Chapter 17
Interactions and Cumulative Impacts

ROD ROUGHAN & O'DONOVAN
Comhairle Cathrach & Contae Phort Láirge Waterford City & County Council
Údarás Náisiúnta Iompair National Transport Authority
Iarnród Éireann Irish Rail
Rialtas na hÉireann Government of Ireland
Tionscadal Éireann Project Ireland 2040

Chapter 17 Interactions and Cumulative Impacts

17.1 Introduction

In addition to the assessment of impacts on individual topics presented in the previous chapters of this Environmental Impact Assessment Report (EIAR) in respect of the proposed Flood Defences West (hereafter, the 'proposed development'), the interaction between these factors has also been considered. In addition, the cumulative impacts of the proposed development with those of previous developments and developments for which planning authorisation has been received as well as development objectives in the development plans for the areas through which the development is proposed, have been assessed and are described in this chapter.

17.2 Methodology

17.2.1 Legislation and Guidelines

Directive 2011/92/EU ('the EIA Directive'), as amended by Directive 2014/52/EU, requires that the EIAR considers the potential for significant cumulative impacts to arise as a result of (i) the interaction between the various impacts within a single project ('interactions', hereafter) and (ii) the interaction between all of the different existing and/or approved projects in the same area as the proposed project ('cumulative impacts', hereafter).

This Chapter has been prepared with due reference to the following guidance documents:

- Department of Housing, Planning and Local Government (DoHPLG) (2018). *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*.
- EPA (2017). *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports.*
- EC (2017). Guidance on the preparation of the Environmental Impact Assessment Report
- EC (1999). *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*.

17.2.2 Interactions

The determination of interrelationships was facilitated through an iterative design process that included meetings between designers and specialists where strong interrelationships exist. In addition, the process was informed by consultation with statutory and non-statutory consultees including the National Parks and Wildlife Service (NPWS) and Inland Fisheries Ireland (IFI). Where potential exists for interaction between two or more environmental topics, the relevant specialists have taken these into account when making their assessment and where necessary, mitigation measures have been proposed.

17.2.3 Cumulative Impacts

The geographical boundary of 15km was selected for the assessment of cumulative impacts. This comprises a viable study area holding potential for feasible cumulative impacts whilst excluding those areas which are non-viable because of issues such as topography and distance. Significant projects known to WCCC that are not yet within

the planning system but have the potential to interact with the proposed development are also considered.

Cumulative impacts are impacts that result from incremental changes caused by other past, present or reasonably foreseeable projects together with the proposed Waterford Flood Defences West. Cumulative impacts were assessed by looking at previous plans and projects, current plans and projects in planning and proposed future plans and projects within 15km of the proposed site location from 2010 to the present. There is too much uncertainty associated with development proposals beyond 5 years into the future and this EIAR can only be based on data that is readily available. This cumulative assessment has considered cumulative impacts that are:

(a) Likely;

(b) Significant; and

(c) Relating to a future event which is reasonably foreseeable.

The following data sources have been consulted to identify the plans and projects within the 15km boundary:

- Waterford City and County Council;
- Kilkenny County Council;
- Wexford County Council;
- EIA Portal;
- An Bord Pleanála website (planning searches);
- Web search for major infrastructure projects in Waterford City and County and Co. Kilkenny;
- Waterford City Development Plan 2013-2019 (as extended);
- Waterford County Development Plan 2011-2017 (as extended);
- Draft Kilkenny County Development Plan 2021-2027;
- North Quays SDZ Planning Scheme 2018; and
- Ferrybank Belview Local Area Plan 2009-2020 (including Amendment 1).

17.3 Interactions

Table 17.1 shows a matrix of interactions between different environmental topics which have been identified and addressed in this EIAR. Ticks are indicative of interactions.

Interactions are summarised by receptor in sections 17.3.1 – 17.3.10 below. The impacts and the mitigation provided has been considered by all environmental specialists to ensure all the interactions have been fully considered within this EIAR.

The corresponding mitigation measures, where required, are not detailed in this Chapter, and are outlined in the corresponding specialist chapter, or Chapter 19 'Mitigation Measures' of this EIAR.

Table 17.1 Interactions Matrix

Receptor / Activity	Traffic Analysis	Population and Human Health	Biodiversity	Soils and Geology	Hydrogeology	Hydrology	The Landscape	Noise and Vibration	Air Quality and Climate	Archaeological and Cultural Heritage	Architectural Heritage	Material Assets and Land
Traffic Analysis		✓	✓					✓	✓			
Population and Human Health	✓											
Biodiversity								✓				
Soils and Geology	✓	✓	✓		✓	✓	✓	✓	✓	✓		
Hydrogeology		✓				✓						✓
Hydrology		✓	✓	✓								✓
The Landscape		✓										
Noise and Vibration		✓	✓				✓					✓
Air Quality and Climate		✓	✓									✓
Archaeological and Cultural Heritage												
Architectural Heritage												
Material Assets and Land		✓			✓	✓						

17.3.1 Traffic Analysis

Traffic will interact and / or interrelate with the following environmental topics:

- Population and Human Health
- Biodiversity
- Noise and Vibration
- Air Quality and Climate

Population and Human Health

During the construction phase, the haulage of materials to and from the site of the proposed development will interrelate with road users, adding to the potential noise and vibration, air quality and visual impacts. However, restricted haulage routes have been outlined as part of this EIAR (refer to Chapter 4 'Description of the Proposed

Development') to ensure that the population of Waterford City is not affected significantly by increased traffic volumes as a result of construction traffic.

Due to the nature of the proposed development, no traffic will be generated during the operational phase as a result of the proposed development.

Biodiversity

The impact of construction traffic including piling barges and machines required for sheet piling have been assessed in Chapter 7 'Biodiversity' of this EIAR for their impact on the biodiversity within the Lower River Suir Special Area of Conservation (SAC) and the surrounding European and nationally designated sites. No impacts on biodiversity are envisaged during the operation phase as the proposed development will not generate an increase in traffic volume.

Noise and Vibration

Noise and vibration levels will increase as a result of construction traffic. Mitigation measures, as well as compliance with measures outlined in the outline Construction Environmental Management Plan (CEMP) in Appendix 4.1 A of this EIAR, will be put in place during construction to reduce the short-term noise impacts of construction traffic. No impacts on noise and vibration are envisaged during the operation phase as the proposed development will not generate an increase in volume of traffic.

Air Quality and Climate

Air pollutant emissions will also increase during the construction phase as a result of construction traffic. Mitigation measures have been developed and are presented in Chapter 13 'Air Quality and Climate' of this EIAR to mitigate potential short-term air quality impacts from construction traffic.

17.3.2 Population and Human Health

Population and Human Health will interact and / or interrelate with the environmental topic of Traffic Analysis.

Traffic Analysis

The construction phase of the proposed development will increase traffic visiting the site as a result of the workforce. The impact of these traffic movements have been incorporated in the traffic assessment.

17.3.3 Biodiversity

Biodiversity will interact and / or interrelate with the following environmental topics:

- The Landscape

The Landscape

As part of the biodiversity mitigation measures, it is proposed to install cladding in the form of an eco-seawall to the section of riverside sheet pile walls that it is within the intertidal zone of the River Suir to enhance marine biodiversity. This mitigation measure will have a beneficial visual impact during the operation phase of the proposed development by reducing the area of the steel sheet piles visible during low tide.

17.3.4 Soils and Geology

Soils and Geology will interact and / or interrelate with the following environmental topics:

- Traffic Analysis
- Population and Human Health
- Biodiversity
- Hydrogeology
- Hydrology
- The Landscape
- Noise and Vibration
- Air Quality and Climate
- Archaeological and Cultural Heritage
- Material Assets and Land

Traffic Analysis

Construction traffic will arise from a number of construction elements such the earthworks stage of development; from the removal of waste material off site; and the importation of infill material which is primarily required to backfill the area between the front face of the existing quay wall and the back face of the new sheet pile flood defence wall. Traffic counts have been predicted for the earthworks stage of construction and have been assessed in Chapter 5 'Traffic Analysis' of this EIAR.

Population and Human Health

The construction stage will have the potential to have impacts on population and human health within the area due to earthworks, the transport of material to and from the site and the installation sheet piles. The impacts on population and human health have been assessed in the respective specialists' chapters and Chapter 6 'Population and Human Health' of this EIAR. These chapters have taken increases in noise and vibration, and air quality and climate impacts into account due to the movement of construction material.

Biodiversity

Earthworks during the construction phase have the potential to impact on the Lower River Suir Special Area of Conservation (SAC) through construction site runoff, the risk of release of contaminants from the ground, noise and vibration, and air quality impacts. A suite of best practice techniques, mitigation measures and guidelines have been outlined in Chapter 9 'Hydrogeology', Chapter 10 'Hydrology', Chapter 7 'Biodiversity' and the Environmental Operating Plan (EOP) presented in Appendix 4.1 of this EIAR to mitigate impacts on the European and nationally designated sites within the River Suir.

Hydrogeology

Sheet piling and localised excavations have the potential to temporarily reduce the overburden to the aquifer during construction, creating a pathway for pollution. These potential impacts have been assessed and mitigated for in Chapter 8 'Soils and Geology' and in Chapter 9 'Hydrogeology' of this EIAR.

Hydrology

During the construction phase there is the potential for sediment laden run-off from the site to enter the River Suir. As part of the outline Environmental Operating Plan (EOP) developed, an outline Incident Response Plan (IRP), an outline Construction Environmental Management Plan (CEMP) and an outline Construction and Demolition Waste Management Plan (CDWMP) have also been developed detailing the mitigation that the contractor shall implement to avoid sediment from entering the River Suir during construction.

The Landscape

Earthworks on site will have an impact on the landscape of the site during the construction phase however the main landuse of the site is infrastructure and is of low landscape importance. Any landscape and visual impacts due to earthworks, presence of construction machinery and the movement of material will be short term and has been assessed in Chapter 11 'The Landscape' of this EIAR.

Noise and Vibration

Earthworks activities and the movement of construction materials will have potential for short term impacts on noise and vibration during construction. Earthworks machinery have been included in a noise model and mitigation measures have been included in Chapter 12 'Noise and Vibration' and in the outline CEMP to mitigate noise and vibration impacts due to earthworks and the movement of construction materials where possible.

Air Quality and Climate

Earthworks and the movement of construction materials have the potential to create airborne dust. Controls and mitigation have been proposed in Chapter 13 'Air Quality and Climate' to mitigate any impact from dust during construction.

Archaeological and Cultural Heritage

The construction of the sheet pile wall and clearance of the site will require the removal of old masonry quay walls within the site. The significance of this impact and mitigation measures put in place are discussed in Chapter 15 Architectural Heritage of this EIAR.

Ground disturbances have the potential to impact on unidentified archaeological sites during excavation and construction. All ground disturbances associated with the proposed development will be monitored by a suitably qualified underwater archaeologist. If any features of archaeological potential are discovered during the course of the works further archaeological mitigation may be required, such as preservation in-situ or by record. Any further mitigation will require approval from the National Monuments Service of the Department of Housing, Local Government and Heritage (DoHLGH). Impacts and mitigation measures proposed for the earthworks stage are discussed further in Chapter 14 Archaeological and Cultural Heritage of this EIAR.

17.3.5 Hydrogeology

Hydrogeology will interact and / or interrelate with the following environmental topics:

- Population and Human Health
- Hydrology
- Material Assets and Land

Population and Human Health

Routine run-off and / or a spillage event during construction phase has the potential to pose a risk to groundwater due to potential infiltration of contaminated surface water to groundwater.

Construction best practice guidelines will be followed to reduce the risk of spillage events and the contamination of groundwater. Therefore, when considered in conjunction with the overburden to the aquifer, the risk to the groundwater supply is not likely.

Hydrology

Potential changes to aquifers or unsaturated zones may result in changes to existing baseflow to watercourses within the site of proposed development. The proposed development represents a negligible to slight impact on the saturation zone of the aquifer recharge area.

Material Assets and Land

The potential risk of pollution to groundwater from routine run-off would have a resultant impact on water quality and therefore material assets. The drainage system incorporates treatment prior to discharge to minimise the potential for pollution. Therefore, in conjunction with the overburden to the aquifer, there is a very slight risk of groundwater pollution impacting material assets.

17.3.6 Hydrology

Hydrology will interact and / or interrelate with the following environmental topics:

- Population and Human Health
- Biodiversity
- Soils and Geology
- Material Assets and Land

Population and Human Health

The construction works for the proposed development will increase the number of people near a known source of flooding, namely the River Suir, thus increasing the potential for flood risk related impacts on human health. Mitigation measures have been proposed as part of Chapter 6 'Population and Human Health' and Chapter 10 'Hydrology' to reduce the risk of flood-related impacts on human health.

The proposed development has been designed to avoid the potential for flooding through the provision of flood defence measures for the north quays area of Waterford City, thereby having a beneficial impact on population and human health during the operation phase by avoiding the potential impacts from flooding.

Biodiversity

Construction activities have potential to pose a risk to watercourses, particularly if contaminated surface water from construction activities was to enter the River Suir. Chapter 7 'Biodiversity', Chapter 10 'Hydrology' and the Outline CEMP set out measures to prevent the runoff of contaminants during construction. These measures will mitigate the risk to biodiversity within River Suir and the European sites.

Soils and Geology

During the construction earthworks, heavy rainfall events have the potential for run-off to impact on the usability of materials stored onsite. This could therefore require the importation of additional material from external sources. In conjunction with this, the run-off from the site would have the potential to increase the sediment loading to the adjacent watercourses. Mitigation measures have been included in Chapter 8 'Soils and Geology' to prevent contamination of watercourses such that silt and sediment barriers are installed and maintained at the perimeter of earthworks areas. Furthermore, the outline Environmental Operating Plan (EOP) has been developed which sets out measures to avoid the silt laden runoff from contaminating the receiving watercourses.

Material Assets and Land

There is potential for the build-up of excess silts in the existing drainage networks derived from construction runoff that could limit the network capacity. However, standard pollution control measures will be implemented so as to manage contaminated runoff and ensure the existing drainage pathways are maintained during the construction phase. Refer to Chapter 9 'Hydrology' and the outline CEMP for details of pollution control measures to be used during the construction phase.

17.3.7 The Landscape

The Landscape will interact and / or interrelate with the environmental topic of Population and Human Health.

Population and Human Health

The sensitive visual receptor, as described in Chapter 11 'The Landscape' is the population, and therefore all visual impacts relate directly to the residents, those working in the area and visitors. The proposed development will likely have negative, moderate to imperceptible impact on the visual receptors during the operation phase due to the physical presence of the flood defence sheet pile walls. Due to the nature of the site and the works proposed, Chapter 11 'The Landscape' concluded that there are no practical landscape or visual mitigation measures that would make a significant difference to the impacts identified at either construction or operational stage. The levels of landscape and visual impact generated by the proposed development however are relatively low.

17.3.8 Noise and Vibration

Noise and Vibration will interact and / or interrelate with the following environmental topics:

- Population and Human Health
- Biodiversity
- Material Assets and Land

Population and Human Health

The sensitive receptor, as described in Chapter 12 'Noise and Vibration', is the population, and therefore all noise and vibration impacts relate directly to the residents, those working in the area and visitors. Potential noise and vibration impact related to population and human health are likely during the construction phase of proposed development due to construction-related noise. Mitigation measures have been included in Chapter 12 and the outline CEMP to reduce such impacts on sensitive

receptors. There are no predicted noise and vibration impacts during the operational phase of the proposed development on population and human health.

Biodiversity

Construction noise and vibration is likely to have an impact on and number of Key Ecological Receptor (KER) including KER 5 Otter and KER 6 Bat Species and KER 4 Fish Species including Annex II migratory species, most notably on Twaite Shad, if there are prolonged periods of continuous piling or if there are inadequate or uncoordinated breaks between pile drives. Mitigation measures have been proposed as part of Chapter 7 of this EIAR to ensure that the noise and vibration associated with the construction of the sheet pile wall does not have a significant impact on the above KERs.

Material Assets and Land

Noise and vibration levels during construction stage will also interact with Material Assets and Land. Businesses within Sallypark may be subject to temporary indirect impacts during construction as a result of noise and vibration increases.

17.3.9 Air Quality and Climate

Air Quality and Climate will interact and / or interrelate with the following environmental topics:

- Population and Human Health
- Biodiversity
- Material Assets and Land

Population and Human Health

Increases in air pollutant and dust emissions from construction activities have potential to impact on population and human health. Impacts associated with air pollutant and dust emissions during the construction phase are discussed in Chapter 13 'Air Quality and Climate' and Chapter 6 'Population and Human Health' of this EIAR. There are no potential air quality impacts on population and human health during the operation phase of the proposed development.

Biodiversity

Air pollutants and dust emissions have the potential to interact with the biodiversity of the area due to pollutant deposition. The potential for deposits on Lower River Suir SAC are assessed in Chapter 13 Air Quality and Climate of this EIAR. Air quality mitigation measures will reduce impacts on the biodiversity of the area as a result of construction traffic.

Material Assets and Land

Dust generated from construction activities may cause annoyance or nuisance to businesses within the area. Measures to control the production of dust, which have been outlined in Chapter 13 'Air Quality and Climate' and included in the outline CEMP, will be put in place by the contractors to reduce any potential impacts experienced by receptors. Good communication between the contractors and business owners in the proximity of construction activities will facilitate on-going operations.

17.3.10 Material Assets and Land

Material Assets and Land will interact and / or interrelate with the following environmental topics:

- Population and Human Health
- Hydrogeology
- Hydrology

Population and Human Health

The proposed development is likely to have a long-term positive impact on the transport infrastructure (incl. road and rail) during its operation phase by protecting the existing assets from existing and future flood risk, having a positive impact on population and human health.

Hydrogeology

The provision of improved utilities such as a surface water drainage system across the site will have a positive impact on the hydrogeology of the area. The proposed development will provide filter drains which will treat the surface water runoff before it is discharged into the River Suir.

Hydrology

The existing surface water drainage system within the site of the proposed development will be upgraded with filter drains to collect and treat the surface water runoff before discharging it into the River Suir.

17.4 Cumulative Impacts

Plans and projects which were identified, and which may be of significance are assessed and discussed in Table 17.2 below in relation to cumulative impacts.

Table 17.2 Assessment of Projects in Respect of their Potential to Result in Cumulative Impacts with the Proposed Development

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
Project Ireland 2040- National Planning Framework **(Distance: 0 m)**	The National Planning Framework (NPF) is the Government's high-level strategic plan for shaping the future growth and development of the country out to the year 2040. The NPF with the National Development Plan also set the context for each of Ireland's three regional assemblies to develop their Regional Spatial and Economic Strategies taking account of and co-ordinating local authority County and City Development Plans in a manner that will ensure national, regional and local plans align. An SEA and AA have been completed to support the plan. The proposed flood defences will protect the railway corridor, including Plunkett Station and the associated rail infrastructure against coastal, tidal, and combined flood events. The proposed development will also support the implementation of a number of NSOs and NPOs identified in the NPF and NDP respectively.	As the proposed development supports the National Planning Framework, it is considered that there will be positive cumulative impacts as a result of the proposed development.
National Adaptation Framework: Planning for a Climate Resilient Ireland **(Distance: 0m)**	The National Adaptation Framework (NAF) has been developed to address current and future risks associated with climate change, including impacts attributed to increase in heavy rainfall events; intensity of storms; sea level rise etc. The NAF recognises that climate change will have a negative impact on a number of key socio, economic and environmental sectors including critical infrastructure: transport, emergency, water, energy, and communications services and are at risk from a range of climate induced impacts such as sea level rise, changing rainfall patterns, increasing temperature and extreme weather events. In response to climate change, the NAF aims to set up effective adaptation strategies to reduce the vulnerability of Ireland's environment, society, and economy and to increase its resilience to the effects of climate change. The NAF identified an array of adaptation measures that "enhance adaptive capacity of social, industrial and environmental infrastructures and mitigate the effects of climate change". Adaption measures have been categorised as soft, green and grey adaptation measures. Building new or raising the level of existing flood defences is an example of 'grey' adaptation measures. The proposed development will provide protection of the rail corridor, a critical infrastructure against existing and future flood risk and will support Waterford City in building its resilience to climate change.	As the proposed development supports the National Adaptation Framework, it is considered that there will be positive cumulative impacts as a result of the proposed development.
Southern Region Regional Spatial and Economic Strategy (SRRSES) **(Distance: 0m)**	Arising under the Local government Reform Act 2014, the Southern Regional Assembly has assumed a number of new functions. Chief among these responsibilities is the preparation of a Regional Spatial and Economic Strategy (RSES) for the Southern Region. The Southern Regional Assembly prepared the Regional Spatial and Economic Strategy (RSES) in 2020. The Southern RSES seeks to align with the National Policy Objectives (NPOs) and goals set out in the NPF including NPO 7 which seeks to accelerate the development of Waterford, Cork, and Limerick to grow by at least half of the 2016 Census population, i.e., by 50% to 60% by 2040. The Waterford Metropolitan Area Strategic Plan (MASP) was developed as part of the RSES to *"develop a concentric city both north and south of the River Suir"*. The proposed development is in line with this objective by minimising flood risk to the north quays area which will facilitate sustainable development of the City. The proposed development is also in line with the Regional Policy Objective **RPO 9** which aims to *"ensure investment and delivery of comprehensive infrastructure packages to meet growth targets that prioritise the*	As the proposed development supports the Southern Regional RSES, it is considered that there will be positive cumulative impacts as a result of the proposed development.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	delivery of compact growth". The infrastructure packages *include "climate change adaptation and future proofing infrastructure including flood risk management measures, environmental improvements*". The proposed development is consisted with the Southern RSES and will protect the existing and future built infrastructure from climate changed induced flood risk.	
Waterford City Development Plan 2013-2019 (as extended)	The Waterford City Development Plan 2013- 2019 sets out an overall strategy for the proper planning and sustainable development of the functional area of Waterford City, pursuant to section 9 of the Planning and Development Act 2000 (as amended). The purpose of the Plan is to inform the public, statutory authorities, service providers, developers and other interested parties, of the policy framework that will guide development decisions within the city over the Plan period. The Plan provides: • *A sustainable strategy to guide the location and pattern of development* • *Guidance on the phased release of housing land for development* • *A framework for infrastructural provision.* • *A framework for the conservation and protection of the heritage, built and natural, whilst facilitating appropriate use* • *A framework for the integration of development with the social, community and cultural requirements of the population* • *Guidance for the public and developers on development.* The Plan also includes the following policy in relation to allieviating flood risk: • *To seek to alleviate flood risk in areas currently liable to flooding (POL 11.5.10)* An SEA , SFRA and AA have been completed to support the plan.	As the proposed development supports the Waterford City Development Plan, it is considered that there will be positive cumulative impacts as a result of the proposed development.
Waterford Heritage Plan 2017-2022 **(Distance: 0 m)**	The Heritage Plan sets out the priorities for Heritage in Waterford over the next 5 years and is a cross agency plan with input from as wide a sector as possible who are involved in heritage projects, policy and work programmes across the city and county along with an extensive public consultation process. The plan also sets the framework for the Heritage Council allocation that we apply for through the annual Heritage Plan Fund. The plan sets out a Vision to: *To increase engagement with, and access to, all aspects of heritage in Waterford City and County and promote conservation, best practice, appreciation and enjoyment of our shared heritage.* The Mission Statement for this plan is: *To set out a strategic and co-ordinated approach for heritage in recognition of the benefits that heritage delivers; identifying a sense of place for Waterford, learning lessons from our past to plan for the future and added value for the development of Waterford City and County*	No likely significant cumulative impacts are predicted to arise from the combination of this plan with the proposed development.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
Waterford North Quays Strategic Development Zone Planning Scheme 2018 **(Distance: 0 m)**	The Government designated lands at North Quays in Waterford City as Strategic Development Zone (SDZ) on 20th January 2016. SDZ designations are created to facilitate development which in the opinion of the Government is of economic or social importance to the State. Waterford City and County Council as the 'Development Agency' prepared the North Quays SDZ Planning Scheme which was adopted by the elected members of Waterford City and County Council in February 2018. The Planning Scheme sets out a Vision to: • To create a sustainable, compact extension to the City Centre that will serve a future population of 83,000 people. • Creation of an integrated multi-modal transport hub designed to sustainably meet the access requirements of The City. The Planning Scheme vision is supported by a range of principal goals, including, but not limited to, the following: • To promote the expansion of the City Centre to the north of the River Suir in a manner that enhances and supports balanced and sustainable growth in Waterford City and encourages its vitality and viability • To provide sustainable solutions that address and manages the risk of flooding and climate change. The proposed Flood Defences West will form a continuation of the flood defences east which received a planning approval as part of the SDZ Transportation Hub and will cumulatively protect the Waterford City north quays area against existing and future flood risk. As such, the proposed development will complement the sustainable development of the Waterford SDZ site.	As the proposed development adjoins the Waterford North Quays SDZ site and complements the sustainable development of the site, it is considered that there will be positive cumulative impacts as a result of the proposed development.
Waterford Planning Land Use and Transportation Study 2004 **(Distance: 0 m)**	The Waterford Planning Land Use and Transportation Strategy (PLUTS) was adopted by Waterford and Kilkenny Councils in 2004 in order to provide a vision and strategy for the development of Waterford City and Environs up to the year 2020. The core provisions of PLUTS are: • Provision for a population increase of almost 30,000 people (or 57% population growth) in Waterford City and Environs; • Investment needed for almost 12,800 new jobs or 46% growth; • Requirement for approximately 11,500 new dwellings transitioning predominantly to the north of the River Suir; • Significant retail expansion in the expanding City Centre; • A Downstream River Crossing to facilitate the extension of the Outer Ring Road northwards to the N25; • A new City Centre Bridge for pedestrians and cyclists to link the redeveloped North Quays with the existing City Centre; • Provision of a rail-passenger platform on the North Quays as part of a new Public Transport Interchange; • Development of a high-quality bus-based public transport system in the City supported by Park and Ride facilities located north and south of the River;	As the proposed development will enhance and protect the transport infrastructure, it is considered that there will be positive cumulative impacts as a result of the proposed development.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	Waterford has developed some of this infrsatructure since 2004, most notably the provision of the Waterford Bypass and up river crossing of the River Suir and the Outer Ring Road. A number of these projects have received planning within the past few years and are considered further within this table.	
Transforming Waterford Integrated transport proposals **(Distance: 0 m)**	This document relates to costing relating to transportation proposals some of which are based on the PLUTS Strategy and strategic City infrastructure, necessary for the future development of the City. They are consistent with the Planning Land Use and Transportation Strategy for the City and with Regional and National Planning Policies. The proposed transportation components include: • City centre – Enabling City Growth • City Centre Improvement – Building On The Essential Character • Sustainable Transport Corridor/Regional Greenway • Abbey Road Improvement Works • Dock Road Improvement Works • Integrated Transport Hub – Redefining Urban Transport Modal Integration As above, a number of these projects have received planning within the past few years and are considered further within this table.	No likely significant cumulative impacts are predicted to arise from this plan and the proposed development.
Port of Waterford Waste Management Plan 2017 **(Distance: 5.5 km)**	The Port's waste management plan outlines the Port's policies and procedures in relation to the management of waste. The plan describes the Port's current facilities in terms of waste management and also how the adequacy of these facilities will be reviewed. In the context of the plan, "waste" includes waste originating both from ships using the Port and from the Port itself. Procedures for the handling of different types of waste (e.g. general waste, galley waste, international catering waste, cargo waste, hazardous waste and electrical waste) are described. Procedures for how incoming ships must notify the Port regarding their waste reception needs and how Port users may lodge complaints about waste management are also included. The small volume of waste associated with the proposed Flood Defences West, will be disposed of as per the mitigation measures in Chapter 8 Soils and Geology.	There are no significant cumulative impacts predicted to arise from this plan and the proposed development.
Port of Waterford Company – Dumping at Sea / Dredging (EPA Licence No. S0012-03) **(Distance: Approx. 15 m)**	This permit is for the loading and dumping at sea of dredged material (consisting of sand, silt and gravel) arising from maintenance dredging by Port of Waterford Company at a number of discrete locations in the Suir Estuary Waterford Harbour over a six-year timeframe (2020 - 2025). The licence provides the Port of Waterford Company a Dumping at Sea Permit from the Environmental Protection Agency to maintain the shipping corridor through dredging and dispose of the dredged material in an approved disposal site located c. 2.5km west of Hook Head and c. 2.8km southeast of Dunmore East within the Port's limits. The licence provides for three areas of dredging within the River Suir at Waterford City. These three locations are located downstream of Rice Bridge, namely North Wharf, Frank Cassin Wharf and Forde Wharf & Merchant's Quay Marina. The Port of Waterford have commissioned numerous environmental assessments over the past two decades, as included in the application, to ensure that the impact of the development is minimal. A Natura Impact Statement (NIS) was prepared as part of the application and	No significant cumulative impacts predicted to arise from this licence and the proposed development.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	concluded that the proposed dredging and disposal operations will not negatively impact on the integrity of the Natura 2000 sites, their qualifying interests or marine mammals.	
The Southern Waste Management Plan 2015-2021 **(Distance: 0 m)**	The Southern Waste Management Plan 2015-2021 is a statutory planning document whose objective is to set out a framework for the prevention and management of wastes for the Southern region. The overarching strategic objectives of the SRWMP as presented in June / July of 2014 were: 1. *Policy & Legislation The Region will implement EU and national waste and related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes.* *2. Prevention Natura Impact Report: Southern Region Waste Management Plan MDR0998RP0015F02 9 Prioritise waste prevention through behavioural change activities to decouple economic growth and resource use.* *3. Resource Efficiency. The Region will encourage the transition from a waste management economy to a green circular economy to enhance employment and increase the value, recovery and recirculation of resources.* *4. Coordination Coordinate the activities of the Regions and to work with relevant stakeholder to ensure the effective implementation of objectives.* *5. Infrastructure Planning. The Region will promote sustainable waste management treatment in keeping with the waste hierarchy and the move towards a circular economy and greater self sufficiency.* *6. Enforcement & Regulations. The Region, will implement a consistent and coordinated system for the regulation and enforcement of waste activities in cooperation with other environmental regulators and enforcement bodies* *7. Protection Apply the relevant environmental and planning legislation to waste activities to protect and reduce impacts on the environment, in particular European Sites, and human health from the adverse impact of waste generated.* *8. Other Wastes. The Region will establish policy measures for other waste streams not subject to EU and national waste management performance targets.* An SEA, AA and SFRA have been completed to support the plan.	No significant cumulative impacts predicted to arise from this plan and the proposed development.
Suir River Basin Flood Risk Management Plan **(Distance: 0 m)**	The purpose of the Plan is to set out the strategy, including a set of proposed measures, for the cost-effective and sustainable, long-term management of flood risk in the River Basin, including the areas where the flood risk has been determined as being potentially significant. This Plan, which is for the period of 2018-2021, is one of 29 Plans being published; each setting out the feasible range of flood risk management measures proposed for their respective River Basins. The preparation of these Plans addresses Ireland's obligations under the 2007 EU 'Floods' Directive (EU, 20074). The Plan includes feasible measures developed through a range of programmes and policy initiatives including: • *Non-structural flood risk prevention and preparedness measures that are applicable nationally, aimed at reducing the impacts of flooding, that have been and are being developed to implement Government policy on flood risk management (OPW, 2004).*	No significant cumulative impacts predicted to arise from this plan and the proposed development.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	• *Structural flood protection measures proposed for communities at significant flood risk, aimed at reducing the likelihood and/or degree of flooding, identified through the National Catchment Flood Risk Assessment and Management (CFRAM) Programme.* The CFRAM Programme has examined the flood risk, and possible measures to address the risk, in 300 communities throughout the country at potentially significant flood risk. These communities were identified through the Preliminary Flood Risk Assessment, which was a national screening assessment of flood risk. The communities identified through the PFRA process as being at potentially significant flood risk in the Suir River Basin, along with the sources of flood risk that were deemed to be significant for each community. A set of flood maps, indicating the areas prone to flooding, has been developed and published for each of the communities. The Plan builds on and supplements the national programme of flood protection works completed previously, that are under design and construction at this time or that have been set out through other projects or plans, and the ongoing maintenance of existing drainage and flood relief schemes. A Strategic Environmental Assessment, and an Appropriate Assessment under the Habitats Directive where appropriate, have been undertaken as part of the preparation of, and have been published with the Plan.	
Ferrybank Local Area Plan (LAP) 2017 – 2023 **(Distance: 0m)**	The Ferrybank- Belview Local Area Plan (LAP) 2017 – 2023 outlines a strategy for the proper planning and sustainable development of an area of land stretching from Grannagh to Belview and from the River Suir to the line of the Waterford bypass, adjacent to the proposed Waterford Flood Defences West. The Ferrybank LAP supports the development strategy set out in the Waterford Planning, Land Use and Transportation Study (PLUTS) to achieve a balanced and sustainable growth of Waterford. The PLUTS proposed to bring the "North Quays and the Suburbs fully into the social and economic domain of the City". To achieve this overarching objective, the study advocated for future growth to be distributed between the north and south quays of the city, including Ferrybank. The proposed development will assist Ferrybank LAP to realise its sustainable growth objectives by protecting the north quays area from potential flood events.	Significant positive direct, indirect, cumulative impacts are predicted to arise impacts this plan with the proposed development.
Waterford-New Ross Greenway **(Distance: 1.1km)**	The development of the disused railway line on lands which extend from within Waterford City and County Council's administrative boundary through to Rosbercon, New Ross as a cycle and pedestrian route. The route which is 22km in length will begin at Abbey Road, Ferrybank, Waterford and will follow the disused line through or in close proximity to the townlands of Abbeylands, Rathculliheen, Gorteens, Drumdowney Lower, Rathpatrick, Luffany, Curraghmore, Ballyrowragh, Scartnamoe, Rathinure, Rochestown, Aylwardstown, Carrickcloney, Ballyverneen, Forestalstown, Shanbogh Upper and Raheen (Rosbercon), Co. Kilkenny. The project screened out for Appropriate Assessment.	No significant cumulative impacts predicted to arise from this project and the proposed development.
Bilberry to Waterford City Centre Greenway Link **(Distance: 0.2km)**	Part 8 application was submitted to WCCC in 2019 to carry out works at existing greenway car park at Bilberry, to the Clock Tower on Merchants Quay. • Construction of an approximate 4000mm wide cycle and pedestrian corridor from the Greenway car park at Bilberry, along Bilberry Road, Grattan Quay and Merchants Quay, to the proposed South Quay Plaza • Road widening along Bilberry Road, erection of railings and fences and provision of accommodation works where necessary for adjoining landowners	The construction phases of both development are not likely to overlap and due to the scale and nature of the project, no significant cumulative impacts are predicted from this project and the proposed development.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	• Provision of 2 No. 4000 mm wide boardwalks at the eastern end of Bilberry Road • Upgrade the existing facilities on Grattan Quay and Merchants Quay, and upgrade the existing facilities in the car parks in Merchants Quay The proposed development has undergone Appropriate Assessment Screening under the Habitats Directive (92/43/EEC) and the Planning and Development Act 2000, as amended, and the Planning Authority has determined that a Stage 2 Appropriate Assessment is not required in this instance. In addition, the proposal has also undergone screening for Environmental Impact Assessment under the EIA Directive 2014/52/EU (and the relevant provisions of the Planning and Development Act, as amended), and the Planning Authority has determined that there will be no likelihood of significant effects on the environment arising from the proposed development and therefore, an Environmental Impact Assessment is not required.	
River Suir Sustainable Transport Bridge **(Distance: 440 m approximately)**	Planning Permission was granted in 2019 (ABP ref no. ABP-303274-18) for construction of a 5-span, 8m wide sustainable transport bridge which will be a shared space for pedestrians, cyclists and a public transportation service. The bridge crossing point is approximately 550m downriver of the existing Rice Bridge. The Lower River Suir is in the region of 207m wide at this location and is part of the Lower River Suir Special Area of Conservation (SAC). The proposed development is located approximately adjacent to Barronstrand Street (commercial partially pedestrianised and in front of the existing Clock Tower on the south quays in Waterford city centre. An Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement were submitted to An Bord Pleanála with the River Suir Sustainable Transport Bridge (RSSTB) Application. **Biodiversity** The residual impacts identified in the RSSTB EIAR during operation phase include permanent, slight negative impact on KER 1 River Suir as a result of the permanent loss of estuarine habitat. The residual impacts predicted on the estuarine habitats of River Suir as a result of the proposed development constitutes a Permanent Slight Positive Impact on the River Suir. As such, no significant cumulative impacts likely to arise from the combination of this project with the proposed development. **Noise and Vibration** The residual noise impact for the construction activities for the RSSTB which will be carried out during normal working hours are likely to have *negative, moderate, short-term* impact on sensitive receptors while there are no night-time construction works for the RSSTB. There will be *negative temporary, slight to not significant* impacts on receptors as a result of construction activities for the proposed Flood Defences West during normal working hours while *negative, significant*, *temporary* impacts are predicted at one receptor during night-time works (see Chapter 12 Noise and Vibration of this EIAR for more details). No further significant cumulative impacts are predicted as a result of construction phase activities for the RSSTB and the proposed Flood Defences West as localised, temporary noise impacts on different noise sensitive receptors are predicted for both projects.	The construction phase of this Project and of the proposed development are likely to overlap. With the implementation of the mitigation measures proposed within Chapter 19 of the EIAR and the NIS as part of this application, and the CEMP, the impacts will be minimised. No further significant effects are likely to arise from the River Suir Sustainable Transport Bridge and the proposed development, other than those localised *temporary significant* impacts identified in Chapter 12 of this EIAR during the night-time works.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	AA The NIS for the River Suir Sustainable Transport Bridge concluded that the *Project, either individually or in combination with other plans or projects, will not adversely affect the integrity of the Lower River Suir SAC, the River Barrow and River Nore SAC or any other European site*. Furthermore, the NIS *recommends that it be a binding condition of any consent granted in respect of the Project that the mitigation prescribed in this NIS be fully and properly implemented*.	
Falcon Real Estate Development Ireland Limited **SDZ Planning Application** **Distance (0m)**	Planning Permission was granted in 2020 (WCCC ref no. 19928) to a single 10 year planning application for development of lands that is required to conform with the Waterford NQ SDZ Planning Scheme. The proposed development will comprise a mixed-use development consisting of nine blocks of between 1 to 18 storeys. The development described below on a block by block basis will be built on a new raised podium structure, which establishes new ground/ street formation levels, which varies from 8.075m OD to 9.3m OD across the site. This is to ensure the floorspace of the proposed development is above the flood level of the River Suir. The proposed development also includes various areas of landscaping and public realm, infrastructure to connect to the surrounding road network and the City Centre, services infrastructure and all associated site and development works. The proposed development will include the following elements: • 220 bed Hotel, 15 storey building (Block A); • A Mixed-use Commercial Building (Block B) contained over three levels comprising a Visitor Centre (tourism / cultural use), retail (including a licenced supermarket), Foodcourt and individual food and beverage units with associated outdoor seating areas, Leisure/ entertainment, cinema and associated circulation and ancillary areas. Some ancillary accommodation associated with Block B is located below podium. The maximum building height is 32.45m (41.2m OD). This is the height of the portal building at the main entrance to Block B, adjacent to the proposed Sustainable Transport Bridge landing point. Generally, the building height is c.17m (25.65m OD) rising at the western and eastern ends to c21.7m (30.45m OD). There are three main access points to Block B from the south elevation and two on the north elevation (the northern entrances onto Dock Road will be opened in tandem with the proposed Transport Hub development by WCCC). Vehicular access / egress to the carpark is provided from the eastern and western access points off Dock Road. • A seven-storey office block Office Development (Block C) located on the eastern side of the site. • A Residential (Blocks D1-D5) comprising five apartment blocks with a total of 298 apartments with associated balconies, ancillary accommodation, resident support facilities, services and amenities are proposed at the eastern end of the site. • Energy Building (Block E) is a standalone single level building (11.45m) located to the west of the Hotel (Block A). The building contains utilities and plant to service the proposed development. A green roof and PV panels are proposed on the roof structure. Carparking: A car park and services / plant associated with the Blocks A-D will be provided below podium, beneath Blocks A – D on a new formation level of 4.75m OD. A total number of 1,481 parking spaces will be provided across the development site. This includes parking and basement accommodation (GFA) directly	The construction phase of this Project and of the proposed development are likely to overlap. With the implementation of the mitigation measures proposed within Chapter 19 of the EIAR and the NIS as part of the Flood Defences West, and the CEMP, the impacts will be minimised, and therefore, no further significant effects are likely to arise from this project and the proposed development, in addition to those localised, *temporary significant* impacts identified in the Noise chapters of the respective EIARs.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	associated with the relevant block above, vehicle and pedestrian circulation, stair cores, lifts, plant and storage, service/ delivery yards and other ancillary accommodation. The below podium floor level of 4.75m OD is 2 metres above the existing deck level at 2.75m OD. Associated Infrastructure and Public Utilities: Transport: The development connects to the 'SDZ Access and Public Road Infrastructure' project (WCCC Part VIII approved in January 2019) which provides two vehicular access points into the site off Dock Road / Fountain Street (R711) – the western access point is located opposite the entrance to the former Ard Ri Hotel; the eastern access connects to the site from a realigned Abbey Road. This proposed development will connect to the approved New Ross to Waterford Greenway and vehicular access points with minor modifications within the site at the tie-in points. The proposed development has incorporated this design of the proposed Sustainable Transport Bridge (proposed by WCCC and was granted planning permission by ABP (ref no. ABP-303274-18) in) that will tie in at the Central Plaza. Drainage: The development will also include all related infrastructure and associated site and development works and connections to water services and public utilities outside the SDZ site. The proposed works include decommissioning of the existing Ferrybank Pumping Station which is located on the SDZ lands and provision of a new pumping station and associated stormwater tanks on the combined sewer network serving Waterford City (Rockshire Area). The new pumping station is proposed on lands north of the railway line, on the former Dunlop Tyres site. A new connection from the SDZ lands, under the railway line, is proposed east of the eastern access to the lands. An emergency outfall and stormwater outfall from the new pumping station to the River Suir is proposed at the eastern boundary of the SDZ lands. This will replace the outfall from the existing pumping station. These ancillary infrastructure works for the pumping station are located east of Blocks D1-5. WCCC will divert the existing 900mm combined sewer, from a point north of the existing railway crossing to drain by gravity to the proposed pumping station location. The Council will also upgrade (if required) the existing rising main to Abbey Road. All floorspace associated with the building blocks (Blocks A – E) are within the Waterford North Quays Planning Scheme boundary on a site of c 7.3 ha. The ancillary infrastructure works outside the Planning Scheme boundary relate to an area of 0.5 ha and include the proposed new pumping station and related infrastructure. An Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement have been submitted to the Planning Authority with the Application. The residual impacts identified in the EIAR during construction and operation phase for the project include a slight effect on the road network, a minimal impact on hydrology once the appropriate mitigation and monitoring measures are implemented throughout. Chapter 12 Noise and Vibration of the EIAR prepared for the development at the North Quays SDZ lands determined that *"noise impacts will be negative moderate short-term and, in some instances, negative significant and temporary depending on the activities involved at the closest noise sensitive locations".* No night-time construction works are proposed for the development at the North Quays SDZ lands. There will be *negative temporary, slight to not significant* impacts on receptors as a result of construction activities for the	

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	proposed Flood Defences West during normal working hours while *negative, significant*, temporary impacts are predicted at one receptor during night-time piling works (see Chapter 12 Noise and Vibration of this EIAR for more details). The construction programme for the Flood Defences West is short, lasting approximately 7 months of which, 4 weeks of night-time piling will be required which will locally significantly impact on one receptor. This receptor will not be impacted by works associated with the development at the North Quays SDZ lands. Therefore, no further significant cumulative impacts are predicted as a result of construction phase activities for the development at the North Quays SDZ lands and the proposed Flood Defences West. The NIS concluded that the *project, alone or in combination with other projects, will not adversely affect the integrity of the River Barrow and River Nore SAC*.	
SDZ Transport Hub (Distance: 0km)	Waterford City and County Council granted planning permission in September 2019 for a Part VIII Planning Application for the construction of a Transport Hub at Ferrybank, Waterford. The new Transport Hub is to include; a Rail station to replace the existing Plunkett Train Station along the existing Waterford City to Rosslare Iarnród Éireann railway (active only to Belview Port); re-configuration to the layout of the existing Bus Éireann depot site; construction of additional parking for Bus Éireann at an adjoining site (former Dunlop site); construction of drainage network upgrades along the Dock Road and in the vicinity of the Transport Hub and construction of Flood Defences East along the southern boundary of the Iarnród Éireann railway. The noise and vibration section of the Part VIII report identified that *"there is little likelihood of a significant adverse impact from construction works"* for the Transport Hub development which will occur during normal working hours. There are no night-time construction works for the Transport Hub. There will be *negative temporary, slight to not significant* impacts on receptors as a result of construction activities for the proposed Flood Defences West during normal working hours while *negative, significant*, temporary impacts are predicted at one receptor during night-time works (see Chapter 12 Noise and Vibration of this EIAR for more details). No further cumulative significant impacts are predicted as a result of construction phase activities for the Transport Hub and the proposed Flood Defences West, further to those identified in Chapter 12 of this EIAR, as *localised*, *temporary* noise impacts on different noise sensitive receptors are predicted from both projects.	The construction phase of this Project and of the proposed development are likely to overlap. With the implementation the CEMP, the impacts will be minimised, no further significant effects are likely to arise from this project and the proposed development during the construction phase, other than those localised *temporary significant* impacts identified in Chapter 12 of this EIAR during the night time works. The proposed Flood Defences West will form a continuation of flood defences with those proposed as part of the SDZ Transportation Hub. Both projects will cumulatively protect the north quays area against potential flood risk during their operation, resulting in positive cumulative impacts.
Rock Stabilisation and Rock Protection measures Plunkett Railway Station	Waterford City and County Council granted planning permission for a Part VIII Planning Application in January 2019 for Rock Stabilisation and Rock Protection measures at Plunkett Railway Station. The rockface running parallel to the railway line behind Plunkett station requires works to reduce the risk of global slope instability and of rockfalls which could affect railway infrastructure, Irish Rail personnel or the public. The project comprises of approximately 380 metres of rockface remedial works consisting of a combination of rock face	The construction phase of this Project and of the proposed development are not likely to overlap.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
(Distance: >10 m approximately))	stabilisation measures (rock bolting and netting) and rock fall protection systems (metal rockfall barriers fixed to the rockface or rockfall strengthened earth embankments). Other works which are anticipated to be required to facilitate the construction include the temporary removal of the existing signal cabin adjacent to the rockface (to be reinstated following the works), construction of a temporary access embankment from imported & site won material in front of sections of the rockface to enable rockface reprofiling, installation of a cut off drain at the top of the rockface and its connection into the existing station drainage network, excavation of existing rockfall debris at the place of the proposed rockfall embankment and de-vegetation of the rock face where required.	Likely significant positive effects are predicted to arise from this project and the proposed development which aim to protect the existing rail infrastructure.
SDZ Access and Public Road Infrastructure (Distance: 0 m)	Waterford City and County Council granted planning permission for a Part VIII planning application in January 2019 for the proposed SDZ road and access infrastructure improvement that will consist of modifying and upgrading the existing R711 dual carriageway and Abbey Road to facilitate the connection of the existing and proposed future planned road, cycling and pedestrian network with a future planned internal road, cycle and pedestrian network within the NQ SDZ. Connection into the SDZ is proposed through two bridge access points located at the eastern and western ends of the SDZ respectively. The eastern access will connect into a realigned Abbey Road and the western access will connect to the R711 opposite the currently unoccupied 'Ard Rí Hotel' entrance. The site is set back from the existing Dock Road and adjacent properties and is also set back from the River Suir.	The construction phase of this Project and of the proposed development are not likely to overlap. No significant effects are likely to arise from this project and the proposed development.
Gracedieu LIHAF Scheme (Distance: 900 m)	A Part VIII planning approval was granted to the Gracedieu LIHAF Scheme which consists of Public Infrastructure: An access road and Housing Delivery: Located in the Electoral Division of Gracedieu, north west suburbs of Waterford City on the south bank of River Suir. It is proposed to develop roads infrastructure to support the initial development of 200 housing units. The roads infrastructure will serve a site of approx. 7.4 ha, part of which is in WCCC / HSCA ownership and part of which is privately owned. The proposal is to construct an access road along with roundabouts at the northern and southern end of the Phase 1 road proposal.	No significant cumulative impacts are predicted to arise from this project and the proposed development due to the nature of the works and distance from the site.
Kilbarry LIHAF Scheme (Distance: 3.4 km)	A Part VIII planning approval was granted to the Kilbarry LIHAF Scheme which consists of Public Infrastructure: A ring and distributor road in the Electoral Division of Kilbarry, approximately 3.4km south of proposed Flood Defences West. Housing Delivery: This proposal relates to the provision of a distributor road network to open up a landbank in the Lacken/Kilbarry area of Waterford City. This involves opening up of a large tract of residentially zoned lands consisting of c. 105 ha. The land is zoned as High Density and Low Density housing with mixed use, open space and community facilities. It will provide community facilities, amenity spaces, parkland and neighbourhood services along with the development potential of 450 housing units by 2021 with a longer-term potential of 1500 units.	No significant cumulative impacts predicted to arise from this project and the proposed development, due to the distance from the proposed development.
Ferrybank LIHAF Scheme (Distance: 600 m)	A Part VIII planning approval was granted to the Ferrybank LIHAF Scheme which consists of Public Infrastructure: Provision of community and amenity facilities. Housing Delivery: This proposal relates to the provision of a Neighbourhood Park at Ferrybank in South Kilkenny. This is a joint venture between Kilkenny County Council and Waterford City & County Council. Housing supply in this area has been almost stagnant since mid-2000. The provision of a park will increase the attractiveness of the area and lead to the activation of housing supply. In addition, Ferrybank District shopping centre is located across the Belmount Road from	No significant cumulative impacts predicted to arise from this project and the proposed development due to the nature of the works proposed as part of the proposed development.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	the proposed park. This is constructed, but largely vacant apart from Kilkenny County Council Area office and library.	
Nevin Construction - Development at Waters Gate, Bilberry, Waterford **(Distance: 180m)**	Planning permission was granted in 2018 (WCCC ref no. 17780) for demolition of an existing dwelling and construction of 9 No. dwelling houses comprising 6 No. semi-detached 3-storey 4-bed units, 2 No. semi-detached 2-storey 3-bed units and 1 No. detached 2-storey 3-bed unit together with a 2 m high boundary wall/railing and all associated site works at Waters Gate, Bilberry, Waterford. This development is located on the southern bank of the River Suir, 180m southwest of the proposed development. A Natura Impact Statement (NIS) was submitted as part of the application which proposed a number of mitigation measures to protect the Lower River Suir SAC. The NIS concluded that the development would not have an adverse effect on the integrity of the Lower River Suir SAC or any other Natura site.	No significant cumulative impacts are predicted to arise from this project and the proposed development.
Glanway Ltd. **(Distance: 5.3km)**	Planning Permission was granted in 2019 (KCC ref no. 19328) for a change of use at units 3 and 4 Belview Port. It is intended to change its current warehousing use to allow for the acceptance and processing of non-hazardous waste into Solid Recovered Fuel (SRF) and for the composting of organic fines. The application will allow for acceptance and processing of up to 98,500 tonnes per annum at the facility. The application is accompanied by An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS). On review of the above-mentioned reports, it is concluded that significant cumulative impacts will not arise as a result of the proposed development.	The site is located at Belview Port, 5.3km east and on review of the EIAs and NISs for both developments, no significant cumulative impacts are expected as a result of the proposed Flood Defences West and the additional processing at Glanway Ltd.
Jackie Greene Construction Ltd. – Strategic Housing Development **(Distance 5.4km)**	Planning permission was granted in 2019 (ABP ref no. ABP-304423) for construction of 361 no. units comprising 207 no. houses (13 no. 2-beds, 116 no. 3-beds, 78 no. 4-beds), 154 no. apartments within 15 no. 4 storey blocks (providing 53 no. 1-beds, 90 no. 2-beds and 11 no. 3-beds); A creche of c.574 sq.m.; 7 no. internal/external communal waste storage facilities (total floor area c.214.3 sq.m); 638 car parking spaces and 390 no. bicycle parking spaces within 15 no storage facilities (total floor area c.232 sq.m). Additional visitor bicycle parking provided in the public realm; 2 no. ESB sub-stations/switchrooms (totalling c.10 sq.m); and Vehicular/pedestrian/cyclist accesses to the public road (Ballygunner Hill/St. Mary's Place). An Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS) accompany the planning application. The NIS concluded that *"concluded that the proposed development will not have significant effects on the WFD environmental objectives associated with the Lower Suir Estuary, nor is it likely to impact on the qualifying habitats and species of the Lower River Suir SAC or the River Nore and River Barrow SAC".* Due to the distance between the two developments, there will be no significant cumulative impacts.	No significant cumulative impacts predicted to arise this project and the proposed development due to the distance between the two developments.
Kilbarry Developments Ltd – Housing Development (Distance: 4.4km)	Planning permission was granted by WCCC for a permission for the construction of a residential development (ref no. 18734) at Kilbarry, Co. Waterford (phase 3). The Project will comprise construction of 90 no. dwellings consisting of: 24 no. apartments in 3 no. 2 storey blocks containing 4 no. 2-bed and 4 no. 1-bed apartments in each block; 46 no. 2 storey 3-bed semi-detached dwellings; 20 no. 2 story 4-bed semi-detached dwellings; and all associated works. The application is accompanied by An Environmental Impact Assessment Report (EIAR) and Natura Impact Statement (NIS). The NIS concludes: *whilst it has been acknowledged that there is the potential for the project to have significant indirect impacts on two European sites, with the implementation of*	No significant cumulative impacts predicted to arise from this project and the proposed development due to the distance between the two developments.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	the detailed mitigation measures identified in this NIS, it is concluded beyond reasonable scientific doubt that the proposed development shall not result in a significant impact to any European sites. Due to the distance between the two developments, there will be no significant cumulative impacts.	
Kilbarry Developments Ltd – Housing Development (Distance: 4.4km)	Planning permission was granted in 2019 (WCCC ref no. 18735) for the construction of a residential development within the townland of Lacken, Kilbarry, Co. Waterford (phase 4) comprising of the following: 92 no. dwellings consisting of: 24 no. apartments in 3 no. 2 storey blocks containing 4 no. 2-bed and 4no. 1-bed apartments in each block; 46 no. 2 storey 3-bed semi-detached dwellings with optional attic conversion and/or ground floor sunroom; 22 no. 2 storey 4-bed semi-detached dwellings with optional attic conversion and/or ground floor sunroom. Permission is also sought for access from the proposed new Kilbarry LIHAF Road; drainage and water connections to include pumphouse, rising main and associated access road with new entrance from the public road (Lacken Road); all associated site works; landscaping and boundary treatments, at Kilbarry, Co. Waterford. This application is associated with a concurrent planning application being lodged with Waterford City and County Council for 90 no. dwellings on adjoining lands. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) accompany this application. The NIS concludes: *whilst it has been acknowledged that there is the potential for the project to have significant indirect impacts on two European sites, with the implementation of the detailed mitigation measures identified in this NIS, it is concluded beyond reasonable scientific doubt that the proposed development shall not result in a significant impact to any European sites.* Due to the distance between the two developments, there will be no significant cumulative impacts.	No significant cumulative impacts predicted to arise from this project and the proposed development due to the distance between the two developments.
JHOK Ltd Company (Distance: 4.3km)	Planning Permission was granted to JHOK Limited in 2019 (KCC ref no. 19668) for a seven-year planning permission for a Continental Cheese manufacturing plant at the IDA Ireland, Belview Science and Technology Park, Gorteens, Slieverue, Co Kilkenny. The development will include a part single storey and part two storey production building approximately 14 metres high with intakes, processing plant and equipment, packing, stores, despatch, offices, laboratories, utilities and personnel facilities; a 10 bay milk intake and cream despatch building approximately 11 metres high and associated plant and equipment with office, milk testing and personnel facilities; storage silos up to 28 metres high for milk, whey and water; pipe and service bridges, salt silos and brine mixing; sprinkler storage tank and pumphouse; waste water treatment plant comprising balancing, waste water treatment and sludge drying and a truck wash; waste recovery compound and store and a monitoring building. The development consists of an activity for which an Industrial Emissions Licence is required. An Environmental Impact Assessment Report (EIAR) and a Natura Impact Statement (NIS) have been submitted to the Planning Authority with the Application. The NIS concludes that the project *alone or in-combination with other projects, will not adversely affect the integrity and conservation status of any of the qualifying interests of the Lower River Suir SAC and the River Barrow and River Nore SAC*. Due to the location of the proposed plant and the distance to the proposed development, there will be no significant cumulative impacts.	No significant cumulative impacts predicted to arise from this project and the proposed development due to the location of the proposed plant and the distance to the proposed development.
Solas Eireann Development Ltd (Distance: 8.7km)	Application (WCC ref no. 20170330) was granted for the construction of a solar PV panel array at Kilmannock & Great Island, Kilmokea, Co. Wexford. The development comprises photovoltaic panels on ground mounted frames within a site area of 28.14 ha, 11 no. single storey mv substations, 1 no. single storey DSO substation,	No significant cumulative impacts predicted to arise from this project and the proposed development

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	1 no. single storey customer. An Environmental Impact Assessment Report (EIAR) accompanies the planning application. Due to the nature of the development, there will be no significant cumulative impacts.	due to the nature of the proposed development.
Waterford Institute of Technology **(Distance: 2.5km**	Planning permission was granted in 2019 (WCCC ref no. 19669) for a development consisting of a third level educational building comprising of engineering, computing and general teaching facilities of a floor area of 12,894 m^2. The application site is located within the Waterford Institute of Technology Campus which is generally bounded by Paddy Browne's Road on the west and the Cork Road to the south. The building consists of a five storey over lower ground floor building, together with roof top plant and architectural screening. The application includes for 2 no. new disabled access parking bays, 294 no. cycle spaces, removal of existing campus service road, soft landscaping and footpath connections to the existing campus landscaping, hard landscaped entrance area, seating and lighting stands. An Ecological Impact Assessment (EcIA) was submitted with the planning application. The EcIA concluded that *provided that the proposed development is constructed and operated in accordance with the design and best practice that is described within this application, significant effects on ecology are not anticipated at any geographical scale*. Due to the nature of the project and the distance to the proposed Flood Defences West, there will be no significant cumulative impacts.	No significant cumulative impacts predicted to arise from this project and the proposed development due to the nature of the project and the distance to the proposed Flood Defences West.
Smartply Europe DAC **(Distance: 5.8km)**	A planning permission was granted to Smartply Europe DAC in 2019 (KCC ref no. 19509) for amendments to planning permission ref: 11/443, as extended by Extension of Duration of planning permission ref: 19/8, in respect of buildings containing a blending plant, for external drying, screens and associated equipment, structural steel support structures and associated platforms, for site works including alterations to existing road and drainage layout and to relocate the energy plant permitted by permission 09/635. The proposed amendments involve repositioning permitted external plant, changes to the layout and design of external plant (primarily the external energy plant and dryer), relocation of the fuel mix area and fuel bin structures and all associated site works. The planning application is for development of lands at Gorteens, Belview Port, Slieverue, Co. Kilkenny. A Natura Impact Statement (NIS) was submitted with the planning application. The NIS concluded that the *project, alone or in-combination with other projects, will not adversely affect the integrity, and conservation status of any of the qualifying interests of the Lower River Suir SAC or River Barrow and River Nore SAC*.	No significant cumulative impacts predicted to arise from this project and the proposed development due to the distance between the two developments and the conclusion of the environmental assessments and the Appropriate Assessment (AA) from both projects.
Smartply Europe DAC **(Distance: 5.8km)**	A planning application was submitted in 2020 (KCC ref no. 20700) by Smartply DAC to develop a log yard and associated works. The log yard will extend the area available for stockpiling and handling of logs for use in SmartPly's oriented strand board mill which adjoins the site at Gorteens, Slieverue, Co. Kilkenny. A Natura Impact Statement (NIS) accompanies the Application. The NIS concluded that the *project, alone or in-combination with other projects, will not adversely affect the integrity, and conservation status of any of the qualifying interests of the Lower River Suir SAC or River Barrow and River Nore SAC*.	No significant cumulative impacts are predicted to arise from this project and the proposed development due to the distance between the two developments and the conclusion of the environmental assessments and the Appropriate Assessment (AA) from both projects.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
Suir Shipping Ltd (Distance: 5.4km)	A planning permission was granted in 2021 (KCC ref no. 20552) for a 7-year planning permission for Bulk Stores, an uncovered storage yard and associated offices, personnel facilities and site works including earthworks, road works, entrance, gates, and fencing, concrete paving, water services, borewell, drainage works, site lighting and landscaping. The stores will be used to store Port related products such as bulk goods, break bulk and unitised products. The yard will be used to store Port related break bulk products at Gorteens, Slieverue, Co. Kilkenny. Entry and exit will be via a new entrance and also via the adjacent site (Planning Ref. No. PD18/317) for trucks to be weighed. A Natura Impact Statement (NIS) accompanies this application. The NIS concluded that the *project, alone or in-combination with other projects, will not adversely affect the integrity, and conservation status of any of the qualifying interests of the Lower River Suir SAC or River Barrow and River Nore SAC*.	No significant cumulative impacts are predicted to arise from this project and the proposed development due to the distance between the two developments and the conclusion of the environmental assessments and the Appropriate Assessment (AA) from both projects.
Roadstone Limited (Distance: 3.6km)	A planning permission was granted in 2017 (KCC ref no. 16700) for a development consisting of continuation of quarrying activities at Aglish North, Granny, Kilmacow, Co. Kilkenny within the red line application area of 62.04 ha to include the extension of the existing excavation by an additional 2 x 15m high benches from the current floor level of ca.-15m AOD to -45 m AOD within the permitted extraction footprint area of 27.06 ha. The proposed development will involve the continuation of stripping of overburden and its storage for use in site restoration; the extraction of rock by means of blasting, the crushing of blasted rock on the quarry floor, and subsequent processing of crushed rock in the existing aggregate plant to produce a range of aggregates. The proposed development will also include the continuation of use of the existing wheel-wash and associated hardstanding area, bunded fuel tank and associated refuelling area. An Environmental Impact Statement (EIS) and Natura Impact Statement (NIS) have been prepared and submitted to the Planning Authority with this Planning Application. Chapter 6 (Water) of the EIS predicts that surface and groundwater quality and quantity will not be adversely affected by the Site extension proposals. The NIS concluded that *the implementation of the committed mitigation measures outlined herewith will ensure that no significant impacts are considered likely on ecological features present on receiving waters that extend downstream to the Lower River Suir SAC*. Furthermore, the Applicant will continue to carryout environmental monitoring in compliance with current Discharge and Planning conditions while meeting EPA and Dept. of Housing, Local Government and Heritage Guidelines.	Due to the considerable distance of 3.6 km between the sites, and the conclusion of the environmental assessments and the Appropriate Assessment (AA) from both projects, no significant cumulative impacts are expected.
Bellvue Port Services (Waterford) Ltd (Distance: 6.2km)	A planning permission was granted in 2017 (KCC ref. no. 17623) for extension of duration for a previously granted permission (KCC ref no. 10363) for a development at Gorteens and Drumdowney Upper, Belview Port, Slieverue, Co. Kilkenny. The planning permission is for a for a tank farm for the storage and distribution of petroleum products including petroleum, diesel and kerosene. The tank farm will include six large tanks each 35 metres diameter and 16 metres high, a range of smaller vertical and horizontal tanks, bunded areas, truck loading canopy, vapour recovery building, pumps, gantries, pipelines throughout the site and from the site to Belview Port, firewater tank, store, offices, parking, roads, drains, outfalls to the river, services, landscaping, wastewater treatment plant and fencing. The application also includes a large store for the temporary storage of non perishable imported goods prior to distribution or for the temporary storage of non perishable goods prior to export. An Environment Impact Assessment (EIS) and a Seveso II Land Use Planning Risk Assessment accompany the Application.	No significant cumulative impacts are predicted to arise from this project and the proposed development due to the distance between the two developments and the conclusion of the environmental assessments from both projects.

Plan or Project	Description of Plan or Project	Cumulative Impact(s)
	Biodiversity The 'Flora and Fauna' chapter of the EIS concluded that provided the mitigation measures are implemented, the project will not adversely affect the integrity and conservation status of the Lower River Suir SAC and the River Nore SAC. **Hydrology** The Hydrology Chapter in the EIS concluded that provided the mitigation measures are implemented, there will be a negligible impact on surface water and groundwater during the construction and operational phases of the project.	

Waterford City and County Council are currently progressing a number of projects in support of the SDZ. Based on this knowledge, consideration of likely future planned projects was deemed to be required, as far as is practicable at this stage in the process. Projects are at different stages in the design process with some nearing completion and others at Scoping Stage. However, in the interests of ensuring that all known likely and potential cumulative impacts are identified, Table 17.3 assesses the likely cumulative impacts as a result of these projects. Each of these projects will also be the subject of their own Screening process and EIA and AA where required.

Table 17.3 Assessment of Future Planned Projects in Respect of their Potential to Result in Cumulative Impacts with the Proposed Development

Project	Description of Project	Cumulative Impact(s)
Upgrade of Rail Line east of Plunkett Station to the Proposed Transport Hub (0m)	In order to facilitate the passenger trains at the SDZ Transport Hub Iarnród Éireann will undertake an upgrade to the rail line east of Plunkett Station to the approved SDZ Transport Hub. The primary works to be carried out by Iarnród Éireann are trackworks, including the reinstatement and realignment of double track in the vicinity of the proposed new train station; and signalling works to facilitate the proposed train station and track layout.	While the design details and the environmental assessments are not available yet, based on the nature of the project and the mitigation outlined in the SDZ Planning Scheme for all future developments, significant cumulative impacts between the two developments are not predicted at this stage.