and property, were also taken into account.

Effects were described in accordance with the terminology contained in the EPA Guidelines. Effects classified as Significant, Very Significant or Profound were treated as likely significant effects for the purposes of the EIAR.

13.3 Receiving Environment

The Royal Canal already provides an important recreational and walking route. However, parts of the existing towpath have uneven or informal surfaces, restricted widths, varying accessibility standards and breaks in provision. Existing bridge crossings, road interfaces and access arrangements also limit connectivity between some residential areas, schools, community facilities, public transport services and recreational destinations.

The receiving environment includes rural, peri-urban, suburban and urban areas along the Royal Canal. The western section is predominantly characterised by agricultural land and open countryside, while the central and eastern sections pass through established and emerging residential communities with schools, railway stations, community facilities, recreational amenities, public transport infrastructure and local services.

The Study Area has a growing residential population and contains a high proportion of family households, together with an increasing population aged 65 years and over. Census 2022 recorded approximately 114,360 residents in the Electoral Divisions intersecting or adjoining the Study Area, representing an increase of approximately 9.3% since 2016. The most common household type was a married couple with children.

The Study Area has a relatively strong employment profile and contains a wide range of businesses, schools, healthcare facilities, community facilities, shops, sports facilities, playgrounds and open spaces. The area has also experienced substantial residential development, and its population is expected to continue growing, increasing demand for active travel infrastructure, accessible open space and recreational amenities.

Most residents reported their health as being either very good or good. The Study Area also includes groups that may be more sensitive to environmental or accessibility changes, including children, older persons, people with disabilities or reduced mobility, and people who rely on walking, cycling or public transport. Approximately 17.8% of the Study Area population reported having some form of disability.

13.4 Predicted Impacts

Construction

Construction may result in temporary disruption for residents, businesses, pedestrians, cyclists and users of nearby schools, community facilities, recreational amenities and railway stations. Effects may arise from traffic management measures, temporary diversions and access restrictions, construction traffic, noise, vibration, dust and general construction activity. These effects will generally be localised and limited to the areas in which works are taking place.

Temporary changes to accessibility and ease of movement may be more noticeable for children, older persons, people with disabilities or reduced mobility, and people who rely on walking, cycling or public transport. Temporary disturbance may also affect the use of nearby community, sporting and recreational facilities and sections of the existing canal amenity.

The main adverse construction effects are assessed as Negative, Slight and Temporary. The broader temporary effect on the local population arising from construction activity and disruption is assessed as Negative, Moderate and Short Term. Construction will also generate temporary employment and economic activity, resulting in a Positive, Slight and Short-Term effect on economic activity and employment.

Operational

Once operational, the Proposed Development will provide a continuous and accessible walking and cycling route connecting residential communities with schools, community facilities, healthcare services, railway stations, employment locations, recreational amenities and public transport. It will improve accessibility and permeability through new and upgraded access points, crossing facilities and connections with the wider walking, cycling and public transport networks.

The Proposed Development will increase opportunities for walking, cycling, recreation and social interaction. These changes will support physical activity, health and wellbeing and provide more equitable access to services, amenities and sustainable transport, particularly for children, older persons, people with disabilities or reduced mobility, and people who depend on walking, cycling or public transport.

The Greenway will also enhance the Royal Canal as a recreational and social amenity, improve connections between communities and increase opportunities for informal recreation and community interaction. Increased use of the route may support local shops, hospitality providers, visitor attractions and recreation-related businesses.

At a limited number of locations adjoining residential properties, increased use of the Greenway may alter existing activity levels and perceptions of privacy. Design measures, including level adjustments, boundary treatments, fencing and defensive planting, have been incorporated to minimise these effects.

The principal operational effects on population, equality and inclusion, social infrastructure, accessibility and social interaction are assessed as Positive, Significant and Permanent. Effects on environmental and public health, economic activity and tourism are assessed as Positive, Moderate and Permanent.

13.5 Residual Impacts (Post Mitigation)

Construction effects will be reduced through the implementation of the Outline Construction Environmental Management Plan and Outline Construction Traffic Management Plan. Measures will include controls on construction noise, vibration, dust, traffic and working hours; protection of water quality; maintenance of safe access for pedestrians, cyclists and vehicles; temporary signage and traffic management; and advance notification of construction activities and temporary access arrangements.

Following mitigation, construction will still result in some localised and temporary disturbance, including temporary changes to accessibility, connectivity, environmental quality and amenity. The overall residual construction effect on population and human health is assessed as Negative, Slight and Temporary. A separate Positive, Slight and Short-Term residual effect will arise from construction-related employment and expenditure.

During operation, the Proposed Development will deliver lasting benefits through improved accessibility and connectivity, increased opportunities for active travel, recreation and social interaction, better access to community facilities and services, and enhanced use and enjoyment of the Royal Canal corridor. The overall residual operational effect on population and human health is therefore assessed as Positive, Significant and Permanent.

14 Material Assets – Traffic & Transport (Chapter 14)

14.1 Introduction

The Proposed Development comprises an approximately 8.1 km shared pedestrian and cycle greenway along and beside the Royal Canal, extending from the Kildare County Council boundary to Talbot Bridge at the Old Navan Road. It will connect the completed Kildare section of the Royal Canal Greenway with the existing Ashtown Greenway and will form part of the wider Royal Canal Greenway and EuroVelo 2. The assessment considers the direct and indirect effects of the Proposed Development on transport routes, facilities and users.

14.2 Methodology

The assessment was based on a review of the existing transport network, site observations, topographical information, stakeholder consultation, 2022 Census travel data, pedestrian and cyclist counts undertaken in March 2025, and parking surveys in the Delwood, Brompton and Roselawn areas. Demand forecasts were informed by existing travel patterns and observed use of comparable Irish greenways. The assessment also considered relevant walking, cycling, road safety and temporary traffic management guidance. Potential effects were assessed for the construction and operational phases, followed by consideration of mitigation, residual effects and cumulative effects.

14.3 Receiving Environment

The western part of the route is mainly rural or peri-urban, while the central and eastern sections pass through established suburban and urban areas. Existing towpath conditions vary considerably. Some sections are surfaced, but other sections are narrow, unsurfaced or constrained by the canal, vegetation, structures and the adjoining Dublin–Maynooth railway. The Deep Sinking section is particularly constrained, with local pinch points, uneven surfaces and limited access from adjoining neighbourhoods. The route is close to Clonsilla, Coolmine and Castleknock railway stations and crosses or connects with several local roads and historic canal bridges. Existing surveys indicate a baseline demand of approximately 1,364 daily pedestrian and cyclist trips. The assessment forecasts a substantial increase in walking and cycling following completion of the Proposed Development. Existing parking surveys generally recorded available on-street capacity, although higher parking demand was observed on the eastern side of Roselawn Road during the evening period.

14.4 Predicted Impacts

Construction

Construction is expected to take approximately 24 months and will proceed through sequenced work areas. Temporary effects may include restrictions or diversions for pedestrians and cyclists, short-duration road or towpath closures, local access changes, temporary lane restrictions and additional construction traffic. Construction traffic is expected to be relatively low, with a maximum of nine HGV movements per day. Before works commence, the appointed contractor will prepare a detailed Construction Stage Temporary Traffic Management Plan. This will address construction access, haul routes, delivery times, worker parking, pedestrian and cyclist diversions, temporary traffic management and stakeholder notification. Emergency access will be maintained. With these measures in place, construction effects will be temporary and localised. Effects on walking and rail access are assessed as negative, moderate and temporary; effects on cycling and residential traffic are assessed as negative, slight and temporary.

Operational

During operation, the Proposed Development will provide a continuous and more accessible walking and cycling route, improved surfacing and width, safer road crossings, better permeability between adjoining communities and improved connections to Clonsilla, Coolmine and Castleknock railway stations. It is forecast to increase daily pedestrian and cyclist use and support a shift from private car

travel to walking, cycling and public transport. The effects on pedestrian infrastructure, cycling infrastructure and people movement are assessed as positive, very significant and long-term. Effects on the general traffic network are assessed as positive, moderate and long-term, while improved access to rail is assessed as positive, slight and long-term. Some additional recreational parking demand may arise at railway stations and access points, but this is expected to be low and dispersed. The parking effect is assessed as negative, slight and long-term. No significant adverse operational traffic effect is expected.

14.5 Residual Impacts (Post Mitigation)

Following implementation of the construction traffic management measures, residual construction effects are expected to be temporary, localised and not significant. The cumulative construction effect, including potential overlap with DART+ West and other planned works, is assessed as negative, slight and temporary.

The principal residual operational effects will be positive and long-term. The Proposed Development will improve conditions and safety for pedestrians and cyclists, strengthen access to public transport and provide a continuous strategic active travel route. It is also expected to support reduced reliance on private cars for shorter trips. Local parking conditions will be kept under review by Fingal County Council, with proportionate parking management measures considered if material issues arise. The cumulative operational effect, in combination with the wider Royal Canal Greenway, EuroVelo 2, DART+ West and other planned active travel infrastructure, is assessed as positive, moderate and long-term.

15 Material Assets – Waste Management (Chapter 15)

15.1 Introduction

This section summarises the findings of the assessment of potential effects associated with resource use and waste generation arising from the Proposed Development. The assessment considers the materials required for construction and operation, the wastes likely to be generated during demolition, excavation, construction and maintenance activities, and the availability of waste management infrastructure to manage these materials. The assessment also identifies measures to minimise waste generation, promote reuse and recycling, and ensure waste is managed in accordance with relevant legislation and the waste hierarchy. Potential effects during both the construction and operational phases are considered.

15.2 Methodology

The assessment considered the generation and management of demolition waste, excavation material, construction waste, hazardous waste and operational waste, together with the capacity of existing waste management infrastructure to accommodate these materials.

The assessment was informed by a project-specific Resource and Waste Management Plan (RWMP) – as Appendix 1 to the chapter, which aims to minimise waste generation and maximise opportunities for reuse, recycling and recovery.

15.3 Receiving Environment

The Proposed Development is located within a region served by an established network of authorised waste management facilities that provide recovery, recycling, treatment and disposal services.

No waste management facilities are located within the immediate project corridor. Existing waste management within the Royal Canal corridor is undertaken by Waterways Ireland, while public litter bins are available in nearby streets and public spaces.

A review of available waste infrastructure concluded that sufficient authorised capacity exists within the Dublin Region and Eastern-Midlands Waste Region to manage the waste expected to arise from the Proposed Development.

The assessment also considered relevant waste management policy and identified the importance of applying circular economy principles and the waste hierarchy, which prioritises waste prevention, reuse and recycling ahead of disposal.

15.4 Predicted Impacts

Construction

The majority of waste associated with the Proposed Development will arise during the construction phase.

Construction activities will generate waste from the demolition of existing structures, excavation works and general construction activities. Excavated soil and stone will comprise the largest material stream generated by the project. However, most excavated material is expected to be reused within the Proposed Development, reducing the need for off-site disposal and minimising the requirement for imported materials.

Other construction waste streams may include concrete, asphalt, metals, timber, plastics and packaging materials. Small quantities of hazardous waste may also arise from fuels, oils, paints, batteries and other construction-related materials. There is also the potential for invasive plant material and associated soils to require specialist treatment where identified within the works area.

The quantity of waste generated by the Proposed Development represents a small proportion of available regional waste management capacity. Consequently, significant effects on waste infrastructure are not anticipated.

Operational

During operation, waste generation is expected to be limited to routine maintenance activities and occasional litter generated by users of the greenway. As a result, operational waste arisings are expected to be low.

15.5 Mitigation Measures

A Resource and Waste Management Plan will be implemented throughout the construction phase of the Proposed Development.

The project will apply the waste hierarchy by seeking to avoid waste generation where possible and prioritising reuse, recycling and recovery over disposal. Suitable excavated materials will be retained and reused within the works wherever practicable.

Construction materials and waste will be managed carefully to minimise waste generation. Waste streams will be segregated at source to maximise recycling opportunities and reduce the quantity of waste requiring disposal.

All waste will be collected, transported and managed by appropriately authorised waste contractors and facilities in accordance with relevant waste management legislation. Records of waste movements will be maintained throughout the construction period.

Where hazardous waste is generated, it will be stored, transported and disposed of in accordance with applicable legal requirements. Any invasive plant material encountered during construction will be managed in accordance with recognised best practice and relevant guidance.

15.6 Residual Impacts (Post Mitigation)

Following implementation of the Resource and Waste Management Plan and associated mitigation measures, no significant adverse effects on waste management infrastructure or regional waste management capacity are predicted.

The reuse of excavated materials within the Proposed Development will reduce the volume of material requiring off-site management and contribute to the efficient use of natural resources. The segregation and recycling of construction waste will further reduce the quantity of waste requiring disposal.

Operational waste generation is expected to remain low and will be managed through routine maintenance procedures and the existing waste management infrastructure available within the surrounding area.

The assessment concluded that the Proposed Development will not give rise to significant adverse effects in relation to material assets, resource use or waste management. No significant cumulative effects are anticipated when considered alongside other existing, permitted and proposed developments in the wider area.

16 Material Assets – Utilities (Chapter 16)

16.1 Introduction

This section summarises the findings of the assessment of utility infrastructure within and adjacent to the Proposed Development. The assessment considered the potential effects of the construction and operation of the Royal Canal Urban Greenway on existing utility networks, including electricity, water supply, drainage, wastewater, gas, telecommunications and a strategic fibre optic network. The assessment also considered the demand the Proposed Development may place on utility services and the potential for disruption to existing infrastructure.

16.2 Methodology

The assessment was based on a review of information provided by utility service providers, utility surveys, ground investigations and consultations undertaken during project development. Existing utility networks within the study area were identified and potential interactions with the Proposed Development were assessed. The assessment considered both the potential for increased demand on utility services and the potential for utility diversions, protection measures or temporary service interruptions during construction.

16.3 Receiving Environment

The study area is served by an extensive network of utility infrastructure providing services to residential, commercial and industrial properties. Most utilities are located within public roads and footpaths adjacent to the Royal Canal corridor, with interactions generally occurring at bridge crossings and other locations where the Proposed Development interfaces with existing infrastructure.

A strategic fibre optic network operated by euNetworks is located along part of the canal towpath between the western extent of the scheme and Pakenham Bridge. This network forms part of a wider telecommunications network linking facilities and data centres throughout Ireland and Europe.

Electricity, water supply, foul drainage, surface water drainage, gas and telecommunications infrastructure are present throughout the wider area. Existing records and utility surveys identified a number of locations where these services cross or run adjacent to the Proposed Development, particularly at bridge crossings.

16.4 Predicted Impacts

Construction

The principal utility-related effects during construction arise from the potential for temporary disruption to existing services where utility diversions, protection works or connections are required. Construction compounds will also require temporary electricity, water and telecommunications services and will generate limited wastewater requiring management.

The most sensitive utility asset identified is the euNetworks strategic fibre optic network, which is located at a relatively shallow depth beneath sections of the existing towpath. There is a risk that accidental damage could occur during construction activities if appropriate protection measures are not implemented. Such damage could result in disruption to an important telecommunications asset.

Temporary interruptions to electricity, water supply, gas and telecommunications services may also occur where localised diversions or connections are required. However, these interruptions would be temporary and localised in nature. Existing foul drainage and surface water drainage infrastructure are generally expected to remain operational throughout construction.

Operational

Once operational, the Proposed Development will require a small amount of electricity for public lighting, traffic signals and associated infrastructure. This demand will be accommodated by existing utility networks and is not expected to adversely affect available capacity or service provision.

The Proposed Development will not require permanent water supply, wastewater or gas connections and will therefore have no material impact on these utility networks during operation. Telecommunications connections associated with traffic signals and other ancillary equipment will represent only a minor increase in demand on existing networks.

The installation of additional warning marker tape above sections of the strategic fibre optic network encountered during construction will improve protection of the asset and reduce the potential for accidental damage during future works.

16.5 Mitigation Measures

A range of measures will be implemented to protect utility infrastructure during construction. Prior to the commencement of works, the Contractor will obtain up-to-date utility records and verify utility locations through surveys and targeted investigations where necessary. Consultation will be maintained with the relevant utility providers throughout the construction process.

Where utility diversions or connections are required, these will be undertaken in accordance with the requirements of the relevant utility owners. Any planned service interruptions will be coordinated in advance and communicated to affected customers where appropriate.

Special protection measures will be applied in the vicinity of the euNetworks strategic fibre network. These measures include verification of the location of the fibre ducting prior to excavation, controlled excavation methods and consultation with the asset owner to minimise the risk of accidental damage.

16.6 Residual Impacts (Post Mitigation)

Following implementation of the proposed mitigation measures, no significant adverse effects on utility infrastructure are predicted during either the construction or operational phases of the Proposed Development.

Short-duration interruptions to some utility services may still occur where localised diversion works are required; however, these effects would be temporary, localised and managed in consultation with the relevant utility providers.

The risk of accidental damage to the strategic fibre optic network will be substantially reduced through construction management and protection measures. In addition, improved protection of the fibre network will provide a minor long-term benefit by reducing the risk of damage during future third-party works.

Overall, the assessment concludes that the Proposed Development can be constructed and operated without significant adverse effects on existing utility infrastructure or utility service provision.

17 Material Assets – Land Use and Property (Chapter 17)

17.1 Introduction

The Material Assets: Land Use and Property assessment considers the likely effects of the Proposed Development on existing and planned land uses and property during construction and operation. It examines temporary and permanent land take, land acquisition, property interests, access arrangements, severance, land-use compatibility and the future development potential of affected lands.

The Proposed Development comprises an approximately 8.1 km pedestrian and cycle route extending along and adjacent to the Royal Canal from the Kildare County Boundary to the Old Navan Road, near the 12th Lock, where it will connect with the previously constructed Ashtown Greenway.

17.2 Methodology

The assessment was undertaken in accordance with relevant national and European Environmental Impact Assessment legislation and guidance. It considered the land required for the construction and operation of the Proposed Development and its effects on existing and planned land uses, property interests, access arrangements, land-use zoning and development potential.

The assessment was informed by the design drawings, Compulsory Purchase Order maps and schedules, land acquisition plans, Ordnance Survey mapping, aerial photography, site inspections, planning policy documents, land-use zoning and available planning information for lands within and adjoining the Study Area. The assessment of effects was based principally on the identified permanent and temporary land requirements, the characteristics of the affected lands and professional judgement regarding the scale and significance of the resulting changes.

A Study Area extending approximately 500 m on either side of the Proposed Development was used where relevant. The assessment considered the sensitivity and importance of each affected land-use or property receptor and the magnitude, scale, duration and reversibility of the proposed change. It also considered effects on land ownership, access arrangements, severance and the future development potential of affected lands.

For the purposes of the assessment, effects classified as Significant, Very Significant or Profound were treated as likely significant effects in EIA terms. Effects classified as Moderate, Slight, Not Significant or Imperceptible were not considered likely significant effects, although they were reported where relevant to provide a comprehensive assessment.

17.3 Receiving Environment

The receiving environment changes considerably along the route. The western section is predominantly rural and peri-urban and is characterised by agricultural land, open countryside, recreational uses and the existing Royal Canal towpath. The central section forms a transition between rural and suburban areas and contains agricultural land, established and emerging residential development, schools, community facilities and transport infrastructure. The eastern section passes through established urban and suburban communities, with extensive residential development, commercial activity, schools, sports facilities, public open spaces and transport infrastructure.

The Royal Canal is an important recreational, environmental and green infrastructure corridor. The existing towpath is used for walking and access to the canal, although its quality and accessibility vary along the route and some sections are not suitable for all users.

Almost all of the application area is located on lands zoned **Open Space**, where the objective is to preserve and provide for open space and recreational amenities. Small portions of the route intersect or adjoin Green Belt, High Amenity, Residential Area and Residential zonings. The corridor also

interacts with planned growth areas and local planning frameworks, including the Barnhill Local Area Plan, Kellystown Local Area Plan, Clonsilla Framework Plan and Hansfield Strategic Development Zone.

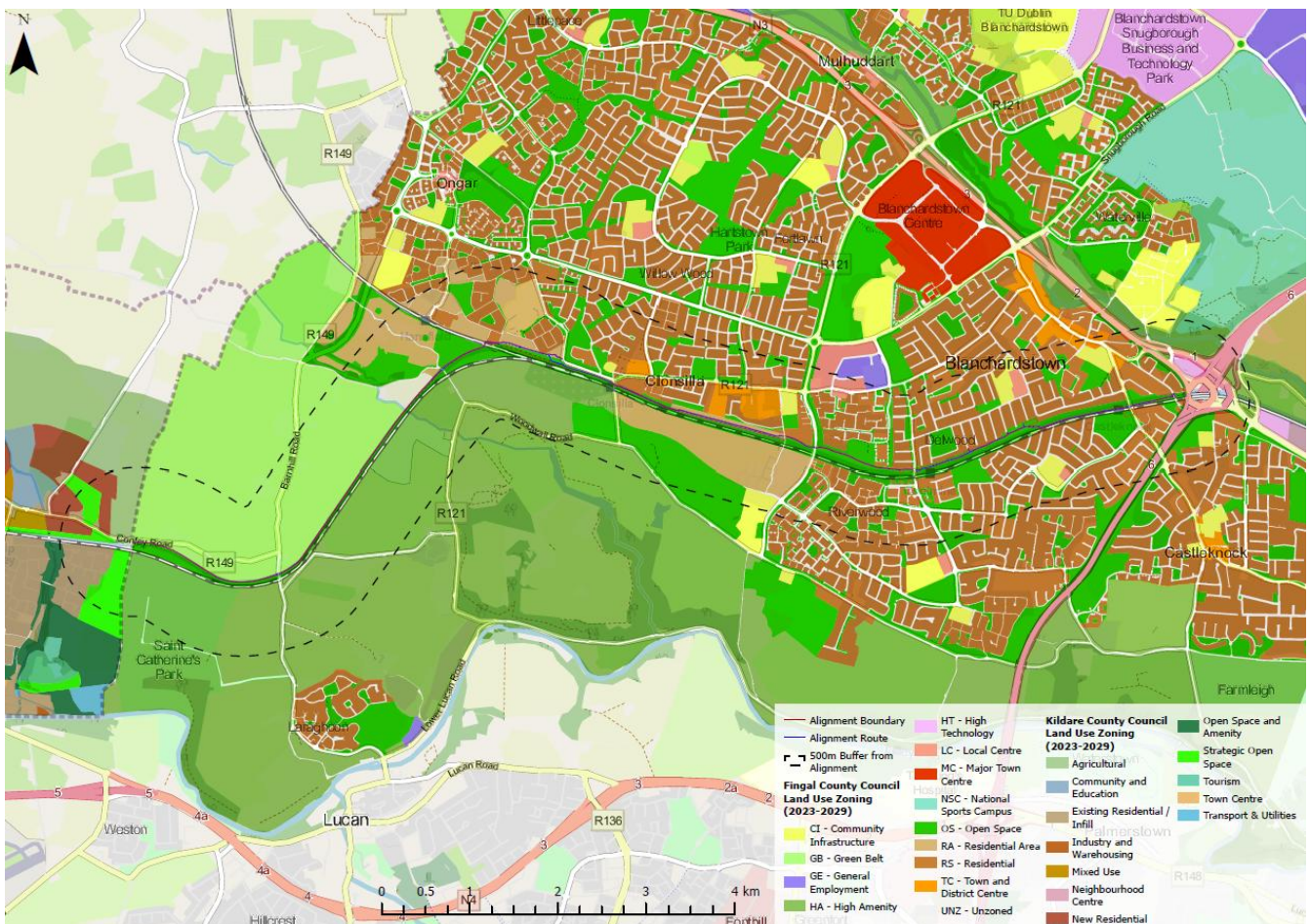


Figure 17-1 Land use zoning types for land within a 500m buffer of the RCUG alignment. Source: Fingal County Development Plan 2023 – 2029

Development of the Proposed Greenway requires a combination of permanent and temporary land interests. A total of 15 plots are identified through the Compulsory Purchase Order process. These lands principally comprise existing pedestrian and cycle routes, open space, canal-side land, undeveloped land and local access areas required to construct and operate the Greenway.

17.4 Predicted Impacts

Construction

The principal construction effects will arise from the temporary occupation of land, temporary changes in land-use function and disruption to existing access arrangements. Construction will require working areas, vegetation clearance, earthworks, construction compounds, material storage and temporary site access arrangements. These activities will result in localised disturbance to open space, undeveloped land, agricultural land and other lands adjoining the route.

Temporary restrictions will also be required along sections of the existing towpath and canal-side routes. Temporary diversions may be necessary for pedestrians and cyclists, while temporary traffic management measures may be introduced at road crossings, bridges and construction access points. Construction compounds at Hansfield, Sheepmoor Lane and Castleknock/Laurel Lodge Park may also temporarily affect adjoining land, public open space and local amenities.

Construction effects on most affected lands are assessed as Negative, Slight and Temporary. Effects are assessed as Negative, Moderate and Temporary in more sensitive locations, including areas close to residential properties and wooded areas where tree, hedgerow or vegetation clearance is required. Effects on land and property access are assessed as Negative, Slight to Moderate and Temporary.

Temporary land requirements associated with the Barnhill Local Area Plan, Kellystown Local Area Plan, Clonsilla Framework Plan and Hansfield Strategic Development Zone will be limited in extent and duration and will not prevent or materially constrain the delivery of those plans. The resulting construction effect on planned land uses is assessed as Negative, Slight and Temporary. The effect on applicable land-use zoning objectives is assessed as Imperceptible and Temporary.

Operational

Once operational, the Proposed Development will enhance the land-use function of the Royal Canal corridor by providing strategic walking, cycling, recreational and amenity infrastructure. It will improve accessibility, permeability and connectivity between established and planned communities and strengthen connections to public transport, recreational amenities and the wider active travel network. These benefits are assessed as Positive, Significant and Permanent.

Delivery of the Proposed Development will require permanent land acquisition and changes to certain existing land uses. Some undeveloped land, agricultural land, canal banks, open space, existing routes and local access areas will be permanently incorporated into the Greenway. These changes are generally localised and are required to facilitate the Greenway and its associated public benefits.

The Proposed Development will also require the demolition of two houses owned by Fingal County Council near Hansfield Road. Their removal is necessary to provide a continuous, safe and accessible active travel corridor and to connect the Greenway with existing pedestrian and cycle infrastructure in Hansfield. The permanent loss of these built assets is assessed as a Negative, Moderate and Permanent effect.

Operational effects associated with the individual CPO plots generally range from Positive, Slight and Permanent to Positive, Significant and Permanent, depending on the scale of the accessibility, connectivity, recreational and amenity improvements provided. Lands required only temporarily will be reinstated following construction and will not experience operational effects.

The Proposed Development is compatible with the established and emerging land-use pattern and applicable zoning objectives. It will support the objectives of the Barnhill and Kellystown Local Area Plans, Clonsilla Framework Plan and Hansfield Strategic Development Zone by providing strategic walking and cycling infrastructure, improved recreational opportunities and stronger connections between existing and planned communities. The interaction with these local plans is assessed as Positive, Significant and Permanent.

17.5 Residual Impacts (Post Mitigation)

The design of the Proposed Development has sought to minimise permanent and temporary land take, avoid unnecessary effects on existing properties and land uses, maintain access and avoid unnecessary severance of landholdings. During construction, existing access to residential, commercial and agricultural land will be maintained where practicable. Where temporary restrictions are necessary, advance notice and alternative arrangements will be provided where feasible.

Other measures will include liaison with affected landowners and occupiers, temporary fencing and site-security measures, accommodation works where required, restriction of construction activities to designated areas and reinstatement of temporarily occupied lands following completion. Compensation associated with land acquisition and disturbance will be addressed through the statutory CPO process. Following mitigation, residual construction effects associated with temporary land occupation, working areas, vegetation clearance, access restrictions and disruption to existing land uses will generally be

Negative, Slight and Temporary. At more sensitive locations, including areas adjoining residential properties or requiring vegetation clearance, residual effects will be Negative, Moderate and Temporary.

The demolition of the two Fingal County Council-owned houses cannot be fully mitigated and will remain a Negative, Moderate and Permanent residual effect.

During operation, residual effects associated with permanent land acquisition and land-use change will remain. However, effects on the individual plots will generally range from Positive, Slight and Permanent to Positive, Significant and Permanent, reflecting the improved accessibility, connectivity, recreation and amenity provided by the Proposed Development. Temporarily acquired lands will be reinstated and will not give rise to residual operational effects.

18 Interactions (Chapter 18)

The EIAR assessed the potential for interactions between the environmental factors considered throughout the assessment, in accordance with the EIA Directive. The assessment considered how effects arising from one environmental factor may influence another, both during construction and operation of the Proposed Development. The interaction assessment was informed by the findings of Chapters 5 to 17 of the EIAR and is presented in an interaction matrix identifying the key relationships between environmental factors.

The most notable interactions identified during the construction phase relate to the relationship between biodiversity, water, land and soils, air quality, noise and vibration, traffic and transport, and population and human health. These interactions arise primarily from earthworks, vegetation clearance, construction traffic, noise, dust generation, drainage works and temporary disturbance associated with construction activities along the Royal Canal corridor.

Strong interaction is identified between water and biodiversity, reflecting the ecological importance of the Royal Canal and the potential for water quality, hydrological and habitat changes to influence aquatic and riparian ecological receptors. Interactions were also identified between traffic and transport, population and human health, reflecting the influence of accessibility, connectivity, recreation and active travel opportunities on community wellbeing.

During operation, the primary interactions relate to biodiversity, landscape and visual amenity, water management, transport infrastructure, land use and population and human health. These interactions are generally associated with the long-term operation of the Greenway, including enhanced active travel opportunities, improved connectivity, recreation, public amenity, landscape enhancement and sustainable mobility benefits.

Overall, the assessment concluded that the interactions identified are consistent with the findings of the individual EIAR chapters and that no additional likely significant adverse effects arise as a result of interactions between environmental factors beyond those already assessed and mitigated within the relevant topic chapters.

Table 18-1 Interactions Matrix

Some interaction ✓ No interaction x	Air Quality		Climate		Noise & Vibration		Biodiversity		Archaeology & Cultural Heritage		Landscape & Visual		Land, Soils, Geology		Water		Population & Human Health		Traffic & Transport		Waste Mngt		Utilities		Land Use & Property	
	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O	C	O
Air Quality			✓	✓	x	x	✓	x	x	x	x	x	✓	x	x	x	✓	x	✓	x	x	x	x	x	x	x
Climate	✓	✓			x	x	x	x	x	x	x	x	✓	✓	x	x	x	x	✓	✓	✓	x	x	x	x	x
Noise & Vibration	x	x	x	x			✓	x	x	x	x	x	x	x	x	x	✓	✓	✓	✓	x	x	x	x	x	x
Biodiversity	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	✓	✓	✓	✓	x	x
Archaeology & Cultural Heritage	x	x	x	x	✓	x	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Landscape & Visual	x	x	x	x	x	x	✓	✓	✓	✓			x	x	x	x	✓	✓	x	x	x	x	x	x	x	x
Land, Soils & Geology	✓	x	x	x	✓	x	✓	x	x	x	x	x			✓	✓	x	x	✓	x	✓	x	✓	x	x	x
Water	✓	x	✓	✓	✓	x	✓	✓	✓	x	✓	✓	✓	✓			✓	✓	✓	✓	✓	x	✓	✓	✓	✓
Population & Human Health	✓	✓	✓	✓	✓	x	x	x	x	x	✓	✓	✓	x	✓	✓			✓	✓	✓	x	x	x	✓	✓
Traffic & Transport	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	x	✓	x	✓	x	✓	✓			✓	x	x	x	✓	✓
Waste Management	✓	x	✓	x	✓	x	✓	✓	✓	x	✓	x	✓	x	✓	x	✓	✓	✓	x			x	x	✓	x
Utilities	✓	x	✓	✓	✓	x	✓	x	✓	x	✓	✓	✓	x	✓	x	✓	x	✓	✓	✓	x			✓	x
Land Use & Property	x	x	x	x	✓	x	x	x	x	x	✓	✓	✓	x	x	x	✓	✓	✓	✓	x	x	✓	x		

19 Summary of Mitigation and Monitoring Measures (Chapter 19)

19.1 Introduction

Chapter 19 brings together the mitigation and monitoring measures identified in Chapters 5 to 17 of the EIAR. These measures are intended to avoid, prevent, reduce or, where necessary, offset adverse environmental effects during the construction and operational phases of the Proposed Development. The detailed requirements remain set out in the relevant technical chapters and supporting management plans.

A Construction Environmental Management Plan (CEMP) will be implemented during construction. The appointed Contractor will be responsible for incorporating the environmental commitments into construction methods, site management procedures and specialist plans, and for ensuring that the measures are implemented throughout the works.

19.2 Summary of Mitigation Measures

The principal mitigation measures for the Proposed Development are summarised below. They include measures embedded in the design as well as controls to be implemented during construction and operation.

- **Air Quality:** Dust will be controlled through a Dust Management Plan, regular inspections, careful management of stockpiles and haul routes, wheel washing, road sweeping, water suppression and restrictions on vehicle idling. No operational mitigation is required because significant air quality effects are not predicted.
- **Climate:** A whole-life Carbon Management Plan will be implemented to reduce construction-related greenhouse gas emissions and embodied carbon. Measures will include design optimisation, reuse of excavated materials, waste reduction, efficient plant operation, local sourcing where practicable and selection of lower-carbon materials. Flood-resilient design, permeable surfaces and resilient planting will support climate adaptation during operation.
- **Noise and Vibration:** Construction noise and vibration will be managed by selecting quiet plant, maintaining equipment, restricting noisy works to appropriate hours, using acoustic screening where required, programming activities carefully and maintaining liaison with nearby communities. No specific operational mitigation is required.
- **Biodiversity:** The design minimises habitat loss and protects the Royal Canal ecological corridor through route optimisation, reduced widths in sensitive areas, retention of riparian buffers and vegetation, and use of boardwalks where appropriate. Construction will be subject to ecological supervision, pollution-prevention controls, pre-construction surveys, species-specific measures for protected fauna, seasonal restrictions, habitat exclusion zones and an Invasive Species Management Plan. Operational measures include SuDS drainage, mammal crossings, native planting, habitat management, bat boxes and biodiversity-sensitive lighting.
- **Archaeological, Architectural and Cultural Heritage:** Ground disturbance will be archaeologically monitored under licence. Baseline photographic surveys will record the canal and associated heritage features and works beside historic structures will be subject to appropriate engineering supervision. Access to heritage routes will be maintained where practicable, with temporary diversions and protection measures used where required.
- **Landscape and Visual:** Construction compounds and working areas will be confined to designated locations, retained trees will be protected, and temporary works areas will be

reinstated. The permanent design incorporates sensitive route alignment, retention of landscape features, native planting, public-realm improvements and long-term landscape maintenance.

- **Land, Soils and Geology:** Soils, excavations and stockpiles will be managed to prevent erosion, instability and contamination. Excavated material will be reused where practicable, while fuels and chemicals will be stored and handled in controlled areas. Temporary compounds and disturbed areas will be removed or reinstated following construction.
- **Water:** The CEMP will include controls for refuelling, chemical storage, spill response, dewatering, sediment management and the treatment of construction runoff. Works beside the Royal Canal and associated watercourses will be carefully managed. The permanent drainage design incorporates SuDS measures to control runoff, support groundwater recharge and protect water quality.
- **Population and Human Health:** The mitigation measures identified across the EIAR will reduce temporary construction effects on communities, access, amenity and environmental quality. Construction traffic, noise, dust, working hours and temporary diversions will be managed, while safe access and advance communication will be maintained. No additional operational mitigation is required.
- **Traffic and Transport:** A Construction Stage Traffic and Transportation Management Plan will control haul routes, delivery times, worker parking, temporary traffic management, pedestrian and cyclist diversions, signage and stakeholder notification. The completed Greenway is expected to provide positive walking and cycling effects, and no additional operational mitigation is required.
- **Waste Management:** A Resource and Waste Management Plan will apply the waste hierarchy by prioritising prevention, reuse, recycling and recovery. Materials will be segregated and tracked, with authorised contractors and facilities used for waste transfer and treatment. Operational waste and incidental litter will be managed through routine maintenance arrangements.
- **Utilities:** Up-to-date utility records, surveys and investigations will be used before construction. Works near existing services will be controlled and coordinated with utility providers, with protection or diversion measures implemented where necessary. Particular care will be taken to protect strategic telecommunications infrastructure along the canal corridor.
- **Land Use and Property:** Temporary land take and work areas will be minimised. Access arrangements, accommodation works, fencing, drainage, boundary treatments and landowner liaison will be managed throughout construction, and temporarily affected lands will be reinstated. No additional operational mitigation is required beyond the measures incorporated into the design.

19.3 Monitoring

Monitoring will be undertaken to confirm that mitigation measures are implemented effectively and to identify any need for corrective action. The principal monitoring commitments are summarised below.

- **Construction environmental compliance:** Regular inspections and environmental audits will review compliance with the CEMP and associated plans. Records will be retained and corrective actions implemented where required.
- **Air quality, noise and water:** Dust inspections will be undertaken throughout construction, with increased inspection during dry, windy or high-risk activities. Noise monitoring will be carried out where required at representative sensitive locations. Water quality monitoring will

include visual inspections, monitoring of sediment controls and drainage infrastructure, and additional sampling or corrective action where trigger levels or incidents arise.

- **Climate and resources:** Embodied carbon, greenhouse gas emissions, energy and fuel use, water use, waste generation and material reuse will be monitored and reported during construction. The embodied carbon of maintenance materials will also be monitored during operation.
- **Biodiversity:** Ecological and environmental clerks of works will oversee construction mitigation. Monitoring will cover water quality, habitats, protected species, invasive species, construction lighting and ecological exclusion measures. Long-term operational monitoring will include selected grassland and woodland habitats, Badger and Otter activity, bat activity and bat boxes, Glutinous Snail habitat, and invasive species management.
- **Heritage and landscape:** Archaeological monitoring will accompany relevant ground disturbance. Heritage features will be recorded before works and monitored where construction takes place nearby. An Arboricultural Clerk of Works and Ecological Clerk of Works will supervise tree protection, vegetation removal and related ecological measures.
- **Land, soils, waste and property:** Earthworks, stockpiles, fuel storage, wheel-wash facilities and ground conditions will be inspected during construction. Waste quantities, movements, destinations, reuse and recovery will be recorded and audited. Temporary land take, access arrangements, accommodation works and reinstatement commitments will also be monitored.

19.4 Overall Conclusion

The mitigation and monitoring measures form binding environmental commitments for the Proposed Development and will be incorporated into the detailed design, construction contracts, CEMP and relevant specialist management plans. Their implementation will reduce construction effects, protect sensitive environmental receptors and support the long-term environmental performance of the completed Greenway. The measures summarised in this NTS should be read together with Chapter 19 and the relevant technical chapters of the EIAR, which provide the full mitigation and monitoring measures proposed.