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Waterford City & County Council

# Clonea Sea Wall

Part VIII Planning Report

March 2022



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# Clonea Sea Wall

## Part VIII Planning Report

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# Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Project Background	1
1.2	Project Description	2
1.3	Applicability under Part VIII of the Planning and Development Regulations, 2001, as amended	3
1.4	Public Participation	3
<b>2</b>	<b>Screening Assessments</b>	<b>4</b>
2.1	Environmental Impact Assessment Screening	4
2.2	Appropriate Assessment Screening	4
<b>3</b>	<b>Planning Policy Context</b>	<b>5</b>
3.1	Introduction	5
3.2	National Planning Policy	5
3.3	Regional Planning Policy	5
3.4	Local Planning Policy	6
3.5	Conclusion	8
<b>4</b>	<b>Construction Phase Activities</b>	<b>10</b>
4.1	Construction Programme	10
4.2	Construction Activities	10
4.3	Traffic Management	11
4.4	Construction Environmental Management Plan	12
<b>Tables</b>		
	Table 4.1: Indicative construction programme	10
<b>Figures</b>		
	Figure 1.1: Location and extent of proposed works	1
	Figure 1.2: Proposed wall improvement layout	2
	Figure 1.3: Proposed Wall Sections	3
	Figure 3.1: Flood Risk (left) and Land Use Zoning (right)	7
	Figure 3.2: Flood Zone A in Dungarvan (annotation No.2 – Duckspool)	8
	Figure 4.1: King Post Wall with Precast Panels	11



# 1 Introduction

## 1.1 Project Background

Waterford City & County Council propose to carry out improvement works to the existing sea wall along Clonea Road (R675), Dungarvan, Co. Waterford. The surrounding residential areas of Tournore, Sallybrook and Clonea Road are located within low lying areas and are at risk from coastal flooding. The current sea wall along Clonea Road provides coastal flood protection, however, in recent times overtopping of the sea wall has occurred during storm events.

In 2020 Waterford City & County Council removed 50m of the 760m existing wall and replaced it with a new stone clad reinforced concrete retaining wall designed to provide protection to the road and surrounding area against the higher predicted flood level and forces from wave action.

This Part VIII planning application seeks to raise a 450m section of the existing sea wall along Clonea Road to a height which will provide protection against a 1 in 200-year high tide event. An existing 50m section of the wall was replaced. This 50m section will be increased in height only, while a remaining c.398.5m length of the existing sea wall will require complete replacement. A berm will also be provided as part of the proposed development to assist the halt of flood waters to the southeast.

The proposed wall alteration and replacement has been designed to provide protection from a 1 in 200-year high tide event predicted by the Irish Coastal Protection Strategy Study (ICPSS). The predicted flood level within the ICPSS is stated as 2.62m ordnance datum (OD), with an allowance of 0.5m for climate change as required under Office of Public Works guidance, resulting in a final proposed wall height of 3.27m OD (i.e. an increase in the wall height up to 1.75m above ground/ road surface level), along this 450m section of the sea wall.

**Figure 1.1: Location and extent of proposed works**



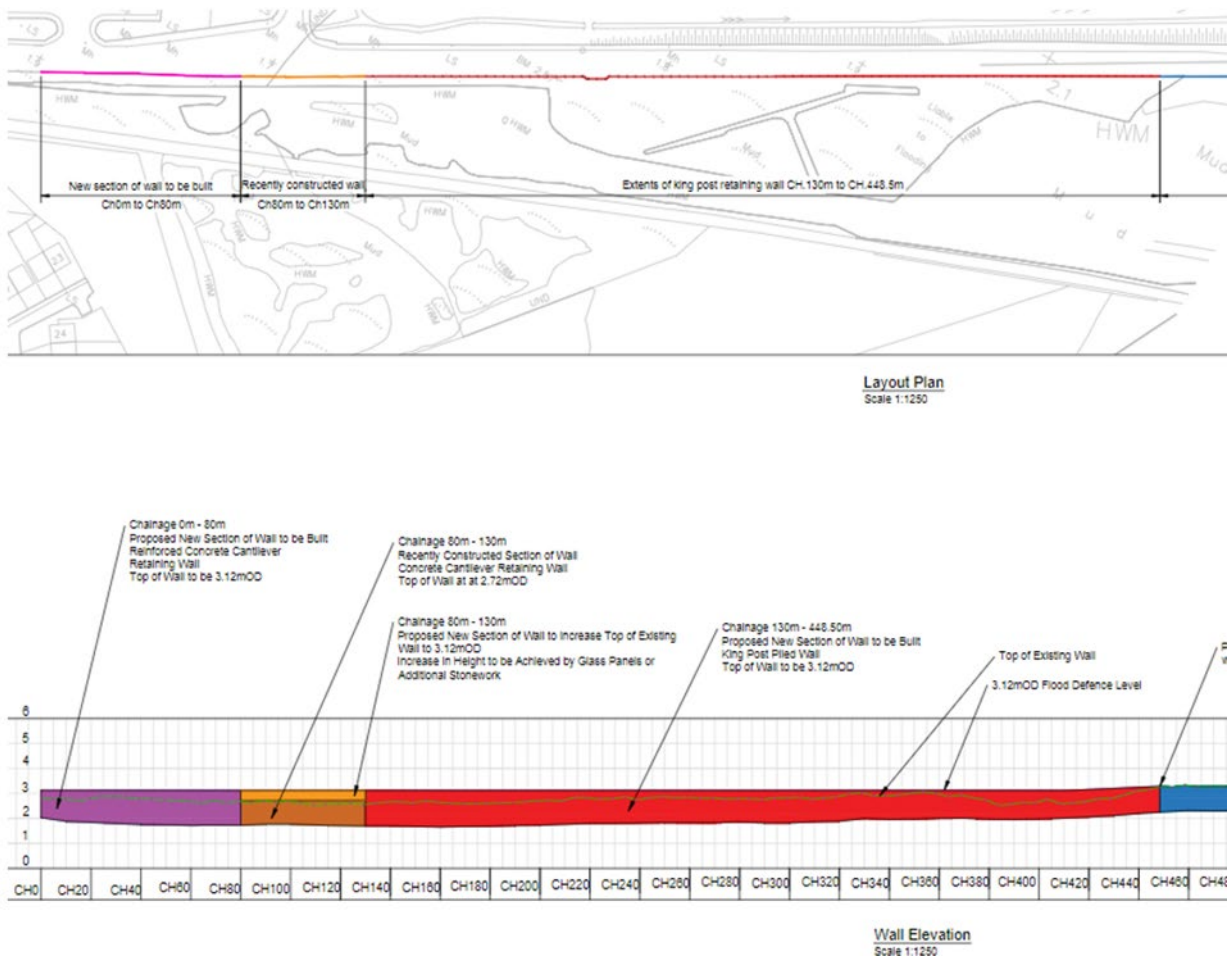
Source: Extract from Mott MacDonald Drawing No. MMD-349264-C-DR-00-XX-4300

The proposed development will help to protect existing residential properties from predicted coastal flood levels of 3.12mOD. A total of 450m of the existing sea wall is below the necessary flood protection level. The number of properties within the surrounding residential areas which are located below 3.12mOD and directly affected by a 1 in 200-year flood event of this level, currently totals 148no. Additionally, the two access roads to St. Augustine's College and the Clonea Road (R675) would be blocked by flood water during such a flood event. Whilst some of these properties would only be impacted for a few hours at the highest spring tide, many would be impacted during a number of consecutive high tides.

## 1.2 Project Description

Waterford City & County Council propose to carry out improvement works to a 450m section of the existing sea wall along Clonea Road. The proposed works will replace, strengthen and increase the height of the existing sea wall to ensure that it can withstand the force of sea surges and flood levels associated with a 1 in 200-year high tide flood event.

**Figure 1.2: Proposed wall improvement layout**



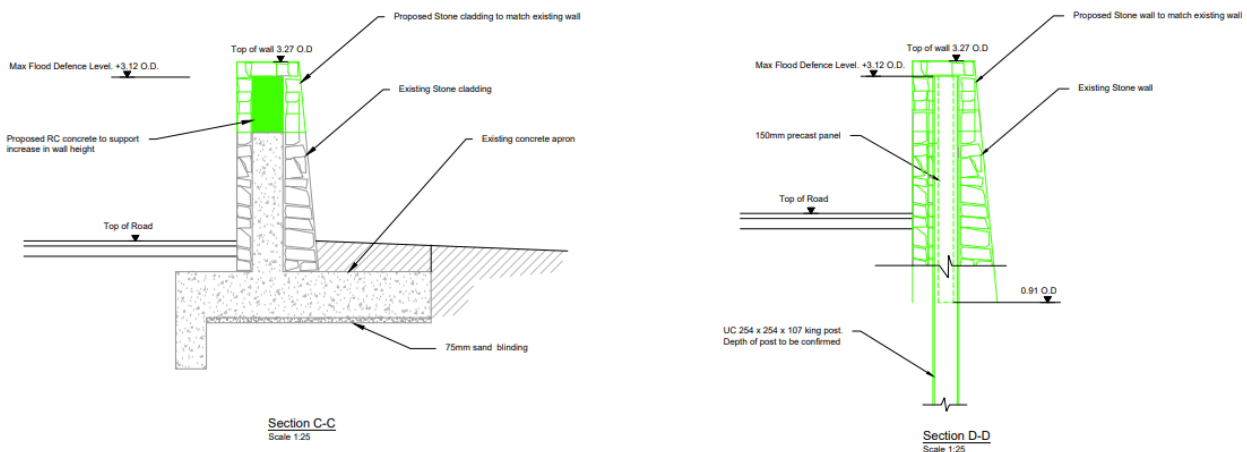
Source: Mott MacDonald



The proposed development will comprise;

1. Replacement of 80m section of stone sea wall with reinforced concrete cantilever flood wall, with stone cladding façade (chainage 0m-80m)
2. Raising of the recently constructed 50m section of flood wall by 0.55m, via additional stonework, to achieve the required flood protection level of 3.27m OD (chainage 80m to 130m);
3. Replacement of 320m section of the existing stone sea wall with king post piled wall with stone cladding façade (chainage 130m to 450m), and
4. Provision of a berm to assist the halting of flood waters and safety barrier across the berm and a section of wall.

**Figure 1.3: Proposed Wall Sections**



Source: Extract from Mott MacDonald Drawing No. MMD-349264-C-DR-00-XX-4304

The proposed development construction is expected to last for a duration of approximately 4–6 months, and be carried out outside of the bird wintering period (i.e. not between October and April).

### 1.3 Applicability under Part VIII of the Planning and Development Regulations, 2001, as amended

Part VIII, Requirements in Respect of Specified Development by, on behalf of, or in Partnership with Local Authorities of the *Planning and Development Regulations, 2001, as amended* (hereafter referred to as the Planning Regulations), sets out the requirements of the legislation pertaining to local authority own development. The proposed development is a class of development to which Part VIII applies, and is listed under Article 80 - Development prescribed for purposes of section 179 of Act, specifically;

*(k) any development other than those specified in paragraphs (a) to (j), the estimated cost of which exceeds €126,000, not being development consisting of the laying underground of sewers, mains, pipes or other apparatus.*

### 1.4 Public Participation

Pursuant to the requirements of Part VIII of the Planning Regulations, the scheme will be advertised for public consultation, inviting submissions.

## 2 Screening Assessments

### 2.1 Environmental Impact Assessment Screening

The requirement for Environmental Impact Assessment (EIA) has its origins in Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment. This Directive has been amended three times and was codified by Directive 2011/92/EU in 2011. Directive 2011/92/EU was then subsequently amended by Directive 2014/52/EU in 2014.

In determining the requirement for EIA, the Directive differentiates between the projects that always require EIA and those for which an EIA may be required. These projects are listed in Annex I and Annex II of the Directive respectively.

The EIA Directive Annexes I and II are broadly transposed by way of the *Planning and Development Regulations 2001, as amended*, in Schedule 5 Parts 1 and Part 2 with national thresholds added to many of the Part 2 classes of development. The proposed development has been reviewed against the class of development and thresholds prescribed within Schedule 5.

The proposed development is not a class of development identified in Schedule 5 Part 1 or Part 2 of the *Planning and Development Regulations 2001, as amended*, there is no automatic requirement under the EIA Directive for it to be subject to EIA. Due to the scale, nature and location of the proposed development no likely significant effects will result on the receiving environment. A copy of the determination on the requirements for EIA will be included with the advertisement.

### 2.2 Appropriate Assessment Screening

Waterford City & County Council have made a determination for Appropriate Assessment, having assessed the scheme in accordance with Article 6(3) and 6(4) of Council Directive 92/43/ECC on the Conservation of natural habitats and of wild fauna and flora habitats (the 'Habitats Directive'). The Habitats Directive requires that where a plan or project, either individually or in combination with other plans or projects, is likely to have a significant effect on a Natura 2000 Site, and where that plan or project is not directly connected with or necessary to the nature conservation management of the site, it shall be subject to 'Appropriate Assessment' to identify any implications for the Natura 2000 site in view of the site's conservation objectives. Natura 2000 sites include Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Sites of Community Importance (SCIs) which have been adopted by the (EU), but not yet formally designated by the governments of Member States, as well as candidate SPAs, SACs and SCIs.

The first stage in the Appropriate Assessment process is Stage 1 Screening for Appropriate Assessment. This assessment was undertaken to determine whether the proposed works; alone, and in-combination with other projects, are likely to have significant effect on the conservation objectives of the European sites within the Zone of Influence.

The Screening for Appropriate Assessment concluded that the proposed development would not result in any significant effects on the European sites. A Natura Impact Assessment (Stage 2 in the Appropriate Assessment process) is therefore not required. A copy of the Appropriate Assessment Screening will be included with the public advertisement.

## 3 Planning Policy Context

### 3.1 Introduction

The proposed development is supported throughout the national planning hierarchy of statutory development plans. The proposed development is aligned with proper planning and sustainable development which is reflected in the policies it is supported by, and through the objectives it helps to fulfil by its implementation.

### 3.2 National Planning Policy

Project Ireland 2040 - National Planning Framework (hereafter referred to as the NPF) published by the Government in February 2018, is a 20-year planning framework designed to guide public and private investment, to create and promote opportunities for Irish citizens, and to protect and enhance Ireland's built and natural environment.

There are several National Strategic Outcomes within the NPF which are linked to the National Development Plan. **NSO8 – Transition to a Low Carbon and Climate Resilient Society** seeks to address the issues of climate change and transition to a low-carbon, climate-resilient and environmentally sustainable economy by 2050.

The issue of coastal flooding is addressed in Chapter 7, specifically Section 7.4 - Coastal environmental and Planning for Climate Change, of the NPF. This chapter acknowledges the requirements to respond to climate changes are a key issue for planning and flood risk management, especially in managing the ongoing development of settlements. In this regard **National Policy Objective (NPO) 41b** supports the proposed development:

*NPO 41b - "In line with the collective aims of national policy regarding climate adaptation, to address the effects of sea level changes and coastal flooding and erosion and to support the implementation of adaptation responses in vulnerable areas."*

### 3.3 Regional Planning Policy

The Regional Spatial and Economic Strategy for the Southern Region (hereafter referred to as the RSES) came into effect on 31st January 2020. The RSES sets out a 12-year strategic regional development framework for the Southern Region, the primary aim of the RSES is to support and implement Project Ireland 2040 - the National Planning Framework (NPF) and National Development Plan 2018-2027.

Chapter 5 acknowledges the impacts of climate change, stating that sea levels are anticipated to increasingly rise each decade. The RSES states that the Regional Assembly is committed to implementing regional policy consistent with the Climate Action Plan 2019, including climate resilience, through flood defences.

**Regional Planning Objective (RPO) 89 – Building Resilience to Climate Change** supports the proposed improvements works to Clonea sea wall, it states;

- a. *It is an objective to support to build resilience to climate change throughout the Region to address impact reduction, adaptive capacity, awareness raising, providing for nature-based solutions and emergency planning*
- b. *Local Authorities and other public agencies shall continue to work with the Office of Public Works to implement the Flood Risk Management Plans and address existing and potential future flood risks arising from coastal, fluvial, pluvial. Groundwater and potential sources of flood risk.*

**RPO 113 – Floods Directive**, also highlights the importance of managing flood risk and progressing flood infrastructure schemes, it states;

*“It is an objective to support, at a regional level, the implementation of the Floods Directive to manage flood risks. It is an objective to encourage collaboration between local authorities, the OPW and other relevant Departments and agencies to implement the recommendations of the Catchment Flood Risk Assessment and Management (CFRAM) programme to ensure that flood risk management policies and infrastructure are progressively implemented”.*

**RPO 120 – Flooding and Coastal Erosion**, states;

*“It is an objective to support measures (including Integrated Coastal Zone Management) for the management and protection of coastal resources and communities against coastal erosion, flooding and other threats. Statutory land use plans shall take account of the risk of coastal erosion”.*

### 3.4 Local Planning Policy

#### **Waterford County Development Plan 2011-2017 (as extended)**

The Waterford County Development Plan was supported by a Strategic Flood Risk Assessment (SFRA) which undertook a high-level review of available datasets and levels of flood risk. The impact of flood risk within the context of the preparation of County Development Plan was acknowledged and incorporated into the policies and objectives in Section 8 (Environment and Heritage Chapter). These policies and objectives aimed to ensure that flood risk areas targeted for development, will follow the sequential approach and will be planned, designed and constructed to reduce and manage flood risk and be adaptable to changes in climate. Relevant flood policies and objectives of the County Development Plan are reproduced below;

**Policy ENV 16:** It is the policy of Waterford County Council that flood risk be managed pro-actively at all stages in the planning process, by avoiding development in flood risk areas where possible, and by reducing the causes of flooding to and from existing and future development.

**Policy ENV 17:** The Council will have regard to the policies and guidelines of the DoEHLG and OPW in floodplains and areas sensitive to flooding.

**Objective ENV 7:** It is an objective to protect floodplains of river catchments in the County and retain them for their flood protection and natural heritage values.

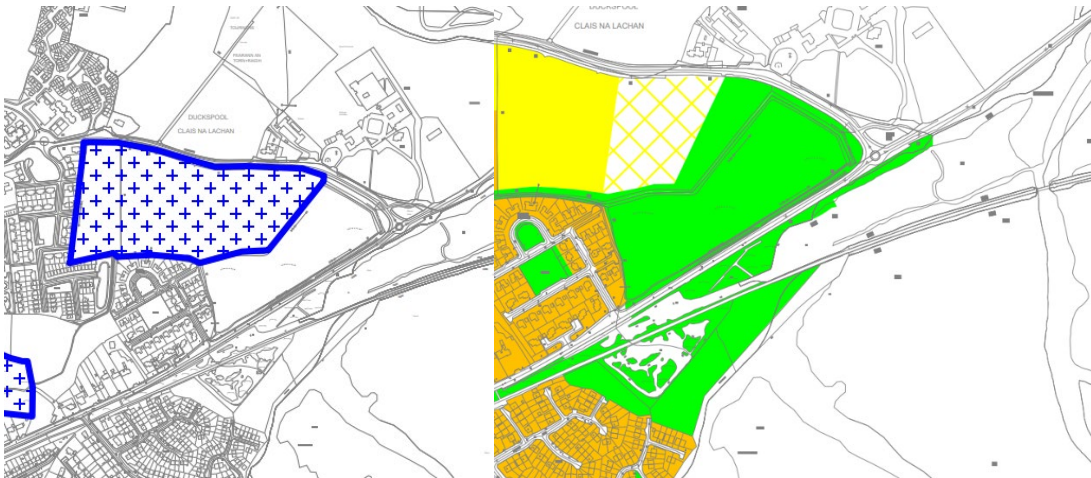
**Objective ENV 8:** It is an objective to identify and consider flood hazard and potential risk of flooding in development applications at the earliest stages in the planning process and require the preparation of a Flood Risk Assessment where necessary.

**Objective ENV 9:** It is an objective to continue to support the preparation of all CFRAM Studies including the River Suir, South-Eastern RBD CFRAM Study and South-Western RBD CFRAM Study and incorporate measures to manage flood risk identified in these studies.

#### **Dungarvan Town Development Plan 2012-2018 (as extended)**

Consideration of flood risk also formed part of the considerations pertaining to the preparation of the Dungarvan Town Development Plan, including production of a flood map (refer to Figure 3.2) and environmental objectives as a result of SFRA. The development plan did not include a screening of risk to specific development sites but did require development within areas shown to be at risk of flooding, to undertake a site-specific flood risk assessment. The flood map within Volume 2 of the town development plan identified an area of land zoned for residential development (yellow hatching and solid yellow in Figure 3.2) as an area at risk of flooding within the Duckspool area.

**Figure 3.1: Flood Risk (left) and Land Use Zoning (right)**



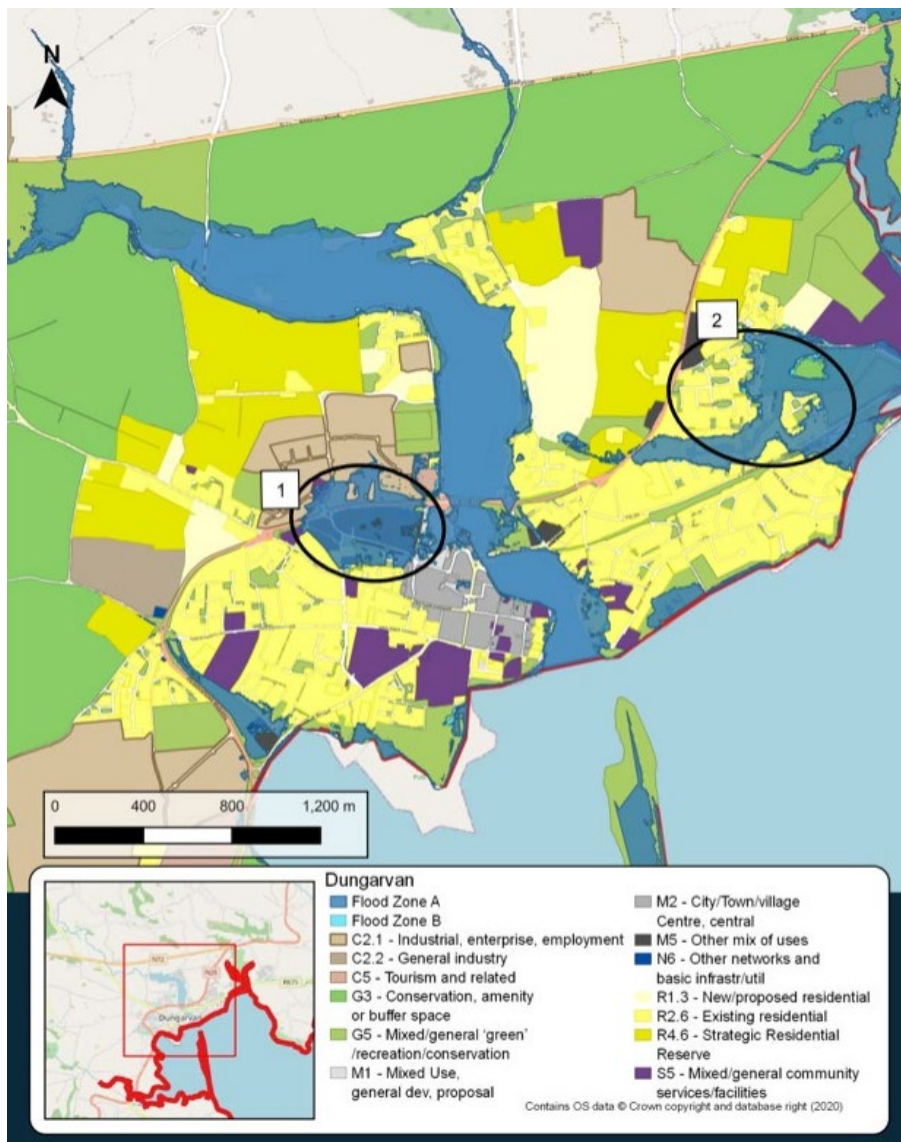
Source: <https://www.waterfordcouncil.ie/media/plans-strategies/development-plan/dtc/index.htm>

Within the Town Development Plan, roads are annotated as unzoned, the surrounding land zoning objective is Open Space (green). The proposed development will not impact Open Space objective which seek “to preserve and enhance Open Space areas and Amenity Areas for passive and active recreational uses, including the preservation of grass verges, hedgerows and tree stands”. The proposed development comprises replacement and improvement works to an existing structure, it will ensure that an undefended area has coastal flood protection from 1 in 200-year storm events while also supporting the Open Space objective ensuring that lands at coastal risk of flooding remain available for recreational uses.

### **Draft Waterford City & County Draft Development Plan 2022-2028**

A SFRA has been prepared to inform land use zoning for this development plan. In relation to Dungarvan, it is noted that there are existing residential areas which are within Flood Zones A and B. As identified in Figure 3.1 below (reproduced from the SFRA), the majority of Duckspool (circled area labelled as '2') is noted as being within Flood Zone A; the flood defences in the area are described as informal and for the purposes of the SFRA, this area was considered to be undefended. Within new and existing residential development areas, the SFRA recommends that new development here should be limited to minor development, as these lands will not be rezoned.

**Figure 3.2: Flood Zone A in Dungarvan (annotation No.2 – Duckspool)**



Source: <https://consult.waterfordcouncil.ie/en/system/files/materials/805/Appendix%2013%20Strategic%20Flood%20Risk%20Assessment.pdf>

In relation to climate change, Dungarvan is identified as an area which could be at significant risk when future climate change scenarios are considered. Such areas/ settlements are mainly located along the coast, where a 0.5m (medium range future scenario) to 1m (high end future scenario) rise in sea level should be allowed for, based on current Office of Public Works guidance. The proposed sea wall improvements have been designed to provide a 0.5m climate change allowance.

### 3.5 Conclusion

The proposed development is supported by national, regional and local planning policies and objectives which seek to combat the impacts of climate change on our existing urban areas, build in climate resilience to existing areas, and ensure flood risk management measures are provided to protect same. The proposed development facilitates the achievement of climate resilience for areas within Duckspool which are located in Flood Zone A. The proposed

development will provide coastal flood protection (including climate change allowance), against a 1 in 200-year coastal flood event.

## 4 Construction Phase Activities

### 4.1 Construction Programme

The proposed development is expected to last for a duration of approximately 4-6 months. An indicative programme for construction is detailed, it may be possible for these timeframes to be expedited by the appointed contractor;

**Table 4.1: Indicative construction programme**

Construction Stage	Duration	Description
Site Preparation	1 week	Establish construction compound, installation of temporary construction fencing, traffic management signage
Civil Works – construction	20 weeks	Demolition and construction of new sections of wall will take place simultaneously. Stone will be retained for re-use in the construction of the replacement wall. This will be stored in-situ within the construction working area parallel to the sea wall, within the fenced compound. Provision of earthen berm.
Scheme Completion	1 week	Removal of construction fencing, construction compound and traffic management signage/controls

The construction working hours will be limited to the following:

- Monday to Friday: 07:00-19:00
- Saturday: 08:00-14:00
- Sunday or Bank Holiday: No construction works to be programmed

### 4.2 Construction Activities

The proposed design of the improvements works for Clonea sea wall have been informed by intrusive site investigations, which concluded that poor ground conditions were encountered with low weight bearing capacity (maximum allowable bearing capacity of 30kPA was confirmed) along sections of the wall which must be replaced.

The following construction methods will be utilised for the construction of the replacement sections of sea wall.

#### **Cantilevered Retaining Wall – applied to 80m section (chainage 0m to 80m)**

A cantilever sheet pile derives its support from the embedment into the underlying soil below the dredge level. For a cantilevered retaining wall design to be considered feasible, ground improvements would be required between the foundation of the wall and bed rock to overcome the poor-quality of the soil. These ground improvements would involve the use of temporary works (propped sheet piled wall to the front and rear of the proposed excavation) or large battered sided excavations to enable removing the unsuitable soil and filling from bedrock to below foundation level with mass lean mix concrete.

#### **Raising Wall height of constructed wall – applied to 50m section (chainage 80m to 130m)**

A 50m section of the wall was reconstructed in 2020. The top of the wall is currently 2.72m OD and is required to be raised by 0.4m to 3.12m OD. This increase is required to provide protection against a 1-in-200-year flood event. The wall height will be increased using stonework which is already applied to the wall.



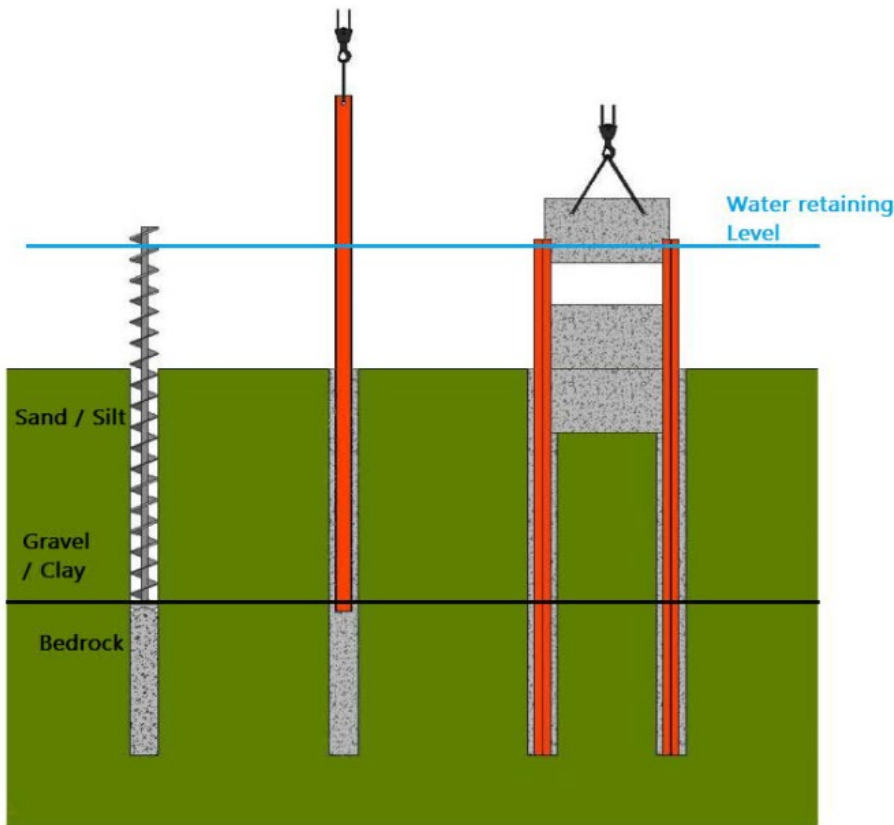
### King Post Wall – applied to 320m section (chainage 130m to 450m)

A king post wall is a well-established retaining wall system that utilises embedment into the bedrock to resist lateral forces acting on the wall. A schematic of this system is shown in Figure 4.1.

A hole is bored out of the bedrock and intermediary layers of soil and backfilled filled with concrete. A steel H section is then installed before the concrete sets. Precast concrete panels are subsequently installed in-between the web of the steel H sections. The precast concrete panels transfer horizontal loads from the retained soil and water to the king posts.

By having the king posts as the main retaining elements of the combined wall, the precast panels do not need to go to bedrock level. The precast panels can be installed just below ground level, achieving efficiencies in design and construction. To perform as a liquid retaining wall the precast units will require a flexible and watertight seal to be installed in-between precast units and steel H sections.

**Figure 4.1: King Post Wall with Precast Panels**



At an approx. spacing of 3.5m c/c a total of 92 no. piles would need to be installed for construction of the flood wall.

### 4.3 Traffic Management

Traffic management will be required during the construction phase of the works. Given the nature and scale of the works being undertaken, the R675 Clonea Road will need to be closed to vehicular traffic for certain periods to protect the safety of the public and the construction workers, and to provide sufficient working space for the works to be undertaken. The period of road closures will be minimised, particularly during term time at the adjacent schools.

Pedestrian and cycle access will be maintained during the period when the road is closed to vehicular traffic. Lane restrictions will also be implemented along the works area.

A detailed traffic management plan will be produced by the Contractor following consultation and agreement with the Gardaí and Waterford City & County Council in advance of construction of the scheme. The Traffic Management Plan shall comply with the requirements of Chapter 8 of the Traffic Signs Manual August 2019 & the Temporary Traffic Management Document Suite. The Contractor shall also take account of the “Guidance for the Control and Management of Traffic at Road Works” Second Edition issued by the Department of Transport (2010) in the implementation of the plan and the “Guidelines for Managing Openings in Public Roads” Second Edition issued by the Department of Transport, Tourism and Sport (2015).

The Contractor must ensure that a suitable Traffic Management Plan is prepared and implemented to ensure that the public and other users of the site are not put at risk during the works.

The design of all traffic management is to be forwarded to the PSDP for design coordination purposes. At a minimum, this shall include layout plans/drawings, together with a site-specific design risk assessment relating to the traffic management works area.

The Contractor shall nominate and appoint a fully trained and experienced person with direct responsibility for the implementation of the traffic management plan during construction including installing, maintaining, modifying and removing the temporary traffic management arrangements.

The traffic management plan must at a minimum include the following:

- Site Traffic and Parking
- Deliveries
- Storage of Materials
- Safe Access and Egress
- Other Road Users, particularly cyclists and pedestrians
- Local Residents
- Existing Entrances
- Emergency Services
- Working Hours
- Safety & Security
- Speed Limits
- Restrictions to Traffic
- Safe Working Widths
- Safety Zones

#### **4.4 Construction Environmental Management Plan**

A Construction Environmental Management Plan will be prepared for the development. Prior to construction commencement, the Construction Environmental Management Plan (CEMP) will be provided to Waterford City & County Council by the appointed Contractor, providing detailed construction methods and updated timelines, where applicable. The CEMP will remain a ‘live’ document which will be reviewed regularly and revised as necessary to ensure that the measures implemented are effective. The primary objective of the CEMP is to safeguard the environment, site personnel and nearby sensitive receptors, i.e. occupiers of residential properties, from site activity which may cause harm or nuisance.

